

Effect of Management Information System (MIS) on Decision-Making in the Academic Sector

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Abstract

The current era is the information era; people are running on society 5.0, where machines are integrated with humans for a healthy, comfortable, easy, and long life. In general, information is blood, and MIS is body; blood flows for life which can be compared with the flow of information on the organization as per the requirement for decision-making to grow the organization to meet its desired outcome. The overall objective of this research is to assess the effect of MIS on decision-making among academic institutions. This machine can function effectively and efficiently only with the help of data and information for humanitarian assistance for various purposes. Nowadays, every organization cannot run smoothly without the use of MIS. It signifies the dependability of decision-making on MIS. This research has attempted to identify necessary variables. They are used to evaluate the influence of management information systems on decision-support capabilities in the organization.

This study also discusses the concept, attributes, characteristics, types of MIS, and the MIS model, and finally, highlights the effect of MIS in decision-making in academic institutions. At the same time, different models and figures are presented to enrich the discussion and to highlight the status of each MIS and DSS information system in an organization's decision-making process. Here fifteen related articles are incorporated to review the title to ensure the research gap and where conceptual review approach based on descriptive content analysis using long-term classroom discussion. This research will create an awareness to develop an integrated MIS among academic institutions to ensure success through rational scientific decision-making.

Keywords: *MIS, decision making machine, society 5.0, academic institution*



1. INTRODUCTION

Data, information, knowledge and result are interrelated terms to perform the specific decision-making process. The information management system is an integrated set of parts of gathering, organizing, extracting, storing, processing and disseminating information for decision-making. Some information systems have been developed for various purposes, especially in business sectors such as TPS, DAS, KWS, MIS, DSS, E.S., CSCWS, GDSS and ESS. Each plays multiple roles in the organizational hierarchy for activities and decision-making. Management Information Systems (MIS) is a newly evolved business and organization management concept. It is an integrated system of man, machine, programs and procedures for providing the information to support the organization's transaction, operations and decision-making function for effective and efficient management. Shortly, it is a computer-based information system (Ali, 1019).

The Management Information System is an effective tool for managing complex, huge, unmanaged data in a simplified manner to perform business activities at the various levels of the organization (Tripathi, 2010). Information systems and decision-making activities are interrelated where information system is a system used to collect the right information and the right time with high reliability for the right decision-making of the organization. Nowadays, a successful organization is the symbol of the proper implication of an MIS system in an organization that helps solve both structured and unstructured problems (Alkhaffaf, 2012).

No doubt, the primary resource of the organization's success is accurate, reliable, and timely information. Effective and efficient information and decision-making activities are the main success factors of various administrative activities. There are five attributes of the information to be remarkable to the organization: appropriateness, accuracy, quantity, timeliness, and accessibility of data used in the organization—the more reliable and timelier the information, the more correct and beneficial the decision. Consequently, an integrated information system should provide the organization with current and future data to help in accurate managerial decision-making (Yassine, 2017).

Many authors discuss information, management information system and decision-making; the relationship among information, information system, system analysis

and decision-making which was established in 1966 by Oleh Kostetsky. Management information system generates knowledge about an organization's relative position and fundamental workable force. Srinivas Nowduri said that there is a good relationship between MIS and decision-making. The decision-making process and its effect on middle-level and top-level management in a business organization have a significant role in automated decision-making (Ghaffarzadeh, 2015).

2. OBJECTIVES AND RESEARCH QUESTION

The main objective of the research article is to review the effect of Management Information Systems (MIS) on decision-making in the academic sector. Besides, it has some minor objectives highlighting the findings or outcomes during the research.

- To identify highly cited journals on the impact of MIS in the decision-making process.
- To identify the research method applied in the review articles.
- To identify the impact of MIS on the decision-making process
- To determine the relationship between management information systems and the managerial decision-making process.

Research Question

Which is the highest cited journal article in this review research and its main results?

What methods were used in the reviewed articles of this study?

