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CLOUD COMPUTING AND HR COMPETENCY TOWARDS THE PERFORMANCE OF MSMEs IN DENPASAR

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Abstract: The industrial revolution 5.0 brings the economy to an industrial paradigm through the rapid development of technology and the internet. MSMEs that have contributed to Indonesian economic development by increasing the GDP and absorbing the workforce need to be able to adapt to technological advances. Cloud computing is one of the drivers of Industrial Revolution 5.0. This study aimed to determine the effect of cloud computing based accounting information systems toward the performance of MSMEs with human resources competency as a moderating variable. Data used is primary data which was collected through a survey questionnaire from a sample of 100 MSMEs. The sampling method used is purposive sampling. Data was performed by moderating regression analysis through SPSS. The result of this study shows that a cloud based accounting information system and human resources competency has a positive influence on the performance of MSMEs, while human resources competency significantly moderates the relationship between cloud based accounting information systems and the performance of MSMEs. These findings show the importance of implementing cloud based accounting information systems by MSMEs for business success.

Keywords: Cloud Computing, MSME, Human Resources

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1. Introduction

The current industrial revolution 5.0 provides a great opportunity for MSMEs to develop their businesses to be more productive and able to compete in the global market. Industry 4.0 significantly affects enterprises by increasing digitization and automated processes, which enhances performance and competitiveness through reductions in time and expenses, increased efficiency, and system flexibility. In Indonesia, MSMEs is a critical engine that leads to the development of economics. According to data from Kementerian Koperasi dan UKM (2021), there were 64.2 million MSMEs in Indonesia, contributing 61.07 percent to the country's GDP. MSMEs in Indonesia may utilize 97 percent of the employed population and generate as much as 64 percent of all investments. It is appropriate for MSMEs to utilize the features of cloud computing to develop an accounting information model. MSMEs can revise accounting information with greater precision and efficiency through the cloud computing environment (Petcu et al., 2024). Following the introduction of cloud computing, numerous businesses started integrating cloud computing into accounting informatization. To further improve the sophistication of accounting informatization, a cloud computing accounting service platform was developed. The trend of accounting informatization construction is unavoidable, however as of right now, cloud computing-based accounting informatization development is still in its early stages of development (Zhao et al., 2022).

Cloud-based accounting information systems enable companies to manage their accounting and financial processes online, with easy access from multiple devices and locations. Key features of these systems include bookkeeping, financial reporting, invoice management, inventory management, and in-depth analytics and reporting. Additionally, these systems often

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integrate with other business applications and offer high levels of security to protect financial data. Previous studies have shown that the adoption of information technology, especially cloud computing, can have a positive impact on the performance of MSMEs. Syahputra et al., (2022), found that the performance of MSMEs in Medan is impacted by the cloud computing-based accounting information system, however there are still few MSMEs in Medan who implement the accounting information system in running their businesses.

According to the Indonesian Ministry of Finance, future challenges for MSMEs that must be addressed by stakeholders include those related to innovation and technology, digital literacy, productivity, financing, marketing, human resources, equal distribution of coaching, training, and facilitation, and a single database. In light of these difficulties, MSMEs must acquire and comprehend technology in order to support business operations due to HR's insufficient level of competency from traditional (offline) business methods to online business.

The competence of current Human Resources (HR) is critical to the success of technology implementation. Technology can be used most effectively by HR professionals; incompetence may cause it tougher to implement technology effectively. HR might not be able to effectively make the best use of an accounting information system's features. As a result, the system's advantages remain not entirely realized, and MSMEs' performance is still constrained by their current managerial and technological capacities. Therefore, in order for accounting information systems to actually improve MSMEs' company performance, they have to maintain a balance between investing in technology and developing human resource competencies. According to research conducted by Saragih & Surikayanti (2015), some business owners lack financial reports, and those who do might not possess adequate access to them or knowledge of how to use accounting information systems as they are concerned of not knowing enough. Farhan et al., (2023) discovered that MSME in Medan Johor District experienced difficulties completing financial reports, and for some merely generating very simple reports, focused on revenues without pointing out expenses.

As a metropolitan city in Bali Province, Kota Denpasar has experienced rapid development of MSMEs, demonstrated by the growth of MSMEs, which increased from 11,500 to 31,685 units, or 175.52 percent, between 2019 and 2020. These companies fall into four categories : trade, different sorts of businesses, agricultural industry, and non-agricultural industry. There is a gap in research related to the implementation of cloud computing-based accounting information system (AIS) in MSMEs in Indonesia, especially in Kota Denpasar. Most previous studies emphasize more on the technical aspects and general benefits of cloud computing, while few discuss the role of HR as a moderating variable in the context of MSME performance. The biggest highlight of this research is the implementation of cloud based computing and human resources competency to MSMEs accounting information systems, which realizes the improvement of MSMEs performance and effectively improves the efficiency of business sustainability.

