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DIGITAL TRANSFORMATION AND MANAGEMENT INFORMATION SYSTEMS FOR HIGHER EDUCATION ASSET INVENTORY: A LITERATURE REVIEW

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Abstract

Digital transformation is driving universities to develop information system-based asset management, but the use of digital systems alone does not guarantee the effectiveness of asset inventory. This study aims to analyze the role of Management Information Systems (MIS) in supporting university asset inventory and to formulate a conceptual framework based on a literature review. The study employs a qualitative approach using the library research method. Literature was searched via Google Scholar in August 2026, followed by searches of relevant journal websites, publishers, and official sources. The analysis focused on 14 research articles published between 2021 and 2026, with books and official standards serving as conceptual supporting sources. Data were analyzed descriptively and qualitatively through information grouping, comparison of findings, and narrative synthesis. The results of the study indicate that the SIM supports the recording, classification, retrieval, monitoring, and reporting of assets. The literature synthesis yielded four interrelated dimensions: SIM functions, asset data quality, information governance, and organizational readiness. The conceptual contribution of this study lies in the integration of these four dimensions to explain digital asset inventory as a process that depends not only on the availability of applications but also on data reliability, clarity of responsibilities and procedures, and organizational readiness. This framework can serve as a foundation for further empirical research on information-based inventory and management of higher education institution assets.

Keywords: asset inventory; asset management; digital transformation; higher education institutions; management information systems

INTRODUCTION

Digital transformation in higher education is not only about using technology to support administration, but also involves the integration of data, work processes, and institutional services. The adoption of digital technology has the potential to improve efficiency and governance in higher education institutions. However, these benefits depend on the readiness of infrastructure, human resources, and institutional support in integrating technology into organizational processes (Kambau, 2024). One key tool in this process is the Management Information System (MIS), which integrates people, technology, procedures, and data to generate information that supports operational activities and organizational decision-making (Hisbanarto, 2014). In the context of higher education, Management Information Systems not only play a role in managing academic and administrative information but also have the potential to support the management of institutional resources, including facilities, infrastructure, and assets. Research on information system integration in higher education

institutions indicates that the integration of data and digital services can help reduce repetitive data entry, expedite services, and improve coordination among units (Afianto & Windiarti, 2026). Nevertheless, findings regarding the integration of administrative services in general need to be distinguished from evidence that specifically demonstrates an increase in the effectiveness of asset inventory.

Inventory is a fundamental part of asset management because it provides information on the type, quantity, location, condition, and status of assets owned by an organization. This information is necessary to support asset tracing, condition monitoring, maintenance planning, and decision-making regarding asset utilization and needs. ISO 55000:2024 provides a general framework for asset management focused on value realization and aligning asset management with organizational objectives. Meanwhile, ISO 55013:2024 specifically provides guidance on data management to support asset management and organizational objectives (ISO: the International Organization for Standardization, 2024; ISO (the International Organization for Standardization), 2024). Both standards highlight the importance of the relationship between asset management, organizational objectives, and the information used in the management process. In higher education institutions, these needs include the management of data on buildings, rooms, laboratories, technological devices, office equipment, and various facilities that support both academic and non-academic activities.

A number of studies have examined the application of information systems in asset inventory management. Husni discusses the development of an asset information system to assist with asset recording and reporting (Husni, 2021), while Masri et al. developed a web-based asset inventory system for higher education institutions (Masri et al., 2022). Silpa et al. examined an asset inventory system supported by QR codes, while Kusumojati and Mediawati analyzed the use of a web-based asset management information system in a university context (Kusumojati & Mediawati, 2024; Silpa et al., 2022). These studies provide an overview of the role of digital systems in recording, categorizing, searching for, and monitoring asset information. However, the focus on application development or functionality does not in itself prove that data quality, asset governance, and the use of information for managerial decision-making have improved sustainably. Meanwhile, research on digital transformation by Aditya et al., Bisri et al., and Sukorini et al. highlights organizational barriers and factors, such as strategy, leadership, digital competencies, infrastructure, and resources (Aditya et al., 2021; Bisri et al., 2023; Sukorini et al., 2024). Although relevant for understanding organizational readiness, these studies do not specifically link these factors to the quality of inventory data and asset management in higher education institutions. This comparison indicates that the literature on inventory systems, digital transformation, and asset management has provided complementary perspectives but still needs to be synthesized into a single conceptual framework focused on the inventory of higher education assets.