What is the impact of MIS on the decision-making process?

What is the relationship between management information systems and managerial decision-making processes?

3. REVIEW OF LITERATURE

The author has collected 23 articles on management information system and decision-making for the literature review, including related books and other online resources. Out of them, important 15 articles are incorporated to review the literature. The most related fifteen articles are reviewed (see Table 1).

Table 1. Summary of the previous studies on the roles of MIS in the decision-making process in organization

Name of the Article	Name of the Journal	Article Publisher	Author and Publication Year	Citation Score	Method Used	Key Words	Results
Comparison of Management Information System and Decision Support System and Its Role in the Decision-making Process of Managers of Economic Affairs and Finance of Zahedan	International Review of Management and Marketing	Econjournals	Keshtegar and Vakili, (2018)	1	Quantitative analysis Method	Management Information System, Decision Support System, Managers, Decision-making Process	The result indicated that MIS and DSS have a significant relationship with managers' decision-making process and that rational decision-making process as the intermediary variable inferred and explained this effect.
Decision Making Based on Management Information System and Decision Support System	International Journal of Economics, Commerce and Management	European Researchers	Ada & Ghaffarza-deh, (2015)	194	Literature Review Method	Management Information Systems, Decision Support Systems, Decision-making	The results highlighted that the management information system works online mode. But the decision support system works in real-time mode. The management support system supports a medium level of data, but the decision support system supports huge volumes of data. The management support system uses low graphics support, but the decision support system uses large graphics support. The management information system focuses only on fully structured tasks or routines for decisions, but the decision support system focuses on the structure and semi-structured data.
The Role of Management Information System (MIS) and Decision Support System (DSS) for Managers' Decision Making	International Journal of Business and Management	Canadian Center of Science and Education	Trivedi, (2011)	194	Literature review Method	Management information system, Decision support system, Managers, Decision-making process	The results indicated that the decision-making process, especially with an emphasis on MIS and DSS, provides information services for middle and higher-level managers.
Decision support system and knowledge-based strategic management	International Conference on Communication, Management, and Information Technology (ICCMIT 2015) Decision support system and knowledgebase	Elsevier B.V.	Alyou-bi(2015)	88	Literature review Method	Decision-making, Decision Support Systems (DSS), Knowledge Management (K.M.), Group Support System (GSS), Strategic management, Strategy	The results conclude that the concept of K.M. is as crucial to strategic management as any other activity. Through its enhancement of K.M., DSS has also found use towards enabling decision-makers to make more informed strategic decisions.

Name of the Article	Name of the Journal	Article Publisher	Author and Publication Year	Citation Score	Method Used	Key Words	Results
DECISION SUPPORT SYSTEM (DSS)	Singaporean Journal of Business Economics and Management Studies	National Library Singapore, 2013	Khodashahri & Arabi, (2018)	6	Literature Review Method	Organizations, decision support systems, managers, semi-structured problems	The results concluded that the decision support system is a counsellor beside a decision maker and allows it to run with huge information mass and use them arbitrarily and in a suitable model frame to improve decision making.
Decision Support Systems (DSS) in Higher Education Systems	International Journal of Applied Information Systems (IJ AIS)	Foundation of Computer Science FCS, New York, USA	Fakeeh (2015)	36	Literature Review Method	Decision Support System (DSS), Higher Education, and Information Systems.	The results concluded that the headway and integration of a DSS with the higher education institute information and communication technology structures might settle on a compact outlay and anticipated time. It would focus on critical drafting issues and grasping the most appropriate decisions for the higher educational systems' delegate involvement.
Impact of Management Information Systems (MIS) on Decision Making	Global Disclosure of Economics and Business, Volume 8, No 2/2019	ISSN 2305-9168 (print); 2307-9592 (online)	Ali (2019)	1	Literature Review Method	MIS, Database, Information access, Decision support system, Decision quality, Decision-making process, organization	This research article concluded that using information systems, i.e. MIS, can influence the decision-making process through the various attributes of information like accuracy, timeliness, relevance, completeness, economic information etc. The success of information systems will enhance the performance of enterprises
Management Information System and Decision-Making	Academic Journal of Interdisciplinary Studies	MCSER (Mediterranean Center of Social and Educational Research), Rome-Italy	Berisha - Shaqiri (2014)	60	Literature Review Method	Management Information Systems, decision-making, organization, database	The main results indicate that the number of contemporary business data and information exponentially grows, and efficient business decision-making is possible only if the necessary information is fast and accurate. It can be managed by adequate staff; in most cases, poor efficiency results from a lack of sound management information systems.
MIS is an Effective Tool for Decision Making	International Journal of Computer Applications (0975 – 8887)	International Journal of Computer Applications support centre	Tripathi, (2010)	7	Literature Review Method	Management Information System, Transaction Processing System, Decision Support System, MIS Model.	The results indicate that the MIS plays an important role in providing the information required for crucial decision-making for the top-level management, directly affecting the organization's performance.