2. Literature Review

Resource Based Theory

Resource Based Theory is based on Barney (1991) belief that a company's success is defined by its internal strengths and limitations. This theory focuses on the internal organizational resources that are defined as scarce, imperfectly adaptable, imperfectly replicated, and imperfectly exchangeable. The theory has been applied to analyze business resource and capability strategies in light of modern technological and innovative advances Utami &

Alamanos (2023). In other words, organizations must be able to manage their internal resources in order to remain competitive and maintain company continuity. MSMEs are business entities that consist of a group of resources with distinct competencies and can aid in the implementation of strategies to achieve business goals optimally (Maulatuzulfa & Rokhmania, 2022). This study applies Resource Based Theory to the management of internal company resources in MSMEs, including cloud computing-based accounting information systems and HR competencies. Both are internal corporate resources that can be utilized to increase performance and achieve a competitive advantage.

Cloud Computing Based Accounting Information System

Accounting information systems consist of protocols, databases, hardware, and software that collaborate to gather, store, record, and process accounting data into information that can be utilized for making decisions (Tawaqal & Suparno, 2017). This accounting information system evolves alongside technology advancements. The utilization of cloud computing as a database is currently the main focus of accounting information system development. Cloud computing is a collection of distributed computing infrastructure, such as server farms, and very large data centers that supply services and resources on demand via a network (Asiaei & Ab. Rahim, 2019). With the use of this technology, businesses may take advantage of economies of scale, flexibility, and quick innovation without having to make large expenditures in physical infrastructure. Through the cloud computing model, small and medium-sized businesses can access the newest technological advancements and expert advice from major service providers, enhancing the effectiveness of their accounting management and business process reorganization (Ko et al., 2018).

Human Resources Competency

Human resource competency is defined as the knowledge, skills, and personality traits that directly influence corporate performance (Maulatuzulfa & Rokhmania, 2022). The three components of HR competency are knowledge, skills, and abilities. Knowledge is a person's understanding of science and technology gained through the process of learning and experience. Skills are specific abilities to do something, such as production, communication, teamwork, supervision, administration, and accounting. On the other hand, ability refers to a person's capacity to carry out different activities in a work (Ardiana et al., 2010). In terms of accounting information systems, human resource competency refers to the ability of firm personnel to use accounting information systems to create additional value for the organization. This comprises employee understanding of the accounting information system utilized, employee abilities in using accounting information systems, and employee skills in optimizing the use of various features and dealing with problems that may arise. This involves continuous endeavors to enhance staff proficiency through instruction in the utilization of accounting information systems.

Micro, Small, Medium Enterprises Performance

One important concept that must be regularly studied is firm performance. It represents an organization's current status stated in financial and non- financial terms and serves as any enterprise's lifeline. The performance of MSMEs is defined as the extent to which they have improved their cash flow, profitability, and other non-financial metrics, such as employee and customer satisfaction, innovation, and business strategy (González-Benito et al., 2009). Generally speaking, market, operational, and financial performance are all components of

MSME performance (Praditya & Utomo, 2022). Financial performance is correlated with MSMEs' capacity to grow earnings over a given time frame. Operational performance is associated with the efficacy and efficiency of MSMEs' business operations. While market performance is connected to the company's worth as determined by third parties' assessments or as measured against its market value. MSMEs' success can be evaluated in terms of accounting information system utilization based on enhanced productivity, as well as decision-making speed and efficiency. Furthermore, MSMEs' performance is demonstrated by the ease with which inventories and cash flow are managed, as well as the minimization of potential errors.

Conceptual Framework
The conceptual framework in this research is shown in Figure 1.

