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FIRST PAGE OF RESEARCH PAPERS PUBLISHED IN  
SCOPUS/WEB OF SCIENCE/UGC CARE INDEXED  
JOURNALS IN THE YEAR 2019

  
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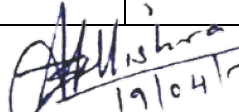
## 3.4.4 First Page of Research Papers Published in Scopus/Web of Science/UGC CARE Indexed Journals in the Year 2019

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# A Study on Training and Development Effectiveness and Job Performance of Employees in Select Banks in Jharkhand

Arvind Hans<sup>1</sup>, Rashmi Kumari<sup>2</sup> and Shahid Akhter<sup>3</sup>

## Abstract

Study aimed to report the phenomena of Training and Development (T&D) effectiveness and job performance among select bank employees in Jharkhand. A descriptive research design was selected to report the phenomena of these variables. Data was collected from Bank employees through standard questionnaires on Training & development effectiveness and Job performance. Sample size was 100. Study revealed that banking employees secured 3.97 out of 5 on Likert five point scale on training and development effectiveness. However, they averaged 4.22 out of 5 point scale on job performance. It suggests that bank employees perceived relatively higher increase in job performance than increase in perceived T&D effectiveness. Correlation analysis indicated that T&D effectiveness was positively but very weakly related to job performance. Also the relationship was not found significant as  $\alpha$  values were reported as 0.104. It is inferred that an increase in T&D effectiveness may not proportionately increase job performance among select banks employees in Jharkhand because the relationship between these two variables were found relatively weak based on Pearson correlation coefficient.

**Keywords :** Bank employees, Development, Job Performance, Training, Training & Development effectiveness.

## Introduction

Economic development of any country is directly related to the development of banking system of that country. In order to survive and succeed in this competitive environment, banks need to organize, develop and manage their human resources effectively. Their major responsibility in this regard is to build up a right mix of skills, attitude and conceptual understanding amongst their employees. For achieving this, a continuous process of training interventions in banks is a must. Despite years of training and huge investment, the effectiveness of training programmes of banks is a matter of concern. In many instances, it has been observed that the trainees are considering training just as an outing or a routine program because selection of staff for the training programmes was not always need based. Therefore, there is a need to study

the effectiveness of the training and development programmes and analyze the job performance of bank employees in banks across India. Therefore, research problem includes following questions pertaining to Banks in Jharkhand:

- Whether Training and Development of employees is effective in select banks in Jharkhand?
- What is the attitude of bank employees towards their job performance in Jharkhand?
- Is there any relationship between training & development effectiveness and job performance of employees in banks?

## Theoretical framework and Review of Literature

Training is the process of acquiring specific skills to perform the present job better than before

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# Conceptualizing Academic Marginalization Based on Level of Accessibility among Reputed Research Journals and Publication Houses

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**Abstract:** *The study aimed to explore and conceptualize academic marginalization based on levels of accessibility among reputed research journals and publication houses. It explored and reported the issues related to academic marginalization based on level of accessibility among reputed research journals and publication houses. It was based on an exploratory & descriptive research design. The data was mainly collected from the secondary sources. The data source for the study was Australian Business Deans Council (ABDC) journal list, 2016. Journals were categorized into four quality classes ranking from A\*, A, B, C. The journal list was taken from JQL (Journal Quality List), 2016. Findings of the study indicated that the accessibility provided by the journal publisher were mostly not freely accessible and the journal website did not share journal articles without payment process or registration process. Few journals were available which provided free accessibility and downloading of full text research articles were also less in number and for a limited duration. It was observed and reported that there was an element of marginalization based on accessibility among top rated journals & publication houses.*

**Keywords:** Academic marginalization

**JEL Classification:** M00, M10

## 1. Introduction

### Problem statement

The study highlights conceptualizing academic marginalization based on level of accessibility among reputed research journals and publication houses. The main reason behind taking the topic was that most of the journals research articles were not freely available. The journal articles were not completely accessed without any membership or prior paid intuitional registration or individual/ institutional online payment process. These reputed publishers were not inclined to share content of their journals articles without any registration or payment process.