Name of the Article	Name of the Journal	Article Publisher	Author and Publication Year	Citation Score	Method Used	Key Words	Results
Rational Model of Decision Making	Global Encyclopedia of Public Administration, Public Policy, and Governance,	Springer International Publishing	Uzonwanne (2016)	41	Literature Review Method	Decision-making models; Leadership decision making; Rational decisions; Rational planning model	This article's outcome is that rational decision-making is positioned as the most promising, effective, and functional decision-making process for leaders, managers, and individuals, especially when stakeholders, investments, and high stakes are involved.
The Role of Management Information System (MIS) and Decision Support System (DSS) for Managers Decision Making Process	International Journal of Business and Management	Canadian Center of Science and Education	Asemi et al. (2011)	193	Literature Review Method	Management information system, Decision support system, Managers, Decision-making process	It could be concluded that DSS can extend its support to the same steps of the decision-making process and has more roles in decision-making and problem-solving than MIS.
The Role of Management Information Systems in the Effectiveness of Managerial Decision-Making in Greater Irbid Municipality	Arabian Journal of Business and Management Review	Arabian J Bus Manag Review, an open-access journal	Yassine (2017)	11	Quantitative Method	Management information systems; Managerial decision making; Greater Irbid Municipality	The results concluded that management information systems have a medium to high effectiveness role in the greater Irbid municipality and provide the required information to make a managerial decision; their degree of convenience range from moderate to high. The results further highlight a relationship between the use of management information systems and the effectiveness of managerial decision-making. • Improving management information systems impacts the effectiveness of managerial decision-making.
Exploring the Relationship between MIS and Decision-Making Process at Al-Hussein Bin Talal University	International Journal of Engineering and Management Research	www.ijemr.net	Al-Ghonmein et al. (2020)	1	Statistical analysis Method	Al-Hussein Bin Talal University, Decision Support System, Information Systems, Decision-Making	The results confirm that there is a vital role for the management information system in choosing the most appropriate alternative from among the available options. It contributes to increasing the ability of managers and decision-makers at AHU to choose the most suitable choice to solve the problem in a highly efficient and effective manner. The results also found that the MIS improves the implementation and follow-up of the decision-making process. It also contributes to assessing the decision-making process results and determining the efficiency of the proposed solutions in dealing with the problem.

Name of the Article	Name of the Journal	Article Publisher	Author and Publication Year	Citation Score	Method Used	Key Words	Results
Management Information System and Decision-Making Process In Enterprise	Economics management information technology (emit)	Civic Library Europe, Gradanskačitaonica Evropa	Ranisavljević et al., (2012)	26	Literature Review Method	information, management information system, decision-making process	This study concluded that MIS is a renowned concept; having good decision choices guarantees viable business decisions.
The Role of Information Systems in Decision Making: The case of Jordan Bank	Computer Engineering and Intelligent Systems	International Institute for Science, Technology and Education (IISTE): E-Journals	Alkhaffaf, (2012)	20	Empirical study and a structured questionnaire Method	Information systems, decision making.	The study found a strong relationship between information systems and the decision-making process; on the other hand, the results show that Jordan relies heavily on several technologies I.S. used to implement their key activities.

