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Intentions to Use "Simpan UGM" as Cloud-Based Records Repository Service at Universitas Gadjah Mada

A B S T R A C T

University students, lecturers, and staff have entered the digital age. All administrative activities, including recordkeeping, should be carried out digitally, that can be stored both online and offline. For this reason, Universitas Gadjah Mada (UGM) provides a free cloud repository, namely "Simpan UGM" for the UGM community. However, many students, lecturers, and staff do not use it. The purpose of this study was to determine the factors that influence the intention to use Simpan UGM at UGM. This study uses a mixed-method sequential explanatory design with three important stages, namely the quantitative, qualitative, and interpretation phases. Samples were determined randomly to students, lecturers, and staff related to records management, namely students and lecturers of the "Pengelolaan Arsip dan Rekaman Informasi Study Program" (PARI) as well as staff from members of the UGM Records Manager and Archivists Forum (Forsipagama). Quantitative data were analyzed with PLS-SEM, while qualitative data were analyzed with Miles and Huberman's interactive model. The results of the study show that there are many factors that have a positive effect, although not all of them are significant, on the intention to use Simpan UGM as a records cloud repository at UGM.

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INTRODUCTION

Background of Research

Entering the digital age, university administrative activities produce digital records, or also known as electronic records. The advent of digital technology has brought about significant advantages for archives and records management. Besides the apparent benefits of this technology, including worldwide access and reduced paperwork (Lee & Lee, 2009: 525). According to Pearce-Moses (2005: 141), electronic record, which is also referred to as a digital or automated record (a term that is mostly outdated), refers to information or data that has been captured and saved in an automated system for later manipulation or storage. To comprehend

this data, a person needs to use the same automated system that was used to capture and save it. In line with this opinion, in their article, (Aouira et al., 2020: 2) state that the use of electronic records can have several benefits, including providing health workers with real-time information access, developing accurate and structured information, and promoting better communication.

Digital records are stored and managed with digital devices. The records rely on the user as the main recipient of the information and records contained within it. Its fundamental goal is to grant access to information, and the user is the one who searches and exploits it. The concept of records users involves individuals or groups who access or interact with records, both internal and external stakeholders. In university, this group can consist of students, faculty, staff, administrators, and external stakeholders such as alumni or members of the public. Records users can also contribute to the management and preservation of institutional records by developing policies, providing input on retention schedules, and identifying historical records of importance. Since the 1960s, the importance of user interaction and meeting the user's needs has become a crucial issue in archival studies. Archivists have taken two different approaches to their work: the traditionalist "keepers of records" style, which focuses primarily on the content, and the "use-centered" approach taken by other archivists. While both approaches have their benefits, the preservation of records and their context being one of the advantages of the former, the latter is equally important. The use-centered approach is essential in ensuring that preserved records are accessible and useful in the modern world (Bartliff et al., 2020: 3). Consequently, the records must take into account the user's requirements when managing and allowing access to records. This involves comprehending the different user categories that may use the records, their information needs, and how they may retrieve and employ the records.

Both offline and online digital repositories are required for records. Offline digital record repository may have certain advantages, but it also has some drawbacks that make it less desirable than cloud-based. Storing data on physical hard drives for offline repositories of digital records has a number of drawbacks compared to cloud-based repositories. One of the critical drawbacks is the potential for data loss due to hardware malfunction, theft or even natural disasters, which cannot be mitigated by redundancy or automated backups, unlike cloud repository. In addition, the cost of maintaining an offline repository is high, and it requires periodic updating to maintain data accessibility and security.

Another limitation of offline digital record repositories is the lack of accessibility and collaborative features. In our experience, because offline repositories usually require physical access to the repository device, sharing or collaborating on documents is constrained. In contrast, cloud-based allows users to access and collaborate on documents from any location with an internet connection.

Currently, online media is available in the form of cloud computing, namely computing services delivered via the internet, enabling users to access shared resources without physical hardware. Over the past ten years, cloud computing has revolutionized the enterprise software industry. Previously, enterprise software vendors produced modular product platforms known as packaged enterprise software. With the emergence of cloud computing, vendors now seek to convert their packaged enterprise software into cloud-based enterprise software ecosystems that enable both partners and customers to develop inventive applications (Muhic et al., 2023: 2). Cloud repository is part of cloud computing, enabling users to store, access and share data and files over the internet using remote servers. Cloud repository offers a scalable and cost-effective solution for storing large amounts of data. Cloud computing is a significant development that enables the provision of information technology as a service. It offers infrastructure, platform, and software services that can adjust to meet the fluctuations in demand. The purpose of this study is to examine how potential adopters of cloud computing respond to external factors such as the COVID-19 pandemic and its impact on their decision-making regarding technology adoption (Sharma et al., 2023: 1). Adopting cloud computing is essential for the public sector to improve operations and provide better services to the public. From these opinions it can be synthesized that cloud computing involves providing computing services, including repository, software, databases, and servers, through the internet or "the cloud." Users can access these services as needed and pay only for what they use, without having to handle the underlying infrastructure themselves.

