



## THE USE OF BIG DATA IN STRATEGIC COMMUNICATION FOR PUBLIC RELATIONS IN PUBLIC AND PRIVATE SECTOR COMPANIES IN SAUDI ARABIA: SURVEY STUDY

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### ABSTRACT

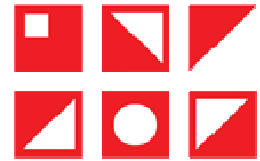
*The revolution brought by big data has evolved the way organisations used to operate. The implication of big data is potentially significant in strategic communication for public relations. It helps PR professionals in developing an understanding and manages the massive amount of data. Big data provides the professional of PR with an opportunity to make a decision based on evidence by analysing the past trends rather than making decisions that are solely based on intuitions and guesswork. The current research paper dives deeper into the values, benefits, challenges and risks that are associated with the adoption of big data in public relations to achieve strategic communication. The research paper covers Saudi Arabia's public and private companies to analyse the utilize of big data in strategic communication for improving public relations. A sample of 100 PR practitioners within Saudi Arabia's private and public companies are included in the research. The paper answers multiple questions regarding the implementation of big data and its extent in Saudi Arabia. The research paper bridge the literature gaps as most of the studies highlighted the European practitioners' perspective regarding big data and its applications. However, the research paper shedlight on the perspective of Saudi Arabia's practitioners regarding big data advantages, challenges, risks and application.*

### Keywords:

*BIG DATA - STRATEGIC COMMUNICATION - PUBLIC RELATIONS*

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## 1. INTRODUCTION

In modern technology, big data have become one of the most significant trends. The amount of data being generated in today's world is massive and collection, storage and organization of this massive amount of information is a challenge. The term big data describes the collection of all data being generated and our ability to utilize it to our advantage across different areas (Peterson, 2018). *Thus the current amount of information and data available today has been grown significantly in the past decade creating new sets of opportunities and challenges for organisations at the global level. In public relations utilization of big data is increasing as it provides the organization with the ability to improve the performance of a campaign and generate greater customer value (Grover et al., 2018). As per different studies, big data play a vital role in improving the effectiveness of PR as it measures, determines and monitors the wide range of data that is relative to effective communication in the dynamic business world. According to the study by Holtzhausen and Zerfass (2014), strategic communication is used to highlight a managerial approach for the integrated communications among all types of organizations. Big data in strategic communication enables to evaluation and analysis of the opinions, requirements, needs, attitudes along with the behaviour of the stakeholders. Thus utilization of big data in the corporate world makes communication more strategic.*

However, adopting the new practices adhering to the big data strategies in the workplace is combined with difficulties, challenges and risks. The management and organization of the unstructured data are considered to be a difficult point for communication professionals and lack of skills that can handle the big data. Big data processing is very complicated for the software packages that are standard for their processing (Mayer-Schönberger and Cukier, 2013). The interest in big data utilization by the organization for strategic communication in public relations increases the cost of storing and processing massive data sets (Malomo and Sena, 2017). The study by Wiencierz and Röttger, (2019), highlighting the role of big data in public relations shed light on the point that big data have caused a major revolution that is irreversible in the public relation sector of both public and private organisations. This aspect connects with the point that utilization of big data by the communicators serves the purpose of understanding their stakeholders and competitors in a better way that will result in optimization of the organisation's performance. However, a certain factor is still considered to be debatable that is regarding the potential public relations measures such as improvement in the planning, implementation and evaluation by big data is just a significant step forward or revolution.