However, few of the journal's issues were freely made available for certain time period to the researcher with certain terms and conditions. Most of the open accesses journals in ABDC listing were only sharing abstract to the researchers. Many research articles from reputed Journals with full text were not available without any membership riders or payment process.

## 2. Theoretical Framework

### Operationalization

According to the study "Academic marginalization refers to not providing uniform access to the published research articles by reputed research journals and journal publication houses to all types of researchers". Academic marginalization was conceptualized in terms of "not providing equal accessibility or opportunity to read and access published research articles by all kinds of researchers willing to undertake quality research as a free being".

Two types of researches were conceptualized for the present study:

- 1) Independent researcher ( without any affiliation to any academic institutions)
- 2) Affiliated researcher (with affiliation to one or few academic institutions)

**Assumptions:** These researchers are willing to publish research papers after identifying and solving the research problem related to organizations and society and also keen to publish and further their career in social awareness, academia and consultancy.

## 3. Literature Review

Review of literature provides a base for any research work conducted by the researcher. It also helps to identify theoretical background for the topic of research. Academic marginalization was identified as a keyword for the present study. Reviewed articles related to the keywords shall provide an initial framework to further the study in this area, although there was paucity of research in the area of academic marginalization or monopoly.

According to researchers, top 10 publishers of academia has received £94m in subscription revenues from UK academic libraries in the year 2014 alone. One Austrian researcher estimated that nearly €65–70m is spent on journal subscriptions in Austria every year.

Few academicians and researchers pointed out that digitization would limit the power of publishers. But, the expansion of Elsevier into social reference management and networking software (Mendeley) and Open Access repositories (SSRN), is another term of an aggressive digital feudalism that indicates no discretion to monopolize the current scholarly publishing infrastructures as possible. Sharing of knowledge and universal access are fundamental, the idea of the equality of all knowledge is also equally

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# Quality of Work Life and the Retail Industries

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**Abstract:** The main objective of this research paper is to identify the significance of work environment towards the employee performance and also to study the impact of quality of work life on the effectiveness of the retail organization. Retail industry in India is undoubtedly one of the fastest growing retail industries in the world. It is the largest among all other industries accounting for 10 per cent of the country GDP and employs around 8 per cent of the workforce. India has seen a drastic revolution in the buying behavior of customers. The retail industries are facing immense challenges from the dynamic business environment as well as due to deficit in human resource. Challenge of holding back of quality workforce in the organization has forced the management to think of new ways. It has been observed that Quality of work life is one of the major factors which help determine employee's attitudes towards its organization. The quality of work life is not a single factor but comprises of multiple and complex factors which guides the behavior pattern of employees. This research paper serves as the theoretical framework for developing the concept and to identify the factors of Quality of Work Life in retail industry. It helps contribute towards the significance and effectiveness of QWL on employee job satisfaction and its impact on organizational performance.

**Keywords:** Employee performance, employee satisfaction, Quality of work life, Work environment.

## 1. Introduction

In today's competitive world, the external and internal dynamic forces of businesses have made organizations revolve around its two pillars. These two pillars of the organization are its employees and the customers. The employees being the core elements are considered as internal customers whereas the customers are external to the firm. No organization exists without their employees; however, the objective of organizations existence is to serve the customers' needs. Thus there is a strong relationship between the internal and external customers of the organization i.e. employees and customers. Actually, it is the employees of the organization who fulfill the customer's satisfaction. However, behind the success of any organization lies the employee's team effort and dedicated service towards the organizational customers. So, it is obvious that if employees are satisfied then in return it will give satisfied customers. This leads to giving priority to customer's service by many of the organizations. But this approach fails as the organizations are not able to satisfy their employees who are their primary and internal customers. To keep the employees satisfied, the organizations are required to be more flexible with them so that they can be developed into a committed workforce.