4. RESULTS

R.Q 1. Which are the highest and the lowest cited journal articles in this review research and its main results?

The results highlighted that the most cited journal article (194) is the International Review of Management and Marketing (see Table 1), signifying that MIS and DSS have a meaningful relationship with managers' decision-making processes. The rational decision-making process as the intermediary variable inferred and explained this effect of the decision-making processes.(Ada & Ghaffarzadeh 2015). The role of management information is the second most cited (n = 194) article in MIS and (DSS) for managers' decision-making (see Table 1).

The result showed that the decision-making process emphasizes MIS and DSS providing information services for middle and higher-level managers to make rational decisions (Trivedi 2011). The third most cited (n = 193) article is about the role of MIS and DSS in the manager's decision-making process (see Table 1). The results highlighted that DSS could extend its support to the same steps of the decision-making process and has more roles in the decision-making process and problem-solving than MIS (Asemi et al., 2011). The fourth most cited article (n = 88) is DSS and Knowledge-based strategic management (see Table 1). The results signify that the concept of knowledge management is crucial to strategic management. Through its improvement of knowledge management, the DSS has also been found helpful in improving decisions for more informed strategic decisions (Alyoubi 2015). The fifth most cited article (n = 60) published in the *Academic Journal of Interdisciplinary Studies* is about MIS and

decision-making processes (see Table 1).

The main finding indicates that the number of current business data and information exponentially grows. The results further show that business decision-making is possible only if the necessary information is fast, accurate and adequate staff for most cases (Berisha-Shaqiri 2014). The rational decision-making model is the sixth most cited article (n = 41). It was published in the global encyclopedia of public administration, public policy, and Governance (see Table 1). The results indicate that rational decision-making is the most promising, effective, and functional decision-making process for leaders, managers, and individuals, especially when stakeholders, investments, and high stakes are involved (Uzonwanne 2016). The seventh most cited article (n = 36) published in the *International Journal of Applied Information Systems* is DSS in the higher education system (see Table 1).

The results concluded that the headway and integration of a DSS with the higher education might settle on a compact outlay and anticipated time that would focus on the critical issues of drafting and grasping the most appropriate decisions (Fakeeh 2015). The eighth most cited article (n = 26) is *Information System and decision-making* process. It was published in *Economics Management Information Technology Journal* (Ranisavljević et al., 2012) (see Table 1). The ninth most cited article (n = 20) published in *Computer Engineering and Intelligent Systems journal* is systems in decision making (see Table 1). The study found a strong relationship between information systems and decision-making (Alkhaffaf 2012). The tenth most cited article (n = 11) published in the *Arabian Journal of Business and Management Review* is about the role of management information systems in the effectiveness of managerial decision-making. This article concluded that MIS have a medium to high effectiveness role in the greater organizations and provides the required information to make administrative decisions. The results also indicate a relationship between the use of management information systems and the effectiveness of managerial decision-making (Yassine, 2017). The eleventh most cited article (n = 7) is MIS is an effective tool for decision-making. It was published in the *International Journal of Computer Applications* (see Table 1). The findings further signify that MIS plays a key role in providing the information required for crucial decision-making for the top-level management, directly affecting the organization's

performance (Tripathi, 2010). The twelfth most cited article ($n = 6$) published in the *Journal of Business Economics and Management Studies Journal* is DSS (see Table 1). The results concluded that DSS could run with huge information mass and use them randomly and in suitable models to improve decision-making (Khodashahri & Arabi 2018). The least cited article ($n = 1$) published in the *International Journal of Engineering and Management Research* is about the relationship between MIS and the decision-making process (see Table 1). The findings show the important role of MIS in choosing the most appropriate alternative among the available options.

