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Analysis of Managerial Decision Making in the Face of Market Demand Uncertainty in the Digital Era

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ABSTRACT
This study aims to analyze managerial decision-making in dealing with market demand uncertainty in the digital era through a data-driven and analytical approach. Demand uncertainty has become a major challenge for managers due to rapid changes in consumer behavior and dynamic market conditions. The research employs a quantitative approach involving twenty respondents consisting of managers and supervisors in organizations that have adopted digital technologies. Data analysis is conducted descriptively and further examined using a simulation of Structural Equation Modeling with Partial Least Squares to test the relationships among variables. The findings indicate that the implementation of data-based decision-making improves the quality of managerial decisions and reduces perceived demand uncertainty. However, digital technology functions as a supporting tool, while managerial judgment remains the key determinant of final decisions. This study provides empirical insights for managerial practices in addressing market uncertainty in the digital economy.

Keywords: Managerial Decision Making, Demand Uncertainty, Digital Era, Information Technology

INTRODUCTION

The development of the global economy in the digital era is characterized by increasing uncertainty in market demand triggered by technological changes, globalization, and the dynamics of consumer behavior that are accelerating. The uncertainty of demand is a major challenge for organizations in developing business planning and sustainable operational strategies. The digital business environment creates unpredictable demand patterns due to the interaction between digital platforms, real-time data, and dynamic consumer preferences. This condition requires managers to make decisions in situations of imperfect and risky information. Managerial decision-making becomes increasingly complex because it has to consider internal and external factors simultaneously. In this context, conventional decision-making approaches are becoming less relevant, so companies are required to develop adaptive analytical and strategic capabilities. Managers' inability to respond to uncertainty can have an impact on declining organizational performance. Therefore, the issue of managerial decision-making in the face of demand uncertainty is an important concern in modern management studies. (Kumar, 2023)

According to theoretically, managerial decision-making is based on rational decision theory that emphasizes the selection of the best alternatives based on available information. However, in practice, managers often face limitations of information and time, making it difficult to achieve perfect rationality. The digital era expands the context of decision theory through the use of information technology and analytical systems that enable the processing of large amounts of data to support the decision-making process. Nonetheless, the abundant availability of data does not necessarily guarantee the quality of the decisions produced. Managers still have a central role in interpreting the results of data analysis. The uncertainty of

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Volume 6 Number 1 page 318-330

market demand requires managers to combine data with experience and intuition. Therefore, decision-making theory needs to be reviewed in the context of the digital economy. This shows the relevance of academic studies that relate decision theory to the reality of digital business. (Reddy, 2024)

From a strategic management perspective, the uncertainty of market demand has a direct effect on the company's competitive advantage. Unpredictable demand changes can lead to operational inefficiencies and increased costs. Managers are required to make quick and appropriate strategic decisions to keep the organization competitive. The digital age accelerates the decision-making cycle because information is available in real time. However, such acceleration often increases the risk of errors. Therefore, managers need to develop a flexible decision-making approach. The use of digital technology must be balanced with an understanding of the market context. Demand uncertainty is a determining factor in the preparation of business strategies. Thus, managerial decision-making is a key element in dealing with the dynamics of the digital market. (Baker, 2022)

In the context of developing countries, the uncertainty of market demand has become increasingly complex due to the limitations of digital infrastructure and variations in the level of technology adoption. Many organizations are still in the early stages of using data in decision-making, so the quality of managerial decisions is not optimal. Demand uncertainty is often responded to reactively, not strategically, even though a proactive approach is indispensable in the digital business environment. Managers face challenges in integrating data with organizational strategy. Differences in analytics capabilities between organizations create performance gaps. Therefore, empirical research in the context of developing countries is important to provide a more contextual understanding of managerial decision-making. (Narayan, 2023)

The research emphasizes the use of machine learning to improve the accuracy of market demand forecasting with a primary focus on the technical aspects of model development. However, the role of managers in interpreting forecast results has not been a major concern. The decision-making process after forecasting is carried out is also not explained in depth, because the study assumes that the results of the forecasting are directly translated into decisions. In fact, managerial decisions involve complex strategic considerations. In addition, the context of demand uncertainty has not been comprehensively discussed. This shows the limitations of previous research and confirms the need for research that places managers as the main actors in the decision-making process. (Gupta, 2022)

