Framework for Cloud Computing Adoption in the Malaysian and Libyan Hospitality Industry

Riyad Alsewie[1]; Md Gapar Md Johar[2], Asif Iqbal Hajamydeen[3]

[1]PhD candidate, School of Graduates Studies, Management and Science University, Malaysia, Email: (riyad.mohamed84@hotmail.com)
[2]Software Engineering and Digital Innovation Center, Management and Science University, Malaysia, Email: (mdgapar@msu.edu.my)
[3]Faculty of Information Science and Engineering, Management and Science University, Malaysia, Email: (asif@msu.edu.my)

Information of Article

Abstract

Cloud computing, a paradigm that provides on-demand network access to a shared pool of configurable computing resources, is revolutionizing various sectors. Cloud computing supports the hospitality industry by offering scalable, on-demand resources that enable streamlined operations, personalized customer experiences, and cost-effective infrastructure management. This paper provides a comprehensive explanation to address the challenges associated with cloud computing adoption in the Malaysian and Libyan hospitality industries while focusing on providing a comprehensive framework for successful cloud computing adoption in the hospitality industry. It also provides literature and definitions with regard to the desired variables. It proposes a conceptual framework that can be applied within Malaysian and Libyan hospitality industries. The conceptual framework explains technological factors, organizational factors, environmental factors, perceived usefulness, and perceived ease of use, with respect to cloud computing adoption decision.

1. Introduction

Cloud computing has generated positive impacts, large-scale production, and business opportunities for numerous users and organizations. Benefits include improved efficiency, added value, cost reductions, and increased business opportunities. The demand for green, cost-saving technologies is expected to rise due to technological advancements and environmental consciousness. Various cloud computing models can provide different benefits to businesses, depending on their needs. Zbořil & Svatá (2022) describe cloud adoption as an organization's full or partial transformation to a cloud technology environment, emphasizing its role in digital transformation. To remain competitive globally, organizations must adopt modern technologies and economic models in their business strategies. Cloud computing balances cost and technological choices, catering to client consumption models and company direction. Its adoption will likely increase with technological advancements. Cloud computing allows on-demand, ubiquitous network access to a shared pool of configurable computing resources, which can be quickly provisioned and released with minimal management effort. Trustworthy and efficient cloud providers with high-security frameworks include Amazon Cloud and Microsoft Azure Adoption Framework. According to Khan & Al-Yasiri (2022), cloud computing firms often outsource their entire ICT infrastructure to focus on core business products, eliminating significant IT costs and prioritizing consumer needs. However, the cloud industry faces adoption challenges among small and medium enterprises due to security, contractual concerns, interoperability, and lack of knowledge.

The hospitality industry is undergoing rapid transformation due to advancements in technology, and one of the key driving forces is the adoption of cloud computing. Cloud computing has the potential to revolutionize the way hotels and other hospitality businesses manage their operations, improve efficiency, and reduce costs (Lai & Hung, 2018). As businesses in this industry increasingly rely on technology to enhance customer experiences and streamline processes, the importance of cloud computing cannot be overstated. Asiaei and Ab. Rahim (2019) highlighted the benefits of cloud computing adoption in Malaysian hospitality industry, proposing a multifaceted framework that considers various factors, such as technological, organizational, and environmental aspects. This framework aims to guide hotels in making informed decisions on cloud computing adoption and implementation, ultimately improving their competitiveness and performance. Benlian et al. (2018) explored the transformative value of cloud computing, proposing a theoretical framework based on decoupling, phantomization, and recombination. This framework suggests that cloud computing enables organizations to separate computing resources from physical infrastructure, build platforms for innovation, and recombine existing resources to create new value. By adopting cloud computing,

organizations can leverage its transformative potential to drive innovation, improve agility, and enhance scalability. Ahmed (2020) proposed the Technology Organization Environment (TOE) framework in cloud computing, focusing on the interplay of technology, organization, and environmental factors in the adoption process. The TOE framework services as a comprehensive model to understand the factors influencing the decision to adopt cloud computing and provides guidance on how organizations can successfully navigate the complexities of cloud adoption. In the context of the hospitality industry, Willie (2019) explored the potential influence of blockchain technology on various sectors within the industry. Although blockchain is a separate technology, its adoption is also driven by the need for secure, transparent, and efficient processes. This highlights the importance of understanding the factors and challenges associated with adopting new technologies in the hospitality industry, such as cloud computing.