The implementation of cloud computing has enabled organizations to access their required resources easily and cost-effectively, which has led to increased efficiency in organizational management (Wu et al., 2022: 1). From the reviews of several authors, it can be concluded that a cloud-based records management system offers a cost-effective solution for records repository and management. Cloud repository makes it easy to access records from anywhere and anytime. Furthermore, cloud

computing is an effective solution for managing records in institutions, including higher education, providing scalability, accessibility, and cost-effectiveness.

The advantages of cloud computing that offer cloud repositories are accompanied by the emergence of both free and paid cloud repository services. Examples of unpaid services are Google Drive with a capacity of 15 GB, Dropbox with a capacity of 2 GB, Microsoft OneDrive with a capacity of 5 GB, iCloud with a capacity of 5 GB, Mega with a capacity of 50 GB, etc. Meanwhile, some services are paid because they provide more capacity.

Universitas Gadjah Mada (UGM) uses OwnCloud as a cloud repository platform that allows users from the UGM community to store, access and share files and other data. UGM hosts their data on its own servers, providing greater control over privacy and security. OwnCloud can be accessed via web interface or by using the desktop and mobile apps. Users can manage files, collaborate with others, and integrate with other applications and services.

Even though cloud repository at UGM is available, there is still a gap, namely the desire and reluctance to use this system among the university community. Previous studies have focused more on the technical aspects of cloud repository, while the factors influencing users' willingness to use these systems have not been extensively studied. Therefore, it is important to examine the factors that encourage the use of cloud repository at UGM which is named "Simpan UGM". Simpan UGM is Cloud-based media with cloud document repository specifications that are used solely by UGM and self-hosted. Simpan UGM enables file sharing and collaboration across multiple devices and platforms. It offers robust security features, collaboration capabilities, customization options, and accessibility across multiple platforms and devices. About the user trust on records keeping, Esteves & Alves (2013: 506) state that very organization is likely to encounter resistance to change at some level, and it is important for leaders to be equipped to manage this aspect of change in a manner that facilitates swift transition from resistance and denial to acceptance.

The Technology Acceptance Model (TAM) that was introduced by Davis (1986) perspective is used in this study. Despite the extensive use of TAM to investigate technology acceptance, there are gaps in the literature regarding the application of TAM to cloud repository services at UGM. Therefore, research that investigates the relationship between perceived usefulness, perceived ease of use, outreach, technological

awareness, and technological capabilities related to intention to use Simpan UGM is needed at UGM.

State of Problem

Before stating the problem, there is a conceptual model as presented in Figure 1.

In the conceptual model offered, Outreach (X1), Technological Awareness (X2), and Technological Capability (X3) are exogenous variables. Meanwhile, Perceived Usefulness (X4) and Perceived Ease of Use (X5) are intervening variables. While the Intention to Use Simpan UGM (Y) is an endogenous variable.

Although cloud repository has the potential to offer several advantages for managing records in UGM, including cost-effectiveness, accessibility, and scalability, there is a dearth of research that examines the factors that impact the adoption of cloud repository by university lecturer, staff, and students. This knowledge gap poses challenges for UGM looking to implement cloud repository solutions and impedes their ability to manage their records efficiently. Consequently, it is necessary to investigate the factors that influence the intention to use cloud repositories for managing records in universities, such as perceived usefulness, ease of use, security concerns, and organizational support. From this conceptual model and the problem statement, the authors ask the following research questions:

1. How are the processes and results of the quantitative analysis of the conceptual model?
2. How are the processes and results of the qualitative analysis of the conceptual model?
3. What is the interpretation of the mixed-method analysis results in this study?