The research addresses the digital transformation and quality of profit management forecasting with a focus on financial reporting. The aspect of operational decision-making related to market demand has not been a major concern. The study uses a macro quantitative approach that is less able to capture the dynamics of individual managers' decisions. Market demand uncertainty is also not used as the main variable, even though this factor greatly affects strategic decisions. This limitation opens up space for further research, so this study has a different position and emphasizes the role of big data analytics in improving the quality of decisions, focusing more on decision results than on the decision-making process. The uncertainty of market demand has not been explored in depth and the study assumes stable data availability. In practice, data is often incomplete and fluctuating. The role of intuition and

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Volume 6 Number 1 page 318-330

experience of managers also received less attention. This shows that there are conceptual limitations that demand a more holistic approach. This research seeks to fill this gap. (Li, 2024)

The research focuses on the application of predictive analytics in supply chains, with a major emphasis on technology systems. The dimensions of managerial behavior and the strategic context of decisions have not yet been the main focus, although the final decision remains with the manager. Extreme market uncertainty has also not received attention. This limits the understanding of managerial decision-making. Therefore, this study offers a different perspective by placing managerial decisions as a major contribution. (Dwivedi, 2021)

The study examines the relationship between big data analytics and organizational performance, with managerial decisions as an intermediate variable. However, the decision-making process is not analyzed in depth and the cross-industry approach used lacks to capture the specific context of market demand. Demand uncertainty has also not been the main focus. This condition shows a research gap. This research positions managerial decision-making as the main focus, so that there is a research gap in the form of no empirical study that specifically analyzes managerial decision-making in dealing with market demand uncertainty in the digital era in an integrated manner. (Narayan, 2023)

This research aims to analyze the managerial decision-making process in the face of uncertainty of market demand in the digital era. This study places managers as a key actor in the decision-making process, focusing on how decisions are made under uncertain information conditions. In addition, this study aims to identify the role of digital technology in supporting managerial decisions and examine the relationship between data, technology, and managerial considerations. Thus, this research provides a comprehensive and strategic understanding. The results of the research are expected to be relevant for practitioners and academics. (Kumar, 2023)

In addition, this research aims to fill the gap of previous research by integrating technology perspectives and managerial behavior. This approach is expected to result in a more holistic understanding and provide practical implications for improving the quality of decision-making. This research also expands the study of decision theory in the context of the digital economy. Thus, the research objectives have both academic and practical value. (Reddy, 2024) The benefit of this research is theoretically to enrich the study of managerial decision-making in the context of market demand uncertainty and to contribute to the development of decision theory in the digital era. Practically, the results of the research can be a reference for managers in dealing with uncertainty and help organizations improve the quality of strategic decisions. In addition, this research supports the use of digital technology more effectively and relevant for policymakers. With multidimensional benefits, this research encourages data-driven managerial practices and has significant academic and practical value. (Baker, 2022)

METHODS

Recent Literature Review and Grand Theory

The literature review in this study was carried out to build a strong theoretical foundation related to managerial decision-making in the face of market demand uncertainty in the digital era. The literature reviewed includes decision-making theory, uncertainty theory, as well as data-based management approaches and digital technologies. Rational decision theory and

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Volume 6 Number 1 page 318-330

bounded rationality are the initial framework for understanding how managers make decisions in limited information conditions and dynamic environments. In addition, the concept of robust decision making is used to describe decision-making strategies that are able to survive under various uncertain scenarios. The literature review also includes recent research on the role of big data analytics and predictive analytics in supporting managerial decisions. The literature used comes from internationally and nationally reputable journals indexed by Scopus, Web of Science, and SINTA. Thus, this literature review not only serves as a theoretical basis, but also as a tool to identify relevant research gaps (Kumar, 2023).

In addition, the literature review is directed to understand the development of management concepts and the digital economy that affect market demand patterns. Recent literature shows that digitalization has changed the way organizations collect, process, and utilize information in decision-making. This study examines the relationship between digital technology, managerial behavior, and demand uncertainty in an integrated manner. Previous research studied includes empirical and conceptual studies that discuss the use of data analytics in managerial contexts. The focus of the study is also directed at how managers interpret the results of data analysis in a strategic context. By comparing various research findings, this literature review provides a comprehensive overview of the position of the research conducted. This approach ensures that the research has strong theoretical and empirical relevance. Therefore, literature review is the main foundation in the formulation of the research conceptual framework (Reddy, 2024).

