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Banking Services, Profitability, and Operational Advantages of Cloud Computing and Artificial Intelligence

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Abstract **- Core Banking, Online Banking, Mobile Banking, Wallets, Kiosk Banking, and other IT- enabled systems and services have led to a convergence in the way banks engage with their end customers during the past decade. Banks and their customers alike benefit from the industry's evolving use of information technology. These days, the key to a successful bank is providing customers with solutions and services that are made possible by information technology. With the use of cloud computing, financial institutions may adopt a digital paradigm that allows them to meet customer expectations, comply with regulations, launch new products and services more quickly, and save money. The value proposition of IT solutions and services is enhanced by cloud-based solutions in the ever-changing technological paradigm. Using cloud architecture, device administrators can remotely administer a business solution by assembling, uploading, customizing, and executing virtual tools. Another great thing about cloud IT is that it can be easily and cheaply scaled up or down depending on your needs and budget. With the goal of determining how AI and the cloud would affect service and operational efficiency, A method called confirmatory factor analysis (CFA) is employed. Verification of the validity of the estimating hypothesis and the degree to which the measured variables represent the number of constructs are presented in the thesis.**

Keywords: Cloud technology, IT technology, Confirmatory factor analysis (CFA).

I. INTRODUCTION

The banking industry is on the verge of undergoing a technological revolution, which will be driven by the combination of Artificial Intelligence (AI) and Cloud Computing technologies. By improving operations, boosting security, and customizing customer experiences, this merger has the potential to reimagine the conventional paradigms established by the banking industry.

Overview of AI and Cloud Computing

Machines that have been built to simulate human intellect, including learning, reasoning, and self-correction, are what artificial intelligence (AI) refers to initially. Artificial intelligence, when used to the banking industry, facilitates the transformation of data into insights, hence automating and improving decision-making processes [1]. In contrast, cloud computing provides scalable and flexible computing resources that are accessible via the internet. This makes it possible to store, process, and manage massive data sets in a way that is both simple and effective [2]. In order for financial institutions to maintain their competitive edge in a digital landscape that is always shifting, these technologies, when combined, provide a powerful synergy that enables them to use data-driven insights and scalable infrastructure.

Importance in the Banking Sector

Although the banking industry has long been known for its cautious approach to innovation, it has recently come to the realization that it is absolutely necessary to become more flexible. The combination of artificial intelligence and cloud computing not only makes operations more efficient, but it also brings about large cost reductions, significantly increases security measures, and significantly boosts customer satisfaction [20]. In a time where data is king, the ability to process and analyze information in a short amount of time is a game-changer. It provides banks with exceptional potential for development and innovation that have never been seen before.

Introduction of AI and Cloud Computing

The most recent stage in the development of banking technology has been defined by the advent of Artificial Intelligence (AI) and cloud computing. Through chatbots, fraud detection, and tailored financial services, artificial intelligence has found uses in customer service. This is due to AI's capacity to analyze huge volumes of data in order to gain insights on the data. The use of cloud computing, on the other hand, has enabled financial institutions to acquire

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infrastructure that is both scalable and flexible, thereby lowering operational costs and improving data security. By working together, these technologies are laying the groundwork for a new era in banking, one that will be distinguished by increased efficiency, more security, and more tailored experiences for customers [3].

Need for Cloud Computing in the Banking Industry

Access to shared resources, applications, or storage space is made available through the use of cloud services, which are on-demand services. The ability to store and process data on remote servers rather than on local systems is made possible by this technology for financial organizations. With concerns about giving up their old on-premises applications, regulatory compliance, and data protection issues, the financial industry has been sluggish to adopt cloud technology. However, this posture is rapidly changing as a result of various factors. With the passage of time, an increasing number of financial institutions have come to the realization that technology may assist them in accomplishing their business goals while simultaneously catering to the requirements of their consumers. In addition, the use of cloud computing is not just about technology; rather, it is about a new form of ownership for technological resources. By taking this strategy, financial institutions are able to innovate more quickly, become more adaptable, and reap the benefits of economies of scale that have never been seen before. An accurate cloud model, in our opinion, should include the following:

- The provision of a foundation for the secure and uninterrupted transmission of content, applications, and services is required.
- Why Provide financial institutions with the ability to independently orchestrate new services to eliminate the need for them to manually deploy software or add new hardware to their infrastructure.
- The use of consumption-based pricing, such as a pay-as-you-go approach, can help businesses become more adaptable and transparent.
- Enable banking at the size of computing resources, which may be increased or decreased according to demand.
- Data should be decoupled from apps and made available to any business process or service that may require it to be consumed.
- This interesting piece is another one that you might want to read if you are interested in learning more about the primary drivers and use cases of cloud adoption in the financial services industry.