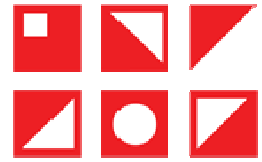
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Furthermore, the study by Wiencierz and Röttger, (2017), discussed the fact that despite the level of the general importance of big data regarding strategic communication by the organisation is known, however, researchers have ignored the challenges and potentials connected with adopting big data in public relation sector for strategic communication. An organization focusing on the adoption of big data can make a decision that is being supported by a massive amount of information and data that allows the organisations to anticipate needs, evaluate the risk, produce relevant products, personalization of services along optimization of the customer experience. Big data in the decision-making process ensures that all decisions being made must be wellinformed (*Peterson.*, 2018). Moreover, this advantage of big data in decision-making procedures can also be applied to the public relations sector. It creates initiatives that are considered to be sustainably valuable in terms of both tactic and strategic development. Big data provides an opportunity for communicators in public relations to achieve insights based on facts and figures. The professionals in public relations can collect more data and information regarding the clients' sentiments from niche communities. Thus the upcoming campaigns can be customized that can potentially suit the values perceived by the targeted community.

Thus most of the articles that are published being associated with big data and strategic communication are connected strongly with marketing aspects making a gap of knowledge from the public relation perspective globally. The major work and researches on big data understanding and implementation focusing on public relations and strategic communication are mostly based on European practitioners' perceptions. Therefore, the major goal of this current research paper is to cover the literature and knowledge gap regarding the utilisation of big data in strategic communication in public relations; compare the big data in public relations of public and private companies of Saudi Arabia. While the research paper also aims to contribute to the debating point linked with the benefits, difficulties, challenges and risks revolving around the adoption of big data in the public relations sector of both private and public organisations.



## 2. LITERATURE REVIEW

### 2.1 Big Data Revolution

The term big data refers to the data collection and technology that integrates, accesses along with reporting all the available data on the addressed issue by correlating, filtering and reporting insights that were not attainable by the previous data technologies. Big data covers the processing of data that is beyond human abilities (Christozov and Rasheva-Yordanova, 2017). In the current era of technology, big data is considered to be a revolution in terms of information technology that is impacting all organisations worldwide. The study by Pepping, (2017), highlighted that the world generates an amount of 2.5 quintillion bytes of data each day out of which 90% of the data is reported to be unstructured. Further, the amount of data produced and consumed by the world will be approximately more than 40 trillion gigabytes by 2020 as per Gantz and Reinsel, (2012). The occurrence of the big data revolution is major because of technological advancements that allow the organisations to collect data and information that is extremely detailed along with propagating the obtained knowledge to the consumers, alliance partners, suppliers and competitors.

However, several organisations are still relying on guesswork and intuition despite the increasing availability of digital real-time data companies are still not taking benefit from this big data tool to measure customer relationships and their activities (Williamson, 2017). The big data revolution includes three major trends that include an increasing amount of available data, enhancing the storage of data capacity and computing power at a low cost along with evolution regarding the machine learning approach to evaluate datasets. While the study by Maltby, (2018), the impact of big data is visible in all industries, businesses, private and public sectors. While the adoption of big data in public relations is playing a critical role in improving the traditional PR functions. The benefit of big data is not only linked with a wide range of data and information rather creating value that can lead to improving the performance of an organisation along with developing a better understanding of competitors, employees, media, and consumers. This all is possible through the revolution of big data and its adoption in public relations sectors of both private and public organisations.

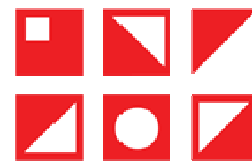


## **2.2 Big Data Challenges**

Revolution in terms of technology includes the big data revolution, however, there are benefits and challenges along with risks that are associated with big data adoption. One of the major challenges as stated by Gaur, (2020), in the research article is connected with finding the most suitable way of managing the massive amount of data. This includes data analysing and data storing. Thus the big data challenges must be deal with agility to gain as many benefits as possible. Vassakis et al., (2018), discussed the big data prospect, challenges and applications. It is highlighted that the big data revolution has a major effect on businesses as it caused a revolution in the platforms, networks, consumers along with digital technology has improved the innovation and competitiveness of the organisations.

