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# CHANGING ROLE OF USE OF STATISTICAL DATA IN MANAGING BUSINESS OPERATIONS TO IMPROVE DECISION MAKING

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## ABSTRACT

***Purpose***- *The business operations have become highly complex in the current business scenario due to the impact of the continuous changing environment. The current research is conducted to analyze the changing role of the use of statistical data in managing business operations to improve decision making.The research paper focuses on exploring the effectiveness of statistical information that will lead to improve the efficiency of the business.*

***Research methodology***- *The research project uses the qualitative analysis conducted through secondary sources books and journals. The use of existing study material provides justification to the research questions.* The choice of reliable and authentic sources has been considered to conduct the entire research. *The paper basically aims to develop effective understanding of managing the statistical information in the organisation. Therefore, studies of different authors have been considered to conduct the overall review.*

***Findings***- *The research reflects the effectiveness of operation research in improving business efficiency. The statistical analysis enables the business to assess and analyze their business performance in the market. The management within the business also take major decisions on the basis of statistical data and not based on the assumptions.*

***Conclusion***- *The report states that operational research is an effective method of conducting business planning and risk management. It provides a true and fair picture of the business operations and positioning so that plans support in making necessary improvement.*

**KEYWORDS**- **Risk management, business operation, statistical data, business effectiveness, research**

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## 1. INTRODUCTION

### 1.1 Rationale

Statistics has been evolved extremely over the past decades, and programs for executing the new approaches have followed in their wake, including those that need increasingly computing intense methods [1]. The use of statistics is increased due to correct decision making based on the comparison as it gives the position of acceptance or rejection. The statistical thinking is required to look at the nature of the problem. Therefore, the good knowledge of statistic is the vital element of operational research practitioner's toolbox. The information offered through statistics identified the problems, analyze the problem and give the particular solution on it.

### 1.2 Research question-

- What do you understand by statistical information in business management?
- What is the link between statistical data and operation research activities?
- The importance of activities of operation research in managing business performance?
- How is business efficiency improved through the collection of statistical information?

## 2. OBJECTIVES OF THE STUDY

- To develop effective understanding of statistical information applied in the business.
- To explore the relationship between statistical information and operational activities.
- To underline the effectiveness of operation research to enhance business performance.
- To examine the relationship between use of statistical information through improved efficiency.

## 3. RESEARCH METHODOLOGY

The research paper is developed on the basis of the qualitative research methodology. The qualitative research collects the non-numeric information as it gives the concepts, definitions and description of the topic of paper taken. For collecting the data and information, the use of online journals, Google books, and web articles is to be done from the Year 2007 to 2011. The reason for taking qualitative research for the paper is that it provides the in-detail information and frame openness to the researcher.

## 4. ROLE OF STATISTICAL DATA IN MANAGING THE BUSINESS OPERATION AND IMPROVING BUSINESS EFFICIENCY

### 4.1 Operation research

As per Turban et al.Operation research is the quantitative strategy that helps in solving the issues, by application of various mathematical techniques. It is supportive to consider the application of operational research when the individual is making efforts to make decisions, but the situations are uncertain. It takes place, especially when varied objectives are in conflicts with one another [2].

### 4.2 Use of statistical information

The statistical information supports giving an effective understanding and correct explanation of the natural phenomenon. Williams in its study explored that also supports giving reliable planning of statistical research in any area of the subject along with supporting in gathering suitable quantitative information [3].

### 4.3 Importance of decision making in business

Black identified that the decision making is the pervasive operation of managers for meeting the organizational purposes. The major importance of decision making is that it gives the selection of most appropriate alternative, assure business continuity, effective resource utilization, formulate policies and plans, achieve mission and vision, brings innovation, supports in growth of business and examines managerial performance [4].

## 5. REVIEWING THE IMPORTANCE OF OPERATION RESEARCH IN THE EFFECTIVES OF BUSINESS ACTIVITIES

### 5.1 Improved decision making

The statistical approaches of operations research enable the individual to examine the higher alternatives and limitations than will usually be likely in an intuitive approach. By application of operational research, it would be simple to examine the varied alternatives that outcomes into higher confidence in optimum choice.