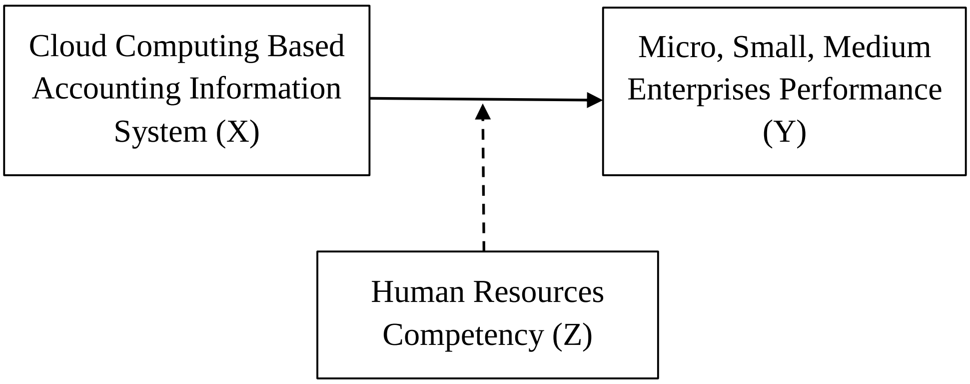

Figure 1: Framework

3. Method

The present study employs a quantitative approach using the survey method to objectively measure the relationship between variables using numerical and statistical data. The study aims to determine the relationship between the cloud computing based accounting information system (AIS) and the moderation of human resources competency in the MSMEs performance. Primary data were collected through an online questionnaire distributed to MSMEs in Denpasar City. The survey had closed-ended questions using a Likert scale to evaluate MSME performance, HR competencies, and the implementation of cloud computing-based AIS. The research sample consisted of 100 respondents, selected using the Slovin algorithm from a population of 32,626 MSMEs. The sample was drawn using a non-probability sampling strategy, especially purposive sampling, to identify MSMEs that had employed cloud-based accounting software for their financial reports. The statistical method used in this study was moderated regression analysis.

4. Result and Discussion

Validity and Reliability Test Results
The validity test results indicate that the independent, moderating, and dependent variables in this study meet the required criteria with a significance value of < 0.05. Thus, it can be concluded that the statements related to the variables of cloud-based accounting information

systems, human resource competence, and MSME performance are valid. Furthermore, the reliability test results show that the Cronbach's Alpha value for each instrument exceeds 0.60 (Cronbach's Alpha > 0.60), indicating that the instruments are reliable and appropriate for use in this research.

Descriptive Statistic

The characteristics of the respondents in this study are presented in Table 1 below.

Table 1. Responden Characteristic

Characteristic	Category	Count	Percentage
Gender	Male	61	61%
	Female	39	39%
Age	25-35	48	48%
	36-45	43	43%
	>45	9	9%
Education Background	Senior High School	16	16%
	Diploma	39	39%
	Bachelor’s Degree	45	45%
Total		**100**	**100%**

Source: Processed data, 2024

The following section presents the descriptive statistics for each of the variables examined, including the Cloud Computing-Based Accounting Information System, Human Resource Competence, and MSME Performance, along with their respective minimum, maximum, and average scores.

1. Cloud Computing-Based Accounting Information System Variable
   This variable has a minimum score of 2 and a maximum score of 5. The test results indicate that the average score for this variable is 4.45.
2. Human Resource Competence Variable
   This variable has a minimum score of 2 and a maximum score of 5. The test results indicate that the average score for this variable is 4.38.
3. MSME Performance Variable
   This variable has a minimum score of 3 and a maximum score of 5. The test results indicate that the average score for this variable is 4.47.

Moderated Regression Analysis

Moderated Regression Analysis (MRA) includes the F test, determination coefficient analysis, and hypothesis testing (t test) which are presented in Table 2.

Table 2. ***Moderated Regression Analysis***

Model		Unstandardized Coefficients		Standardized Coefficients	t.	Sig.
		B	**Std. Eror**	**Beta**		
1	(Constant)	2.229	1,165		1,994	0,043
	AIS	1,408	0,608	1,226	2,316	0,023
	HR Competency	1,331	0,643	1,100	2,070	0,041
	AIS*HR Competency	1,371	0,628	1,395	2,104	0,038
Sig. F		0,000				
Adjusted R^2		0,789				

Source: Processed data, 2024

The results of the determination coefficient test contained in Table 2 show that the adjusted R2 value is 0.789 or 78.9%. This means that 78.9% of the variation in the MSME performance variable can be explained by the variables in the regression model of this study, while the remaining 21.1% is explained by other variables outside the model.

The moderation regression model equation formed from the results of data analysis is:

$$Y = 2.229 + 1{,}408X + 1{,}331Z + 1{,}371XZ$$

The interpretation of the regression model and its significance level are as follows:

1. The constant value of 2.229 means that if the variables of cloud computing-based AIS, HR Competence, and the interaction of cloud computing-based AIS and HR competency are 0, then the performance value of MSMEs is 2.229.
2. Cloud computing-based AIS has a regression coefficient value of 1.408, which means that every 1 unit increase in cloud computing-based AIS will increase MSME performance by 1.408. The significance value of 0.023 <α=0.05 indicates that cloud computing-based AIS has a positive effect on MSME performance.
3. HR competency has a regression coefficient value of 1.331, which means that every 1 unit increase in HR competency will increase MSME performance by 1.331. The significance value of 0.041 <α=0.05 indicates that HR competency has a positive effect on MSME performance.
4. The interaction of cloud computing-based AIS and HR competency has a regression coefficient value of 1.371, which means that every 1 unit increase in cloud computing-based AIS will increase MSME performance by 1.371. The significance value of 0.038 <α=0.05 indicates that HR competency strengthens the influence of cloud computing-based AIS which has a positive effect on MSME performance.