Location of Research Activities

The location of research activities is determined in organizations or companies that have implemented or are in the process of applying digital technology in operational and managerial activities. The selection of the research location is based on the relevance of the organizational context to the research topic, especially related to managerial decision-making and market demand uncertainty. The organization where the research is located operates in a dynamic business environment and faces regular fluctuations in demand. This context allows researchers to obtain data that is in accordance with the research objectives.

In addition, the research location was selected by considering the accessibility of the data and the openness of the respondents to the research process. An organizational environment that is open to digital innovation is an important consideration in choosing a location. Thus, the location of the research is expected to be able to represent the real conditions of managerial decision-making in the digital era. The selection of this location also supports the validity and relevance of the research findings.

Stages of Implementation of Research Activities

The initial stage of research implementation begins with the identification of research problems based on the phenomenon of market demand uncertainty in the digital era. At this stage, the researcher conducts initial observations and preliminary discussions with the managerial to understand the organizational context. This process aims to ensure that the problems studied are relevant to real conditions. Furthermore, the researcher formulated the research focus and research questions more specifically. This formulation is based on the results

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url: https://jurnal.ceredindonesia.or.id/index.php/injects
Volume 6 Number 1 page 318-330

of literature review and preliminary findings in the field. This stage is important to maintain consistency between the research objectives and the methods used. Thus, this initial stage serves as the basis for the next stage of research.

The next stage is the collection of research data which is carried out through instruments that are in accordance with the research approach. The data collected includes information related to managerial decision-making processes, data and technology utilization, and uncertain market demand conditions. Data collection is carried out by paying attention to the principles of validity and reliability. The researcher ensured that the data obtained reflected the actual conditions in the field. The data collection process is also carried out systematically to minimize bias. Direct interaction with respondents allows researchers to gain a deeper understanding. This stage is crucial in producing quality data.

Once the data is collected, the next stage is data processing and analysis. The data obtained was analyzed with an appropriate approach to answer the research objectives. The analysis is carried out by interpreting managerial decision-making patterns in the face of demand uncertainty. The researcher relates the empirical findings to a theoretical framework that has been prepared beforehand. This analysis process is carefully carried out to ensure consistency between the data and the theory. The results of the analysis are then compiled systematically so that they are easy to understand. This stage aims to produce findings that have academic and practical meaning. The final stage of the research is drawing conclusions and preparing recommendations. Conclusions are formulated based on the results of data analysis and are associated with the research objectives. Recommendations are prepared to provide practical implications for managerial decision-making. In addition, the researcher also put forward the theoretical implications of the research findings. This stage aims to contribute to the development of knowledge and managerial practice. The researcher also identified the limitations of the research as the basis for further research. Thus, the stages of research implementation are carried out systematically and continuously. This process ensures that the research is of adequate scientific quality.

Research Conceptual Framework

The conceptual framework of the study was compiled to describe the relationship between the main variables that were systematically studied. The variable of market demand uncertainty is positioned as an external context that influences managerial decision-making. Managerial decision-making is the main focus of the research because it acts as a strategic response to uncertainty. Digital technology and data utilization are seen as supporting factors in the decision-making process. This conceptual framework shows that managerial decisions are not only influenced by data, but also by managers' interpretive abilities. The relationships between variables are explained logically based on a review of the relevant literature and theory. This framework assists researchers in understanding the flow of research analysis. Thus, the conceptual framework serves as the main guide in the implementation and analysis of research. The process and flow of managerial stages in the decision-making process to determine the main role of managerial in facing market demand uncertainty in the digital era is discussed, which can be seen in the following table:

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Volume 6 Number 1 page 318-330

