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Data Driven Decision making concept

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Abstract

The Decision-making based on solid facts as well as intelligence is referred to as the strategic data-based decision making. Unlike intuition-based decision making, in which judgments are made based on unsubstantiated opinions about the company and also its external environment, one such approach is based on facts and data. Data-driven strategic decision-making is indeed a popular recommendation for boosting efficiency as well as competitiveness, as well as ensuring responsibility to the public and shareholders. Strategic decision-making based on the data necessitates extensive data collecting and impartial analysis. Data-driven organisations are attempting to improve their decision-making abilities in the current age of big data. There is, meanwhile, a dearth of studies examining the capabilities of the (DDDM) data-driven decision making. There are four methods to defining capabilities: an unrelated, an unidirectional, entangled and mixed. DDDM capacity is then defined as a multi-dimensional construct using the procedure entanglement method.

Keywords: Decision Making , Data on decision makings , strategic decision making process, Data Driven decision making.

1. INTRODUCTION

Making judgments rellying on data instead of intuition or the observation alone is called "data-driven decision making," or even "DDDM." Businesses across a wide range of sectors are increasingly making

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decisions based on data because of the rapid advancements in the business technology over the last few years.

When making the strategic business choices that are aligned with its goals, objectives, and activities, you may use (DDDM) data-driven decision-making. As just a business analyst,sales manager, or even a human resources professional, you are empowered to make the right choices with data each day when firms grasp the full potential of their data. It's not enough to just choose the right analytics technology to find the very next strategic opportunity.

Data-driven decision-making must become the standard in your firm, fostering a climate of scepticism and inquiry among employees. Data is the starting point of many interactions, and people of all skill levels are constantly honing their data literacy via repetition and application. People demand access to data they need, while maintaining security and control, as a foundation for this self-service approach. Training as well as development programmes for workers to gain data skills are also necessary. To inspire people to the make data-driven choices, it's important to have strong executive support and a supportive environment.

1.1. Role of Data in Strategic decision making.

Small and big businesses alike depend on being able to make timely, well-informed choices in order to remain competitive and expand. Companies have experienced a huge growth in the quantity of consumer and corporate data stored on legacy systems (such as desktop computers, servers, or intranets) in the recent years. When it comes to using data from various systems, it is practically difficult because of lack of an integration. Strategic direction is often guided by experience, incomplete or out-of-date information, and the use of intuition rather than concrete statistics based on previous patterns. Most academic studies show that data plays the following functions in strategic planning process;

1.2. Role in Optimizing Decision Processes

Making strategic choices based on concrete facts necessitates the use of integrated, consistent perspectives of data. For instance, decision makers want information to examine the sales process in order to understand variables driving sales across goods, locations, and timeframes. Decisions may be made more quickly and efficiently when all relevant data is readily accessible, well-integrated, and up-to-date. A well-informed decision-making process is essential to maximising resources. Strategic decision-making benefits greatly from high-quality data.

1.3. Data-driven environment, information processing capabilities and decision- making

In order to satisfy its data processing needs, an organization's structure including business procedures should be designed to support the organization's information processing capabilities. When it comes to big data, the processing requirements are difficult because of the amount, diversity, as well as the velocity of the data which must be processed. "It is exceedingly difficult for humans to comprehend

massive amounts of an incoming information completely," according to the report. "Strong as well as the unique information processing capabilities" are expected to be offered by BA with its "advanced and distinctive data storage, administration, analysis, and visualisation technologies," according to the company's press release. Big data processing necessitates that an organisation establish successful BA applications that are enabled by having "analytically driven strategy including the designing suitable business processes as well as organisational structure," as well as the ability to analyse large amounts of data.

1.4. Strategies for decision-making processes about people management in Business Sector

The decision-making process of each company is unique. The environment has an impact on the procedure:

- Macrocontext. Laws and regulations dictate what has to be done here, thus this is the overall picture. If indeed the law mandates that a certain decision be taken by that of board of directors, then so be it.
- Mesocontext. It's important to understand the company's values and norms. Some businesses seek input from their workers before making major choices that would have an impact on the company as a whole. In other companies, the decision is passed down from the top.
- Microcontext. The local surroundings are here. When you're at the meeting among investors, workers, or consumers, for example, the way you make decisions changes

1.5. Strategies for decision-making processes about people management in healthcare organizations

Healthcare organisations are able to better foresee and forecast the type of the job sourcing as well as posting, as well as the likelihood of that activity's success in future, thanks to the use of the big data analytics tools. Many HCOs are now under increasing pressure to improve their performance and push information to help understand as well as control all of the related operations as a result of the current global economic downturn as well as regulatory insensitivity across multiple different areas.