According to Branco Jr et al. (2017), cloud computing is an effective alternative for firms unwilling to invest in in-house IT infrastructures. This technology provides a service model on-premises, allowing organizations to manage information online according to their current needs. However, outsourcing cloud technologies carries risks such as increased threats due to the internet ecosystem, IT control challenges, and concerns about efficient resource usage. These risks negatively impact cloud computing adoption. Al-Ruithe et al. (2018) emphasize that cloud computing is a critical component of the digital transformation technology ecosystem. Security, privacy, and loss of governance are the main issues in adopting cloud computing frameworks. Another challenge is the lack of knowledge and experience among workers in this new technological field. Insufficient cloud computing infrastructure and IT expertise are primary obstacles to adopting cloud technologies in the Malaysian and Libyan hospitality industries. Security concerns, such as data leaks, pose significant barriers to implementing cloud technologies in these sectors.

Despite the numerous benefits of cloud computing in the hospitality industry, its adoption faces several challenges that need to be addressed to ensure successful implementation. Sadeeq et al. (2021) provided an extensive review of the Internet of Things (IoT) and cloud computing, discussing various issues, challenges, and opportunities. The study revealed that some of the major challenges in adopting cloud computing include data security and privacy, managing complex cloud infrastructures, and the need for reliable and high-speed internet connectivity. These challenges can be significant barriers to cloud computing adoption, especially for businesses in the hospitality sector, where data security and system reliability are crucial. Sadeeq et al. (2021) highlighted various issues, challenges, and opportunities related to IoT and cloud computing adoption. The study emphasized the need to understand the significance of cloud computing in the hospitality industry and how it can be leveraged to enhance business operations.

This paper aims to address the challenges associated with cloud computing adoption in the Malaysian and Libyan hospitality industries while focusing on providing a comprehensive framework for successful cloud computing adoption in the hospitality industry.

2. Cloud Computing Technologies in the Malaysian and Libyan Hospitality Industry

According to the statement of Badie et al. (2022), cloud computing is the future generation of on-demand services of IT and products which deliver different applications over the Internet. The technology of cloud computing is sometimes adopted as a great alternative to the current systems used by data centers. But there are various issues in the cloud technologies that serve as a barrier in the adoption process by the data centers. A "Cloud Computing Data Center (CCDC)" adoption model can be helpful for administrative activities in the hospitality sector of Malaysia and Libya. The various theoretical bases of the CCDC model are Institutional, "Technology Organization Environment (TOE)" and "Diffusion of Innovation theory (DOI) theory". Another new method was adopted to understand the interest of the respondents in accepting the cloud technology called the Structural Equation Modeling (SEM)-STELLA method. The results from these methods show that the main influence among the respondents in the adoption of cloud computing technologies relates to security and policy. This model has changed the value of some factors and motivated them to adopt cloud computing. Thus, cloud computing technologies can be easily adopted by the hospitality industry by removing the barriers like security and privacy concerns in Malaysia and Libya.

Discussion of cloud computing in hospitality, several factors can be included that enhance the working behavior and evaluation of the performance measures. In Malaysia, the hospitality industry is adopting cloud computing technologies to improve customer engagement and streamline operations. Many hotels have cloud-based property management systems (PMS) to manage their operations, including reservations, billing, and inventory management. These systems are accessible from anywhere, making it easy for hotel staff to manage their operations remotely (Maelah et al. 2021). This has resulted in improved operational efficiency, reduced costs, and enhanced customer satisfaction. This enables a better scope for the sector to indicate a better working approach and evaluation of the performance measures. Making a proper structure of the inventory is another crucial part that enables better working advantages for the hospitality industry. This enables a better chance of achieving success level at a higher level.

Customer relationship management is another effective part of the work that improves the business development approaches successfully to enhance sustainability. In this particular case, the entire development of the infrastructure plays a vital role in measuring the effective value of the business growth. Moving to the discussion of the major benefit, cloud-based customer relationship management is another important part that includes better working behavior on the cloud platform to emphasize working efficiency. In Libya, the hospitality industry is also embracing cloud computing technologies (Chelliah and Chan, 2022). The cloud-based booking systems manage their reservations and inventory, allowing them to quickly and easily manage their room availability and pricing. This feature also helps customers to improve their experience at the time of availing the services from the company. Developing a better knowledge and understanding of the particular business segment, security in data management is one of the most crucial parts that improve the business value and creation of a better structure in the market area.

Business intelligence is another important part that examines the working progress and behavioral approaches in the market that emphasizes the business scope and creation of a better value to the customer segment. Delivering better business analytics based on cloud platforms, organizations are getting a higher success level in the market for improving market analysis (Ainoo and Nkrumah, 2022). This process helps the brand to make a better and more structured format of the business development approach among the rivals to make effective decisions in the business area. Therefore, the cloud-based CRM and booking system are improving the continuous development of the business work and the creation of superior organizational growth in the market.

