BUSINESS ANALYTICS –A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

Purpose: Corporate analytics, a new term, has been used by thousands of businesses to assist in increasing value and improving company performance. There are numerous aspects of business analytics. Many parts of business analytics, however, remain unknown. This research investigates many viewpoints on company analytics and its relationship to business intelligence.

Furthermore, authors demonstrate uses of B.A both in business areas and industrial sectors, as well as shed some light on business analytics education. Finally, in order to aid future study, authors highlight different research approaches employed in literature.

Theoretical framework: Recent literature has reported good results in both student performance and satisfaction in blended learning (Dziuban et al., 2004). However, there is still much to investigate and learn about BL because it is a recent development.

Design/methodology/approach: Authors used well-defined criteria to pick relevant material from two commonly used database systems: Web of Science,Scopus. Authors conducted a bibliometric study based upon that bibliometric metadata of the papers chosen. Following that, authors read the literature and used MAX Qualitative Data Analysis to code pertinent parts inductively. The coded information was then compared and synthesised.

Findings: To begin, according to bibliometric study, the literature on business analytics is expanding at an exponential rate. Second, analytics is a system that uses machine learning approaches to improve an organization efficiency and performance by assisting with decision-making.

Third, the use of data analytics is broad, including not just certain parts of a corporation but also many industrial sectors. Finally, analytics is a multidisciplinary field, and effective Technical, intellectual, and business skills should all be taught.

Originality/value: As a result of a synthesis of established business research intelligence, this systematic review may function as a rapid function for novice practitioners and academics, established scholars also can benefit from in this work by using it as a useful reference.

Keywords: Business Analytics, Business intelligence, Analytics, SLR.

INTRODUCTION

Data has rapidly reshaped our perspective of the world in recent decades. A slew of buzzwords, including IOT, artificial intelligence, including machine learning, are gaining traction in the big data background, while business analytics is one of them. Based on the attractiveness

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curve in Google Trends, business analytics has gained international interest at a constant rate over the last ten years. Regardless of its prominence, there is a scarcity of business analytics research, as seen by the number of articles connected with business analytics in databases. There is a scarcity of studies that exhaustively describe current research on various elements of business analytics. Authors suggest three major research questions to clarify existing understanding on:

What are the many definitions of business analytics?

What are the uses of business analytics?

What are the most common research methods in the field?

To find answers, authors undertook a systematic evaluation of literature from two well-known database systems: Web of Science & Scopus.

The following is a bibliometric study to provide a summary of the topic, especially the trend, top publications, top authors, and countries where the writers conducted their research. The section that follows delves into many opinions going on concept of business analytics, the functioning, and the distinction and relationship connecting business analytics techniques. Following that is a section that discusses the submissions for business analytics, namely business domains, industrial sectors. Then authors summarise, state of business analytics education plus training. Following that, authors review the research approaches that were found Appelbaum et al. (2017).

METHODOLOGY

Because of the newness of this burgeoning discipline, there are numerous misconceptions and misunderstood parts of business analytics Cao et al. (2015). Authors conducted a systematic review to explain these elements and address our research questions. This permits us to locate, analyse, and synthesise current information on this issue from practitioners in the field in a methodical, reproducible manner. Aside analysing the literature, authors used articles' bibliometric data to carry out a bibliometric study. Authors classified and categorised the publications considering the publication date, the paper's source, authors, and the locations where authors conducted their study Calof et al. (2015).

Information Source and Criteria of Selection

Academic text was acquired starting two datasets: Web of Science and Scopus. The two sources are well-known, feature supreme-quality papers from peer-reviewed publications. Authors defined numerous principles for literature choice earlier than screening articles in the database, since a set of well-known selection criteria is the cornerstone of a robust review. To begin, the titles of the publications should include the phrase "business analytics." Second, authors only looked at duplicate articles Harzing & Alakangas (2016).

By establishing this citation number requirement, authors were able to incorporate publications with significant scholarly influence in our analysis. Finally, in order to confirm the relevancy of the articles chosen, probing business analytics on titles is insufficient. And, even if the initial four criterions would've condensed the quantity of results, it is not possible to read all of them completely Figure 1.