Therefore, it has become a requirement for the firms to adopt a strategy to take care of the employee's quality of work life which will satisfy both the individual employee objective as well as organizational objective. This organizational approach to create a workplace that enhances the satisfaction level of the employees while taking care of their well being is termed as Quality of Work Life. This paper has tried to study quality of work life in reference with employees in retail industries of India. For this paper, top ten retail industries of India have been taken for study. As, the retail industry is one of the top hiring sectors, so it becomes necessary to maintain the quality of the work life of the employees to reduce absents and turnover.

## 2. Quality of work life

Individuals join organizations to fulfill their economic, social and psychological needs by participating in the workplace and achieving individual as well as the organizational goals. Individual employees adhere to the given position with the organization and perform roles assigned to them in their capacity to fulfill organizational goals. There are number of factors in the organizations which affect the personal as well as professional life of the employees directly and indirectly. It includes factors like income, compensation, promotion policies, training and development, health benefits, job security, work environment etc. These factors of the work place affect the employees working conditions and if given more care, can maintain loyal employees with high level of job satisfaction, motivated and with a feeling of belongingness towards the organization. These factors are broadly termed as Quality of work life which covers the overall quality of an individual's working life.

Quality of work life is generally associated with the conditions that enhance employee well-being and satisfaction. This helps reduce employee's absenteeism and turnover resulting increased organizational efficiency. Today's dynamic work conditions and the inflated employee perception about the organizational HR practices have resulted into elevated employees' grievances and dissatisfaction. QWL is becoming more popular these days to improve the working conditions of employees in modern organizations. This term though new, its roots can be traced back to Principles of Scientific Management propounded by F. W. Taylors. Ever since, emphasis was given on employee's satisfaction, better working environment, quality of relationship with peers and supervisors etc. which help, enhance working efficiency.

# Risk Assessment for Project Construction Based On User Perspective: An Experimental Analysis Using AHP

Suneeta Mohanty, Sharmistha Roy, Mrinmoy Ganguly, Prasant Kumar Pattnaik

**Abstract:** Risk assessment has become essential tool for construction of project in a safe and secure manner. In this paper, one of the Multi-Criteria Decision-Making (MCDM) method is used i.e. AHP (Analytic Hierarchy Process) to rank the investment alternatives from a risk point of view, by taking into consideration the preferences of the investor or decision maker. The proposed approach not only involve identification of potential risks but also analyze the risks and mitigate them, so that it can lead to the overall success of a project.

**Index Terms:** AHP, MCDM, Risk Assessment.

## I. INTRODUCTION

Risk management has become a mandatory demand for construction projects. Hazard identification, risk assessment and risk control are encompassed in risk management process. Risk is assessed by using Quantitative and Qualitative methods. Risk management is the methodical process of analyzing, identifying, and responding to risk relieved to a project and maximizing the possibility and significance of positive attributes and shrinks the possibility and significance of attributes adverse to project objectives. Project risk is an unknown condition or event that, if occurs, has a favorable or unfavorable effect on a project's goal. Components of risk are an event that may or may not happen, the possibility of the happening of that event and the impact of the happening of that event.

### A. Identification of different risks/hazards

- 1) **Project Risk:** Software projects are intangible in nature because of which software project undergoes various risks in the form of budget, schedule, resource, personnel and customer related problems which is very difficult to monitor and control. This type of risks is known as project risk.
- 2) **Technical Risk:** Technical risk of software project is associated with the software requirement specification, potential design, implementation, interfacing, testing and maintenance problems. However, these type of risks occur

due to lack of technical knowledge of the development team.

- 3) **Business Risk:** Business risks occur due to non-technical aspects of project development such as budgetary loss, personnel commitments, lack of user satisfaction etc.