3.   Technology-Organization-Environment (Toe) Model

Borgman et al. (2013) developed a cloud computing adoption framework by leveraging the Technology-Organization-Environment (TOE) framework and IT governance structure as shown in Figure 1. This framework aims to explore cloud computing adoption and governance in organizations. The TOE framework consists of three main components:

- Technology:

This component focuses on the technological aspects of cloud computing, such as the features, functionalities, and relative advantages of adopting cloud services. It includes factors like compatibility with existing systems, complexity, and the potential for trialability and observability. Organizations need to assess these technological factors to determine the feasibility of adopting cloud computing and understand how it aligns with their existing IT infrastructure and business requirements.

- Organization:

The organization component of the TOE framework examines the internal context of an organization, such as its size, structure, resources, and readiness for change. Factors like management support, IT infrastructure, and employees' knowledge and skills related to cloud computing are essential for successful adoption. This component also considers the organization's strategic objectives, culture, and willingness to adopt new technologies. Organizations need to evaluate their internal capabilities, readiness for change, and the potential impact of cloud computing adoption on their operations and workforce.

- Environment:

The environment component of the TOE framework addresses the external context surrounding the organization, such as industry characteristics, market conditions, and regulatory requirements. Factors like competitive pressure, government policies, and data privacy concerns can influence the organization's decision to adopt cloud computing. Additionally, the availability of cloud service providers, their service offerings, and the overall maturity of the cloud computing market are crucial environmental factors. Organizations need to consider these external factors to understand the broader context in which they operate and how it might affect their cloud computing adoption decisions.

By considering the technology, organization, and environment components, the TOE framework developed by Borgman et al. (2013) provides a comprehensive and systematic approach to understanding cloud computing adoption and governance in organizations. This framework enables organizations to make informed decisions about adopting cloud computing while considering the potential benefits, challenges, and risks associated with this technology.
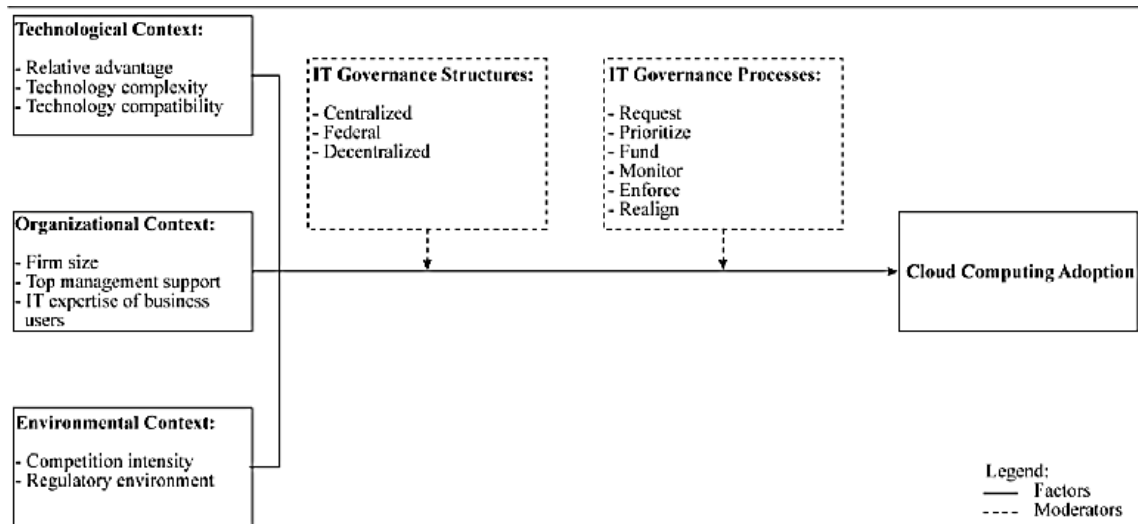
Figure:1 TOE and IT governance structure integration toward cloud computing adoption framework

4. Extended TAM–TOE Framework

Gangwar, Date, and Ramaswamy (2015) developed a cloud computing adoption framework that provides a structured approach to understanding the factors influencing the adoption of cloud computing in organizations as shown in Figure 2. The framework is based on several factors and is organized into six dimensions, which are further classified into various sub-dimensions. The six dimensions are as follows:

- Technological Factors:

This dimension focuses on the technological aspects of cloud computing that can impact its adoption, including relative advantage, compatibility, complexity, treatability, and observability. It considers how cloud computing can provide benefits to organizations, its alignment with existing systems, the ease of implementation, the ability to test and evaluate the technology, and the visibility of its results.