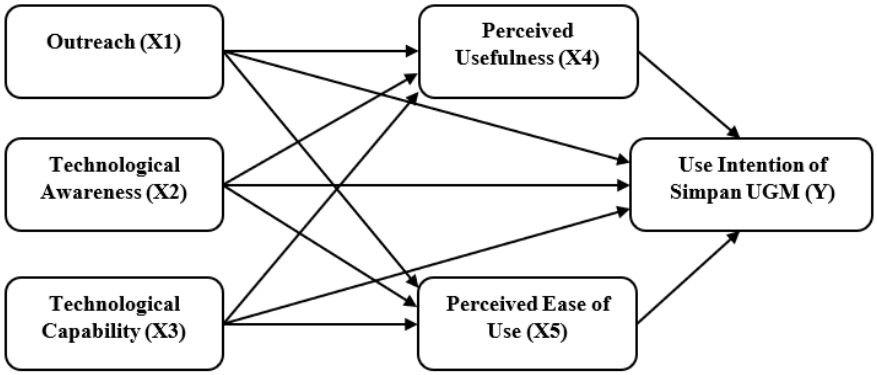

Figure 1. Conceptual Model
Sources: Researcher's Analysis, 2023

Purposes

The aims of this research are:

1. Exploring the processes and results of quantitative analysis of the conceptual model to find the factors that influencing the use intention of Simpan UGM in UGM
2. Determining the processes and results of qualitative analysis of the conceptual model to strengthen the results of quantitative analysis
3. Analyzing the interpretation of mixed-method analysis results in this study to integrate the results of quantitative and qualitative data analysis in order to provide a more comprehensive understanding of the research problem

Methods

This study uses a mixed method with a sequential explanatory design, a research methodology that combines quantitative and qualitative methods to provide a comprehensive understanding of a research problem. This design consists of three phases. The first phase focuses on the collection and analysis of quantitative data, while the second phase involves collecting qualitative data to gain a deeper understanding of the problem. The last is data interpretation in descriptive form. The two phases are linked, with the results from the quantitative phase informing the qualitative phase. This design is useful for answering complex research questions that cannot be answered using only quantitative or qualitative methods.

Quantitative data collection was carried out by survey using a questionnaire. Samples in quantitative research were selected randomly, while in qualitative research they were determined purposefully. The sample are students and lecturers of the PARI Study Program and staff are members of Universitas Gadjah Mada Records Manager and Archivists Forum (Forsipagama). The quantitative phase analysis used Structural Equation Modeling (SEM) to answer research questions. Furthermore, qualitative data collection was carried out by interviews and then analyzed using the interactive data introduced by Miles and Huberman (1994).

The divided questionnaire contains 20 questions representing the indicators of each construct. The question items in our questionnaire are presented as follows:

1. Some members of the UGM community are not aware of the Simpan UGM facility provided by UGM
2. It is necessary to socialize Simpan UGM for the UGM community
3. I need to know the advantages of Simpan UGM over other online records cloud repository
4. I noticed that there are now more records and letters in digital format

5. Letters sent electronically are reasonable and do not reduce respect for the intended person
6. I often need personal documents such as family cards or residence cards outside working hours and outside the home so I hope to be able to access them anywhere and anytime
7. I know there is a records cloud repository
8. I know how to access mail in Simaster Application of UGM
9. I need a records cloud repository for my own records
10. Work units at UGM require a records cloud repository for the unit's records
11. Simpan UGM is very useful at times
12. Simpan UGM helps save my files
13. the menu on Simpan UGM is easy to understand
14. the menu on the Simpan UGM is easy to operate
15. Simpan UGM is easily accessible with the internet network on campus
16. Simpan UGM is easily accessible with an internet network outside the campus
17. I want to use Simpan UGM to store my files in cloud repository
18. I am confident that I will be able to use Simpan UGM to manage electronic records
19. I will use Simpan UGM because it is safe for managing electronic records
20. I would recommend to my fellow UGM students to use Simpan UGM in managing electronic records

Conceptual Framework

A mixed-method sequential explanatory design begins with the collection and analysis of quantitative data, followed by qualitative data to explain or expand on the quantitative findings. The framework includes developing research questions that can be answered using both types of data, collecting and analyzing quantitative data, collecting and analyzing qualitative data, integrating findings, interpreting results, discussing implications and recommendations, and sharing findings.

Figure 2. Conceptual Framework
Sources: Researcher's Analysis, 2023

DISCUSSION

Process and Results of Quantitative Phase Analysis

Quantitative data collection was carried out by survey method. The survey was conducted on the UGM community: students, lecturers and staff. This study chose a sample with UGM community restrictions related to records management. This consideration is used with the aim of providing direct theoretical and practical benefits to the community. Students and lecturers were selected from the PARI Study Program. Meanwhile, the staff selected as the sample were members of the Forsipagama consisting of archivists, records managers and archival institutions. Samples were chosen randomly.