The following is some information regarding the adoption of cloud computing by financial institutions:

- Bank of America has been able to save $2 billion yearly (on annual infrastructure savings) as a result of the construction of its cloud. As a result, the company was able to cut the number of servers it had from 200,000 to 70,000 and its data centers from 60 to 23.
- Wells Fargo has shifted important business workloads, including data centers, to the cloud as part of its digital transformation focus. The company is utilizing Microsoft Azure as part of its digital transformation framework.
- Goldman Sachs is able to revolutionize its internal operations through the utilization of Amazon Web Services (AWS) products. These solutions include automated digital forensics, digital supply chain, and procurement management.

Benefits of Cloud Computing in the Banking Sector

Banking on the cloud has become a game-changer for digital transformation, preparing institutions for the future. Consequently, in order to take use of cloud computing's strong deployment and delivery strategy, any bank needs to be knowledgeable about its primary advantages.

Faster Processing Speed: Platforms in the cloud provide lightning-fast speed since they are designed to effortlessly process massive volumes of data. It enables financial institutions to lessen latency issues and speed up transaction processing.

Centralized Data Repository: Due to cloud computing, previously siloed company data and operational systems may now be securely and easily integrated. In order to facilitate integrated decision-making and the speedy resolution of customer issues, it generates centralized and connected data.

Data Security: Cloud banking platforms are not only configured with secure servers, but they are also verified to adhere to industry laws and regional and international regulations set out by financial services authorities. Safe data transfers and prevention of unwanted access are governed by these rules for information security management and risk management.

Disaster Recovery: Moving to the cloud has many advantages, but its built-in redundancies and powerful disaster recovery system are the most important. Banks can stay up with the fast- paced financial world, satisfy customers' expectations, and reclaim access to relevant knowledge in the event of disruptive events or natural disasters due to the cloud.

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Access to Powerful Data Management Capabilities & API Ecosystem: Banks can adapt to their clients' evolving needs with open banking thanks to advanced analytics and the cloud API ecosystem. Efficient cash and liquidity management, as well as better reconciliation, are further areas where financial institutions and services may improve.

Improved Customer Experience: Banking services may now be accessible from any location at any time due to the cloud, which improves the client experience.

Reduced Costs: The bank may save a ton of money on management and maintenance costs by transferring data and apps to the cloud. Public clouds also make it easy for financial organizations to use cloud services because of their pay-as-you-go pricing model.

Adhering to Regulatory Compliance: Banks can manage and satisfy regulatory compliance obligations according to geographic financial industry rules with the use of cloud systems. Included in this would be meeting the requirements set out by data protection standards and foreign agencies.

Increased Efficiency: Financial services firms can streamline their operations with better efficiency with the use of cloud technology in banking. Bringing together buyers and sellers on a same platform helps further streamline payment processes. This facilitates faster transactions and makes data tracking easier.

Business Continuity: Increased data protection, fault tolerance, and disaster recovery are all ways in which cloud computing can help financial services organizations and banks. In comparison to more conventional managed systems, it offers more backup and redundancy at a lesser cost.

Agility and Transformation: By utilizing adaptable cloud-based operational models, financial institutions can reduce the time it takes to build new products. The associated technology allows for a more rapid and effective reaction to the demands of contemporary banking clients. It allows companies to refocus their IT resources on more important matters, such as software patches, maintenance, and other non-critical services. Therefore, financial institutions are able to devote more resources to expanding their clientele's businesses.

Applications of Cloud Computing in the Banking Sector

Banks can examine data in remote servers with faster processing speeds and greater security thanks to cloud services, which allow easy access to storage, apps, and shared resources. Here's how financial institutions can take advantage of cloud computing to further their objectives while also satisfying their customers' demands:

Fraud Detection & Prevention: In order to incorporate fraud detection capabilities into their financial system, banks utilize cloud services. They may use it to spot unusual activity in real- time and analyze vast amounts of data from multiple sources, which helps them prevent bank fraud.