- Organizational Factors:

Organizational factors in the framework address the internal characteristics of an organization that influence cloud computing adoption, such as organizational size, structure, culture, readiness for change, and resources. The framework considers the role of top management support, employee skills, and existing IT infrastructure in the adoption process.

- Environmental Factors:

This dimension focuses on the external factors that can impact the adoption of cloud computing, such as industry characteristics, market conditions, competitive pressure, and government regulations. It also considers the role of cloud service providers and their service offerings in influencing the decision to adopt cloud computing.

- Service Quality Factors:

The service quality factors in the framework include aspects related to the performance, reliability, responsiveness, and security of cloud computing services. These factors are crucial for organizations to consider when evaluating the potential benefits and risks associated with cloud computing adoption.

- Economic Factors:

This dimension examines the cost implications of adopting cloud computing, including the potential for cost savings, return on investment (ROI), and the impact on the organization's overall financial performance. It also considers the pricing models and payment options offered by cloud service providers.

- User Satisfaction Factors:

User satisfaction factors in the framework address the perceptions and experiences of end-users when using cloud computing services. This dimension considers the ease of use, accessibility, and overall user experience, as these factors can significantly

impact the success of cloud computing adoption within an organization.

By considering these six dimensions, the cloud computing adoption framework developed by Gangwar et al. (2015a) offers a comprehensive approach to understanding the factors influencing cloud computing adoption in organizations. This framework helps organizations evaluate the potential benefits, challenges, and risks associated with cloud computing adoption and make informed decisions about whether to adopt this technology.
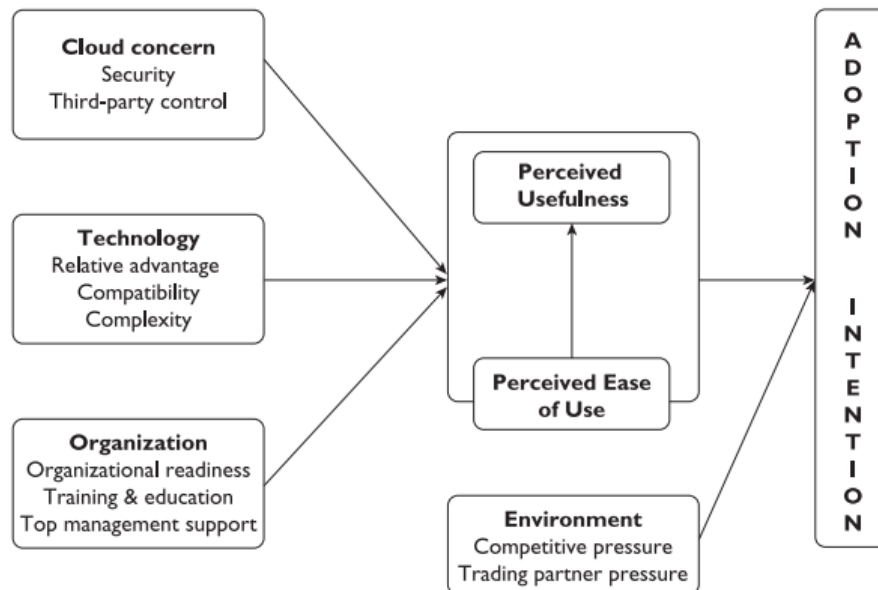

Figure: 2 Extended TAM–TOE Framework for Cloud-computing Adoption

5. Integrated TAM-TOE Model

Gangwar, Date, and Ramaswamy (2015) developed a cloud computing adoption framework that combines the Technology Acceptance Model (TAM) and the Technology-Organization-Environment (TOE) framework to better understand the determinants of cloud computing adoption as shown in Figure 3. The integrated TAM-TOE model identifies the factors influencing cloud computing adoption and provides a comprehensive perspective on the drivers and barriers related to the technology. The integrated TAM-TOE model consists of three main dimensions: technological context, organizational context, and environmental context. Within these dimensions, various factors play a crucial role in determining the adoption of cloud computing.

- Technological Context:

In this dimension, the researchers integrated the TAM constructs of perceived usefulness and perceived ease of use with the TOE constructs of relative advantage, compatibility, and complexity. These factors help evaluate how cloud computing provides benefits, aligns with existing systems, and can be easily implemented and used by the organization.

- Organizational Context:

This dimension focuses on the internal characteristics of an organization that influence the adoption of cloud computing, including organization size, top management support, IT infrastructure, and employee skills. These factors help determine the organization's readiness to adopt and support cloud computing initiatives.

- Environmental Context:

The environmental context dimension examines the external factors impacting the adoption of cloud computing, such as competitive pressure, trading partner pressure, and government support. This dimension also considers the role of cloud service providers and their offerings in influencing the decision to adopt cloud computing.