Based on this gap, aims to analyze how digital transformation through a Management Information System (MIS) can support the inventory of higher education institution assets. Through a literature review, the literature on asset inventory systems, digital transformation, information integration, and asset management was synthesized to formulate a conceptual framework linking four dimensions: MIS functions, asset data quality, information governance, and organizational readiness. This synthesis is expected to provide a more comprehensive understanding of how these four dimensions are interrelated in supporting digital-based asset inventory management at higher education institutions. The conceptual contribution of this article is to formulate a framework that links MIS functions, asset data quality, information governance, and organizational readiness as four interrelated dimensions in digital-based higher education asset inventory. This framework expands upon previous discussions, which tended to treat the technical functions of inventory systems and organizational factors in digital transformation as separate issues. Thus, the success of digital inventory is understood not only in terms of the availability of applications but also in terms of data quality and traceability, clarity of governance, and organizational readiness to utilize information for asset management.

LITERATURE REVIEW

Digital Transformation in Higher Education

Digital transformation is the process of organizational change through the use of digital technologies integrated into work processes, services, and governance. In higher education, digital transformation is not only about the implementation of technology but also about an institution's readiness to adapt its strategies, resources, and the competencies of its users. In the context of higher education institutions in Indonesia, Kambau points out that the use of digital technology has the potential to improve operational efficiency and the quality of governance, although it still faces challenges related to infrastructure, human resources, and institutional support (Kambau, 2024). These findings indicate that digital transformation must be understood as a change involving both technological and organizational aspects. This perspective serves as the foundation for understanding the application of technology in asset inventory, the success of which is also linked to institutional readiness and the consistency of information management processes

Management Information Systems and Asset Inventory

A Management Information System (MIS) is a system that integrates people, technology, procedures, and data to generate information that supports operational activities and organizational decision-making (Hisbanarto, 2014). In asset inventory, a Management Information System can support the recording, coding, grouping, location tracking, updating of information, and reporting of assets. The use of digital systems allows inventory information to be managed in a more structured manner and accessed according to the institution's management needs. Various studies on asset inventory information systems indicate that digital systems are primarily used to support operational functions, such as recording, searching, grouping, reporting, and monitoring assets (Husni, 2021; Kusumojati & Mediawati, 2024; Masri et al., 2022; Silpa et al., 2022). However, the mere existence and functionality of an application do not in and of themselves guarantee the success of comprehensive asset management. Information systems must be supported by adequate data quality and governance so that the information generated can be relied upon.

Data Quality, Governance, and Asset Management

Data quality is a critical aspect of asset information management because inventory information is used to determine the existence, quantity, location, condition, and status of assets. Data that is inaccurate, inconsistent, or out of date can reduce the usefulness of the information for managers. Therefore, digital inventory management requires not only a system for storing and retrieving data but also procedures for updating, validating, assigning responsibilities, and controlling access to information (Purnomoadi et al., 2023). ISO 55000:2024 provides a general framework for asset management focused on value realization and aligning asset management with organizational objectives. Meanwhile, ISO 55013:2024 specifically provides guidance on data management to support asset management and organizational objectives (ISO: the International Organization for Standardization, 2024; ISO (the International Organization for Standardization), 2024). Both standards emphasize the relevance of information management in supporting asset management. In the context of higher education institutions, this principle relates to the need to maintain the reliability of inventory data so that it can be used for asset monitoring, maintenance planning, and decision-making. Thus, the use of an Asset Management Information System (MIS) for asset inventory must be understood in relation to data quality and asset management governance.

METHOD

This study employs a qualitative approach using library research to examine digital transformation, Management Information Systems (MIS), and asset inventory in higher education institutions through relevant concepts, theories, and previous research findings. The literature review was conducted by collecting and analyzing information from various relevant research sources (Fadli, 2021). The sources used in this study include scientific journal articles, books, as well as official documents and standards related to digital transformation, Management Information Systems, asset inventory, and higher education asset management.