Data Analysis: Financial institutions can learn more about their clients' wants, needs, patterns, and trends with the use of analytics tools hosted on the cloud. Unlike with legacy infrastructure, personalization and active interaction across touchpoints are made possible with real-time data analysis. Banks can grow client loyalty and increase conversions by quickly gaining a better understanding of their buying behavior and the problems their customers face. Financial institutions can learn more about their clients' wants, needs, patterns, and trends by using analytics tools hosted in the cloud, such as Microsoft Azure or Amazon Web Services (AWS). Banks can grow client loyalty and increase conversions by quickly gaining a better understanding of their buying behavior and the problems their customers face.

Customer Relationship Management (CRM): To better manage client data and interactions, banks are turning to cloud-based CRM solutions. Regardless of the time of day or location, they enable financial institutions to record all interactions with customers. Furthermore, banks can provide customers with genuinely individualized service by utilizing the correct cloud technique.

Challenges of Cloud Computing in the Banking Industry

Cloud computing has many advantages, but many financial institutions are still unwilling to use it. Banks are hesitant to adopt cloud computing, and here are some of the reasons why, along with possible solutions:

Security

Data security is the top priority for banks looking to engage in cloud services. There is a risk of data breaches, compromised credentials, and a lack of visibility into authentication difficulties when third-party providers hold and process sensitive banking data. The security capabilities of popular cloud services have, thankfully, been optimized. Verify that the identity management solution your cloud provider uses has solid access control procedures. Data privacy standards and database security are also implemented by cloud.

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Performance

When companies store their information and applications in the cloud, their success is increasingly dependent on that platform. Consequently, financial institutions should seek out cloud service providers that have cutting-edge technology before making any investments in cloud computing. Integration with the vendor's systems determines how well cloud-based solutions, including BI tools, work. This is why it's critical to check if the supplier has plans to deal with problems as they arise in real time.

High Availability

The smooth operation of financial systems must be guaranteed continuously. To prevent unscheduled downtime and frequent failures, banks that use cloud services and third-party providers must have strong and dependable processes in place. With the help of third-party solutions, banks can monitor service level agreements (SLAs), consumption, performance, resilience, and the extent to which their businesses rely on cloud services.

Compliance

The retention of client banking data within the home nation is mandated by certain banking regulators. It is imperative that this sensitive data remains separate from any other data stored in common databases.

In order to handle compliance and security concerns, banks must choose the correct service provider and have a clear understanding of their data's location in the cloud as well as the deployment and operation models used.

II. LITERATURE REVIEW

Cloud computing suitability for banking in Ethiopia is examined in the paper [10]. The research questions were addressed through the use of a mixed-methods approach, with data analyzed using the SPSS application [4]. A model called TOE was suggested. The financial sector is not yet prepared to use cloud computing, according to the results. Privacy and security are also major worries [5]. Organizations prioritize cost and security when considering Cloud Computing adoption. Cloud computing is unregulated in Ethiopia, and the government isn't helping to provide the infrastructure, like bandwidth, that businesses need to run their operations [6]. Due to insufficient capacity, the internet service is of low quality.

In order to manage an online banking system, this study [11] suggests a paradigm for using cloud computing. Technological, organizational, environmental, and operational aspects are the four pillars upon which the cloud computing model for managing e-banking systems rests [7]. Cloud e-banking has a far better chance of succeeding if financial institutions successfully implement the cloud computing model for managing E-banking systems [8].

In addition to a modular banking system and an effective load allocation algorithm, the authors of [12] suggest a private cloud architecture for the banking industry [9]. Data confidentiality, lower costs, central processing and scalability, increased data integrity and reliability with less overhead, efficient resource utilization, and accessibility to low-income consumers are all benefits of using a private cloud, according to a comparison of the suggested model. Studying the drawbacks of bank information systems and finding innovative uses of cloud computing, the researchers in [13] provide the concept, features, and applications of cloud computing. They anticipate that commercial banks will benefit greatly from cloud computing's ability to facilitate growth.

Prior to making the transition to the cloud, the banking industry must resolve the concerns raised by the researchers in [14].Cloud platforms still have many unanswered questions, such as mobility, flexibility, and deployment, which are addressed in this paper. Security solutions including intrusion detection systems, honeypots, and firewalls are detailed in the article. Paper [15] compares and contrasts a number of prominent online banking systems in Romania and provides an analysis of the country's online banking market. Also, make some judgments regarding this cloud market. Analyses have shown that online banking has to be redesigned to be more efficient and adaptable to the needs of clients. Cloud services were identified as the solution for the organization's demand.