Health care and pharmaceuticals are increasingly benefiting from the use of big data. It is clear that big data has had a significant impact in the following areas: the clinical trials data; the disease pattern analysis; the campaign and sales programme optimization; the patient care quality; the medical device as well as Pharma supply chain management; as well as, drug research and development analysis. However, big data has also played an important part in human management tasks, helping to better understand various areas of the organisation and offering better decision support. In the end, big data analytics aids whatever healthcare HR department in identifying the firm's blind spots, as well as which divisions are doing better and applying the approach to other divisions in order to enhance their performance. With the use of big data, it is possible to anticipate the requirements of healthcare

organisations with in future and identify potential new employees. Data-driven decisions made by physicians, pharmaceutical personnel or health policy specialists may have a significant impact on patient care as a result of big data.

Because of the high level of specialisation and expertise required by healthcare professionals such as the doctors, the nurses, the pharmacists, the clinical developers, as well as scientists in R&D labs, finding and retaining the best employees can be a difficult task for any Human resources department. The goal is to provide the best possible care to those patients involved while also benefiting the entire healthcare system as a whole. Healthcare HR practises that are culturally and technologically prepared to use big data analysis to boost overall effectiveness and better interpret data repositories as well as make a proclaimed conclusion or choice might benefit greatly from this approach. For every human resources department, the big data has played a key role in attracting and keeping personnel as well as better comprehending the human context for making sound judgements and decisions.

1.6. Dimensions of Data-Driven Decision Making Capability

The firm that collects the correct data first, analyses it first, as well as acts on its insights first succeeds in highly competitive marketplace. In accordance with the procedure entanglement approach to conceptualising capabilities, we recommend the data-driven framework of decision-making capability which includes, the data analytic capability, including the data governance capability, an insight exploitation capability, outcome management capability, as well as integration capability. The data intersections as well as inquiry cycle, one such framework for data-driven decision making can be used to demonstrate desired outcomes; define the important questions; gather and organise targeted data; make meaning of it; take some action using targeted data; and evaluate as well as the assess actions taken. The framework's many capabilities correspond to various stages in data-driven decision-making process.

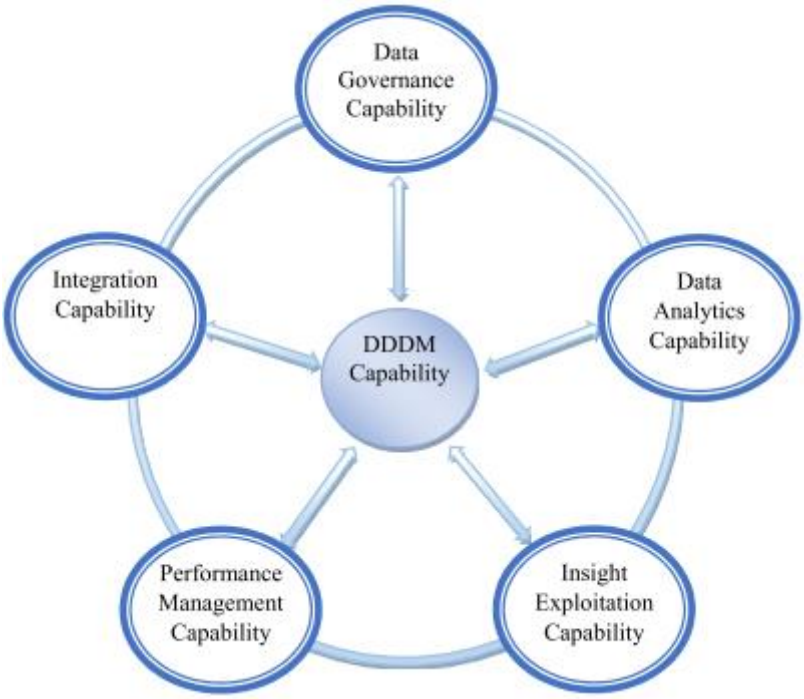

Figure 1. The overall Framework of the Data-Driven Decision Making Capability Data

The DDDM capability is also linked to other DDDM capabilities. Relationships may be one-way, two-way, or even three-way. A circle with really no arrows connects the five DDDM capacity dimensions in this research, expressing every potential kind of connection between the two capabilities.