The survey was conducted by distributing a questionnaire containing 20 main questions related to the six variables in the conceptual model. The survey was conducted online using Google Form media. A total of 72 respondents gave answers to the survey with an instrument with a Likert scale of 5 points with:

5: strongly agree,
4: agree,
3: undecided,
2: disagree, and
1: strongly disagree.

Quantitative research results were achieved through the measurement model and structural model stages.

1. Measurement Model

Measurement in this study using Cronbach's alpha analysis; internal

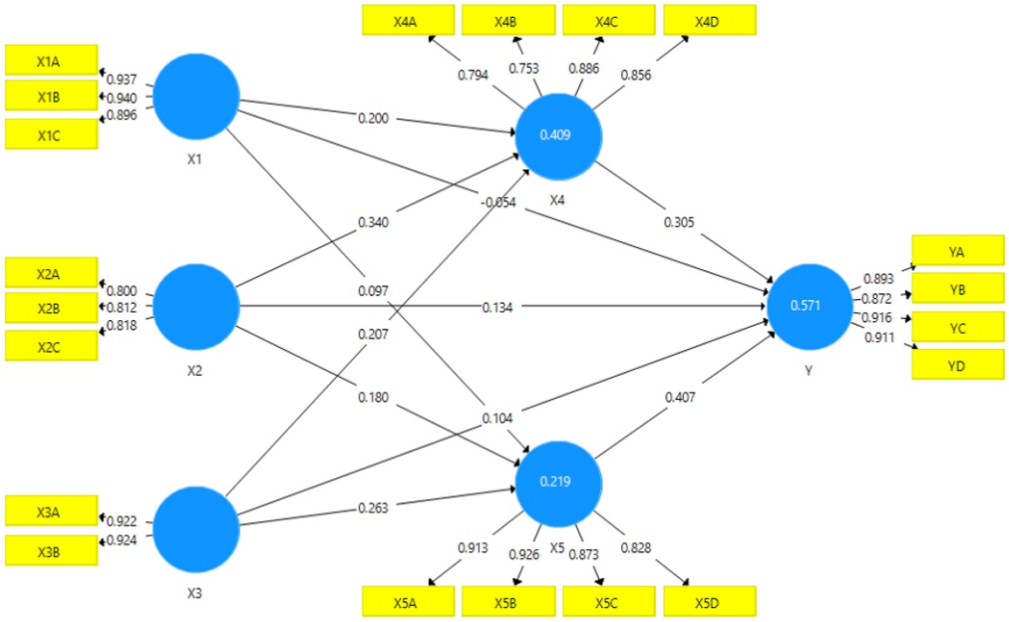

Figure 3. Measurement Model with PLS Algorithm Calculation
Sources: Researcher's Analysis, 2023

consistency of composite reliability; Average Variance Extracted (AVE); and discriminant validity with algorithm calculations. The results of the analysis in this study showed that all constructs met the Cronbach alpha standard and composite reliability > 0.60, so there was a suitable fit. The AVE test shows a value > 0.50, so that all constructs have convergent values. This study use SmartPLS 3 to calculate the model. Table 1. shows the result of Convergent and Construct Validity.

Furthermore, this study uses cross-loading criteria to test discriminant validity. Determining discriminant validity in this study, the correlation between constructs must be less than 0.9, and the AVE for each construct must be greater than the squared correlation with other constructs. In addition, the AVE of each construct must be greater than the squared correlation between that construct and all other constructs in the conceptual model. This method ensures that the loading indicator must be higher than the other constructs. To show its significance, bootstrap technique is used.

2. Structural Model

In the structural model, this study uses SEM-PLS and bootstrap resampling to evaluate the hypothesis. The hypothesis is said to be significant if the t value is greater than 1.96 and the p value is less than 0.05.