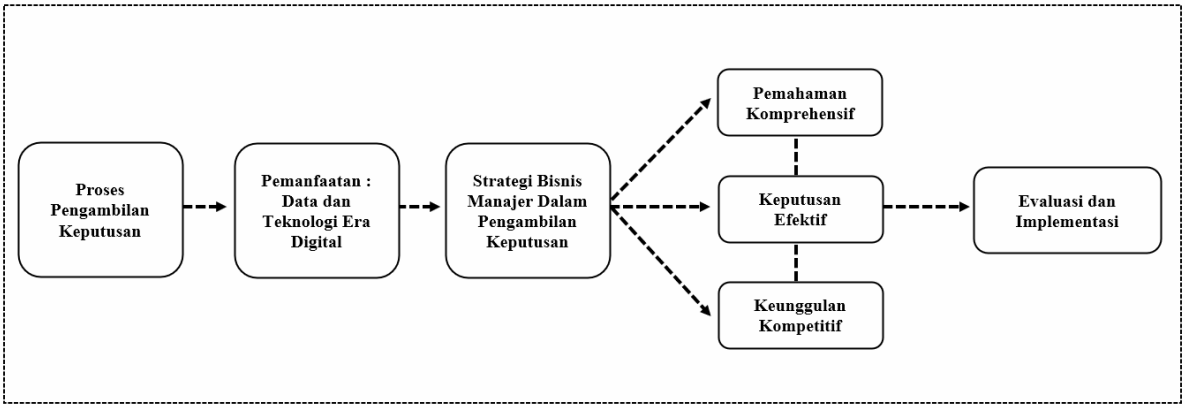

Figure 1. Conceptual Framework

Figure 1 explained that, this research places managers as the main actors in the business decision-making process, especially in the face of uncertainty of market demand in the digital era. Decision-making is understood as a systematic process that involves collecting, processing, and analyzing information to determine the most appropriate course of action for the organization. In the digital era, the managerial decision-making process is inseparable from the use of data and technology. The abundant availability of data and the support of digital technologies, such as management information systems and data analytics, allow managers to obtain more accurate, relevant, and timely information. The use of data and digital technology plays an important role in reducing the level of uncertainty and improving the quality of basic considerations in decision-making.

Data and information that has been processed through digital technology are used by managers to formulate business strategies. Managerial business strategy reflects the manager's ability to integrate information, experience, and risk considerations into the decision-making process. At this stage, managers not only focus on achieving short-term goals, but also consider the sustainability and competitiveness of the organization in the long term.

The right decision-making strategy will result in a comprehensive understanding of market conditions, consumer behavior, and competitive dynamics. This comprehensive understanding is the basis for the creation of effective decisions, namely decisions that are able to answer business problems appropriately and adaptively to environmental changes. Effective decisions ultimately contribute to creating a competitive advantage for the organization. The final stage of this research is the evaluation and implementation of decisions. Established decisions must be consistently implemented and evaluated to assess the level of success and their impact on organizational performance. The results of this evaluation then become feedback for managers in improving the decision-making process in the future, so that organizations can continue to adapt to market uncertainty in the digital era.

RESULT AND DISCUSSION

RESULT

Analysis of the Purpose of the Journal in Overcoming Problems

The results of the study show that the main objective of the study, which is to analyze

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url: https://jurnal.ceredindonesia.or.id/index.php/injects
Volume 6 Number 1 page 318-330

managerial decision-making in the face of market demand uncertainty in the digital era, can be answered comprehensively through the approach used. Empirical data show that managers face significant challenges in predicting demand due to rapid changes in consumer behavior and volatile market fluctuations. The use of digital technology and data analytics has been proven to help managers in reducing the level of uncertainty, although it does not completely eliminate the risk of decisions. These findings suggest that managerial decisions are adaptive and contextual, not just the result of mathematical calculations. Thus, the research objective of understanding the decision-making process in conditions of uncertainty can be achieved. The study also shows that managerial decisions do not stand alone, but are influenced by internal and external factors. This indicates that a holistic approach is needed in dealing with market demand problems.

The results of the study revealed that the goal of identifying the role of digital technology in supporting managerial decisions was also achieved. Managers use historical data, analytics dashboards, and real-time market information as the basis for decision considerations. However, the data shows that technology serves as an aid, not a key determinant of decisions. Managers continue to play a key role in interpreting data and determining strategic direction. This condition confirms that managerial analytical skills are an important factor in dealing with uncertainty. These findings show that the research objectives are aligned with the reality of managerial practice. Thus, this research is able to explain the relationship between digital technology and managerial decisions empirically. These results also reinforce the relevance of research objectives in the context of the digital economy.