The MIS contributes to increase the ability of managers and decision-makers at AHU to choose the most appropriate alternative to solve the problem in a highly efficient and effective manner. The results highlight that the MIS can support improving the implementation and follow-up of the decision-making process. It also contributes to assessing the results of the decision and determining the proposed solutions' efficiency in dealing with the problem (Al-Ghonmein et al. 2020). Similarly, the least cited ($n = 1$) article published in the *Global Disclosure of Economics and Business Journal* is about the impact of MIS on the decision-making process (see Table 1). The results further concluded that using information systems, i.e. MIS, can influence the decision-making process through the various attributes of information like accuracy, timeliness, relevance, completeness, and cost-effective information. The results highlighted that the success of information systems could enhance the performance of enterprises (Ali, 2019). The least cited article ($n = 1$) published in the *International Review of Management and Marketing journal* is a Comparison of MIS and DSS and their role in the decision-making process of managers of economic affairs and finance (see Table 1). The result indicated that MIS and DSS have a committed relationship with managers' decision-making process and that the rational decision-making process as the intermediary variable inferred and explained this effect (Keshtegar and Vakili 2018).

R.Q. 2. What methods were used in the reviewed articles of this study?

The results confirm that the research method was the literature review method in the twelve reviewed articles ($n = 12$). But the quantitative approach ($n = 2$) was used in two reviewed articles (see Table 1). The results show that the literature view method was used. But three reviewed articles have used the qualitative, empirical study and a

structured questionnaire statistical analysis method. The results supported this author for the *assessment of the current state of research on the roles of MIS in the decision-making process, identification of the experts on MIS on the roles of MIS in the decision-making process, identification of critical questions about MIS roles that need further research, and determination of methodologies used in the previous studies of the same or related topics*

R.Q. 3 What is the impact of MIS on the decision-making process?

The results indicate that MIS can influence decision-making through the various attributes of information like accuracy, timeliness, relevance, completeness, and financial information. The success of information systems will enhance the performance of enterprises. The results further indicate that MIS is vital in choosing the most appropriate alternative from the available options. It contributes to increasing the ability of managers and decision-makers at AHU to select the most suitable choice to solve the problem in a highly efficient and effective manner. The results also found that the MIS improves the implementation and follow-up of the decision-making process. MIS also has a direct impact on the decision-making process. A sound MIS system in an academic organization has positive or impressive outcomes so that good academic performance can be achieved (see Table 1).

R.Q. 4 What is the relationship between management information systems and the managerial decision-making process?

The results indicate a good relationship between MIS and the decision-making process. MIS is directly proportionate with the managerial decision-making process because the correct information at the right time and place with the right person always leads to the right decision, which constantly balances good management in an organization, even in the academic organization has effective performance. The results further highlight a relationship between the use of management information systems and the effectiveness of managerial decision-making. It also highlighted that improving management information systems' impacts on the effectiveness of administrative decision-making processes.

QNO 5. What are the research gaps in the reviewed articles on the roles of MIS in the decision-making process?

Organizations have specific system gaps to drive it using the MIS systems. The results highlighted the research gaps in seven issues of the roles of MIS in the decision-making process. The reviewed articles failed to cover attributed information that is important for decision-making, and using MIS in an organization is necessary for decision-making processes. The reviewed article could not focus on the importance of MIS components of the information system used to collect, organize, extract, analyze, store, and disseminate valuable information for top-level management decision-making processes.

The reviewed articles failed to focus on accuracy, timeliness, relevance, completeness, and financial information. The reviewed articles also forgot to mention that there was a relationship between the use of management information systems and the effectiveness of managerial decision-making processes and that improving management information system impacts the effectiveness of managerial decision-making. Besides these, reviewed articles could not highlight the relationship between management with MIS and the decision-making processes. The results further highlight a research gap in ethical consideration while making a decision, integration of society, academician, and professional for decision making integration of information, technology and management role for effective and efficient decision making.