The elements that impact the adoption of cloud computing in the banking industry are explored in the paper [16].With the use of questionnaires sent out to 2358 people in the banking business (including consumers, managers, and upper management), quantitative analysis was performed to analyze the determinants. Cost, Organization, Technology, Environment, and Decision Makers (COTED) are the components that make up the suggested framework. The paper also highlighted several difficulties and advantages. All of the criteria have a substantial impact on the adoption of cloud computing technologies, according to the study. Because of this discovery, cloud service providers will have a better idea of what drives CC usage.

Security, privacy, and availability are some of the cloud computing challenges that the Commercial Bank of Ethiopia is trying to address in this study [17]. Using a case study of

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major banks, the researchers employed a descriptive technique to investigate and assess the function of cloud computing in the commercial bank of Ethiopia, which generates robust and cost-effective solutions to the present crisis. Its outcome Reliability, interoperability, cost- effectiveness, security, and regulation are some of the major aspects that influence cloud adoption in CBE.

In [18], the author examines the emerging CC markets in Russia. Next, we compared cloud banking systems to see where cloud technology is being used in the banking industry. The study also compared the cloud banking system's efficiency to that of more conventional automated banking systems. Results show that the CC market is expanding at a rate four to five times quicker than the IT sector, thanks to the introduction of additional services at cheaper prices. In 2017, SaaS accounted for more than 37.8 percent of CC. And by 2020, they will have reached $99.7 billion and $0.48 billion, simultaneously. The financial sector accounts for as much as 35% of the worldwide cloud computing market. The United States accounts for almost 70% of the global credit institution market, making it the largest player in the industry.

After analyzing the effects of the worldwide economic downturn on Russia's banking sector, the article [19] go on to talk about how well Russian banks are able to utilize cloud computing. Also covered in the piece were the fundamentals of cloud computing and an examination of the variables influencing cloud adoption in the Russian banking sector. This survey found that over half of Russia's banks do not use cloud services, and that the adoption of cloud technology is very slow in the country's banking sector[20].

In this paper, we look at the cloud-based core banking system's design and compare it to other bank designs, highlighting the advantages and disadvantages of each. Furthermore, an architecture for a cloud-based core banking system was suggested, which might automate a number of banking services. The research found that some applications might not be able to use the IaaS or PaaS models due to security issues for important systems that may need vendor reviews. Cost and security are two of the obstacles to cloud computing's widespread adoption. Paper [21] explains what cloud computing is and how it works, and also suggests a business plan to make better use of cloud computing and its limitations. Investigate the shortcomings of the present banking system and learn about the novel uses of cloud computing in this industry. Concerns like data segregation and privileged user access, regulatory compliance, long-term viability, and recovery were all covered in the article as obstacles to cloud computing adoption. The present state of the cloud computing system is highlighted in the paper [22]. In response to the inquiry, "is cloud computing secure?" Examining the security system's pros and cons, Bring attention to the benefits of secure cloud computing, Explore the various cloud service models, their associated security concerns, and the difficulties of securing sophisticated data stored in the cloud. Find out how to keep your cloud data safe, Benefits, drawbacks, and possibilities.

The impact of cloud computing on EGHTESAD NOVIN Bank's customer relationship management (CRM) efficacy is assessed in paper [23]. Determine if the features of cloud computing have any bearing on the efficiency of the CRM system. Also developed and put into action a model for innovative cloud computing banking and customer relationship management. The results of the survey indicate that banks will benefit from adopting cloud computing as a banking strategy. There are unique difficulties associated with integrating AI with preexisting banking systems. Financial institutions frequently need to make major upgrades or replacements to their legacy systems in order to integrate AI technology. The safety and efficiency of current banking operations must not be jeopardized throughout this integration [24].