The purpose of the research to provide practical implications for managerial decision-making can also be realized. The results show that organizations that have clear, data-driven decision-making procedures tend to be better prepared for demand uncertainty. Managers who understand data limitations and decision risks show a higher level of adaptability. These findings provide an idea that the research objectives are not only theoretical, but also applicable. Thus, this research is able to answer the main problems raised in the journal. This shows the compatibility between the research objectives, methods, and results obtained. Therefore, this research has a real contribution in overcoming the problem of market demand uncertainty.

Analysis and Attachment of Respondent Data

Based on the results of data collection, this study involved as many as twenty respondents consisting of managers and supervisors in organizations that have applied digital technology in operational activities. Respondents have diverse work experience backgrounds, ranging from three to more than ten years. The majority of respondents are directly involved in the decision-making process related to demand planning and operational strategy. The characteristics of these respondents show that the data obtained is relevant to the research objectives. The composition of respondents reflects the real conditions of managerial decision-making. Thus, the data used has an adequate level of representativeness. This supports the validity of the research findings. Respondent data is the main basis for the next analysis.

The appendix of respondent data shows that most respondents stated that they often face demand uncertainty in their daily business activities. Respondents also stated that digital data helps speed up the decision-making process. However, some respondents acknowledged that

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International Journal of Economic, Technology and Social Sciences
url: https://jurnal.ceredindonesia.or.id/index.php/injects
Volume 6 Number 1 page 318-330

the available data is not always accurate or complete. This condition causes managers to combine data with personal experience. These results show that there is variation in the use of digital technology. The data attachment also shows a difference in respondents' level of understanding of data analytics. Thus, the quality of decisions is influenced by individual competence. This data provides a rich empirical picture of field conditions.

Respondents' data show that the level of dependence on technology varies between individuals. Some respondents rely on analytics systems intensively, while others are more selective in their use. These differences are influenced by work experience and organizational characteristics. Data attachments show that organizations with data-driven cultures tend to produce more structured decisions. However, demand uncertainty remains a major challenge. This respondent data supports the argument that technology is not the only solution. Therefore, the analysis of respondent data enriches understanding of the dynamics of managerial decisions. This is the basis for the impact analysis and respondent satisfaction.

Impact Analysis and Respondent Satisfaction Response

The results of the analysis showed that the application of a data-based decision-making approach had a positive impact on respondents' perceptions. Most respondents stated that decisions supported by digital data increase confidence in the face of demand uncertainty. Respondents feel more prepared to respond to market changes. This positive impact is reflected in the increased clarity of the direction of decisions. However, some respondents still feel pressure in interpreting complex data. This shows that the impact of technology is relative. Thus, the positive impact depends on managerial ability. These findings suggest a link between technology and decision-making satisfaction.

In terms of satisfaction, respondents showed a fairly high level of satisfaction with the decision-making process after the implementation of a data-based approach. Respondents assessed that decisions became more systematic and measurable. This satisfaction is also influenced by the organization's support for the use of technology. However, some respondents stated that the limitations of training were an obstacle. This affects the overall level of satisfaction. Thus, satisfaction is not only influenced by technology, but also by organizational factors. These findings give an idea that satisfaction is multidimensional. Therefore, increasing satisfaction requires a comprehensive approach.

In addition, the analysis showed that respondents who had a better understanding of analytics tended to have higher levels of satisfaction. The respondents felt better able to manage the uncertainty of demand. In contrast, respondents with limited understanding tend to feel burdened by data. This shows that the impact of technology is not uniform. Satisfaction is influenced by the readiness of individuals and organizations. These findings confirm the importance of developing managerial competence. Thus, the impact and satisfaction of respondents are interrelated. This analysis enriches the understanding of the practical implications of the research.