Process of Selection

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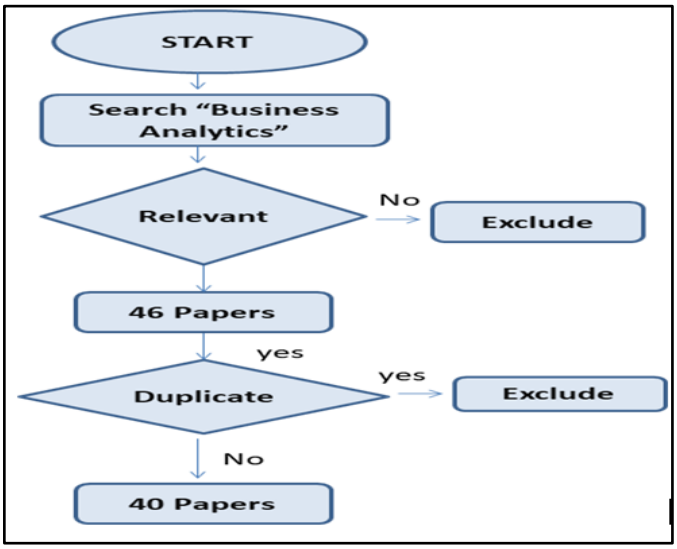

FIGURE 1
PROCESS OF SELECTION

Process of Analysis

Authors thoroughly studied the literature in order to assess the publications. Authors highlighted and tagged the significant portions of the reading. Authors coded inductively, which implies authors highlighted passages relating to our study topics and grouped them into codes as authors read.

There are definitions, business areas, industrial sectors, education and training, and so on.

To ease the process, authors employed MAXQDA, a prominent qualitative text analysis programme. Authors may analyse and summaries many elements of business analytics by comparing the coded parts of the papers Holsapple et al. (2014).

Bibliometric Analysis

The dotted and dashed lines in below fig.2 depict outcomes in particular time.

while thick line represents the assignment of the remaining 40 articles in different years Figure 2.

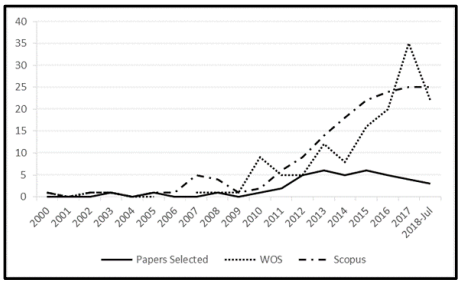

FIGURE 2
DIVISION OF THE PAPERS SELECTED

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As seen by the solid line, there has been a rise in the amount of publications since the year 2010 and a reduction after the year 2015. However, this doesn't indicate the quantity of articles in print on business analytics is decreasing with time Griva et al. (2018). The drop is due to our selection rules, which require us to evaluate publications written before the year 2017 having the citation counts in excess of five, while documents published more recently have less citation Chiang et al. (2012).

To examine overall pattern available regarding business analytics, authors may look at the dotted and dashed lines: the phrase "business analytics" gained popularity in 2009, and its popularity continues to this day. It should be noted that the graph only covers the trend up to July 2018; Taking into consideration where the authors conducted their study, a total of 16 nations on five continents have been found. In terms of continents, North America ranks first, with 54 writers doing their study there. Following Europe, 30 scholars worked on this continent Cosic et al. (2015).

Definition, Functionality, and Difference

Authors discovered a nonappearance of mutual accepting of the phrase business analytics while reviewing the literature.

In this part, authors synthesise many definitional viewpoints. Furthermore, authors explain the functioning of business analytics because it is critical to comprehend the concept. Finally, authors examine the relationship and distinction between two commonly used concepts with in literature: business analytics and business intelligence.

Functions

There are four primary functions of business analytics. To begin with, business analytics assists organisations in objectifying the decision-making process instead of making judgments foundation solely on experience or assumptions. Second, corporate analytics may help to expedite decision-making. Third, employing business analytics may help organisations get a better knowledge of their consumers and markets, allowing them to enhance customer service and the quality of their marketing strategy Yin & Fernandez (2020).