Artificial intelligence (AI) has been widely used by the banking sector to improve its capacity to detect fraud. Artificial intelligence's real-time data analysis capabilities enable the detection of fraudulent activity with unparalleled precision and velocity. Machine learning algorithms allow banks to spot irregularities and trends that human analysts might miss, thereby decreasing the likelihood of financial fraud. Customers' faith in their financial institutions is strengthened by this technological development, which safeguards the bank's assets [25]. When it comes to data management and security, cloud computing has revolutionized the banking industry. Enhanced data security features, such as improved encryption, threat detection, and multifactor authentication procedures, are available to banks when they use cloud infrastructure. In order to comply with strict legal standards, these cloud services offer a strong foundation for safeguarding sensitive client information from cyber attacks. In addition, banks can easily handle their data security demands as they expand with cloud solutions, which guarantees that customer information stays protected in the always changing digital ecosystem [26].

III. SECURITY RISKS

Below are Gartner's seven widely recognized security risks that cloud clients should promote:

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1. Privileged User Access: Due to the fact that external services surpass the "practical and logical IT controls," there is an inherent danger to data security when sensitive data is processed outside the business.

2. Regulatory Compliance: Data security is the responsibility of the customer. External audits and security certificates impact providers of traditional services.

3. Data Location: Users are unaware of the housed data when they utilize the cloud. Cloud companies rely on distributed data storage, which poses risks to consumers due to a lack of control.

4. Data Segmentation: The reason being that data stored in the cloud is typically located in a common area. Thus, the possibility of data loss exists. Are all categories able to use encryption, and were these applications redesigned and evaluated by experts?

5. Recovery: Resetting data is crucial in the event of a failure caused by a specific issue. So, the main concern now is whether the cloud service can restore data in its whole or not. Lack of security can be caused by this issue.

6. Investigation Support: Due to the fact that cloud services are combined and cannot be separated among an ever-changing set of hosts and data institutions, investigating them becomes more challenging due to the increased likelihood of logging and more customer data being accessible.

7. Long-Term Performance: Cloud computing is perfect since the provider will never go out of business or institute new regulations. However, customers need to be sure their data will still be accessible when this happens. Additional risks are listed below:

a) **Data Leaks:** The customer's local PC is also utilized frequently because the data is not stored locally. The result will be an issue with data leakage. This difficulty must be prevented if we are to achieve our goal.

b) **Website and System Server Security:** The safety of websites and servers should be your top priority when you use the cloud. Banks can only use various forms of cloud computing in the event of a safety issue. You may rest assured that your financial information is safe because no hardware is involved.

IV. METHODOLOGY

An evaluation of the relevant literature lent credence to the study and helped to allay concerns about its reliability and validity. Useful for performing statistical analysis on research questions, dependent and independent variables, and to verify the existence of a relationship between them.

In order to gather primary data, ten respondents from each of the fifteen banks were sent a closed-ended questionnaire and asked to score their experiences using a numerical scaling technique. The two extremes of the phenomenon being measured are represented by the two endpoints of the continuum. Regarding cloud computing at these bank branches, main responders stated that the entire industry is powered by it. Our research focused on a small number of rural banks in our region, where cloud computing is useful but not widely used.

In theory-derived models that were developed in advance, the confirmatory factor analysis technique was utilized to examine the links between latent and visible variables. The main advantage of CFA is that it will assist researchers in bridging the gap that is frequently seen between hypothesis and observation. For instance, a variety of theoretical structures can be used to design an instrument. CFA can help researchers find out which items may have problems and how well the data fits with a theory-derived measuring model (where items only load on the variables they were meant to measure). For all your model needs, including ideation, identification, and parameter estimation, as well as data-model fit evaluation and potential model adjustment, CFA is the way to go. The benefit of CFA lies in its disconformity, as opposed to exploratory methodologies. While models or hypotheses may be abandoned, fresh developments that need further study might be discovered through the findings.

V. DATA INTERPRETATION, ANALYSIS & RESULTS

Table 1: Analysis and Results

Levels	Counts	% of Total	Cumulative %
3	5	3.2 %	3.2 %
4	5	3.2 %	6.6 %
6	11	7.2 %	14.01 %

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7	6	4.09 %	18.01 %
8	38	25.2 %	43.2 %
9	54	36.01 %	79.2 %
10	31	20.6 %	100.01 %

Interpretation

For this primary data set, we employed a numerical scaling technique to rank the replies from one to ten and distributed closed-ended questionnaires to fifteen different banks, with ten respondents per bank. The two extremities of the continuum stand in for the two extremes of the phenomenon being measured. According to the main respondents, cloud computing is the lifeblood of this industry, and that includes these bank branches. Cloud computing is useful but not as prevalent in rural banks that we studied compared to their metropolitan counterparts.