As introduced by Zopounidis et al [1], Multi Criteria Decision Analysis (MCDA) is an evolving discipline during the past three decades. This is because a single objective or criterion can rarely be the sole basis of real world decisions. Several mathematical and operations research efforts have ended up in many usable frameworks that are applied in finance, mainly seeking the maximization of profits. The importance and effect of factors not directly related to Exploration and Production (E&P) projects have increasingly shown the need for them to be considered in all the phases of any given project. Project economics and technical issues are no longer isolated or independent from environmental, social and geopolitical risk factors. Traditional project evaluations and economic analyses perform well as evaluation tools if the problem is well stated, and if there is a single evaluation criterion. However, in reality, the modeling of financial problems is based on a different logic, which must take into consideration:

- 1) Existence of multiple criteria for the selection.
- 2) Existence of conflicting situations within these multiple criteria.
- 3) The subjectivity of the evaluation process (such as probabilities).
- 4) Uncertainty factors that have to be considered and that could drastically change the outcome of an investment.

One of the main concerns at the time of making E&P project evaluations is that there should be proper unbiased consideration given to the probability parameters, ultimately providing the required numbers on which the final decisions are based. A typical example is the probabilities assigned to important petro physical and geological data, which yield the estimated resources in place.

These numbers are often assigned by estimators, based on their experience and judgment. Nevertheless, it still is one of the crucial sources of uncertainties in the appraisal of new discoveries, since original oil in place (OOIP) or original gas in place (OGIP) will be one of the key parameters used to estimate profitability of any project.

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# Green Computing: The Value Added Gap Perspective

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**Abstract-** *Green computing is enduring computing for environment. It is the use of computers and their resources With the advancement in variety of applications and user demands the infrastructure and resources are increasing exponentially. Designing manufacturing and decomposing the parts of computer in that way so that it does not affect the environment. In past few years, computer industries have realized the importance of going green, both in terms of environmental issues and minimizing costs which has led to remarkable drift in strategies and policies of computer industry. The development of environmentally sustainable production of particles, energy efficient computers and better disposing of recycling products. Growing energy use has increased computer costs. The goal of green computing is to diminish down the use of dangerous materials, maximize energy efficiency and biodegradability or recyclability of outdated products and factory waste of the computer factory*

**Keywords-** Green Computing, Energy cost, Data centers, green initiatives

## I. INTRODUCTION

Green Computing is the future technology which is responsible for the manufacturing and use of computer devices by consuming less carbon. The main goals are to decrease the use of hazardous materials like cadmium, mercury and other poisonous substances, maximizing energy efficiency during the product's lifetime, and promote recyclability of obsolete products and factory waste. This means creating eco-friendly products, reducing pollution, proposing alternative technologies, and creating a center of economic activity around technologies that benefit the environment. A green computer will also take into account how it impacts the environment during its life. Scientists are conducting many studies in order to reduce the negative impact of computer technology on our natural resources. A central point of research is using nontoxic materials in the products' manufacturing process. The idea is to make computers without nontoxic materials. The Technical processes adopted by the industries create challenges in the waste management. "Green computing" represents environmentally responsible way to reduce power and environmental e-waste. Green computing technologies are Virtualization, Green Data Centre, Cloud computing, grid computing, Power optimization.

## Green IT Principles

Moreover, states that such an approach should be along the following 4 corresponding paths: green design, green manufacturing, green use, and green disposal. The combined goal of these paths, is to achieve total environmental sustainability from the IT side and make IT greener throughout its whole life cycle. Due to the broadness of IT, many different approaches have emerged already for, or in support of, the awareness of Green IT principles. Examples of such approaches are, amongst others: terminal servers combined with low power thin-clients, recycling of computing equipment, and the process of making large data centers more energy efficient. Especially the latter gained a lot of attention due to the ongoing growth of services provided through the WWW together with the increasing demand for more and better data centers. This attention resulted in several broad and efficient actions for greening data centers, such as modern Eco-friendly designs, alternative methods for conserving energy, and virtualization of servers.