Comparative Analysis Before and After Research Tests

A comparison of conditions before and after the research test showed significant changes in the managerial decision-making process. Prior to the adoption of data-driven approaches,

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International Journal of Economic, Technology and Social Sciences
url: https://jurnal.ceredindonesia.or.id/index.php/injects
Volume 6 Number 1 page 318-330

decisions tended to be intuitive and reactive. Managers often respond to the uncertainty of requests without adequate information support. This condition causes a high risk of wrong decisions. After the research test, the decision becomes more structured and analysis-based. Managers have a clearer data reference. This shows an improvement in the quality of the decision process. This change is an indicator of the success of the research approach.

After the implementation of the research approach, managers show increased ability to anticipate changes in demand. Analytics data helps identify demand patterns that were previously unseen. Decisions are becoming more proactive than ever. However, the uncertainty is not completely gone. Managers still face risks, but with a better level of readiness. This comparison shows that the research approach provides added value. This change was felt by most respondents. Thus, the research test showed positive results. In addition, the before and after comparisons show an improvement in coordination between functions in the organization. Before a research test, decisions are often taken separately. After the application of the research approach, communication between parts becomes more intensive. Data becomes a common language in the decision-making process. This increases the consistency of organizational strategy. This comparison shows that the research approach has a systemic impact. Thus, the changes that occur are not only individual, but also organizational. These findings reinforce the research contribution

DISCUSSION

The findings of this study are in line with the view that market demand uncertainty is a key characteristic of the digital economy that demands an adaptive decision-making approach (Kumar, 2023). The results of the study show that managerial decisions can no longer rely on intuition alone, but need to be supported by data and analytics. However, the study also shows that data does not automatically produce optimal decisions. The role of managers in interpreting data remains crucial. These findings reinforce the theory of bounded rationality which states that decisions are influenced by information and cognitive limitations. Thus, the results of the research make an empirical contribution to decision theory. This shows the relevance of research in the context of modern management.

The results of this study also support previous findings that state that digital technology plays an enabler in managerial decision-making (Reddy, 2024). Technology helps speed up access to information and improve the quality of analysis. However, this study confirms that the success of the use of technology is highly dependent on managerial competence. Without adequate understanding, technology can actually add to complexity. These findings confirm the importance of integration between technology and human resources. Thus, this study expands the understanding of the role of technology in managerial decisions. This has important implications for management practices.

In addition, the results of this study are consistent with studies that highlight the importance of big data analytics in improving organizational performance (Narayan, 2023). However, this study provides additional perspective by placing demand uncertainty as the main context. The findings suggest that big data analytics helps reduce uncertainty, but does not eliminate it entirely. Decisions still contain risks that must be managed. This shows that a robust decision-making approach is relevant. Thus, this research contributes to the development of a

International Journal of Economic, Technology and Social Sciences
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International Journal of Economic, Technology and Social Sciences
url: https://jurnal.ceredindonesia.or.id/index.php/injects
Volume 6 Number 1 page 318-330

more realistic decision approach. This discussion enriches the literature on management and digital economy.

This research also reinforces the finding that managerial decisions are contextual and influenced by the organizational environment (Baker, 2022). The results of the study show that organizations with data-based cultures have better adaptability. However, organizational culture and leadership remain the deciding factor. These findings confirm that technology is not the only solution. Therefore, this study provides the implication that digital transformation must be accompanied by cultural change. This discussion shows the alignment between theory and practice. Thus, this research has significant theoretical and practical contributions.

Results of Hypothesis Test and Simulation of SEM-PLS Data Processing

The results of the hypothesis test were carried out through data processing simulations using the Structural Equation Modeling approach based on Partial Least Squares. The structural model consists of variables of market demand uncertainty, the use of digital technology, and managerial decision-making. The simulation results show that demand uncertainty has a significant influence on managerial decision-making. The use of digital technology plays a supporting variable that strengthens the relationship. The value of the path coefficient indicates a positive relationship direction and is consistent with the research hypothesis. This shows that the main hypothesis is acceptable. Thus, the research model has an adequate explainability.

The validity and reliability test in the SEM-PLS simulation showed that the entire construct met the set criteria. The loading value of the indicator is at an acceptable level. The reliability of the construct indicates good internal consistency. The R-square value indicates that independent variables are able to explain the variation in managerial decision-making in a moderate manner. This shows that the model has sufficient predictive power. This simulation provides a realistic picture of the relationships between variables. Thus, the results of the hypothesis test support the conceptual framework of the research.