5. DISCUSSION AND CONCLUSION

MIS is the process of collecting, organizing, managing, extracting, storing and disseminating information for the decision-making process in an organization for a specific purpose. The actual, dependable, timeliness, updated, frequency and readable information is the primary source of MIS, which plays a vital role in the right decision-making (Devaraju, 2016). Nowadays, organizations are running without the proper use of the MIS department in an organization which may lead in the wrong direction so that they cannot reach the desired destination. The current status of the use of MIS is not based on research and objective motive. Generally, the decision-making process will follow the model known as phases. Herbert Simon made vital contributions to enhance



our understanding of the decision-making process. He pioneered the field of decision support systems. According to (Simon 1960) and his later work with (Newell 1972), decision-making is a process with distinct stages. He has suggested for the first time the decision-making model of human beings. The first is **intelligence** which deals with problem identification and data collection of the problem. The second is the **design** which deals with the generation of alternative solutions to the problem at hand, and the third is **choice**, which is selecting the 'best' solution from amongst the alternative solutions using some criterion. The last phase is **implementation, which deals with implementing the solution in actual practice.**

Simon's decision-making model

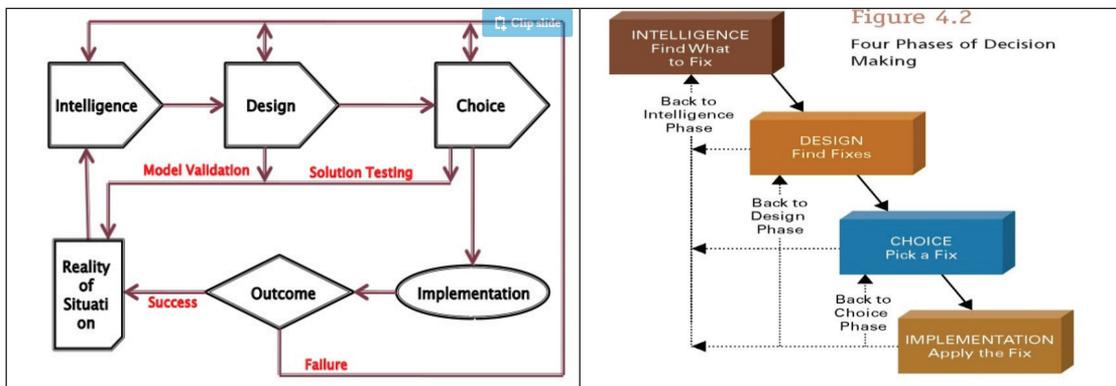


Fig. Simon's Model of problem-solving (Herbert Alexander Simon, 2000)

It is the first step towards the decision-making process. In this step, the decision-maker identifies/detects the problem or opportunity. A problem in the organizational context is identifying anything that is not according to the plan, rule or standard. An example of the problem is the detection of sudden very high attrition for the current month by an H.R. manager among workers. On the other hand, opportunity-seeking identifies a promising circumstance that might lead to better results. An example of identification of opportunity is that a marketing manager gets to know that two of his competitors will shut down operations (demand being constant) for some reason in the next three months. It means that he will be able to sell more in the market (Herbert Alexander Simon 2000).

Thus, we can see that the decision-making process is instigated either in the case of a problem or for opportunity seeking. The first stage is clearly the understanding of the stimulus that triggers this process. So, if a problem/opportunity triggers this process, the first stage deals with a complete understanding of the problem/opportunity.

The intelligence phase of the decision-making process involves problem-searching and formulation (Herbert Alexander Simon 2000). Problem finding is compared to some standards, and differences are measured; the differences are evaluated to determine whether there is any problem. Problem Formulation: When the problem is identified, there is always a risk of solving the wrong problem and establishing relations with some problem solved earlier in the problem formulation (Herbert Alexander Simon 2000).