### 5.2 Managing better control

The managers with the use of operational research can manage suitable control over the teams or employees. The reason for this is due to the establishment of performance standards and gives a manner of measuring the employee's productivity. It will also allow in giving the report deviations from the benchmarks decided to enable the managers to determine the areas of problems. Barreto, Ilídio in its study interpreted that managers will also support giving a suitable course of action [5].

### 5.3 Coordination among departments

The operational research is supporting the organizations to align all the departments to meet the common purpose. Every department has different objectives that will be aligned to get the one mutual objective. Black argued that operational research manager will work by coordinating the aims of the marketing department with the production department schedules. This will ensure in giving better decision making and making the culture of the organization formally and synchronized.

### 5.4 Improved productivity in business

The productivity in the business is increased as the operational research makes use of various mathematical formulas. Along with that, it provides the higher number of optimal

options for inventory mix, utilization of plant machine, size of factory, planning related to manpower and execution of newer technologies. According to Katz et al., statistical analysis of problems supports in measuring the quantity of requirements so that production activities can be directed accordingly [6].

## 6. THE STAGES INVOLVED IN BUSINESS OPERATIONAL EFFICIENCY THROUGH THE USE OF STATISTICAL INFORMATION GATHERED

### 6.1 Identification of problem

The statistical data collected is used to analyze the problem that is faced by an organization in the market. The problem is identified through the collection of data from various sources and stakeholders interaction. Bocij et al.concluded that process is essential in gaining knowledge about the depth of issue and the concern of customers. The problem identification stage directs decisions towards theattainment of business opportunity [7].

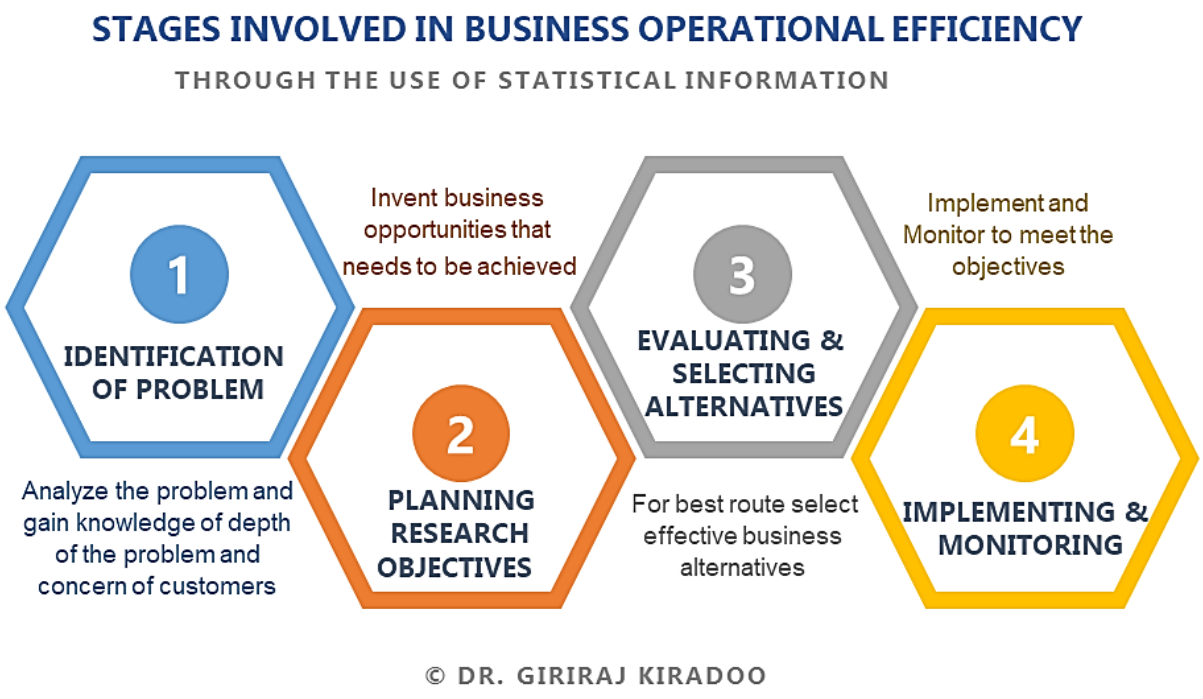


**Figure: 01**

### 6.2 Planning research objectives

The research objectives are the business opportunities that needs to be achieved through proper attention and solving problems. The collection of statistical data provides a realistic atmosphere of ascertaining research objectives that needs to be achieved through planning and controlling of business activities. Black supported that the decisions on research objectives are made after analyzing and interpreting the results of statistical business data. For instance, the market competition and positioning data is calculated and compared to make decisions about new product launch or innovation.