Furthermore, three types of business analytics help the improvement. Descriptive analytics allows businesses to be completely aware about their past and present conditions.

Predictive analytics assists businesses in anticipating the future, such as the potential impact of policy changes or anticipated actions made by rivals. Prescriptive analytics contributes to choice-making by giving robust, fact-based information.

The relationships and contrasts between the two are unclear, and attitudes regarding business intelligence and analytics varies. Business analytics as well as business intelligence are considered similar terms by Chae & Olson (2013) because they reflect the application of analyses for decision support, so although Wixom, Yen, and Relich (2013) observe business intelligence as a process and company intelligence as insights, and business intelligence has been acquired from business analytics Chae (2014).

Business analytics is an expansion of business analytics that incorporates sophisticated statistical or operation research methodologies. It is agreed that "from a management standpoint, business analytics is an offshoot of what is known as business intelligence."

Applications of B.A.

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During our research of the research, authors came across a significant number of applications for business analytics, demonstrating use of business intelligence is broad. These applications are divided into two categories: specialised areas of a firm and various industry sectors. Authors discovered supply chain, accounting and finance and human resources to be business sectors. E-services, retail, politics, national safety, healthcare, athletics, and social welfare are among the industry sectors.

Business

The influence of business analytics on the four parts of the model: Planning, Source, Make, & Deliver. Furthermore, investing in business intelligence in the "Make" part of the supply chain might result in significant improvements in the business operations (Trkman et al., 2010).

Furthermore, supply chain management planning is concerned with balancing demand and productivity, so business analytics plays a vital role in forecasting consumer demand and optimising selling price in this process Chae & Olson (2013).

HR analytics includes "*the association between performance rating and salary, projection of the number of workers projected to depart the organisation, time to hire staff, employee count, and estimated monetary worth of show the difference in function*".

Industry Sectors

According to Hsinchun et al. (2012), the second version of business intelligence is built on online and unstructured data. These unorganized web-based data, as opposed to typical organised transactional data, might assist organisations in understanding their consumers' perspectives and purchasing habits (Hsinchun et al., 2012). Furthermore, assessing this client data forms the basis of product recommendation systems. Furthermore, business analytics may help with "criminal association rule and clustering; criminal networking; spatial-temporal and visualization analysis; multilingual sentiment analysis; sentiment feeling and thinking; analysis on cyber attacks & attribution" in security and public safety.

Business Analytics – Education

Business analytics education is designed to be multidisciplinary, which implies that business analytics programmes should include not just analytical abilities but also understanding of business subjects; also, communication is required.

Furthermore, because business analytics is a practice-oriented field, it is critical to incorporate hands-on projects as well as in internships into the course (Hsinchun et al., 2012). As a result, a close link between academic programmes and industry is vital (Hsinchun et al., 2012).

Research Techniques

In this subject, a literature review is a popular approach. What is noteworthy is that five publications Bedeley et al. (2018). ; Kowalczyk and Buxmann, 2015; Pape, 2016; Phillips-Wren, Iyer, and Kulkarni Ariyachandra, 2015; Troilo et al., 2016)] incorporated practitioners' literature in the review.

Furthermore, Hsinchun et al. (2012) conducted a bibliometric analysis and came to some useful conclusions, such as "although the overall publishing trend for business intelligence held steady, business analytics and big data publications have shown a faster growth trend in recent years" (Hsinchun et al., 2012: page 1179) Duan & Xiong (2015).

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CONCLUSION

According to our findings, business analytics research is expanding at an exponential rate. Many definition of business analytics mention decision making, which is sturdily tied the functioning of business analytics. Business analytics is to categorise it into 3 types based on functionality: descriptive analytics, data modeling, and prescriptive analytics. Moreover, the three most prevalent research approaches were questionnaire, literature review, or interview, with bibliometric analysis, Delphi method, and online search appearing only once. Lastly, business analytics is an interdisciplinary field, and effective training should include a mix of technical, analytical, or business abilities.

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