By integrating the TAM and TOE frameworks, Gangwar et al. (2015b) offer a more holistic perspective on the factors influencing cloud computing adoption. This integrated model allows organizations to assess the technological, organizational, and environmental contexts that contribute to the adoption decision-making process. This comprehensive approach helps

organizations evaluate the potential benefits, challenges, and risks associated with cloud computing adoption and supports informed decision-making about whether to adopt this technology.
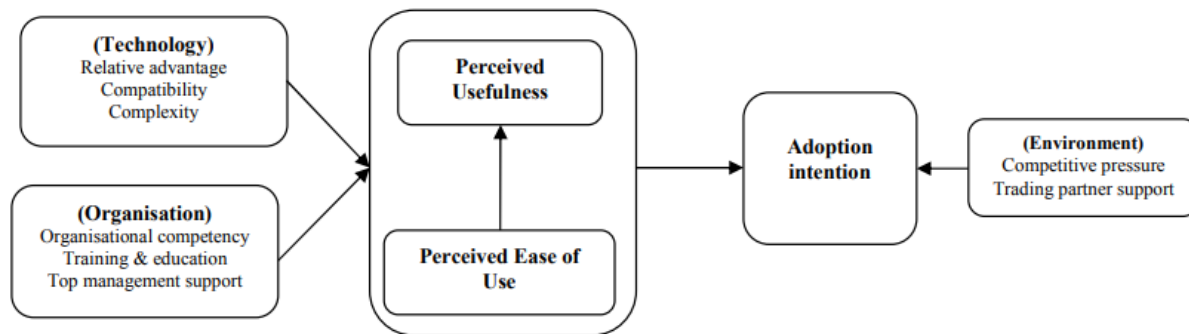

Figure: 3 Cloud computing adoption framework using an integrated TAM-TOE model

6. Cloud Computing Adoption Framework Based on the Innovation Translation Approach

Saedi (2016) proposed a cloud computing adoption framework based on the innovation translation approach, which examines the process of cloud computing adoption by focusing on the translation of the technology from an idea to its successful implementation in an organization as shown in Figure 4.

The framework recognizes that adopting cloud computing involves not only the technical aspects of deploying cloud infrastructure but also the organizational, cultural, and behavioral changes necessary to fully leverage the benefits of cloud technologies. It takes into account the challenges and complexities associated with cloud adoption and aims to provide a structured approach to navigate the process effectively.

This approach considers cloud computing as an innovation that undergoes a transformation process during its adoption, involving the interpretation, translation, and adaptation of the technology to fit the organizational context. The cloud computing adoption framework by Saedi (2016) consists of four main components:

- Problem Formulation:

In this stage, organizations identify the problems they face and determine the necessity for adopting cloud computing as a solution. The problem formulation process involves recognizing organizational needs, assessing current infrastructure, and evaluating the benefits and drawbacks of cloud computing adoption.

- Translation Process:

The translation process is the stage where organizations interpret and adapt cloud computing innovations to fit their specific requirements. This involves selecting the most suitable cloud service model (IaaS, PaaS, SaaS) and deployment model (private, public, hybrid, or community), identifying the appropriate service providers, and determining the required customization and integration efforts.

- Adoption Decision:

The adoption decision component involves the evaluation of the translated cloud computing innovation and the assessment of its feasibility, risks, and potential benefits. Organizations consider factors such as costs, security concerns, data privacy, and compliance requirements during this stage. The adoption decision results in the commitment of resources and the formulation of a strategy for cloud computing implementation.

- Implementation and Institutionalization:

This final component of the framework deals with the actual implementation of cloud computing within the organization. It includes the deployment of selected cloud services, integration with existing systems, employee training, and change management processes. The institutionalization of cloud computing occurs when the technology becomes an integral part of the organization's routine operations and practices.

By focusing on the innovation translation approach, Saedi's (2016) cloud computing adoption framework emphasizes the importance of aligning cloud computing solutions with an organization's specific needs and context. This process-oriented perspective allows organizations to better understand and manage the complexities and challenges associated with cloud