2. LIERATURE REVIEW

(Cao et al., 2015) The use of the business analytics to gather the data-driven insights for decision-making is now on the rise, but little research exists on how to enhance decision-making efficacy just at organisational level using business analytics. This work presents the research model integrating business analytics to the efficacy of organisational decision-making based on information processing perspective as well as contingency theory. Structural equation modelling is used to evaluate the research model, which is based on 740 answers from UK enterprises. The study's major results show which business analytics improves information processing capacities, that in turn improves the efficacy of the decision-making via mediation of the data-driven environment. The results also show that there are no statistical differences in between big and medium-sized businesses in the routes from the business analytics towards decision-making efficacy, although there are some disparities between both the manufacturing as well as the professional service sectors. Our results add to the body of knowledge on business analytics by illuminating the practical applications of the discipline and the benefits of data-driven decision-

making they provide. In addition, they demonstrate how the business analytics may be used to increase decision-making efficacy for managers.

(Sousa et al., 2019) Using Big Data analytics, healthcare businesses can integrate massive datasets, support personnel management choices, and assess the cost-effectiveness of various treatment options.

Our findings were based on a comprehensive examination of the literature. Inside literature review, we'll discuss how big data may be used in healthcare, and also a potential predictive model for human resource management. With the use of the predictive model as well as the real-time analytics, our study shows how the big data analytics can improve efficiency of such healthcare firm's decision-making procedure.

(Brynjolfsson & McElheran, 2019) Even while management in the United States has grown much more data-intensive, little is known about the economic, organisational, and strategic ramifications of this transformation. Using data from U.S. Census Bureau, we established metrics to track how manufacturing companies have utilised data in the last decade to assist their decision-making. (DDD)Data-driven decision-making is highly linked to enhanced productivity in the large as well as the representative sample. Investing in IT and other structured management approaches complement DDD, although their advantages are separate from those of DDD.

(Chengalur-Smith et al., 1999) The two-point ordinal scale, the interval scale, as well as no information were presented to the participants in the research. Subjects were given access to such information in addition to the actual data. In this study, we looked at the conjunctive as well as the weighted linear additive decision techniques. A basic and a somewhat sophisticated decision environment were both employed. It was used to investigate a variety of different topics. There's a tendency toward complacency, agreement, and repetition. There are some early indications in this work as to which types of the data-quality information are the most useful and under what conditions they are. Those who create databases that poll decision-makers might benefit from this information. This study found that when individuals were presented with clearly distinct choices, the addition of the data-quality information influenced the choice of preferred option while preserving group agreement.

(Bousdekis et al., 2021) Industry 4.0's enhanced sensor infrastructure enables the use of algorithms to evaluate data, forecast upcoming scenarios, and prescribe mitigation measures for production as well as the maintenance operations. Research on the data-driven decision making in the maintenance has been reviewed and outlined in this article, with a focus on identifying future research objectives in this area. Augmented reality, the methods as well as the techniques for dealing with the uncertainty in data, as well as the integration of the maintenance decision-making with other operations, like scheduling as well as planning, are among main research directions which have been identified.

(Athamena & Houhamdi, 2018) Because of the widespread use of the electronic devices, the computerization, and the global exchange of information, the term "Big Data" has gained a lot of traction recently. A clear definition of the Big Data remains elusive despite the recent emphasis on this topic. Big Data is expected to give natural answers to the government and commercial sectors, but the

actual consequences of the Big Data in other areas are yet unclear. The decision-making process as well as the notion of knowledge generation are the focus of this paper's discussion of Big Data. This analysis found showed Big Data is an amazing source for generating new information that aids inside the decision-making procedure in businesses.

