

# Social Impacts of Data Science in Food, Housing and Medical Attention Linked to Public Services

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## Abstract

During the past decades, the public health development process increased as a serious concern. In this regard, data science technology has proved as a beneficial tool to support the human safety and security development procedure. Thus the Indian government has implemented several types of schemes to support human health and welfare but due to a lack of proper experts, the schemes do not follow properly. The researcher in this study has focused on the impact of data science in food, housing, and medical attention linked to public services. The data collection process has been noticed with proper attention to make it a valid study. Both advantages along with disadvantages of data science have been discussed to introduce both pros and cons of the technology.

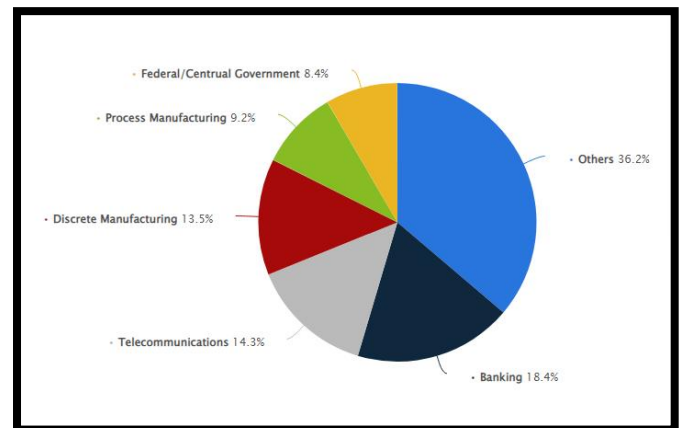
## Keywords

Data Science, Human Safety, Knowledge, Mathematics, Resources, Social Good, Statistics.

## INTRODUCTION

Data science is a field that is trans-disciplinary that utilizes scientific algorithms, methods, systems, processes to bring out profitable knowledge. Across a broad range of approaches realms of data can be reactive. In this modern decade, machine learning systems create several types of rules depending on the data and continue transforming our world. Due to applying advanced analytics techniques as well as tools, the field of data science has played a remarkable role to help people. Serious problems that continuously threaten human safety, health, and well-being, data analytics' potential assists to discover practical solutions.

Depending on the wide range of population, it has been found that data science can handle real-life problems and due to having profits it has been increasingly adopted across the industries. Based on the record of 2020, around **93,500 data science job vacancies** are available in India. In 2021, the market share of Data Science has achieved a better market position and among several sectors in India, banking sectors have reached more than **18%** in the share market ([10], 2021). At the initial stage, a huge amount of **\$20 million** has been contributed to developing this technology to get benefits from it by developing human health and welfare ([10], 2021).



**Figure 1.1:** Market share of Data Science in India in 2021  
(Source: Influenced by [10], 2021)

This study has focused on the *social impact of data science in food, housing, and medical attention linked to public services*. In order to understand the position of billions of molecules in everyday foods, medicine, and housing, this study related to data science has been elaborated. The aim of this study is to introduce knowledge regarding data science and it will be conducted based on the research objectives. The objectives are:

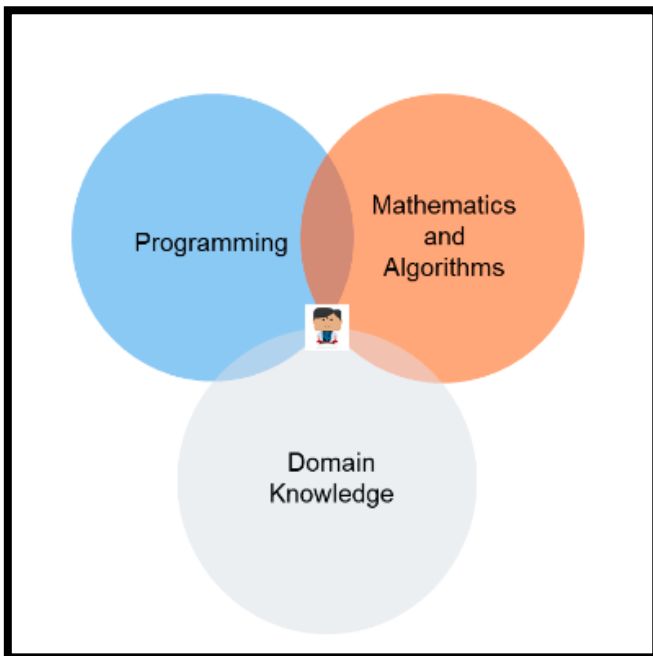
- To analyse the advantages of data science in developing public health.
- To understand the ways that will improve the concept of data science.
- To analyse the impact of using data science on the everyday life of human beings.