The lack of professionals possessing the knowledge of software and programs that handles and manages big data is a major gap in the adoption of it. To process and run these advanced technologies along with massive data tools the organization need data professionals that have these skill sets. The professionals are data scientists, data analysts along with data engineers that can work with the data tools and can comprehend the massive sets of data (Sagiroglu and Sinanc, 2013). Thus the lack of data professionals in the organization impacts the adoption of big data in public relation as other sectors requires the big data more in making the evidenced-based decisions. Furthermore, the tools of handling the data have rapidly evolved however, the professional's skills need to improve their skill sets. The training programs by the companies can play an important in increasing the understanding of people regarding big data utilization. On the other hand, the lack of developing a proper understanding of huge data is another challenge. The organisation's initiatives regarding big data majorly fail due to the gap in understanding. Employees limited knowledge regarding the data and its procedures such as storage, processing, sources and importance is critical. This might result in the loss of sensitive data as employees have no understanding of data storage and its importance (Gaur, 2020).

While the other challenges include issues with data growth, selection of suitable big data tools, data integration from a spread source along data security. These all challenges must be focused on by the organisations before the adoption of big data initiative is being planned as it can fail if these challenges are not overcome.



### **2.3 Structured, Semi-Structured and Unstructured Data**

The terms structured, semi-structured and unstructured data are common in the debates covering the big data aspects. Understanding big data requires developing an understanding of structured, semi-structured and unstructured data. Marr, (2020), highlighted that the data that is considered to be easy in terms of organising and managing is structured data. This is because the data is in columns and rows while the elements can also be mapped into predefined fixed fields. The structured data can easily follow a data model that can keep the records of sales and customers' responses. A great range of data available today falls in the unstructured data group. These kinds of data are unable to be put in rows and columns are not linked with any data models. Thus they are difficult to be searched, evaluate and manage, being the main reason organisations discarded the unstructured data until AI and machine learning makes it process much easier (Ronk, 2014). While the data between structured and unstructured data is known as semi-structured data. The organization of such type of data can be achieved however, fluidity in managing such data cannot be gained easily.

### **2.4 Big Data Application in PR Processes**

The study by Wiencierz et al., (2019), highlights a conceptual framework regarding the implementation of big data in public relations to achieve strategic communication. The framework represents the typical ideal application linked with big data in terms of strategic communications that involve the communication phases along with planning processes being linked with data-generation and analysis of data approaches based on knowledge discovery in databases (KDD) that is being utilised in multiple businesses. Various studies have shown the strong potential of big data in public relations. The positive impact that big data have on effective public relations is vital as it monitors, determines and manages the huge amount of data is critically effective communication in various markets.

Big data improves public relations by creating more effective content strategies through analysing the past data available. The ability to analyse and manage the data in real-time leads to creativity (Grover et al., 2018). Once the PR professional understands what the extracted data is stating, therefore, results in new insights and ideas to improve the communication. Along with this, the big data in public relations processes allows to adjust and manage the messaging and how the PR professional can respond to the market



trends by extracting the relevant data. The big data can evaluate the aspect or factor that had to lead to a trend in the past along with predicting the chances when it will occur again (Monino and Sedkaoui, 2016). Furthermore, big data help PR in adjusting the messages in real-time focused on the emerging and the ongoing trends of the market. On the other hand, it also presents an opportunity that results in efficiently generating interest in a consumer's product or service through understanding which population to target. Moreover, big data provides ready access that can create a pitch that shed-light on data sustained trends in the market. However, the professionals of PR in any organization whether public or private must try to improve their skill sets regarding data interpretation and understanding the statistics. This can be achieved through big data tools that also requires a certain training level (Sterling Communications, 2014).

## **2.5 Limitation of Big Data**

One of the main limitations of big data includes security risks and concerns. Big data technology is also at the risk of a data breach. The information being extracted or provided can be leaked to competitors and customers. Approximately 51% of the organization reported that security issues are a major limitation as it increases the average cost of a data breach. While on the other hand transferability is another limitation that rises during the adoption of big data. The majority of data is on a private cloud or enclosed behind a firewall. Thus requires technical knowledge to effectively provide the data to the analytical team within the company. Moreover, the repeated transfer of data to a data specialist is also difficult (Ciklum, 2017). Data collection inconsistency serves as a barrier in the big data processes. The tools being utilized by the organization to collect sets of big data might be imprecise. This can be overcome once you know how to utilize the big data to the organisation's benefit. According to Ghani et al., (2016), describing the issues that rises with the adoption of big data. The study highlighted that the main limitation with big data includes the privacy and protection of personal data. The personal data in businesses are mostly collected to add value such as the PR can identify the shopping habits of any individual thus revealing a lot about their data and information. While the sensitive data are processed and stored in a location that is considered to be not secured appropriately. Thus, the leakage of data might occur during the procedure of processing and storage.