(Rhyn & Blohm, 2019) The use of the crowdsourcing to get data from big networks of people is a strong method for businesses. Crowdsourced data processing has already made significant progress in developing the technological underpinnings, but little is understood regarding decision-making patterns which arise whenever decision-makers has access to so much data on the people's behaviour, views and ideas. Depending on interviews with the decision-makers at ten global businesses, we look just at characteristics of the decision-making through crowdsourcing. Four distinct decision-making styles, ranging from the highly organised as well as goal-oriented to the dynamic and data-driven, have been identified for scientific study. There are a number of ways in which decision-makers utilise crowdsourced data to influence their judgments. There are many different sorts of choice issues and information acquisition methods that might lead to the same patterns. Such patterns may be practised by discussing the design of information systems that support such pattern.

(Jeble et al., 2018) Massive amounts of data, known to as "big data," have been generated as a result of the integration of an information systems with the internet, the cloud computing, the mobile devices, and the Internet of Things. OLAP as well as ETL are all part of the data warehouse, which contains a variety of data types, including the structured, the semi-structured, as well as the unstructured data. Big data can be mined in a variety of ways by businesses and academics. The use of huge datasets as an extra input for decision-making has a lot of potential. An investigation of how large data can be used to make better judgments is the goal of this study. Here, we examine how big data may be implemented to create smart as well as the real-time business choices. In order to present the conceptual overview of possible prospects for big data within the decision making, the study does a literature analysis and uses secondary data. Discusses big data's importance in decision-making, as well as the competitive advantages it provides for various businesses. Data management in the decision-making is also a topic addressed in the article. Addressing this issue would help businesses make better judgments and contribute to the development of superior knowledge.

(Kavale, 2012) Using data to make strategic decisions is the focus of this article. This is a desk-top research study that analysed many studies on the importance of the data as well as its role in the strategic decision-making by other researchers. This study's primary goal is to determine how data influences strategic decision-making. Strategic decision making is also being recognised and ideas behind strategic decision making have indeed been studied. Data was first defined in terms of what it means to know and be informed. It has been shown how to gather data from both within and outside the organisation and how to use theories of the decision-making such the rational, an incremental, the political, constructive, and the factual approaches described above. According to the research, data plays a critical role within the strategic decision making. This article indicates that data plays the functions of; obtaining competitive advantage, optimising the resources, the cost reduction, the value creation, the accuracy as

well as accountability, including hedging uncertainty. As a result, data improves the efficacy as well as the efficiency of strategic decision-making. Data source, analysis, interpretation, and utilisation must be given a high priority by management in firms in order to gain a competitive edge. Data security must also be improved, since it is a vital resource.

(Ogunbiyi et al., 2021) When it comes to the operational decision making, the usage of Artificial Intelligence (AI) is on the rise. Among some other things, this has enhanced service quality, offered more personalised services, reduced processing time, and the more effectively allocated resources. Although it has brought ethical concerns, such as advocating various credit results for persons with similar financial profiles but differing traits, it has also sparked debate. The public's attention has been drawn to many high-profile examples of algorithmic prejudice. Extensive research has been done in the areas of an ethical decision-making including Explainable AI. However, we are unaware of every studies that explore the procedure of the ethical decision-making in conjunction with enhanced intelligence (IA). With this research, we want to fill up some of the knowledge gaps. Propositions as well as the belief statements are proposed, but not experimentally validated, based just on synthesis of available literature, the observation, the logic, as well as the empirical analogies in both domains of inquiry. These hypotheses will be put to test in future research.

(Jia et al., 2015) Data-driven organisations are attempting to improve their decision-making abilities in the current age of big data. There's really, however, a dearth of studies examining the capabilities of (DDDM) data-driven decision making. There are four methods to defining capabilities: the unrelated, the unidirectional, entangled as well as mixed. The procedure entanglement method is then used to explain the DDDM procedure and suggest a multi-dimensional DDDM capability construct. Inside the DDDM model, data governance capacity, the data analytics capability, an insight extraction capability, the performance management, as well as integration capabilities are combined to create a single DDDM capability. Consideration is also given to the academic as well as the managerial ramifications

3. CONCLUSION

The Data-driven decision-making as well as its components have never been studied before, to the knowledge. As per framework, the capacity to make data-driven decisions is made up of an ability to control data, to analyse data, to exploit insights, to manage performance, and the ability to integrate. This study helps us better grasp whatever data-driven decision making is, the processes in data-driven choice making process, as well as serves as the basis for our knowledge of the data-driven decision making capabilities.

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