The literature search was conducted via Google Scholar in August 2026, followed by searches of relevant journal websites and publishers, as well as official sources regarding asset management standards. The review focused on 14 research articles published between 2021-2026, with other supporting sources used to strengthen the conceptual discussion. Sources were selected based on their relevance to the research focus, the credibility of the publisher or publishing institution, and the adequacy of the information to support the analysis. In addition to recent publications, older sources were also used if they remained relevant for explaining the basic concepts (Khairunisa et al., 2026).

Research data were collected by reading and noting key information from each relevant source. This information included the concepts discussed, the research focus, the context of the study, the main findings, and their relevance to the research objectives. Subsequently, the collected information was grouped by similar topics to facilitate analysis and comparison (Susanto et al., 2024). The data were analyzed using a descriptive-qualitative approach by identifying key ideas, grouping information, comparing findings from various sources, and relating them to the research focus. The analysis covered digital transformation in higher education institutions, the role of Management Information Systems in information management, the quality and governance of asset data, and the support provided by information systems for asset inventory and management. To ensure the accuracy of the study's results, findings from various sources were compared by considering the relevance of the information to the research focus, similarities and differences in the findings, and the research context of each source (Malik et al., 2025). Official documents and standards were used as references to understand the concepts and principles of asset management, while research articles were used to review findings relevant to the topic. This comparison was conducted to identify emerging patterns in the findings, understand differences in research results, and identify limitations in the available information. Subsequently, the analysis results were organized in the form of a narrative synthesis to explain the role of digital transformation and Management Information Systems in supporting the inventory of higher education institution assets and to formulate their implications for digital-based asset management.

RESULTS AND DISCUSSION

Results

Characteristics of the Literature Reviewed

The literature reviewed includes studies on digital transformation, management information systems, asset inventory systems, and asset data management, as summarized in Table 1 below:

Table 1. Characteristics of the Studies and Literature Reviewed

Author and Year	Publication Source	Focus and Approach	Relevant Findings	Limitations Regarding the Focus of This Article
Bayu Rima Aditya, Ridi Ferdiana, and Sri Suning Kusumawardani (2021)	International Journal of Information and Education Technology	Barriers to Digital Transformation in Higher Education: A Literature Review	Identifies nine categories of barriers, including strategy, resources, leadership, digital competencies, technology, resistance to change, as well as governmental and economic factors	Does not specifically address asset inventory
Verry Riyanto, Sumarna, and Hafis Nurdin (2021)	Jurnal Teknologika (Jurnal Teknik-Logika-Matematika)	Information system for monitoring higher education facilities and infrastructure	The system supports the monitoring of facilities, reports, and reminders for maintenance or renewal	Focuses on facility monitoring, not a comprehensive synthesis of

Author and Year	Publication Source	Focus and Approach	Relevant Findings	Limitations Regarding the Focus of This Article
				asset management
Akhmad Faisal Husni (2021)	Journal Vision Technology (V-Tech)	Development of an Asset Information System at ITB Pelita Raya	The system was developed to address equipment loss, data entry errors, late reports, and incomplete equipment requests	Focus on operational systems and processes within a single institution
Nadiyah and M. Syafiih (2022)	COREAI: Jurnal Kecerdasan Buatan, Komputasi dan Teknologi Informasi	Web-Based School Inventory Monitoring System	The system assists with data retrieval and resolves issues related to item codes and data discrepancies	School context, not higher education
Muh. Masri, Mohamad Ilyas Abas, Wahyudin Hasyim, and Irawan Ibrahim (2022)	Jurnal Ilmu Komputer (JUIK)	Web-Based Asset Inventory System for Muhammadiyah University of Gorontalo	The system is designed to support the categorization, recording of quantities, conditions, descriptions, and status of assets to ensure more organized data management	Focusing on inventory system development
Firda Kharismatus Silpa, Arief Rusman, and Kresna Ramanda (2022)	Bianglala Informatika	QR Code-Based Asset Inventory System at STIKes Muhammadiyah Tegal	The system is intended to support asset data collection, inspection, search, and reporting, as well as reduce reliance on ledger records	Focus on system implementation and QR code functionality
Aria Bisri, Atina Putri, and Yusep Rosmansyah (2023)	International Journal of Emerging Technologies in Learning (iJET)	A synthesis of 66 studies on digital transformation in higher education	Leadership, strategy, and consistency in implementation play a crucial role in the success of digital transformation	Does not specifically address asset inventory systems
Putri Pramestiwi Kusumojati and Elis Mediawati (2024)	International Journal of Business, Law, and Education	A Literature Review of Web-Based Asset Management Systems in Higher Education	Web-based systems have the potential to simplify the collection, classification, search and monitoring of asset conditions.	It is a literature review; it does not test a specific system implementation
Ridwan Andi Kambau (2024)	Jurnal Rekayasa Sistem Informasi dan Teknologi	Digital Transformation of Higher Education Institutions in Indonesia	Digital transformation has the potential to improve efficiency, operations, and the quality of education, but faces challenges related to infrastructure, the availability of human resources, and government support	Does not specifically address asset inventory
Linda Apriyanti, Faiqunisa, and	Jurnal Teknologi Informasi dan Komunikasi	Development of an Asset Management	The system supports asset management, procurement,	Focuses on system development at