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## 2.6 Literature Gap and Research Questions

After analysing the studies incorporated in the literature review it was determined that a major gap of knowledge from the perspective of Saudi Arabia's PR practitioners regarding the use of big data in improving the strategic communication for public relations in both private and public companies. Thus the main aim and objective of the research are to address the implementation of big data practices in the public relations sector of Saudi Arabia companies. Thus the research contributes to the critical debate of big data and its impact on PR by focusing on the research questions mention below:

- RQ1. How do public relations practitioners in Saudi companies define big data?
- RQ2. To what extent big data are implemented in Saudi companies?
- RQ3. What importance and attention do public relations practitioners give to big data in the Governmental and private companies in Saudi Arabia?
- RQ4. What are public relations practitioners' skills and knowledge in both types of Saudi companies regarding big data?
- RQ5. To what extent is big data already being used in PR communication strategies in Saudi companies?
- RQ6. What are the communication activities that use the biggest data in Saudi companies?
- RQ7. What are big data applications used in communication strategies of public relations in Saudi companies?
- RQ8. What are the big data sources that public relations practitioners in Saudi companies rely on?
- RQ9. For which purposes do public relations practitioners in Saudi companies use big data?
- RQ10. What challenges are perceived by public relations practitioners in Saudi companies see in the usage and implementation of big data in their communication strategies?
- RQ11. What are the practitioners' perceptions of the future of public relations in Saudi Arabia in light of the use of big data as an artificial intelligence technique?





### **3. METHODOLOGY**

#### **3.1 Research Design**

The framework of methods, procedures, and techniques being utilised in the research study is known as research design. The research design describes the nature of collected data that is being used to develop an understanding of the problem and address it appropriately (Sileyew, 2019). The research studies follow two types of research design qualitative and quantitative research design. The research paper has adopted the application of quantitative research design for the collection of data on the utilisation of big data in strategic communication for public relations in private and public sector companies within Saudi Arabia. The main reason for adopting the quantitative research design was to collect data from large sample size to draw conclusions based on multiple pieces of evidence. Thus quantitative design provides a snapshot of Saudi Arabia's organisations adhering to the strategies of big data and how they improve their strategic communication for public relations. Along with this duplicating, the results obtained through the research is possible while quantitative research design is being utilised.

#### **3.2 Data Collection and Analysis**

The collection of data is segregated into two types primary and secondary collection of data. Adopting the suitable data collection method allows the researcher to analyse and evaluate the research problem in a systemic manner (Pal, 2017). Primary data refers to the collection of first-hand data on the research problem that reflects human participation. While secondary data refers to the collection of data through materials, articles, papers, and reports that have been published already associating with the research questions. In the research paper, the primary data collection method has been adopted to answer the research question. The primary data was collected through survey questionnaires. The survey was conducted among the private and public companies of Saudi Arabia to understand the level of big data utilisation in strategic communication for public relations. Through this primary data, multiple aspects were highlighted regarding big data and public relations.

While data analysis is referred to the use of applications of various tools and techniques that can strategically analyse and evaluate the data collected. The use of data analysis



tools also provides an opportunity to present the findings of research systemically. The data analysis goal is to understand and reveal the trends, patterns along with underlying relationships in public and private sector companies of Saudi Arabia that uses big data for public relations (Albers, 2017). To assess the potential differences, the data were analysed using MS Excel, a statistical tool used to evaluate the data. MS Excel is used to analyse the survey data as being collected in the research and to get the most out of the data. One of the main reasons for adopting MS Excel in the data analysis is that the chances of error are minimised while less time and effort are required. Since the research is based on a primary quantitative method MS Excel is considered to be more beneficial in analysing the quantitative data (Admin, 2017).