Further, most approaches regarding the realization of Green IT principles have a preference to follow the green use path, and, moreover, most of them have been directed on hardware-related aspects. In addition, states that a key green purpose in using computer systems and operating data centers is to reduce their energy utilization, thereby minimizing the greenhouse gas emissions and we can appreciably reduce energy consumption by making small changes to the ways we use computers. For instance, we can enable power management features; frequently turn off a system when it is not in use, and use more energy-efficient systems.

## Focusing on Green Software

The previous section argues that, in contrast to the increased interest for the use of greener hardware, there are still barely any approaches that aim to achieve SD solely through the software by incorporating it in its design. According to this is partially caused by a lack of models, descriptions, and realizations in the particular area. However, some positive changes are noticeable as recently different research works have been devoted to methods for measuring the energy consumption as well as the efficiency of software and models for making the software engineering process more



## Benefits of Big Data in Health Care: A Revolution

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### ABSTRACT

Lifespan of a normal human is increasing with the world population and it produces new challenge in health care. big data change the method of data management, leverage data and analyzing data. with the help of big data we can reduce the costs of treatment, reducing medication and provide better treatment with predictive analytics. Health related data collected from various sources like electronic health record (EHR), medical imaging system, genomic sequencing, pay of records, pharmaceutical research, and medical devices, etc. are referred to as big data in healthcare.

**KEYWORDS:** Big data, Analytics, Healthcare

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### INTRODUCTION

The swift development of the upcoming information technologies, experimental technologies and methods, cloud computing, the Internet of Things, social networks supplies the amounts of generated data that is rising immensely in many research fields. Big data is starting to revolutionize the health care industry. The change in treatment technology, pharmaceutical technology, reducing medication, and helping to provide better treatment.

Data is a powerful resource which is found in many forms. Big data do not have a universal definition while it is discussed in different ways. The term Big data is referred to describe the exponential growth of the data flow in various sectors which is too large to process using the available traditional database and software techniques. Often big data is presumed to be scary, yet it is an explosion in the field of information. It helps to perform various analytics, which can make an impact on the economic growth, creating opportunities, improving efficiency over other organizations. The term big data is described by the following characteristics: *value, volume, velocity, variety, veracity and variability*, denoted as 6 "Vs", shown in Figure 1.

**Volume:** Data volume is a contribution by various factors. It can be transactional data, which is being used through the years, or the data flow over the social media. The volume of the data is the total quantities of the mass data within an organization. The volume of data generated in an organization increases daily at an unpredictable rate, which can be in petabytes and zeta bytes on the production activities and the type of the organization.

**Velocity:** This refers to the data in the total data transmitted currently in an organization or in motion. The speed of the data that an organization produce process and analyzes normally keep on accelerating. It influences the creation and delivery of the data from one point to the next. It is often time-sensitive.

**Variety:** The variety, which is diverse in forms, type of data and its origin. It defines the complexity of the data, and the Occurrences of data. It is in any form like structured, semistructured and unstructured data. Some forms of structured data are the Numerical data, traditional databases, business information and unstructured data like Audio, Video and Pictures.

**Veracity:** Veracity, which is composed of the data that the organization is uncertain. It analyzes levels of forms of data credited on reliability. Organizations enactment of strategies to ensure quality and reliable data is normally hindered by factors such as weather and customer's reactions and purchasing decisions.

**Variability:** Variability refers to data fluctuations throughout the handling and lifecycle. Developing range and variability also grows the attraction of data and the possibility in providing valuable information, unforeseen, and hidden [20]. Value is the method of extracting valuable information from huge sets of data and it is usually referred to as big data analytics. Data value is useful for proper making decisions.

# Scientific Development of Precision Agriculture and Their Applications in India

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## Abstract:

Use of latest technological solutions to make farming more efficient, remains one of the greatest imperatives. While Artificial Intelligence (AI) sees a lot of direct application across sectors, it can also bring a paradigm shift in how we see farming today. AI-powered solutions will not only enable farmers to do more with less, it will also improve quality and ensure faster go-to-market for crops. In this article, we will discuss how AI can change the agriculture landscape, the application of precision agriculture landscape, the future of agriculture and the challenges ahead.