Table 1. Convergent and Construct Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
X1	0,916	0,926	0,947	0,855
X2	0,741	0,746	0,851	0,656
X3	0,826	0,827	0,920	0,852
X4	0,841	0,844	0,894	0,679
X5	0,908	0,922	0,936	0,784
Y	0,920	0,925	0,944	0,807

Source: Researcher's Calculations, 2023

Table 2. Discriminant Validity

	X1	X2	X3	X4	X5	Y
X1	0,925					
X2	0,543	0,810				
X3	0,642	0,589	0,923			
X4	0,518	0,571	0,536	0,824		
X5	0,364	0,388	0,431	0,612	0,886	
Y	0,392	0,498	0,488	0,659	0,672	0,898

Source: Researcher's Calculation, 2023

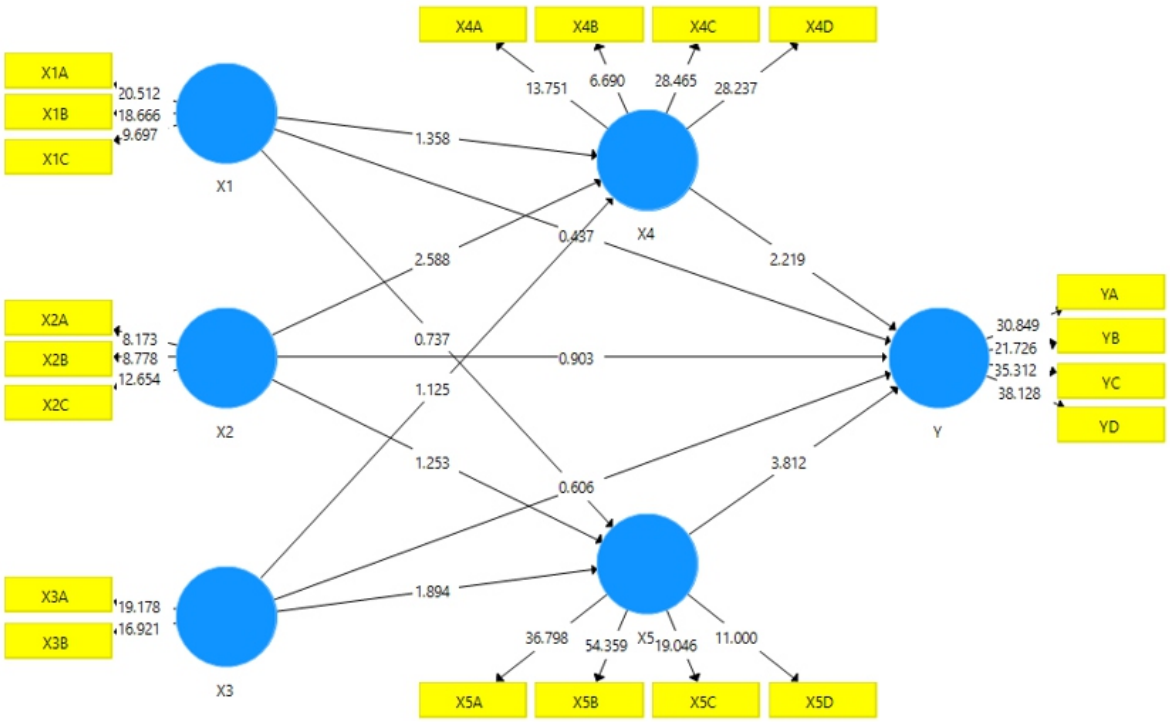

Figure 4. Bootstrapping Calculation
Sources: Researcher's Analysis, 2023

Table 3 shows that not all conjectures reached statistical significance due to these requirements.

Table 3. Hypothesis Test Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
X1 -> X4	0,200	0,182	0,148	1,358	0,087
X1 -> X5	0,097	0,089	0,132	0,737	0,231
X1 -> Y	-0,054	-0,039	0,124	0,437	0,331
X2 -> X4	0,340	0,346	0,131	2,588	0,005
X2 -> X5	0,180	0,185	0,144	1,253	0,105
X2 -> Y	0,134	0,143	0,149	0,903	0,183
X3 -> X4	0,207	0,201	0,184	1,125	0,130
X3 -> X5	0,263	0,258	0,139	1,894	0,029
X3 -> Y	0,104	0,075	0,172	0,606	0,272
X4 -> Y	0,305	0,303	0,138	2,219	0,013
X5 -> Y	0,407	0,416	0,107	3,812	0,000

Source: Researcher's Calculation, 2023

Process and Results of Qualitative Phase Analysis

Qualitative data collected from informants who were determined by purposive sampling. The selected informants included 3 professions on records management involved in the sample: students, lecturers and staff. Data collection is done by interview. Furthermore, the data were analyzed using Miles and Huberman model. Miles and Huberman (1994) developed an Interactive Model for qualitative data analysis, which offers a methodical method for collecting, examining, and understanding qualitative data. The framework consists of three phases, including data reduction, data display, and inference/verification.