### 6.3 Evaluating and selecting alternatives

There are alternate methods of arriving at an effective business opportunity in operation research.The statistical information collected is used to analyze effective business alternatives so that the best route is applied in making operational decisions. Burns et.al concluded that the suitability of an alternative depends on the business resource availability and objectives. This is judged in coordination to the statistical information gathered for making improvements [8].

### 6.4 Implementation and monitoring

The implementation of operation research involves the process of data gathering and analyzing its implementation to meet the objectives. The process of data monitoring is essential in managing regular activities and achieving objectives in an efficient and effective manner. For instance, the application of operation research is analyzed to determine the effectiveness of inventory management so that new plans can be devised to ensure effectiveness [9].

## 7. THE LINK BETWEEN STATISTICS AND MANAGING OPERATIONAL RESEARCH AND DECISION MAKING

Statistics refers to the quantitative data collected through the use of tools and techniques. These are the real-time information that is used in managing business processes and decision. Fildeset.al stated that the use of statistical information in business decisionmakes

processes more reliable and efficient as it is a better option of improving organizational effectiveness that the application of gut feelings [10]. Operation research is a modern method of data analysis that takes into consideration statistical information for optimizing and improving decisions. This is known as the method of operational research. The main objective of this is to create the best out of the available resource and technology.

## 8. FINDINGS

In the current business environment, statistics is used for ensuring the effective operations and management of the business activities. It is quite difficult to grow the business without making the use of statistics. Statistics is used in large business organizations for taking major decisions. Statistics also help small businesses to take a loan and raise funds from the business by showing the financial statements and data [11]. Banks grant loans to the business on the basis of key statistics and financial data presented by the business. Therefore, it can be said that the businesses use statistics for making predictions and developing a business plan for achieving the growth and success in the market [12].

Operational research is a modern technique in which the statistical and mathematical data is used for taking an appropriate decision and developing an appropriate solution for resolving the complex situation within the business. Operational research involves breaking the business problem into different components and then resolve it by following defined steps and statistical data. This technique majorly helps the management within the business to take decision appropriately by using the statistics and arithmetic and solve the critical business problem easily [13]. The management can collect, organize, analyze, understand and present the data and then take the correct decision by using such data. This has made it easy for the businesses in determining their problem, breaking their problem into small parts and then resolves such problem by making the mathematical analysis. This technique is greatly helpful for the management within the business as this enables them to easily and quickly solve their business problem by using and analyzing the statistical data.

The use of operations research concept or technique can be very effective and helpful for the business organization in resolving conflicts within various departments. This concept is used by the management in the business when there are numbers of options to make a decision, and this technique enables them to choose the appropriate decision that can

resolve the conflicts easily. This concept makes it very easier for the management to analyze the conflict and problems within different departments and then take effective decision using statistics to solve such conflicts. The business can manage the performance of its different department and area by using this concept and deploying correct solutions. This concept enables the management to divide the problem into small components and then solve by making the statistical analysis [14]. Therefore, it has analyzed that operations research activities are useful in managing business performance effectively and productively.

The research suggests that the collection and analysis of statistical information support in ensuring business efficiency through increased transparency, relevance and integrity. The quantifying of business success becomes easy, and new plans are easily devised to grab market opportunities for growth [15]. The only drawback associated with operation research involves a complex mathematical calculation and costly approach of implementing this methodology. Operational research has a wide scope in the current business environment in improving business functions.

## 9. CONCLUSION

The analytical method of decision making and problem-solving used in operation research supports business in improving productivity and effectiveness. This method is the division of the major problem into small units and applying statistical information to ensure effectiveness. The mathematical analysis supports in making improved decisions that are based on logic and interpretation. Operation research is highly essential in the current complexity of the business environment and increased competitiveness. It supports in finding optimal solutions to the problem and optimizing business performance. The operational research in organizations is conducted through the collection of data to analyze a problem, making decisions and selecting the best alternatives.

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