## LITERATURE REVIEW

### Concept of Data Science

Data science is an effective area of study that blends programming knowledge, programming skills, expertise, a

domain of statistics, and mathematics to bring out sensible viewpoints from collected raw data. As stated by [9]. (2020), to develop many industries based on today's rising competition and developing social goods, data science has been identified as an essential part. It is able to come from various resources and is able to present depending on several types of formats. Especially in complex machine learning algorithms, data science has been utilised to provide a perfect solution. In the area of food, medical, housing, everywhere people are bound by the use of data science. It includes **Signal Reception, Data Entry, Data Extraction, and Data Acquisition** that is supported in modifying the unstructured data. It has been recognized that data science usage will increase by **26%** by 2026 ([1]. 2020). In the COVID-19 pandemic situation, the use of data science has become more popular in India.

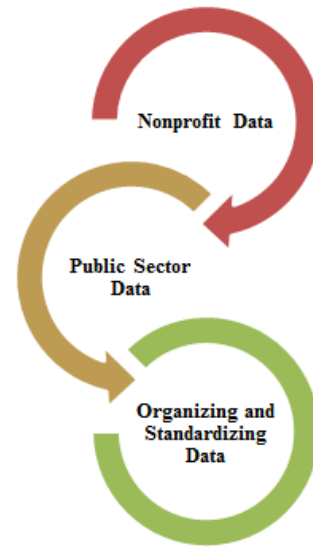


**Figure 2.1.1:** Concept of Data Science  
(Source: Influenced by [9]. 2020)

**Types of Data that are used to Promote Public Health and Welfare**

Accompanied with several restrictions that are associated with data science applications, Indian Government agencies have focused on sharing the open public health to modify it. In this process, the risk factors related to public health can be identified and different data can be used to improve human health and safety. As opined by [4]. (2018), there are three types of data that are utilised to promote public welfare and health. It includes **Non-profit Data, Public Sector Data, and Organising and Standardising Data**. Non-profit data has been used in the private sector in order to modify project management efficiency to serve people better health options. Especially the institutions of education used this type of data. In addition, Public Sector Data has been used by the government agencies to develop employment, geographic information, and financial information to apply better

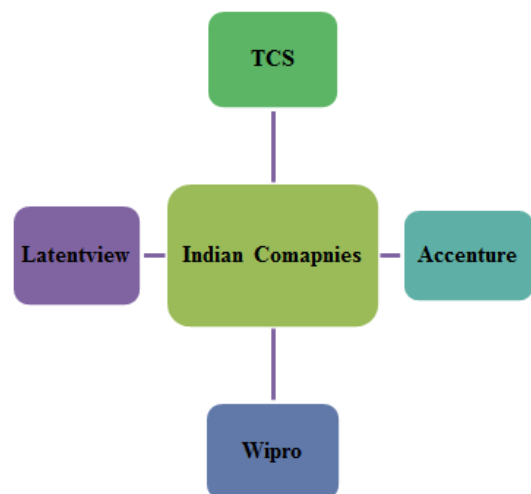
approaches to deliver public welfare. Organising and Standardising Data used to apply in socioeconomic data format processes.



**Figure 2.2.1:** Different Types of Data  
(Source: Influenced by [4]. 2018)

**Companies Using Data Science for Social Good**

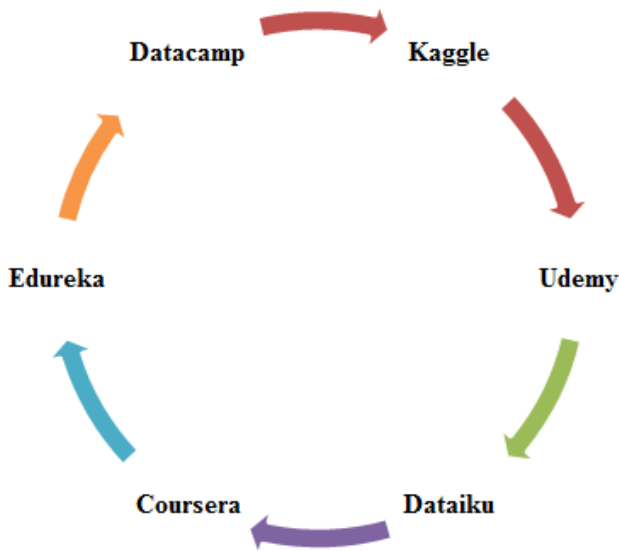
In India, there are several technology companies that are using data science to work to support the country's economy. It includes **TCS, Accenture, Wipro, Latentview** and gained a huge ratio of revenue to continue business processes. All the companies have contributed a large amount of their profit to the government to support social goods. According to [2] (2018), the majority of the companies in recent decades have made a commitment to deliver social good by applying data science technology. From the activity of big data transfer to modify any data quality, the data science area is considered as beneficial. In order to create a more secure digital wallet for the country that can support people in food, housing, and medical attention, the developer has focused on improving the service quality of data science.