computing adoption, ultimately leading to more successful implementation outcomes.
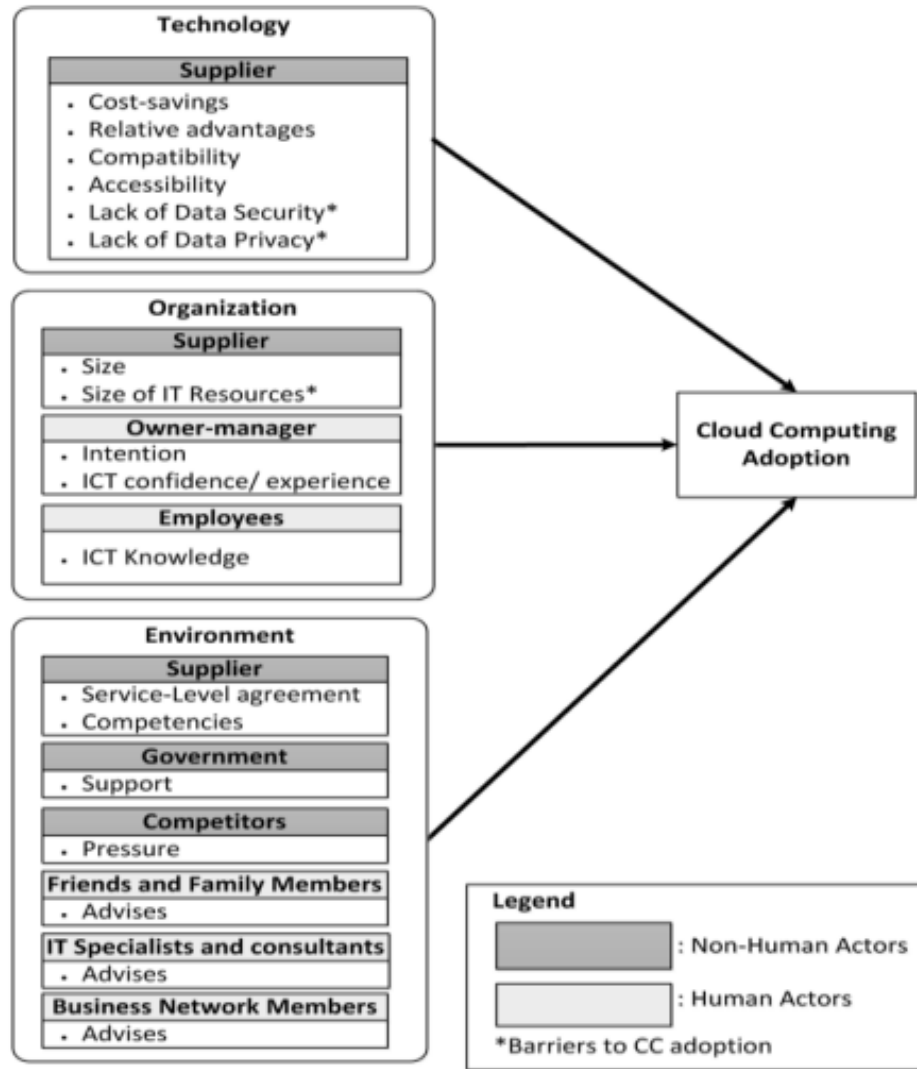

Figure: 4 Cloud computing adoption framework based on the innovation translation approach

7. Conceptual Framework

Based on the previous models discussed, the current paper proposes a conceptual framework for cloud computing adoption in the Malaysian and Libyan hospitality industry as shown in Figure 5. This framework takes into account the unique characteristics and requirements of the hospitality industry while incorporating the most relevant factors from the reviewed frameworks. In this conceptual framework, the first component is technological factors, which include relative advantage, compatibility, complexity, trialability, observability, and data security and privacy. These factors have been identified as important in several studies, such as those conducted by Borgman et al. (2013), Gangwar et al. (2015), and Sharma et al. (2021).

The second component is organizational factors, which encompass organizational size, top management support, resources and infrastructure, employee skills and expertise, and organizational readiness for change. These factors are crucial for successful cloud computing adoption, as highlighted in the works of Saedi (2016) and Sharma et al. (2021). The third component is environmental factors, which consist of market pressure, competitive pressure, regulatory environment, industry characteristics, and trading partner pressure. These factors are significant in shaping the adoption of cloud computing in the hospitality industry, as demonstrated in the studies by Gangwar et al. (2015) and Sharma et al. (2021).

The fourth component is individual factors, which include perceived usefulness, perceived ease of use, and behavioral intention. These factors, identified in the works of Gangwar et al. (2015) and Sharma et al. (2021), play a significant role in influencing the

adoption of cloud computing at the individual level within organizations. Finally, the adoption decision component focuses on cost, risk, flexibility, and scalability. These factors are essential for organizations to consider when deciding whether to adopt cloud computing, as emphasized in the studies by Borgman et al. (2013), Senyo et al. (2016), and Lehrig et al. (2015).