Discussion

The Effect of Cloud Computing-based AIS on MSME Performance

Table 2's hypothesis test findings indicate that the Cloud Computing-based AIS variable has a significance value of 0.023 <α=0.05 and a regression coefficient value of 1.408. The first hypothesis (H1) of the study is accepted since this figure demonstrates the favorable impact of the Cloud Computing-Based AIS variable on MSME performance. This implies that MSMEs' performance will increase with the amount of cloud computing-based AIS they employ. Resource-based theory states that managing internal resources can give a business a competitive edge (Praditya & Utomo, 2022). Accounting Information System (AIS) is one form of internal resource that can affect a company's operations. This is in line with research by Syahputra et al. (2022) and Yumiko & Tjakrawala (2024) which states that cloud computing-based accounting information systems have a positive effect on performance. The use of cloud computing in AIS makes it easier for users to access accounting information and allows automation of accounting data management. This can improve the accuracy of financial data and operational efficiency, which in turn affects improved performance (Ajao Owolabi & Ufuoma Izang, 2020)

The Effect of HR Competence on MSME Performance

The results of the hypothesis test contained in Table 2 show the significance value for the HR Competence variable is 0.041 $<\alpha=0.05$ with a regression coefficient value of 1.331. This figure shows that the HR Competence variable has a positive effect on MSME performance, so the second hypothesis (H2) in the study is accepted. This means that the higher the HR competence in MSMEs, the higher the performance of MSMEs will be. The results of this study are in line with the research of Fariz Zhaviery et al. (2019) and Maulatuzulfa & Rokhmania (2022) which states that HR competence has a positive effect on company performance. HR is the party that carries out MSME operational activities. If MSMEs have competent HR, business activities can be managed optimally. Based on this, HR in MSMEs is an internal resource which according to Resource Based Theory can encourage companies to create competitive advantages if managed properly.

The Influence of Cloud Computing-based AIS on MSME Performance with HR Competence as a Moderator

The results of the hypothesis test contained in Table 1 show the significance value for the interaction variable of Cloud Computing-Based AIS with HR Competence is 0.038 $<\alpha=0.05$ with a regression coefficient value of 1.371. This figure shows that HR Competence is able to moderate the influence of Cloud Computing-Based AIS on MSME performance, so that the third hypothesis (H3) in the study is accepted. This means that the higher the HR Competence in MSMEs, the greater the influence of Cloud Computing-Based AIS on MSME performance. Based on research by Fariz Zhaviery et al. (2019) and Maulatuzulfa & Rokhmania (2022), HR competence is an internal resource that can affect company performance. The success of implementing cloud computing-based AIS is greatly influenced by the HR operating the system. HR with high competence will be able to operate the features contained in the AIS effectively, so that the benefits of using cloud computing-based AIS on MSME performance will be more optimal.

5. Conclusions

According to the findings and discussion, cloud computing-based Accounting Information Systems improve the performance of MSMEs in Denpasar City. This implies that MSMEs will perform better the more intensively and optimally they deploy cloud computing-based AIS. In Denpasar City, MSMEs' performance is positively impacted by HR competency. This suggests that MSMEs' performance will improve as their HR expertise increases. In terms of moderation, the study's findings indicate that HR proficiency can mitigate the impact of cloud computing-based AIS on Denpasar City's MSMEs' performance. The beneficial impact of cloud computing-based AIS on MSME performance can be reinforced by high HR performance in MSMEs. This study suggests that employing skilled HR and cloud computing-based AIS is critical to MSME performance. In light of this, it is advised that MSMEs manage their accounting transactions using cloud computing-based AIS in order to enhance their efficiency. MSMEs are also encouraged to make sure that MSME HR is competent enough to manage business operations by paying attention to candidate qualities throughout the hiring process and holding training sessions to enhance HR proficiency. The HR competency variables and cloud computing-based AIS variables are used in this study, which is restricted to MSMEs in Denpasar City. On the basis of this, it is advised that future researchers broaden the data's scope to include more variables that may have an impact on a company's performance in addition to limiting it to Denpasar City.

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