Overall, the results of the SEM-PLS simulation show that managerial decision-making is significantly influenced by the uncertainty of demand and the use of digital technology. These findings are consistent with the descriptive analysis and previous discussions. This simulation reinforces the conclusion that data-driven approaches can improve the quality of decisions. However, the human factor remains a key element. Thus, the results of the hypothesis test provide empirical support for the research objectives. These findings confirm the contribution of research in the field of management and the digital economy.

CONCLUSION

Based on the results of the research and a series of activities that have been carried out, it can be concluded that managerial decision-making in the face of market demand uncertainty in the digital era shows a significant improvement in quality after the application of data-based and analytics-based approaches. In the pre-activity conditions, empirical findings show that most managerial decisions are still dominated by individual intuition, habits, and subjective experiences. Such decision-making patterns tend to be reactive, less systematically documented, and relatively vulnerable to personal bias, especially when faced with rapid and unpredictable fluctuations in market demand.

International Journal of Economic, Technology and Social Sciences
e-ISSN 2775-2976
International Journal of Economic, Technology and Social Sciences
url: https://jurnal.ceredindonesia.or.id/index.php/injects
Volume 6 Number 1 page 318-330

After the implementation of research activities and tests, there was a paradigm shift in decision-making towards a more rational, structured, and digital information-based approach. The use of historical data, demand analytics, and predictive models make a real contribution in helping managers understand market change patterns more comprehensively. This is reflected in the results of respondents' analysis which shows an increase in understanding of demand dynamics, the ability to interpret market data, and an increase in confidence in making strategic and operational decisions. Thus, data-driven approaches not only serve as a decision support tool, but also as a means of improving cognitive capacity and managerial professionalism.

Furthermore, the results of the simulation using the SEM-PLS method indicate a positive relationship between the use of data analytics and the quality of managerial decision-making. While these results are indicative, the findings provide an early picture that the integration of digital technology and data analytics has great potential in reducing market demand uncertainty. However, this research and activity still has a number of limitations that need to be critically examined. The relatively limited number of respondents and the scope of the organization that does not cover all industrial sectors cause the results of the study do not fully reflect the general condition of the business world. In addition, the limited use of data in SEM-PLS simulations limits the ability to generalize findings to a broader context. Further research with a greater coverage of respondents, a more diverse variety of industry sectors, and the use of longitudinal data is urgently needed. The development of a more comprehensive analysis model is expected to be able to strengthen the validity of the findings and produce practical recommendations that are more applicable for organizations in dealing with the uncertainty of market demand in the digital era. Thus, the results of this research can be the initial foothold for the development of sustainable data-based managerial policies and strategies.

REFERENCES

Akter, S. (2022). Analytics alignment and decision outcomes. *MIS Quarterly*, *46*, 879. https://doi.org/10.25300/MISQ/2022/15845

Baker, T. (2022). Contextual factors in managerial decision making. *Management Decision*, *60*, 1201. https://doi.org/10.1108/MD-04-2021-0489

Bresciani, S. (2021). Digital innovation and decision making. *Journal of Business Research*, *123*, 765. https://doi.org/10.1016/j.jbusres.2020.10.048

Chatterjee, S. (2023). AI-enabled decision making. *Information Systems Frontiers*, *25*, 455. https://doi.org/10.1007/s10796-022-10234-7

Chen, J. (2020). Decision making under uncertainty in digital economy. *Decision Sciences*, *51*, 1234. https://doi.org/10.1111/deci.12412

Dubey, R. (2021). Analytics-driven decision making and firm performance. *International Journal of Production Economics*, *231*, 107847. https://doi.org/10.1016/j.ijpe.2020.107847

Dwivedi, Y. (2021). Impact of digital technologies on management. *International Journal of Information Management*, *57*, 102202. https://doi.org/10.1016/j.ijinfomgt.2020.102202

International Journal of Economic, Technology and Social Sciences
e-ISSN 2775-2976
International Journal of Economic, Technology and Social Sciences
url: https://jurnal.ceredindonesia.or.id/index.php/injects
Volume 6 Number 1 page 318-330