This conceptual framework incorporates the most relevant factors from the previous frameworks discussed while considering the specific needs and challenges faced by the Malaysian and Libyan hospitality industries. It provides a comprehensive understanding of the factors influencing cloud computing adoption, helping organizations make informed decisions and successfully implement cloud computing technologies in their operations. The developed framework for cloud computing adoption in the Malaysian and Libyan hospitality industry addresses several gaps identified in the previous literature review. By incorporating factors specific to the hospitality industry and the unique challenges faced by businesses operating in Malaysia and Libya, this framework contributes to a more comprehensive understanding of cloud computing adoption in these contexts.

Firstly, while the previous frameworks have covered technological, organizational, environmental, and individual factors, the developed framework places particular emphasis on data security and privacy as technological factors. This is crucial in the hospitality industry, where customer data is highly sensitive, and businesses need to ensure that their cloud computing solutions provide adequate security measures to protect both their customers and their reputation.

Secondly, the developed framework highlights the importance of employee skills and expertise as an organizational factor. In the hospitality industry, businesses often have employees with varying levels of technical expertise. The developed framework acknowledges this challenge and emphasizes the need for training and support to ensure that all employees can effectively use and benefit from cloud computing technologies.

Thirdly, the developed framework addresses industry characteristics as an environmental factor, which is essential in understanding the specific needs and challenges faced by the hospitality industry in Malaysia and Libya. This includes the focus on customer service, seasonal fluctuations in demand, and the potential for increased competition due to the rapid growth of online travel agencies and other digital platforms. Lastly, the framework also acknowledges the importance of cost, risk, flexibility, and scalability as factors influencing the adoption decision. These factors are especially relevant in the hospitality industry, where businesses often need to adapt quickly to changes in market conditions and customer preferences. By considering these factors, the developed framework helps businesses make more informed decisions about whether to adopt cloud computing and which solutions best suit their needs.

The developed framework fills the gaps in the previous literature by addressing factors specific to the hospitality industry and the unique challenges faced by businesses operating in Malaysia and Libya. This more comprehensive approach will help organizations better understand the factors influencing cloud computing adoption and make more informed decisions when implementing these technologies in their operations.

Furthermore, the current paper has come up to conclude this study with proposing the following conceptual framework as shown in Fig 5.
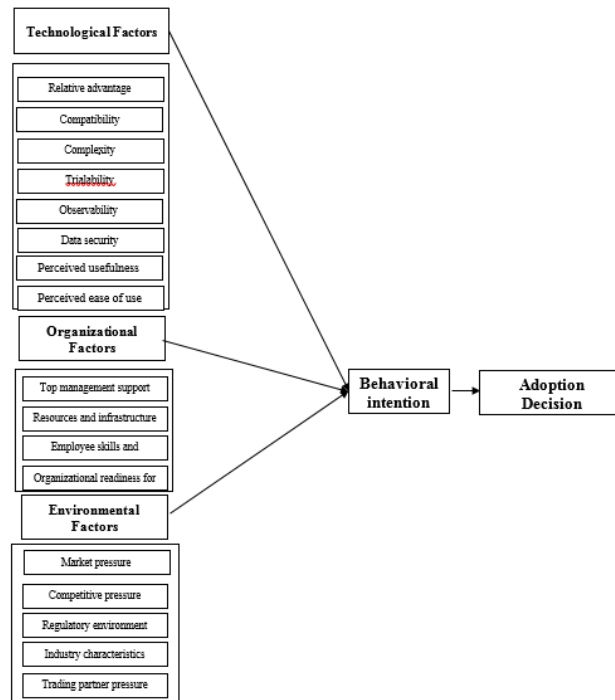
Figure: 5 Research Conceptual Framework

8. Conclusion

This paper presented a comprehensive framework for cloud computing adoption in the Malaysian and Libyan hospitality industries. The framework was developed through an extensive review of literature, empirical data collection, and analysis of the unique challenges and opportunities faced by the hospitality industry in these two countries.

This paper highlights the potential benefits of cloud computing adoption in the hospitality industry, including improved operational efficiency, cost savings, enhanced guest experiences, and increased competitiveness. However, it also revealed several barriers and challenges, such as data security concerns, lack of awareness and understanding, and cultural factors that may hinder the adoption process. The proposed framework addresses these challenges by providing a structured approach that takes into account the specific context of the Malaysian and Libyan hospitality industries. It encompasses key components such as strategic planning, infrastructure assessment, vendor selection, data migration, training and change management, and performance evaluation.

By adopting this framework, hospitality organizations in Malaysia and Libya can navigate the cloud computing adoption process more effectively and maximize the potential benefits. The framework encourages a holistic approach, considering both technological and organizational aspects, and emphasizes the importance of stakeholder engagement, capacity building, and continuous evaluation. It is important to note that while the framework presented in this paper offers valuable insights and guidance, it should be tailored to suit the unique characteristics and requirements of individual organizations within the Malaysian and Libyan hospitality industry. Further research and empirical validation are necessary to refine and enhance the framework's effectiveness.