Author and Year	Publication Source	Focus and Approach	Relevant Findings	Limitations Regarding the Focus of This Article
Hafizh Fauzi Ihsan (2024)		Information System at STMIK Bandung	maintenance, and disposal	a single institution
Raden Sintho Sukorini, Arita Marini, and Rihlah Nur Aulia (2024)	Improvemen: Jurnal Ilmiah untuk Peningkatan Mutu Manajemen Pendidikan	A Literature Review on Digital Transformation and Higher Education Asset Management Systems	The integration of management information systems has the potential to support efficiency, but high costs, infrastructure limitations, and a lack of technical skills pose challenges to implementation	A broader scope than asset inventory
Arjuna Sulistiyono, Murtir Jeddawi, and Ismail Nurdin, Ika Sartika (2025)	Lex Localis – Journal of Local Self-Government	Asset management strategies to support smart campuses	Asset management is positioned as part of the support for digital governance, asset utilization, and campus technology integration	Case study context; this article does not test the four-dimensional framework
Rachmat, Yuyun Rohayati, and Hikmat Permana (2026)	Jurnal Madinasika: Manajemen Pendidikan dan Keguruan	Integrated administrative information systems in higher education	Speeding up services, document tracking, and inter-unit coordination as well as saving paper; relevant in the context of administrative integration	Focus on document administration, not assets; used as an indirect comparison
Dafit Afianto and Ika Safitri Windiarti (2026)	Jurnal Pengembangan Teknologi Informasi dan Komunikasi (JUPTIK)	Integration of academic and centralized administrative information systems	System integration improves data synchronization and service access, but the study also notes limitations in network infrastructure, server capacity, and the need to improve users' digital literacy	Focus on academic administration, not asset inventory

Table 1 shows that research on inventory systems focuses more on operational functions, such as recording, searching, monitoring, and reporting, while studies on digital transformation highlight organizational readiness, resources, leadership, and system integration. This difference in focus forms the basis for a synthesis regarding MIS functions, data quality, information governance, and organizational readiness.

Synthesis of the Reviewed Literature

A comparison of the literature reveals that studies on inventory systems predominantly address operational functions. Meanwhile, studies on digital transformation and information system integration place greater emphasis on organizational readiness, interdepartmental coordination, infrastructure, user competencies, and implementation barriers. The literature on asset management also highlights the importance of data management that aligns with organizational needs and objectives. Based on this comparison, the literature findings are synthesized into four interrelated dimensions, as summarized in Table 2 below:

Table 2. Synthesis of Findings and Their Implications for Higher Education Asset Inventory