Table 2: Confirmatory Factor Analysis

Factor Loadings					
Factor	**Indicator**	**Estimate**	**SE**	**Z**	**p**
Banking services	Efficient client service	1.39	0.0996	13.892	<.001
	Business Continuity	1.35	0.1158	11.691	<.001
	Improved operational efficiency and Business agility	5.37	2.7122	1.981	0.048
Profitability	Access to automatic updates	1.75	0.1135	14.520	<.001
	Auto scalability	1.79	0.1180	15.136	<.001
	Improved operational efficiency and Business agility	-3.60	2.7201	- 1.325	0.185
	Green banking has been promoted	-4.38	5.1891	- 0.709	0.478
	cost reduction	1.86	0.1174	15.880	<.001
Operational benefits	Access to automatic updates.	1.73	0.1151	15.109	<.001

Factor Loadings					
Factor	**Indicator**	**Estimate**	**SE**	**Z**	**p**
Green banking has been promoted		6.9	5.1934	0.984	0.325
Security enhanced		1.72	0.1131	15.170	<.001
Backup management has become easier		1.68	0.1075	15.690	<.001

Interpretation As a multivariate statistical method, confirmatory factor analysis (CFA) checks if the estimated variables represent the number of constructs correctly One way to test the validity of estimating theories is with confirmatory factor analysis (CFA). Cloud computing and artificial intelligence have greatly improved backup management, auto scaling, automated updates access, operational efficiency, cost reduction, security, and business continuity, as shown in the table above. They estimated negatively what was expected to be two major banking benefits: operational efficiency and green banking. With the exception of operational efficiency and green banking, all other examined variables support the measurement theory, according to the study's results.

Table 3: Factor Estimates

Factor Covariances

Estimate	**SE**			**Z**	**p**
Banking services	Banking services	1.000[a]			
	Profitability	0.963	0.02221	43.4	<.001
	Operational benefits	0.958	0.02482	38.6	<.001
Profitability	Profitability Operational	1.000 [a]	0.00252	394.2	<.001

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	benefits	0.997			
Operational benefits	Operational benefits	1.000[a]			

Interpretation

A high positive correlation between banking services and profitability is shown by the anticipated value of (0.963), which is near to +1. Consequently, enhancing banking services will lead to better profitability and operational benefits.

Table 4: Model Fit

Test for Exact Fit				
χ^2	**df**	**p**		
161	30	<.001		
RMSEA90%CI				
CFI	**TLI**	**RMSEA**	**Lower**	**Upper**
0.946	0.919	0.170	0.145	0.197

Table 5: Fit Measures

CFI	**TLI**	**RMSEA**	**Lower**	**Upper**
0.946	0.919	0.170	0.145	0.197

Interpretation

There is a difference between the predicted and actual covariance matrices, and the chi-square tests shows this. Disparity between expected and observed covariance matrices shrinks as values approach zero.

To evaluate the specificity of the results' complementarity to nested models, chi-squared figures can be utilized. The formula is more precise since.001 is so near to zero.

Instead of using a chi-squared test or a normed fit index, which both have problems with sample size, the comparative fit index (CFI) compares the outcomes to the hypothesised model, thus evaluating model fit. On the CFI scale, which goes from 0 to 1, higher values signify a more robust match. It may be concluded that the index is well-suited to the model as (0.946) is closer to 1.

