



A Study on “Role of Cloud Computing in Enhancing Business Analytics”

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Abstract:

Cloud computing has emerged as a transformative technology reshaping how businesses operate, scale, and deliver value in the modern digital economy. This project, "Role of Cloud Computing in Enhancing Business Analytics," seeks to understand how cloud-based infrastructure, platforms, and services contribute to operational agility, cost optimization, and service delivery excellence. As India's digital payment ecosystem expands rapidly, FinTech platforms like PhonePe have become central to the country's financial infrastructure, and cloud computing lies at the heart of their ability to scale seamlessly, process billions of transactions, and provide a secure and reliable user experience. The report emphasizes the critical role of cloud technology in enabling PhonePe to achieve business Analytics, enhance innovation, and build resilience in an increasingly competitive marketplace.

The study adopts a secondary-data research methodology, relying entirely on information that has been previously published by credible and reliable sources. These include cloud technology publications, official PhonePe documents, industry reports from Gartner and IDC, research papers, cybersecurity publications, and case studies examining cloud adoption in India's digital payments ecosystem. By analyzing existing materials, the study identifies key cloud computing benefits, common service models (IaaS, PaaS, SaaS), and deployment strategies utilized by leading FinTech and e-commerce platforms to boost operational performance. This approach ensures a thorough and trustworthy overview of current cloud computing practices without gathering primary data or accessing proprietary or sensitive organizational information.

Overall, this study contributes to a deeper understanding of how cloud-driven strategies can boost operational excellence, promote innovation, and support FinTech platforms in maintaining competitive and efficient digital payment environments in India.

Introduction:

Introduction to the Topic:

In today's data-driven world, businesses generate large volumes of data from various operations. To turn this data into meaningful insights, organizations rely heavily on business analytics. However, traditional in-house systems often face challenges such as limited storage, high costs, slow processing, and difficulty in handling

real-time data. Cloud computing has emerged as a powerful solution to overcome these limitations. Cloud-based analytics offers flexible storage, faster processing, and advanced analytical tools without the need for expensive physical infrastructure. With cloud platforms such as Amazon Web Services (AWS), Microsoft Azure, and Google Cloud, companies can access data anytime, collaborate remotely, and make faster

and more accurate decisions. This project focuses on understanding how cloud computing enhances the efficiency of business analytics by improving speed, accuracy, cost-effectiveness, and decision-making. As industries continue to adopt digital technologies, cloud computing is becoming a key driver for business growth and competitive advantage.

Need and Importance of the Study:

Cloud computing plays a crucial role in business analytics by providing scalable, cost-effective, and flexible infrastructure to store, process, and analyze large volumes of data. It enables businesses to access advanced analytical tools and real-time insights without heavy investment in physical hardware. This helps organizations make faster, data-driven decisions, improve efficiency, and stay competitive in a rapidly evolving market.

Key points:

- Scalability – Easily handles growing data and workloads without infrastructure limits.
- Cost Efficiency – Reduces expenses by eliminating the need for on-premise hardware and maintenance.
- Real-time Data Access – Allows instant data processing and faster decision-making.
- Collaboration & Accessibility – Teams can access data and insights from anywhere, improving productivity.

Research Problem:

A research problem is a clear and concise statement of an issue, gap, or challenge that a study seeks to address. It explains what needs to be investigated and why it is important, helping to guide the entire research process. In the context of cloud computing in business analytics, a research problem could focus on understanding how cloud technologies influence data processing efficiency,

decision-making, and overall business performance, while also identifying any challenges or limitations faced by organizations in adopting these technologies.

Objectives of the Study:

The study is conducted with the following objectives:

1. To understand the role of cloud computing in business analytics.
2. To analyze the impact of cloud computing in improving the efficiency of business analytics.
3. To study how cloud-based analytics improves speed, accuracy, and decision-making.

Scope of the Study:

The scope of the study is limited to:

- The study covers how cloud computing influences business analytics processes.
- It focuses on benefits such as speed, accuracy, scalability, decision-making, and cost effectiveness.
- The scope is limited to business functions and analytical outcomes, not technical programming or server design.

The study focuses on understanding customer perspectives and does not include internal organizational data or confidential business processes.

Limitations of the Study:

This study explores the role of cloud computing in enhancing business analytics, focusing on its impact on efficiency, scalability, and decision-making. It examines how organizations use cloud platforms to manage large volumes of data and gain valuable insights while addressing practical challenges in adoption.

- Explains the importance of cloud computing in modern business analytics.
- Highlights its role in improving data processing and decision-making.
- Focuses on real-world applications and industry practices.
- Identifies challenges and limitations in cloud adoption.

Research Methodology:

The research methodology adopted for this study is both descriptive and analytical in nature. It involves collecting, analyzing, and interpreting data to understand customer behavior and churn patterns.

- **Primary Data:** Collected through structured questionnaires
- **Secondary Data:** Collected from journals, books, reports, and websites The methodology ensures a systematic approach to data collection and analysis.
- **Population:**

The population for this study includes FinTech companies, business analytics professionals, and organizations that use cloud computing for data analysis. It mainly focuses on companies like PhonePe and similar digital payment platforms, along with publicly available industry data, reports, and case studies related to cloud-based analytics.