Dimensions of Synthesis	Supporting Studies	Synthesis Results	Differences or Critical Notes	Implications for asset inventory
Functions of Management Information Systems	(Apriyanti et al., 2024; Husni, 2021; Kusumojati & Mediawati, 2024; Rachmat et al., 2026; Riyanto et al., 2021; Silpa et al., 2022)	MIS supports the recording, classification, retrieval, monitoring, updating, and reporting of asset information in a more structured manner	Technologies and application contexts vary; there is no uniform basis for comparison to determine the most effective technology for all higher education institutions.	System evaluations must focus on the usefulness of the information and its support for the asset management process, not merely on the existence of the application
Asset data quality	(Apriyanti et al., 2024; Husni, 2021; ISO (the International Organization for Standardization), 2024; Nadiyah & Syafiih, 2022)	Recording errors, data discrepancies, and irregular updates reduce the usefulness of asset information	Research on inventory systems addresses issues in different contexts, whereas ISO 55013:2024 provides normative guidance rather than empirical evidence regarding the effectiveness of a particular application	Data needs to be accurate, complete, consistent, up-to-date, and traceable; digitization alone does not guarantee data quality
Information Governance	(ISO: the International Organization for Standardization, 2024; ISO (the International Organization for Standardization), 2024; Riyanto et al., 2021; Sulistiyono et al., 2025)	Asset management relates to the integration of information, work processes, responsibilities, and organizational objectives. Data monitoring and management systems can support asset Oversight and planning.	ISO standards serve as a normative foundation, while empirical research provides specific application contexts. Evidence of general administrative integration cannot be directly considered evidence of successful asset inventory management	Higher education institutions need to designate data managers, establish procedures for recording and updating data, set access controls, and define the use of information in asset monitoring and planning

Dimensions of Synthesis	Supporting Studies	Synthesis Results	Differences or Critical Notes	Implications for asset inventory
Organizational Readiness	(Aditya et al., 2021; Afianto & Windiarti, 2026; Bisri et al., 2023; Kambau, 2024; Sukorini et al., 2024)	Digital transformation relates to strategy, leadership, user competencies, infrastructure, resources, and institutional support. System integration also requires the organization's ability to manage change and coordination	Most sources discuss digital transformation or system integration in broad terms. Afianto and Windiarti discuss academic and administrative systems, rather than asset inventory directly	The implementation of an Asset Management Information System requires support from leadership, user competencies, adequate infrastructure, resources, and consistency in following procedures and updating data

Table 2 shows that the functions of Management Information Systems, data quality, information governance, and organizational readiness are distinct yet interrelated dimensions. Management Information Systems support asset information management; data quality determines the reliability of information; governance establishes responsibilities and procedures; and organizational readiness influences the consistent implementation and maintenance of the system. These findings must be interpreted while considering the differing characteristics of the sources. Application development research describes the system's operational functions; digital transformation studies explain the organizational context; and asset management standards provide a normative foundation, not empirical evidence of the effectiveness of a specific system. Therefore, the benefits of integrating administrative and academic systems are used only as a supporting perspective, not as direct evidence of the success of asset inventory. Conceptually, this synthesis confirms that digital asset inventory should not be evaluated solely based on the availability of applications but must also consider data reliability, clarity of responsibilities and procedures, and organizational readiness. These four dimensions are the result of a literature synthesis in this study and have not yet been empirically tested.

Discussion

Digital Transformation as the Context for Changes in Higher Education Asset Inventory

The study's findings indicate that asset inventory should be viewed within the broader context of digital transformation. Digital transformation in higher education is not merely about acquiring new applications, but rather a change in how organizations manage processes, information, resources, and services. A review by Bisri, Putri, and Rosmansyah of 66 studies on digital transformation in higher education shows that digital transformation is a multidimensional phenomenon involving various aspects of organization, technology, and institutional processes (Bisri et al., 2023). These findings are reinforced by Aditya, Ferdiana, and Kusumawardani, who identified barriers to digital transformation in the areas of vision and strategy, resources, leadership, digital skills, technology, adaptability, resistance to change, as well as governmental and economic factors (Aditya et al., 2021).

In this context, asset inventory is one of the strategic administrative processes that should be digitized because it generates data on the physical resources used by an organization. When inventory is still conducted separately through manual documents or spreadsheets, asset data is likely to be scattered, difficult to update, and hard to trace. Conversely, an information system allows asset information to be stored in a more structured data environment. Husni's research indicates that issues such as lost equipment, data entry errors, and delayed reporting are key reasons for developing asset information systems at

universities (Husni, 2021). Inventory data must not only include the number of assets but also cover their identification, location, condition, and the unit or party responsible (Kusumojati & Mediawati, 2024). Structured and up-to-date information can serve as the foundation for broader asset management. A verified asset data repository also has the potential to support strategic planning, procurement needs projections, and institutional accreditation requirements (Munifah et al., 2025). Thus, digital inventory management can be understood as the informational foundation for asset management in higher education institutions.