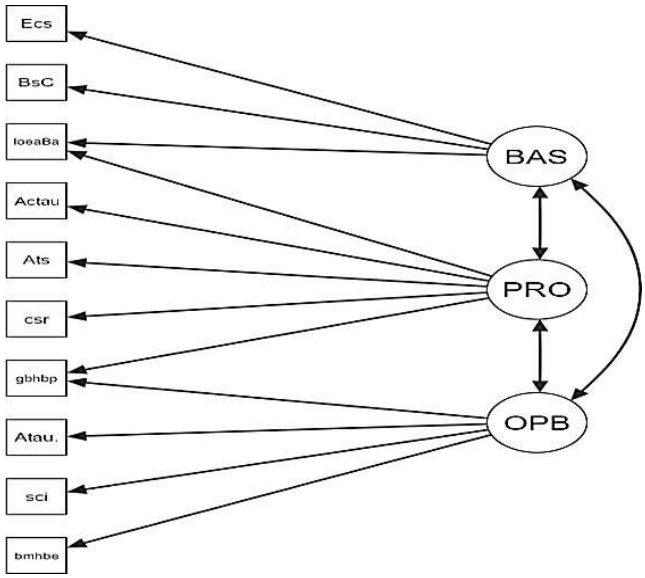

Figure 1: Validated Model of the impact of work culture dynamics

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Figure 1 shows the validated Model of the impact of work culture dynamics. Although path analysis is helpful for evaluating theories of causation, it does not reveal the directionality of causation. While it does show how often a causal theory occurs and makes associations clearer, it fails to identify the direction of causation. To better understand the chain of events, scientists may conduct controlled trials in which subjects are randomly allocated to either a treatment or control group. To better understand the effects of cloud computing on efficient client service, Business Continuity, Auto scaling, improved operational efficiency, cost reduction, security enhanced, backup management, and auto updates, the data sets were integrated and a unified model was built. The structural equation model shown in figure 2 was developed using Partial Least Square.

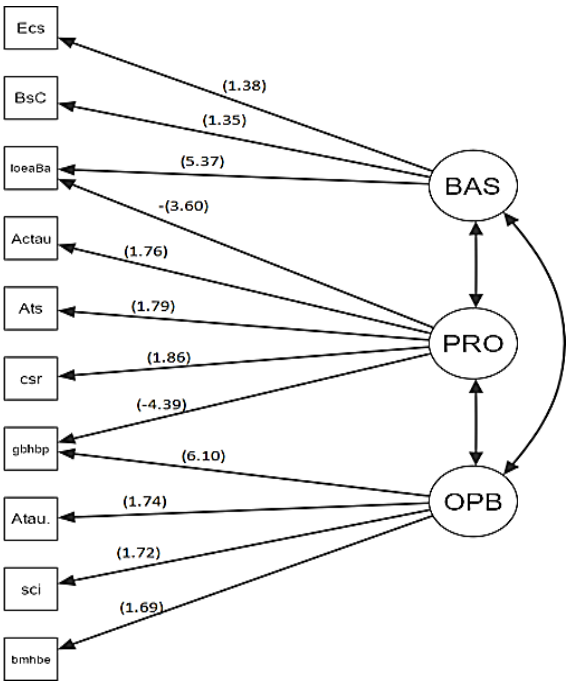

Figure 2: Estimated Model using PLS

Artificial intelligence and cloud computing have a beneficial effect on Backup management, increased operational efficiency, reduced costs, improved security, auto scaling, auto upgrades, and efficient client support are all part of the package. The conventional wisdom holds that operational efficiency and environmentally conscious banking would lead to negative estimates.

VI. CONCLUSION

In order for the banking industry to overcome the challenges posed by cloud infrastructure, the banks will need to collaborate. When banking institutions are developing future cloud computing projects, they should choose distribution and service models that work better with organizational stability, cost effectiveness, and pay-as-you-go models. Financial institutions should approach cloud computing services methodically, evaluating each project based on the software and data types involved. Programs with a minimal potential for failure include enterprise content management and customer experience management. More danger lurks in endeavors that necessitate centralized corporate organizations, such core banking or wealth management. Cloud providers will gradually increase their share of the service mix as banks eventually provide a mix of on-premise and cloud-based systems deployed through various public, hybrid, and private cloud deployment methods. Banks are expected to increasingly use private clouds as a means of integrating cloud technology. This is because private clouds allow banks full ownership and functional control over their cloud infrastructure.

For future cloud infrastructure projects, financial institutions should choose distribution and service models that work better with organizational stability, cost effectiveness, and pay-as- you-use. Capgemini suggests that financial institutions approach cloud computing resources methodically, evaluating each project in turn based on the nature of the applications and the data quality. Programs with a minimal potential for failure include enterprise content management and customer experience management. More danger lurks in endeavors that necessitate centralized corporate organizations, such core banking or wealth management. According to Capgemini, in the future, banks will offer a mix of services that are both on- premise and delivered through the cloud. These services will be offered through various public, hybrid, and private cloud models. The use of private clouds is expected to grow in the years to come implementation model for financial institutions' use of cloud services, which grants them full authority for the management and ownership of their cloud infrastructure.

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