References

Ahmed, I. (2020). Technology organization environment framework in cloud computing. TELKOMNIKA (Telecommunication Computing Electronics and Control), 18(2), 716-725.

Ainoo, O.A.O. and Nkrumah, T.K., 2022. Assessing the Influence of Adopting Innovative Accounting Information System in Small and Medium Scale Enterprises in Ghana. The International Journal of Business & Management, 10(7).

Al-Ruithe, M., Benkhelifa, E., & Hameed, K. (2018). Key issues for embracing the cloud computing to adopt a digital transformation: A study of saudi public sector. Procedia computer science, 130, 1037-1043.

Asiaei, A., & Ab. Rahim, N. Z. (2019). A multifaceted framework for adoption of cloud computing in Malaysian SMEs. Journal of Science and Technology Policy Management, 10(3), 708-750.

Badie, N., Hussin, A. R. C., Yadegaridehkordi, E., Singh, D., & Lashkari, A. H. (2022). A SEM-STELLA approach for predicting decision-makers' adoption of cloud computing data center. Education and Information Technologies, 1-53.

Benlian, A., Kettinger, W. J., Sunyaev, A., Winkler, T. J., & Guest Editors. (2018). The transformative value of cloud computing: a decoupling, platformization, and recombination theoretical framework. Journal of management information systems, 35(3), 719-739.

Borgman, H. P., Bahli, B., Heier, H., & Schewski, F. (2013). Cloudrise: exploring cloud computing adoption and governance with the TOE framework. In 2013 46th Hawaii international conference on system sciences (pp. 4425-4435). IEEE.

Branco Jr, T., de Sá-Soares, F., & Rivero, A. L. (2017). Key issues for the successful adoption of cloud computing. Procedia computer science, 121, 115-122.

Chelliah, T.D. and Chan, L.M., (2022). Ethical decision intention of first-line managers: Case study in Malaysia hotel industry. Asian Management and Business Review, pp.147-161.

Gangwar, H., Date, H., & Ramaswamy, R. (2015a). Developing a cloud-computing adoption framework. Global Business Review, 16(4), 632-651.

Gangwar, H., Date, H., & Ramaswamy, R. (2015b). Understanding determinants of cloud computing adoption using an integrated TAM-TOE model. Journal of enterprise information management.

Khan, N., & Al-Yasiri, A. (2016). Framework for cloud computing adoption: A road map for Smes to cloud migration. arXiv preprint arXiv:1601.01608.

Lai, W. C., & Hung, W. H. (2018). A framework of cloud and AI-based intelligent hotel.

Lehrig, S., Eikerling, H., & Becker, S. (2015, May). Scalability, elasticity, and efficiency in cloud computing: A systematic literature review of definitions and metrics. In Proceedings of the 11th international ACM SIGSOFT conference on quality of software architectures (pp. 83-92).

Maelah, R., Al Lami, M.F.F. and Ghas, G., (2021). Usefulness of management accounting information in decision making among SMEs: the moderating role of cloud computing. Asia-Pacific Management Accounting Journal, 16(1), pp.59-92.

Sadeeq, M. M., Abdulkareem, N. M., Zeebaree, S. R., Ahmed, D. M., Sami, A. S., & Zebari, R. R. (2021). IoT and Cloud computing issues, challenges and opportunities: A review. Qubahan Academic Journal, 1(2), 1-7.

Saedi, A. (2016). Cloud computing adoption framework: Innovation translation approach. In 2016 3rd International Conference on Computer and Information Sciences (ICCOINS) (pp. 153-157). IEEE.

Senyo, P. K., Effah, J., & Addae, E. (2016). Preliminary insight into cloud computing adoption in a developing country. Journal of enterprise information management.

Sharma, M., Antony, R., Sehrawat, R., Cruz, A.C. and Daim, T.U., 2022. Exploring post-adoption behaviors of e-service users: Evidence from the hospitality sector/online travel services. Technology in Society, 68, p.101781.

Sharma, M., Gupta, R., & Acharya, P. (2021). Analysing the adoption of cloud computing service: A systematic literature review. Global Knowledge, Memory and Communication, 70(1/2), 114-153.

Willie, P. (2019). Can all sectors of the hospitality and tourism industry be influenced by the innovation of blockchain technology?. Worldwide Hospitality and Tourism Themes.

Zbořil, M., & Svatá, V. (2022). Cloud Adoption Framework. Procedia Computer Science, 207, 483-493.