The Role of Management Information Systems in Inventory Digitization

The study's findings show that Management Information Systems serve as a mechanism that links inventory data to the organization's management needs. Research on digital transformation and Management Information Systems in higher education institutions indicates that information systems can support efficiency, coordination, and decision-making through the integration of data and processes (Sukorini et al., 2024). This means that the role of Management Information Systems in inventory management extends beyond the mere ability to enter item data into an application.

In the context of inventory management, a Management Information System must at least support an information cycle consisting of data input, storage, updates, retrieval, processing, and presentation of asset information. Data regarding asset names, codes, quantities, locations, conditions, user units, and ownership status can become more useful information when managed within a single system. Research findings on inventory information systems indicate that issues with data retrieval and discrepancies between records and actual conditions arise when inventory management is not supported by an adequate system (Nadiyah & Syafiih, 2022).

This perspective aligns with ISO 55013:2024, which positions data management as a component that supports asset management objectives (ISO (the International Organization for Standardization), 2024). This standard addresses not only the existence of data but also its usefulness, quality, governance, and the relationship between data and organizational objectives. Therefore, an Asset Management Information System (MIS) can serve as an information infrastructure that enables inventory data to be transformed into managerial information.

Digitization Improves Data Quality, Traceability, and Asset Information Security

The study's findings show that traceability is a critical requirement in digital inventory management. Organizations need to know not only the number of assets they own but also the identity, location, condition, status, and the unit responsible for those assets. According to research by Nadiyah and Syafiih, a web-based inventory system was developed because the process of searching for data using Microsoft Excel required searching item by item, while errors in entering item codes could cause difficulties in data retrieval (Nadiyah & Syafiih, 2022). Other studies on inventory systems also highlight the use of digital systems to assist with data collection, verification, and asset reporting (Masri et al., 2022; Silpa et al., 2022). These findings indicate that the quality of a digital inventory cannot be assessed solely based on the volume of stored data. Accuracy, completeness, consistency, timeliness, and ease of retrieval also determine whether the information is usable. Data that is not updated to reflect changes in asset conditions can result in inaccurate information. Therefore, periodic updates and audits must be accompanied by clear access rights management and data change procedures to ensure that information is protected and accountability for its management can be traced. These aspects align with the data management principles in ISO 55013:2024 (ISO (the International Organization for Standardization), 2024). Thus, data quality and security are integral parts of digital inventory governance, not merely additional features of an application.

Digital Inventory as the Foundation for Higher Education Asset Management

Studies indicate that inventory management is closely linked to broader asset management activities. Information regarding the identity, quantity, location, and condition of assets can serve as a foundation for institutions to monitor the presence of assets and determine their management needs. Research on the asset inventory system at

Muhammadiyah University of Gorontalo indicates that a web-based system can support asset categorization, the recording of quantities and conditions, and more structured asset data collection (Masri et al., 2022). Another study at STIKes Muhammadiyah Tegal also showed that an inventory information system can facilitate the processes of data collection, inspection, search, and reporting of assets more easily than manual record-keeping (Silpa et al., 2022).

The relationship between inventory management and asset management is becoming increasingly important in the context of higher education institutions that possess diverse assets spread across various units. A study on asset management strategies at IPDN Jatinangor indicates that asset management can serve as a key component supporting digital transformation and university governance by enhancing asset utilization and technology integration (Sulistiyono et al., 2025). Thus, inventorying serves not only to identify owned assets but also to provide foundational information that can be utilized in broader asset management processes. ISO 55013:2024 reinforces this perspective by emphasizing the importance of effective data and information in supporting decisions as well as asset management and organizational objectives (ISO (the International Organization for Standardization), 2024). Thus, the managerial value of inventory data depends on the consistency of management, the reliability of information, and its alignment with organizational needs.

