Examining Critical Success Factors of Cloud Computing Adoption: Integrating AHP-Structural Mediation Model

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ABSTRACT

The objective of this article is to identify the critical success factors of cloud computing adoption through the integration of AHP-Structural Mediation Model in MSMEs in India. The article is a mixed method research which includes both qualitative and quantitative study. The analytical hierarchical process (AHP) is a process of ranking the critical success factors based upon the priority and in our study, we have taken nine factors that affect business performance. Then these nine factors are employed to construct a conceptual model to check the final mediation effect of the factors (full and partial mediation) on business performance. The findings in AHP show Trust (T) is having lowest priority and perceived IT security risk (PITR) has the third priority. The structural mediation model shows that trust and PITR do not have any mediation effect on business performance. Rarely any study has integrated AHP and structural mediation to check the importance of critical success factors for Cloud computing adoption in business performance.

KEYWORDS

AHP, Cloud Computing Adoption, India, MSMEs, Structural Mediation

1. INTRODUCTION

Cloud computing has become crucial for corporate information technology-related aspects. The industrial developments should be well-aligned with the evolving business strategies. As per Venter and Whitley (2012) business related adoption in cloud computing is a future key for perceived opportunity for cost reduction. Cloud adoption in organizations is a smooth innovation process. Start-up companies should be encouraged to adopt cloud computing. Cloud adoption spreads from MSMEs to larger organizations in India. Trivedi (2013) stated that cloud computing adoption makes the business cheaper, faster and better. Technology flexibility and dynamic applications make it easy to adopt cloud computing. Industry operations become faster and more effective when IT infrastructure is scaled; making it easier to enter markets and meet customers’ demands (Nkhoma and Dang, 2013). Cloud computing is a new conceptual paradigm for businesses, which combines single window applications, architecture and business models to a whole range of professionals for performance of common business tasks in the web medium (Budriene and Zalieckaite, 2012).

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Hsu et al. (2014) stated that some characteristics of cloud computing makes it different from traditional IT innovations, such as customer targets, pricing mechanisms and deployment models. More of the businesses can happen in cloud computing, some give profits like improved customer service and process efficiency. Many organizations develop a strategy for cloud asset deployment (Garrison et al., 2015).

Cloud computing popularity refreshes the IT infrastructure. Industries always need returns in terms of performance. Cloud adoption benefits in cost reduction, agility, device independence, location independence and scalability. Choi and Song (2012) stated that Cloud computing services can be a guideline for users to choose appropriate cloud services. Industries yet to perceive the benefits of cloud computing, even if cloud computing has many advantages. Cloud adoption always depends upon the identification of new factors. These identified factors should be ranked before taking any major cloud adoption decision.

Gupta et al. (2013) stated that SMEs still sit on fence whether to move or not to cloud computing. Cloud has emerged itself as a solution to multiple IT related problems. It is considered as an advanced IT model to host and share both hardware and software over the internet. As per Dutta et al. (2013) organizations use a pool of IT services through the web without holding the computing resources internally.

Virtualization is a technology used in cloud computing that enables resource allocation over the network. Several systems with different operating systems can be run with the hardware instead of having only one physical server. Azarnik et al. (2013) stated that sharing of hardware and software resources leads to cost reduction as the customers’ only need to pay as per the usage. Brender and Markov (2013) stated that whether to adopt cloud computing or not also depends upon the industry size, corporate culture, but not on the data to be merged.

Gaurangkumar and Minubhai (2012) stated that cloud computing survey finds an urgent need to solution identification that can establish trust among the customers for smooth running of the business through cloud computing adoption. Technology innovation has an immense impact on industry structure, international trade, formation and development of firms and in the growth of survival of existing firms. As per Utterback (1971) the knowledge requirement and technology development by managers, executives and other individuals are quite apparent.

The article organization is as follows. Section 1 is introduction, section 2 literature review, section 3 research methodology, section 4 data analysis and results and section 5 is based upon discussion & conclusion followed by limitations and future scope in section 6.

2. LITERATURE REVIEW

A structured literature review of methodology is necessary for the overview of a research field and identifies the research gaps. The review methodology consists of two steps. Step 1 is the search for relevant articles to be included in the review process. Step 2 is the classification of these research articles with respect to their major findings.

The databases used for collecting the research articles were science direct, EBSCO, ACM, Emerald, IEEE, and Pro-Quest journals. The classification of research articles was done using the concepts of cloud computing adoption, business issues, risk analysis and technological issues.

The objective of this literature review is four-fold:

1. To identify the critical success factors for cloud computing adoption;
2. To identify the business issues;
3. To identify the associated risk;
4. To identify the technological issues.
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Nash Feature Package of an Integrated Finance Lease-Sales System for Cautious Customers
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