### **3.3 Sample Population**

The sample population is referred to as the number of participants that are included in the research to collect the data and address the research problem (Majid, 2018). The targeted sample population in the research study was public and private companies within Saudi Arabia. The research targeted 100 public relations practitioners from private companies of Saudi Arabia while 100 were targeted from public companies of Saudi Arabia. Thus a total of 200 public relations practitioner's participants were included in the research to answer the research questions regarding big data in strategic communication for public relations. The survey was conducted online using a questionnaire through which different aspects based on the perspective of Saudi Arabia's public relations practitioners regarding big data and how it can improve the strategic communication in PR.

### **3.4 Research Ethics**

Research ethics is considered to be an essential part of the research study as it ensures that the research being conducted must be following fundamental principles revolving around the research activities. The research ensured the confidentiality of the data being collected along with providing the participants with the right to withdraw from the research anytime. While the participants of the study were informed regarding the aim and objectives of the study and the risks and advantages associated with it. The collected data was interpreted accurately and free from misleading information. The research protects the personal information and privacy of the participants along with avoiding the misconduct of research regulation.



## **4. Findings and Discussion**

### **4.1 Findings**

This section of the paper discusses the primary results that were obtained with the use of a questionnaire. This section is further segregated into two different sections in which the first section defines the demographic information of the recruited participants and the second section defines the primary findings that were obtained with the use of a survey questionnaire in which different aspects were examined regarding the use of big data for strategic communication among the private and public organisations in KSA.

#### **4.1.1 Demographic Results**

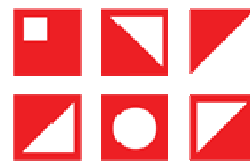
It has been described in the aforementioned section that a total of 200 respondents were recruited to complete this study. The study data defines the gender information of the recruited participants, which defines that a total of 124 males participated in this study and 76 females participated in this study.

The study data defines the information regarding respective sectors in which the research participants are employed. A total of 100 respondents were working in the private sector of KSA and 100 respondents were working in the public sector of KSA.

#### **4.1.2 Primary Findings**

The first question asked from the respondents was regarding the application of using big data in the private and public sector firms in KSA. It has been analysed from the obtained responses in which 58 respondents were strongly agreed and 69 respondents selected the agree option for this question. Moreover, 43 respondents have marked the neutral option. Furthermore, only 20 respondents have selected the disagree option and 10 respondents have selected the strongly disagree option.

The second question was regarding the sufficient use of big data by public and private relations practitioners in KSA. It can be analysed from the responses in which defines that 110 respondents were strongly agreed, and 53 respondents selected the agree option for this question. Moreover, 18 respondents have marked the neutral option. Furthermore, only 10 respondents have selected the disagree option and 9 respondents have selected the strongly disagree option.



Moreover, the third question asked from the respondents was to determine the importance of big data for the public and private firms operating in KSA. The study results indicate that, the response rate of the employed respondents. It has been analysed that 56 respondents were strongly agreed, and 74 respondents selected the agree option for this question. Moreover, 37 respondents have marked the neutral option. Furthermore, only 17 respondents have selected the disagree option and 16 respondents have selected the strongly disagree option.

The fourth question asked from the respondents was to analyse the skills of private and public relations practitioners for using big data for strategic communication. It can be examined from the from the obtained responses, which highlights that 112 respondents were strongly agreed, and 48 respondents selected the agree option for this question. Moreover, 24 respondents have marked the neutral option. Furthermore, only 13 respondents have selected the disagree option and only 3 respondents have selected the strongly disagree option.

The responses for the fifth question. This question was based on the use of big data for communication among public and private firms in KSA. It can be analysed that 109 respondents were strongly agreed, and 50 respondents selected the agree option for this question. Moreover, 30 respondents have marked the neutral option. Furthermore, only 2 respondents have selected the disagree option and only 1 respondent has selected the strongly disagree option.