Based on this synthesis, this study views the relationship between digital transformation, Management Information Systems, and asset inventory as an interconnected series of elements. Digital transformation drives changes in processes and governance; Management Information Systems provide the infrastructure for data management; and asset inventory generates foundational information about assets. When these three elements are integrated, inventory data goes beyond merely serving as a list of assets and can evolve into information that supports a more systematic asset management process. This synthesis also broadens the perspective of inventory information system studies, which previously focused largely on resolving technical issues related to asset recording, searching, and reporting (Masri et al., 2022). This relationship can be illustrated using the framework shown in the following figure:

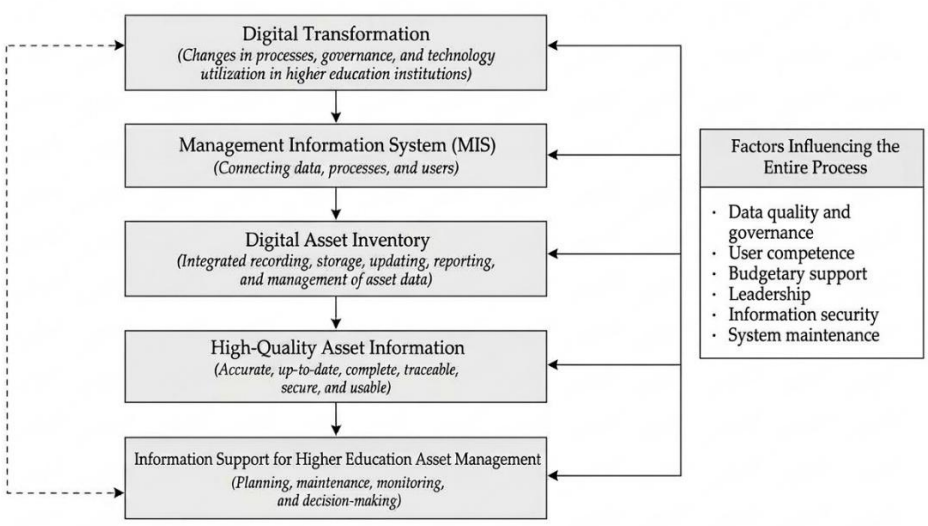


Figure 1. Conceptual Framework for the Digitalization of Higher Education Institution Asset Inventory

This framework shows that the relationships between components are not merely technical in nature. Digital transformation provides the direction for change, Management Information Systems provide the mechanisms for information management, and inventorying generates the baseline asset data. The quality of the results is influenced by governance and organizational readiness. Thus, Management Information Systems are not the end goal of digital transformation but rather a means that enables inventory data to be managed and utilized in a more targeted manner. The conceptual contribution of this study lies in positioning the digitization of inventory as part of information-based asset management, rather than merely

as the development of a record-keeping application. This perspective shifts the focus from the question of whether universities already have an inventory system to the question of whether such a system is capable of producing information that is accurate, up-to-date, secure, and useful for asset management. This framework is the result of a conceptual synthesis of the literature and has not yet been empirically tested at any specific university.

In practical terms, the implications of the findings in this article are that universities developing digital inventory systems need to consider more than just the technical aspects of the application. Data standardization, update procedures, division of responsibilities, access rights, information security, user competencies, and system maintenance must be considered as part of inventory management. Budgetary support and leadership are also necessary to ensure the system can be used sustainably and integrated into the organization's work processes. These aspects indicate that the success of inventory digitization depends not only on the availability of the application but also on the organization's readiness and the information governance that supports its use.

This study has limitations because it employs a library research approach; consequently, the resulting synthesis has not directly examined the implementation of inventory management information systems at specific universities. Furthermore, some of the reviewed literature discusses digital transformation and information system integration broadly, rather than asset inventory specifically. Future research could test this conceptual framework through field studies by examining system implementation, data quality and currency, user competence, information security, system maintenance, and the use of inventory information in decision-making

CONCLUSION

Based on the results of the literature review, Management Information Systems (MIS) play a role in supporting higher education institution asset inventory through more structured information management. However, the benefits of digitization depend not only on the availability of applications but also on data quality, information governance, and organizational readiness. The literature synthesis identified four interrelated dimensions: MIS functions, asset data quality, information governance, and organizational readiness. These four dimensions underscore that digital inventory management must produce information that is accurate, complete, up-to-date, and easily traceable, and must be supported by clear responsibilities, procedures, and institutional capacity. The contribution of this study lies in the formulation of these four dimensions as a conceptual framework for understanding the digitization of inventories as part of information-based asset management. Since this framework was developed through a literature review and has not yet been empirically tested, future research should examine it within the context of higher education institutions to determine its application and the interrelationships among the dimensions in asset management practices.

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