- **Sample Size:**

A sample size of 100 respondents was selected for the study. This sample provides a manageable and representative dataset for analysis while considering time and resource constraints.

- **Statistical Tools:**

The study uses basic statistical tools to analyze and interpret data from secondary sources. These include descriptive statistics such as percentages and averages to summarize data,

comparative analysis to evaluate trends and performance, and graphical representations like charts and tables to present findings clearly.

Review of Literature:

This section presents a review of existing studies related to predictive analytics and customer churn, followed by the conceptual framework, key definitions, theories, models, and identification of the research gap.

Mell & Grance (2011) Defines cloud computing as an on-demand model providing shared and scalable resources with minimal management effort, forming the foundation of modern cloud concepts.

Armbrust et al. (2010) Highlights the economic benefits of cloud computing, such as unlimited resource availability, no upfront costs, and pay-as-you-use pricing.

Marston et al. (2011) Explores cloud computing from a business perspective, emphasizing cost flexibility, improved agility, and associated risks like data security and compliance.

Chou (2015) Proposes a value creation model showing how cloud computing enhances cost efficiency, flexibility, innovation, and collaboration.

Jurgovsky et al. (2018) Focuses on cloud-native architectures in financial services, showing improved scalability, reliability, and performance in payment systems.

NASSCOM Report (2021) Discusses cloud adoption in Indian FinTech, highlighting widespread usage and key applications like payments, fraud detection, and analytics.

Gartner Report (2022) Examines global cloud trends in financial services, stressing improved efficiency, innovation, and challenges in governance and compliance.

Deloitte India Report (2022) Analyzes cloud's role in digital transformation, showing benefits

like reduced downtime, faster innovation, and better analytics.

KPMG Analysis (2021) Explains how cloud-based AI improves fraud detection, reduces costs, and enhances operational efficiency in FinTech.

PhonePe Reports Describes how PhonePe uses cloud infrastructure to handle large transaction volumes with high availability and scalability.

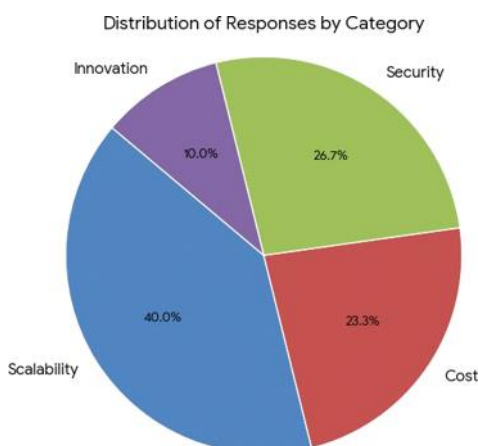
Sharma & Gupta (2021) Studies cloud adoption in Indian FinTech, showing significant improvements in cost reduction, speed, and system performance.

Data Analysis and Interpretation:

This section presents a summarized analysis of the data collected from respondents for the study on Role of cloud computing in enhancing business analytics.

Table 1: Which cloud computing benefit is most important for business analytics?

Option	Responses
Scalability	12
Cost	7
Security	8
Innovation	3



Interpretation:

Scalability (12 responses) is the most important benefit, showing that users value the

ability to handle growth efficiently. Security (8) and Cost (7) also play significant roles, while Innovation (3) is least prioritized.

Table 2: Do you think cloud computing contributes to business analytics?

Option	Responses
Strongly Agree	7
Agree	10
Neutral	5
Disagree	8



Interpretation:

Majority of respondents agree (10) or strongly agree (7) that cloud computing contributes to business analytics, indicating a positive perception. However, some remain neutral (5) or disagree (8), showing partial uncertainty.

Findings of the Study:

- Majority of respondents belong to the 36–45 age group, indicating strong engagement from middle-aged users.
- Female and ‘Prefer not to say’ respondents dominate participation, showing diverse gender representation.
- Students form the largest user group, highlighting high adoption among younger demographics.
- Most users utilize PhonePe on a monthly basis rather than daily.

- Mobile recharge is the most common transaction, followed by money transfers.

Suggestions of the Study:

- Increase awareness about cloud computing through in-app education and campaigns.
- Improve service reliability to reduce frequent interruptions.
- Enhance transaction speed further to meet user expectations.
- Strengthen data privacy features to address user concerns.
- Introduce AI-powered personalized services for better user experience.

Conclusion of the Study:

The overall analysis of the data indicates that PhonePe has successfully established itself as a widely used digital payment platform across different demographic groups. The majority of users, particularly those in the middle-aged category, actively engage with the platform for essential transactions such as mobile recharges and money transfers. The platform demonstrates strong customer retention, with many users' continuing usage for several years, reflecting trust reliability. However, the findings also reveal certain gaps, especially in user awareness regarding cloud computing technologies. While

cloud computing plays a crucial role in enhancing speed, scalability, and security, a large portion of users either lack understanding or are not fully convinced of its benefits. Additionally, frequent service interruptions and moderate levels of user confidence highlight the need for technical and service improvements.

Bibliography:

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