Analytics for business decisions

Introduction

Analytics is increasingly gaining popularity among practitioners and academics (Amankwah-Amoah and Adomako, 2019; Law and Chung, 2020). It is primarily because of the role of analytics in enhancing the efficiency and effectiveness of the businesses considerably (Singh and Del Giudice, 2019). Usage of analytics makes it easy to carry-out the four basic functions of management including planning, controlling, organizing and directing (Fosso Wamba and Akter, 2019). Organizations typically collect data on several parameters and store them for political, economic, social, technological, legal and environmental purposes in the form of huge databases.

Business analytics helps organizations analyze these data and derive meaning out of it. Such data-driven and evidence-based results have positive consequences for organizations. However, experts suggest that there are several challenges in using business analytics including human resource issues such as adaptability of employees, marketing management issues such as reliability and validity of market segmentation, financial management issues such as high initial investment for long-term return on investment, operational issues such as quantifying all the activities, and information systems such as understanding the technical know-how (Hamilton and Sodeman, 2020). Moreover, the ever changing macro-level factors external to the organization also have a role in the extent to which analytics is used in the businesses. Thus, it is important to know the ways in which analytics affects and gets affected by several micro- and macro-level factors.

Objective of the special issue

Analytics in businesses does not work in isolation and does impact the business outcomes significantly (Aydiner et al., 2019). As the research relating to the antecedents and consequences of using analytics in business is very limited especially in the management functions, the main objective of this special issue is to the analytical factors that influence decision-making in businesses. The sub-objectives however are:

(1) To understand the factors affecting the usage of analytics in businesses

(2) To explore the decisional implications of using analytics in businesses

(3) To critically examine the process of using analytics in a particular company or an industry.

(4) To capture the dynamics of variables in the field of marketing, finance, human resource, organizational behavior, operations and information systems on introducing analytics in an organization.

Articles in this special issue

This special issue comprises nine articles from different fields of Business Management such as Operations Management, Organizational Behavior, Information Systems Management and Marketing Management to name a few. The articles provide rich insights into how business analytics affects a firm's performance-related variables, how analytics may be used to assess the impact on firm performance by its antecedents, and so forth. The articles have

been arranged to first give a comprehensive view of the data science-related research thus far followed by experiences of managers with analytics, and then context-specific studies as examples of using data analytics for better managerial decision-making. The subsequent paragraphs summarize this special issue.

The first article titled "A systematic literature review of data science, data analytics and machine learning applied to healthcare engineering systems" is authored by Roberto Salazar-Reyna, Fernando Gonzalez-Aleu, Edgar M.A. Granda-Gutierrez, Jenny Diaz-Ramirez, Jose Arturo Garza-Reyes and Anil Kumar. The authors used a systematic procedure to explore and assess available articles for knowing the characteristics of the analytics area and in business decision-making.

The second article titled "How do mid-level managers experience data science disruptions? An in-depth inquiry through interpretative phenomenological analysis (IPA)" is authored by Atri Sengupta, Shashank Mittal and Kuchi Sanchita The authors did a qualitative analysis to capture the data science disruptions as experienced by the large scale Indian organizations' mid-level managers. The study revealed several interesting insights such as two emergent person–job (mis)fit process models.

The third article titled "The dual drivetrain model of digital transformation: role of industrial big-data-based affordance" is authored by Yi Liu, Wei Wang and Zuopeng (Justin) Zhang. The authors, using a case study approach in China, investigated the role of industrial big data in promoting digital transformation. As an outcome of their study, the authors proposed a drivetrain model of digital transformation by industrial big data.

The fourth article titled "Antecedents to firm performance and competitiveness using the lens of big data analytics: a cross-cultural study" is authored by Abhishek Behl. Using a quantitative approach and collecting data from Indian and Chinese start-ups, the authors examined the ways in which big data analytics capabilities of tech start-ups impacts their competitive advantage and performance.

The fifth article titled "Analysing the voice of customers by a hybrid fuzzy decision-making approach in a developing country's automotive market" is authored by Hannan Amoozad Mahdiraji, Khalid Hafeez, Hamidreza Kord and AliAsghar Abbasi Kamardi. In that, the authors proposed a new method, a hybrid clustering multicriteria decision-making (MCDM) approach, to find ways of approaching multiple decision-making which involves a large set of data. The authors demonstrated it in the context of customer complaints in the Iranian automotive sector.

The sixth article titled "Does service failure criticality affect global travellers' service evaluations? An empirical analysis of online reviews" is authored by Rishi Dwesar and Debajani Sahoo. The authors applied a mixed-method research design to investigate the breadth and depth of the impact of airline type, failure criticality and the traveler's culture on travelers' airline evaluations of service failure for 20 major airlines globally.

The seventh article titled "Impact of wholesale price discrimination by the manufacturer on the profit of supply chain members" is authored by Rofin T.M. and Biswajit Mahanty. The authors developed game-theoretic models to find out the influence of wholesale price discrimination by a manufacturer in a retailer–e-tailer dual-channel supply chain for diverse product categories.

The eighth article titled "Analytics of machine replacement decisions: economic life vs real options" was authored by Yuri Yatsenko and Natali Hritonenko. The authors used several data analytic tools to overcome the shortcomings in making rational machine replacement decisions.

The ninth article titled "Green innovation as a mediator in the impact of business analytics and environmental orientation on green competitive advantage" is authored by Hashim Zameer, Ying Wang, Humaira Yasmeen and Shujaat Mubarak. The authors, in this

study, used structural equation modeling to know the role of business analytics and environmental orientation in affecting green innovation and green competitive advantage.

Conclusion

The articles in this special issue, as one may observe, either applied rigorous analytics to reduce biases or offered new ways of using business analytics to strengthen the decision-making in businesses. The findings of the articles are expected to augment the academic research by providing evidence for possibilities of using business analytics as a tool to examine managerial issues and advance existing models. Some of the articles used case studies as an example to demonstrate how the management can take informed decisions if the models and the factors suggested are taken into consideration.

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