**Keywords:** Precision agriculture, Artificial intelligence (AI), Farmers.

\*\*\*\*\*

## Introduction:

Digital agriculture—or “smart farming”—is advancing through the use of improved sensors, more-accurate computer vision systems, and powerful AI. Someday, large-scale farms will use remote and built-in sensors, cloud storage in digital warehouses, AI software to analyze huge volumes of data, and algorithms to guide machinery. Automated farming systems could grow more bountiful crops on the same acreage at lower cost while using smaller volumes of pesticides, fertilizers, and water. Smart farming, then, is expected to help meet the rising demand for food in more sustainable ways. In agriculture there is a quick adaptation to AI in its various farming techniques. The concept of cognitive computing is the one which imitates human thought process as a model in computer. This results as turbulent technology in AI powered agriculture, rendering its service in interpreting, acquiring and reacting to different situations (based on the learning acquired) to enhance efficiency. To harvest benefits in the field by catching up with the recent advancements in farming sector, the farmers can be offered solutions via platforms like chatterbox. At present in India, Microsoft Corporation is working in the state of Andhra Pradesh with 175 farmers rendering services and solutions for land preparation, sowing, addition of fertilizers and other nutrient supplements for crop. On an average, a 30% increase in crop yield per ha has already been witnessed in comparison to the previous harvests. The various areas where the solutions for benefitting agriculture involving cognition possess knowledge are furnished below.

## AI applications in agriculture

Agriculture is slowly becoming digital and AI in agriculture is emerging in three major categories

# Cloud Computing For Next-Generation Sequencing Information Analysis

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**Abstract-** High-throughput next-generation sequencing (NGS) technologies have evolved apace and are reshaping the scope of genetic science analysis. The substantial decrease within the value of NGS techniques in the past decade has crystal rectifier to its fast adoption in research project and drug development. Genetic science studies of huge populations are manufacturing an enormous quantity of information, giving rise to procedure problems round the storage, transfer, and analysis of the information. as luck would have it, cloud computing has recently emerged as a viable choice to quickly and simply acquire the procedure resources for large-scale NGS knowledge analyses. Some cloud-based applications and resources are developed specifically to handle the procedure challenges of operating with terribly massive volumes of information generated by NGS technology. In this paper, we are going to review some cloud-based systems and solutions for NGS knowledge analysis, discuss the sensible hurdles and limitations in cloud computing, together with knowledge transfer and security, and share the teachings we tend to learned from the implementation of Rainbow, a cloud-based tool for large-scale ordination sequencing knowledge analysis.

**Keywords-** Next-generation sequencing(NGS),Genetics, Cloud computing, Epigenomics.

## I. INTRODUCTION

High-throughput next-generation sequencing (NGS) technologies have evolved apace and are reshaping the scope of genetic science analysis and drug development. The numerous advances in NGS technologies, and consequently, the exponential growth of biological knowledge have created an enormous gap between the pc capabilities and sequencing turnout. Technical enhancements have greatly shriveled the sequencing prices and, as a result, the size and variety of datasets generated by massive sequencing centers have accrued

dramatically. The lower value additionally created the sequencing knowledge additional affordable to little and midsize analysis teams. As always, excavation out the “treasure” from NGS knowledge is that the primary challenge in bioinformatics, that places unexampled demands on massive knowledge storage and analysis. it's changing into more and more discouraging for tiny laboratories or maybe massive establishments to determine and maintain their own computational infrastructures for large-scale NGS knowledge analysis.