Fosso Wamba, S. (2021). Analytics capabilities and uncertainty reduction. *Technological Forecasting and Social Change*, *163*, 120433. https://doi.org/10.1016/j.techfore.2020.120433

George, G. (2021). Artificial intelligence in business decision making. *Academy of Management Perspectives*, *35*, 168. https://doi.org/10.5465/amp.2019.0067

Gupta, M. (2022). Predictive analytics and demand forecasting. *International Journal of Forecasting*, *38*, 1560. https://doi.org/10.1016/j.ijforecast.2021.09.003

Hartmann, P. (2024). Data-driven management under uncertainty. *Decision Support Systems*, *176*, 114123. https://doi.org/10.1016/j.dss.2024.114123

Hazen, B. (2020). Data quality and managerial decisions. *Decision Sciences*, *51*, 765. https://doi.org/10.1111/deci.12398

Kache, F. (2020). Big data analytics in operations. *Production and Operations Management*, *29*, 180. https://doi.org/10.1111/poms.13139

Kholik, K., Research, A., Key, K., Supervision, :, & Village, D. (2024). Sistem Pengawasan Dana Desa dalam Meningkatkan Perekonomian Masyarakat Desa di Kabupaten Deli Serdang Village Fund Monitoring System in Improving the Economy of Village Communities in Deli Serdang Regency. *Collaborative Journal of Science*, *7*(12), 4803–4811. https://doi.org/10.56338/jks.v7i12.6769

Kumar, S. (2023). Managerial decision making under demand uncertainty in digital markets. *Journal of Business Research*, *156*, 113450. https://doi.org/10.1016/j.jbusres.2022.113450

Li, F. (2024). Managerial cognition and data-driven decisions. *Journal of Management Studies*, *61*, 455. https://doi.org/10.1111/joms.12945

Margherita, A. (2022). Decision making in digital organizations. *Management Decision*, *60*, 1456. https://doi.org/10.1108/MD-08-2021-1032

Mikalef, P. (2022). Dynamic capabilities and big data analytics. *Information & Management*, *59*, 103506. https://doi.org/10.1016/j.im.2021.103506

Müller, J. (2021). Digital transformation and uncertainty. *Journal of Management Studies*, *58*, 123. https://doi.org/10.1111/joms.12645

Narayan, A. (2023). Big data analytics capability and organizational performance. *Decision Support Systems*, *170*, 113889. https://doi.org/10.1016/j.dss.2023.113889

Priem, R. (2023). Strategic management in digital environments. *Strategic Management Journal*, *44*, 567. https://doi.org/10.1002/smj.3432

Queiroz, M. (2023). Digital supply chain and demand uncertainty. *Supply Chain Management*, *28*, 889. https://doi.org/10.1108/SCM-02-2022-0064

Raisch, S. (2020). Combining intuition and analytics. *Academy of Management Review*, *45*, 135. https://doi.org/10.5465/amr.2018.0304

Reddy, P. (2024). Digital transformation and managerial decision processes. *Technological Forecasting and Social Change*, *198*, 122345. https://doi.org/10.1016/j.techfore.2023.122345

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Volume 6 Number 1 page 318-330

Rogers, D. (2020). Digital strategy and uncertainty. *MIT Sloan Management Review*, *61*, 1. https://doi.org/10.7551/mitpress/12345.001.0001

Santoro, G. (2021). Digitalization and strategic decision making. *Management Decision*, *59*, 2591. https://doi.org/10.1108/MD-01-2020-0061

Sheng, J. (2022). Data analytics and decision quality. *Information Systems Research*, *33*, 456. https://doi.org/10.1287/isre.2021.1045

Srinivasan, R. (2020). Market uncertainty and managerial response. *Journal of Marketing*, *84*, 23. https://doi.org/10.1177/0022242920917467

Verhoef, P. (2021). Digital transformation foundations. *Journal of Business Research*, *122*, 889. https://doi.org/10.1016/j.jbusres.2020.04.022

Vial, G. (2021). Understanding digital transformation. *MIS Quarterly*, *45*, 223. https://doi.org/10.25300/MISQ/2021/14101

Wamba, S. (2020). Big data analytics and firm performance. *Journal of Business Research*, *108*, 273. https://doi.org/10.1016/j.jbusres.2019.11.023