Design is the process of constructing solution outlines for the problem, which are designed to solve the same problem. Each alternative solution is evaluated after gathering data about the solution. The evaluation is done on the basic criteria to recognize each solution's positive and negative attributes. Quantitative tools and models are applied to appear at these solutions. At this stage, the solutions are only outlines of real solutions and are meant to analyze their suitability alone.

Creativity and innovation are required to design solutions. The 'best' key may be identified using quantitative tools like decision tree analysis and qualitative tools like the six thinking hats technique and force field analysis. It is not as easy as it sounds because each solution presents a scenario, and the problem may have multiple objectives making the choice process difficult. Also, uncertainty about the outcomes and strategies makes choosing a single solution difficult. After implementing the previous phases, we find the result. If the result is a failure, we must start the procedure again or go to the last step and check for any mistakes (Shulman & Elstein 1975).

Contemporary issues appear to drive the organization as per the requirement of 21st century market demand and the world's competitiveness. The new related issues are extensive data, internet security, cloud computing, mobile computing, and user interface system (Stergiou et al. 2018). The next issue is the combination of academics, society and professionals in the learning management system. But people evolving is the system with less ethical consideration, which is one of the critical factors in meeting

the organization's desired objectives, even in the academic sector. Ethics cannot be measured and improved in a short interval of time which is embossed in their mind from their childhood, family background, education, culture, behaviour and heredity. It is one of the significant issues in modern society to use MIS in decision-making in academic sectors (Carroll 2000).

The ideal solution, desired status, and improvement requirement

It is one of the most significant issues in modern society to use MIS in decision-making, especially in academic sectors. There are three factors to run the MIS smoothly in an organization. They are top-level management commitment, use of technology and good management (Dubey et al. 2017). Significantly, in developing countries like Nepal, top-level management is frequently changing, and they are appointed and transferred with the help of top-level political forces. Top-level management commitment is one of the significant issues to success in using technology and implementing MIS in an organization if they are ready and interested in that issue. Most Nepalese organizations have been led by such groups of people who are generally not interested in applying the new system in an organization similar to academic organizations. Management is the most compelling element of the organization, where humans, information, and technology can be appropriately managed for the ideal MIS solution. Now society, academics and professionals are not integrated into each other, which may lead to wrong decisions in an organization (Panda & Rath, 2021). To improve this problem, integrated MIS and the three factors mentioned earlier must be appropriately managed.

Research agendas based on the research gap

The research gap may arise in various research agendas more relevant for new researchers: a) *What is the quality of output and measuring system?* b) *What is the investment for such an application?* c) *What kind of relationship is to be established among information technology, management and measuring procedures?* d) *What is the impact of information system on managerial decision-making process?* e) *How does ethical consideration affect making decision process?* f) *How do we integrate society, academicians, and professionals for sound decision making* g) *How do integration of information, technology, and management take place for effective and efficient decision-making?*

Analysis of research agendas

The research agendas are analyzed based on their nature and available resources too. The organization's output quality will be favourable if input quality is available. The accuracy, timeliness, reliability, frequency, understandability, and updated information must be measured qualitatively and quantitatively. The quality product is directly proportionate with the total investment in information, technology, management, and human resources. The use of technology, information and management are interrelated to generate a quality decision in the organization, even in academic sectors. There is a good relationship with society, academicians, and professionals because they depend on each other. Information, proper technology, and effective and efficient management are significant factors in achieving quality output in an academic organization. There are significant threats to middle and top-level managers, whether they function ethically or not. The 21st century is facing many problems due to ethical considerations in management for decision-making.