A promising answer to handle this procedure challenge is cloud computing where CPU, memory, and storage are accessible within the kind of virtual machines (VMs). In recent years, cloud computing has unfold terribly apace for the availability of IT resources (hardware and software) of different nature, and is emerging as a viable choice to quickly and simply acquire the procedure resources for large-scale NGS knowledge analyses. Cloud computing offers a good choice of VMs with different hardware specifications and users will select and put together these VMs to satisfy their procedure demands. With the huge scale of users, cloud computing suppliers, like Amazon, are unceasingly driving prices down, that successively has crystal rectifier to the employment of cloud computing for NGS knowledge analyses enticing inside the bioinformatics community. Despite the apparent edges related to cloud computing, there also are problems to be addressed. Data privacy and security are significantly vital once managing sensitive knowledge, like the patients’ info from clinical genetic science studies. The aim of this chapter is to explain the applying of cloud computing in large-scale NGS knowledge analysis and to assist scientists to know blessings and disadvantages of cloud computing, associated to create an informed-choice on whether or not to perform NGS analysis on cloud services or to

# Estimation of Software Testing Productivity In Fuzzy Environment

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**Abstract:** Fuzzy logic deals with uncertainty, this methodology is used in this paper to estimate productivity in the testing process. In this research, we tried to estimate the productivity of existing organization which is based upon four factors such as investment in different testing methods, use of different testing tools, the stage when the testing process started, communication between team members. This research helps in taking decisions in the software testing process. These above-used factors are vague and imprecise but very import for an organization. All factors are used as fuzzy variables with membership functions and Mamdani inference which gives a fuzzy value of productivity. Fuzzy logic toolbox of MATLAB is used to build and simulate the fuzzy system, due to lack of real data, we used 1000 random data generated by MS excel (using rand () function) which was free from bias, these values provided to the fuzzy system, results hold good as expected. With the help of this research project manager or team leader can estimate the productivity of testing time before the start of the testing process, so that hel/she can take a measure for improving productivity.

**Keywords:** fuzzy logic, productivity, software testing, uncertainty, vague.

## 1. Introduction

in our day to day life current technology is dominated by machines, and the behaviour of the machine is controlled by the software. software testing is crucial, it identifies errors or bugs. The testing process is the most important part of the software development process that ensures software quality. An organization may have large development teams with their software products being tested by test teams. In such situations, test team managers must have a plan to use proper resources for the successes of the testing process. Testing is can be done in a various way such as manual testing automated testing and combination of both. Productivity in software testing means on the basis of resources such as human resources (testing team), technology used, methodology, time required to complete it, how much outcome expected. We use some vague quantity to estimate or predict the outcome of the testing team based upon a given situation. testing can be successfully completed if it has the proper technology, experienced team members, the interaction between members and methodology chosen for a particular project. Our chosen four factors have a significant role in software testing process.[1]. These factors not only affect directly but also indirectly with a vital role. In literature review there are various efforts applied to improve the testing process, methodology, testing matrices and also way how to do testing so that bugs are can be found easily and quality of software achieved [2]. Our goal is to measure productivity with given resources so that team manager takes those steps for the improvement of productivity of the team. Since resources are limited so it must be used in such a way so maximum outcome achieved. Software testing process

identifies missing requirements, bugs, and gaps in contrary to the actual requirements [3]. It can be either done manually or using automated tools. The whole process of testing aims not only to find faults in the provided software but also to find measures to enhance and improve the software's efficiency, accuracy, and usability. It mainly aims at measuring specification, functionality, and performance of a software program or application. In any organization resources such as labour, land, capital, materials, information, energy are the inputs, to get the maximum output resources must be used efficiently. In other words[4], Productivity can be defined as the proficient use of resources, it is also defined as the ratio of output to the input. Higher productivity means it has achieved higher output with the same amount of inputs in the context of volume or quality.

Productivity in the software testing process is also required to estimate [5] so that within the same resources higher result may be achieved. Resources [6] in the software testing process are testers, testing tools, information sharing, the methodology used, experienced with different methodologies.

## 2. Fuzzy logic

it deals with uncertainty, between true and false. It gives the degree of truthfulness rather than true or false.it contrasts to classical logic which deals with either true and false. A fuzzy inference system consists of four components knowledge base, fuzzifier, defuzzifier, and decision-making unit. Schematic diagram of a fuzzy system in figure 1 [7][8].