**Figure 2.3.1:** Indian Companies using Data Science  
(Source: Influenced by [2], 2018)

**Resources for Data Science for Social Good**

The projects such as *Inside Big data*, *Data Science for Social Good*, and *Inside Angle*, are involved in the activities that will help to introduce public health by housing, food, and medical attention. As proposed by [7]. (2020), identifying the problems of society can help the researcher to understand the potential approach to implement. *Datacamp* is a good option to perform against the problems regarding human welfare and health by evaluating awareness. In addition, *Kaggle*, *Udemy*, *Coursera*, *Edureka* are the other resources that support data science and machine learning. Accompanied by government agencies the resources of data science are able to support human wellbeing activities. *Dataiku* is identified as an advanced analytics solution that is capable of catering its own data tool that will measure the potential need of the people.



**Figure 2.4.1:** Resources for Data Science  
(Source: Self-developed)

**METHODOLOGY**

The researcher has identified that the process of this study will be profitable from methodological considerations. In this regard, the researcher has followed qualitative research methods to lead this study further forward. As observed by [11]. (2020), having broadband sources in the publications can help in estimating proper resources to lead the research work in an effective way. Assessing several citations that were related to the topic have been found between the publications from 2017 to 2021 for inclusion in the dataset. In addition, the researcher has utilised a literature review method to gather the relevant data to find out an effective decision after completing the research process. The researcher has forced on the relationship between socioeconomic factors and diverse health outcomes to identify the effectiveness of data science applications.

Accompanied with utilising Google Scholar due to looking for the headings that contain "data science" or "social impacts" or "public services" has been collected to make this

study reliable and valid. In the words of [12]. (2019), in the estimation of large data science applications, it is important to select the correct source of data. Similarly, in this study, the researcher has focused on the area of development of housing, food, and medical fields to identify the accurate rate of social good. Finding dyadic information regarding social relationships with human health and welfare remains one of the serious concerning areas of the researcher.

**RESULT AND DISCUSSION**

**Theme 1: Government Schemes for Developing Human Health and Welfare**

Due to the *"Health Promotion & Education Programme"*, the Indian government has focused on the implementation of different types of schemes and funding processes. As opposed by [6]. (2019), *"The National AIDS Control Programme"* is associated with a few types of areas such as *Community Care & Support*, *School AIDS Education*, and *Targeted Interventions*. Thus the Indian government has implemented several types of schemes such as *"Rashtriya Swasthya Bima Yojana"*, *"Pradhan Mantri Jan Arogya Yojana (PMJAY)"*, but it could not support all the requirements of people's health and welfare ([5], 2021). All the schemes originated with transfer activity of large size data that has taken the help of data science. In 2000, the Government of India and WHO joined to monitor the activities whether it is implemented properly or not.

The involvement of NGOs in the schemes has made it difficult to analyse the effectiveness of the schemes that have been introduced by the government. *"National Cancer Control Programme"* is another scheme that has been originated by the government to support human health care. Due to not having an appropriate mentor or observer as well as proper knowledge among rural people the schemes remain unworkable.

**Theme 2: Advantages and Disadvantages of Data Science**

Due to having the capability to serve real-life solutions based on the pattern of the problem, data science has become greatly in demand. Accompanied with a lot of opportunities, data science has supplied strong support to humankind to develop social good by providing necessary requirements. According to [8]. (2020), data science is capable of making data quality better to analyse the data in a perfect way. In addition, it is highly prestigious in the business market to manage the workflow and maintain a positive profit level to support the country's economy. Along with this, detecting early-stage tumours, it can save lives. Thus it has several advantages, it is a common fact that every technology has both advantages and disadvantages impact on an individual situation. In this scenario, though data science has become a revolutionary technology it has several limitations.