Final research proposal/ problem in the chosen topic

This research article is interesting for the researchers and incredibly challenging because very few studies have taken place so far. After a long history of such related research, the researcher decided research proposal, so the title effect of MIS on decision-making in academic sectors is selected. The researcher has found very few topics on such related topics for research. Especially in Nepal, few researchers are available on such issues, and resource persons are not available in the current market. This research topic is associated with MIS and the decision-making system, which is integrated with ICT, management, and engineering, so identifying the problem and getting the problem's respective solution is challenging. Playing with complex topics can generate innovations in the research field. The literature review is done to identify the various problems with such research types and minimize the research gap.

ABCD analysis/ slop/ six thinking hats/ other analysis of chosen research proposal

Information is the blood of the academic organization, whereas MIS is the body. Blood circulation is regular only if there is an excellent functional heart. The MIS works as a body's heart, but pure blood is needed for a healthy life (Jones 2014). Similarly, information should cover accuracy, timeliness, relevance, completeness, understanding,



and financial information so that MIS can provide quality output to the middle and top-level management of any academic organization to make the right decision. This research can create significant opportunities for new researchers to analyze and optimize the value of information and its roles for effective and efficient organizational decision-making (Leidner & Jarvenpaa, 1995). This research can create an open door for further research to advance this system in an organization's decision-making activities, which may lead to valuable outcomes. This research benefits the modern world in decision-making activities that generate high revenue, academic performance, innovation, a user-friendly environment, low operation cost, and quality results. The initial investment, risk in data security, technology challenges and complexity for human resource management are increased.

Some constraints are technology updating, frequent changes in top-level management, and investment of huge funds for establishing and implementing technology in the first phase. The major constraint is the continuous change in technology and ethical management of human resources (Oswald et al. 2017). As per the six thinking hats principle, the following can be used to analyze any types of research, which may give an overall analysis of the study. They are Blue Hat: organization and planning, Green Hat: creative thinking, Red Hat: feelings and instincts, Yellow Hat: benefits and values, Black Hat: risk assessment and White Hat: information gathering. These research topics can provide the overall importance of MIS and decision-making in an academic organization which can offer positive analytical thinking and creation for the improvement of the organization.

Organizational improvement is a never-ending process where creative characters, feeling, and thinking always generate benefits and add value to the organization. Every organization consists of various risks, which should be peered at carefully to reduce the risk assessment necessary for that quality information. The effect of MIS on decision-making in the academic organization also has a significant positive impact on quality information. Information, technology resource and management are interrelated to each other. Collecting, organizing, storing, extracting, and disseminating are the processes of quality information generation.

In contrast, good management processes involve planning, organizing, directing, monitoring, system thinking, problem analysis, result review, risk assessment, and controlling (Lin et al., 2007). Similarly, resource management, like human resources, software, hardware resource, network resources, and financial resources, are resource management processes. All these factors are to be controlled through proper MIS in the academic sector for good decision-making, which may positively impact the result in the institution (Lengnick-Hall et al. 2011).

Suggestion to implement research activities according to the proposal

MIS is the primary system of the organization, with an excellent decision-making system. MIS is only possible if there is an information system or use of a computer and supporting system for the computer to an organization. Similarly, in an education system, MIS is one of the significant components of collecting, organizing, analyzing, extracting, storing and disseminating information for the managerial level for decision-making. The right decision can be taken only if the existing system is managed correctly regarding quality information, use of sound and modern technology, and perfect management. Things are to be handled perfectly. The integrated approach of society, academicians, and professionals with technology is a must to make an effective and efficient decision in any academic sector.

Limitation of the Proposal

Limitations are always emphasized for further research activities to improve and adjust the research activities. There are some limitations of resources like technology, management, and information to process data for further application. The researcher cannot define fund requirements, technology, information availability, and technologically sound and knowledgeable human resources for technological management.

Conclusion

Good management is a fundamental requirement of an academic organization. Quality information is the basic root of correct decision-making, and correct decision-making is the perfect activity for the best outcomes. Implementing MIS is the most critical element of any academic organization for getting the right outcome due to good

management. Good management is only achieved if there is quality information, use of MIS and knowledgeable resources in an organization.

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