The sixth question asked from the respondents was based on the development of sustainable communication channels with the use of big data in the public and private firms working in KSA. the responses indicate that 79 respondents were strongly agreed, and 71 respondents selected the agree option for this question. Moreover, 36 respondents have marked the neutral option. Furthermore, 13 respondents have selected the disagree option and only 1 respondent has selected the strongly disagree option.

The seventh question asked from the respondents to examine the use of big data for the development of various communication strategies in public and private firms in KSA. The results show that 59 respondents were strongly agreed, and 65 respondents selected the agree option for this question. Moreover, 31 respondents have marked the neutral option. Furthermore, 27 respondents have selected the disagree option and 18 respondents have selected the strongly disagree option.



The eighth question was asked to examine the use of big data sources used in the private and public sector organisations in KSA. The results define the responses and it can be analysed that 119 respondents have selected the performance management and 54 respondents have selected the social analytics option. Moreover, 24 respondents have selected the decision science option. Furthermore, 2 respondents have selected the data exploration option and only 1 respondent has marked all of the above options.

Moreover, the ninth question asked from the respondents was to evaluate the use of big data for other purposes in the public and private firms in KSA. The responses indicate that 95 respondents were strongly agreed, and 45 respondents selected the agree option for this question. Moreover, 33 respondents have marked the neutral option. Furthermore, 11 respondents have selected the disagree option and 16 respondents have selected the strongly disagree option.

The tenth question asked from the respondents was to examine the use of big data in addressing strategic communication challenges in the private and public firms in KSA. It can be examined from the responses, in which defines that 42 respondents were strongly agreed, and 65 respondents selected the agree option for this question. Moreover, 49 respondents have marked the neutral option. Furthermore, 24 respondents have selected the disagree option and 20 respondents have selected the strongly disagree option.

The last question was asked to analyse the perception of private and public relations practitioners regarding the use of big data for strategic communication. However, it has been analysed from the responses, in which defines that 109 respondents were strongly agreed, and 58 respondents selected the agree option for this question. Moreover, 29 respondents have marked the neutral option. Furthermore, 2 respondents have selected the disagree option and 2 respondents have selected the strongly disagree option.



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## 4.2 Discussion

This section of the paper addresses the discussion based on the primary and literature findings. According to the research of Alam et al., (2021), big data has been recognised as one of the most significant aspects of strategic communication. It has been analysed that in Saudi Arabia significant measures have been induced in their private and public sector which defines the use of big data for strategic communication. The public and private sectors of KSA are working on the development of an AI-friendly ecosystem by which different innovative solutions can be induced and vital results can be obtained (Puaschunder, 2019). This factor has also been analysed from the obtained responses in which significant results are obtained for using big data in the public and private sectors of Saudi Arabia. On the other hand, the government of KSA has introduced new technological trends within their public and private sectors to cope with the current international market. Different partnerships have been observed with several global technology providers by which new and innovative means are introduced in which big data is the most utilised for developing strategic communication among different stakeholders (Gheraout et al., 2018; Walton and Nayak, 2021). All these aspects have also been determined from the responses where positive results have been obtained regarding the use of big data from strategic communication and an affirmative perception is also determined among the private and public sectors working in Saudi Arabia.



## **5. Conclusion**

Big data has been determined as one of the most widely adopted technologies used in different organisational operations. This paper has examined the use of big data for strategic communication among the private and public sector organisations in KSA. This paper has been conducted with the use of a primary research method in which 200 people were recruited and a survey questionnaire was distributed among them. After analysing all the aspects, it can be concluded that the use of big data is significant for the strategic communication for public relations in the private and public sectors in KSA and significant advantages have been observed that could be used to enhance the overall efficiency of the firms operating in the country.



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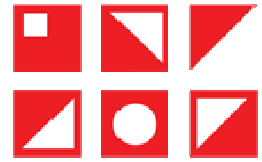


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