Mastering data science is nearly impossible and it requires domain knowledge and because of this, an individual has to keep learning about the technology. In this regard, it needs proper data to analyse otherwise arbitrary data may cause

unexpected results. In addition, data privacy is also not secure to use.

### RECOMMENDATIONS AND CONCLUSION

Based on the above discussion it can be stated that data science has captured a wide range of areas in human development activities. As per the view of [3]. (2020), adopting this application in the majority of Indian business sectors can help the economy to become in a stable position that will support human health development by providing houses, food, and medicines. People need to develop awareness regarding their health care and welfare to understand the importance of government schemes. Adopting continuous learning methods can modify the limitations of the technology to be sustained for a long-term issue.

Solid scientific evidence shows that data science affects a range of health outcomes that supports in managing human physical, mental satisfaction. Thus the activities of human safety are not directly related to data science but it is connected with organisational workforce. The profit of the organisation is associated with the economic development of the country and country development is related to human health improvement activities. In this regard, data analytic tools that have large tech firms hold promise for having a large amount of contribution towards the provision of public services. Moreover, this study will help the readers to recognize the impact of data science to improve human health whether effective or not.

### REFERENCE

- [1] Bambra, C., Riordan, R., Ford, J. and Matthews, F., 2020. The COVID-19 pandemic and health inequalities. *J Epidemiol Community Health*, 74(11), pp.964-968.
- [2] Cantor, M.N. and Thorpe, L., 2018. Integrating data on social determinants of health into electronic health records. *Health Affairs*, 37(4), pp.585-590.
- [3] Dodds, K., Broto, V.C., Detterbeck, K., Jones, M., Mamadouh, V., Ramutsindela, M., Varsanyi, M., Wachsmuth, D. and Woon, C.Y., 2020. The COVID-19 pandemic: territorial, political and governance dimensions of the crisis. *Territory, Politics, Governance*, 8(3), pp.289-298.
- [4] Fröhlich, H., Balling, R., Beerenwinkel, N., Kohlbacher, O., Kumar, S., Lengauer, T., Maathuis, M.H., Moreau, Y., Murphy, S.A., Przytycka, T.M. and Rebhan, M., 2018. From hype to reality: data science enabling personalized medicine. *BMC medicine*, 16(1), pp.1-15.
- [5] India.gov.in, 2021. National Portal of India. <https://www.india.gov.in/spotlight/rashtriya-swasthya-bima-yojana>
- [6] Kumar, N., Raghunathan, K., Arrieta, A., Jilani, A., Chakrabarti, S., Menon, P. and Quisumbing, A.R., 2019. Social networks, mobility, and political participation: The potential for women's self-help groups to improve access and use of public entitlement schemes in India. *World development*, 114, pp.28-41.
- [7] Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, M. and Agha, R., 2020. The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *International journal of surgery*, 78, pp.185-193.
- [8] Paital, B., Das, K. and Parida, S.K., 2020. Inter nation social lockdown versus medical care against COVID-19, a mild environmental insight with special reference to India. *Science of the total environment*, 728, p.138914.
- [9] Ray, D., Salvatore, M., Bhattacharyya, R., Wang, L., Du, J., Mohammed, S., Purkayastha, S., Halder, A., Rix, A., Barker, D. and Kleinsasser, M., 2020. Predictions, role of interventions and effects of a historic national lockdown in India's response to the COVID-19 pandemic: data science call to arms. *Harvard data science review*, 2020(Suppl 1).
- [10] Statista.com, 2021. Market share of big data and analytics spending in India in 2021\*, by industry <https://www.statista.com/statistics/1264351/india-market-share-of-big-data-and-analytics-spending-by-industry/>
- [11] Thakur, N., Lovinsky-Desir, S., Bime, C., Wisnivesky, J.P. and Celedón, J.C., 2020. The structural and social determinants of the racial/ethnic disparities in the US COVID-19 pandemic. What's our role?. *American journal of respiratory and critical care medicine*, 202(7), pp.943-949.
- [12] Thomas, K., Hardy, R.D., Lazrus, H., Mendez, M., Orlove, B., Rivera-Collazo, I., Roberts, J.T., Rockman, M., Warner, B.P. and Winthrop, R., 2019. Explaining differential vulnerability to climate change: A social science review. *Wiley Interdisciplinary Reviews: Climate Change*, 10(2), p.e565.