The initial stage of the Interactive Model was carried out with data reduction, which aims to reduce the amount of data into a size that is more manageable without sacrificing important

information. The next phase, data presentation, involves presenting the reduced data in a way that is easy to understand and suitable for analysis, such as by using matrices, charts, and graphs to highlight patterns and correlations. The final stage is drawing conclusions/verification, namely drawing conclusions from the data and then verifying them through cross-checking and validation. This can be achieved by comparing and contrasting data from different sources, using multiple researchers to analyze the data, and comparing findings with existing literature and theory.

The results of the questionnaire with qualitative questions showed that as many as 53 respondents knew Simpan UGM, while 19 other respondents did not know Simpan UGM. When compared, respondents who know SIMPAN UGM are 73.6%, while those who do not know Simpan UGM are 26.4% (a fairly large number). However, although many respondents are familiar with Simpan UGM, more have not used it. Only 12 out of 72 respondents used Simpan UGM (16.7%). Other respondents use other cloud repository media that do not use the UGM server.

The results of interviews from 3 people agreed that the use of Simpan UGM as an electronic records cloud repository was influenced by factors in the conceptual model, including outreach, technological awareness, technological capabilities, perceived usefulness, and perceived ease of use. However, in the interview, it was revealed that other factors that influence the use of Simpan UGM as an electronic records cloud repository are organizational culture, level of need, and the status of students who have graduated and cannot reactivate it. So, this media only applies to active UGM members. For lecturers and staff, using Simpan UGM can take a long time, while for students it is relatively short.

Interpretation of Measurement Results

The results of the quantitative phase shown on Figure 3 influence or relationship between variables, seen from the calculation of the path coefficient. The following is an interpretation of the results of quantitative research:

1. Outreach of Simpan UGM has a positive and significant effect on the perceived usefulness of Simpan UGM as an electronic records cloud repository.
2. Outreach of Simpan UGM has a positive but not significant effect on perceived ease of use of Simpan UGM as an electronic records cloud repository.
3. Outreach of Simpan UGM has a positive but not significant effect on the intention to use Simpan UGM as

an electronic records cloud repository.

4. Technology awareness has a positive and significant effect on the perceived usefulness of Simpan UGM as an electronic records cloud repository.
5. Technology awareness has a positive but not significant effect on perceived ease of use of Simpan UGM as an electronic records cloud repository.
6. Technology awareness has a positive but not significant effect on the intention to use Simpan UGM as an electronic records cloud repository.
7. Technological capability has a positive but not significant effect on the perceived usefulness of Simpan UGM as an electronic records cloud repository.
8. Technological capability has a positive and significant effect on perceived ease of use of Simpan UGM as an electronic records cloud repository.
9. Technological capability has a positive but not significant effect on the intention to use Simpan UGM as an electronic records cloud repository.
10. Perceived usefulness has a positive and significant effect on the intention to use Simpan UGM as an electronic records cloud repository.
11. Perceived ease of use has a positive and significant effect on the intention to use Simpan UGM as an electronic records cloud repository.

It describes a study that investigated the effects of outreach, technology awareness, technological capability, perceived usefulness, and perceived ease of use on the intention to use Simpan UGM, an electronic records cloud repository. The results show that outreach has a positive and significant effect on perceived usefulness but not on perceived ease of use and intention to use. Technology awareness has a positive and significant effect on perceived usefulness but not on perceived ease of use and intention to use. Technological capability has a positive and significant effect on perceived ease of use but not on perceived usefulness and intention to use. Finally, perceived usefulness and perceived ease of use have a positive and significant effect on the intention to use Simpan UGM.The significance of the effect can be used to show the strength of the influence between variables. If they are significant, the model can be applied to the population, but if they are not significant, the model only applies to the sample.

Meanwhile, the results of the qualitative phase show support for the influence between variables. The qualitative phase of the interview results cannot show whether or not the influence between variables is significant, but the positive effect can still be predicted. Apart

from that, in the mixed-method phase the results show that there are other factors that influence the intention to use Simpan UGM as an electronic records repository at UGM.

CONCLUSION

There are positive influences between outreach, technology awareness, technological ability, perceived usefulness, and perceived ease of use on the intention to use Simpan UGM as an electronic records cloud repository at UGM. The positive effect is indicated by all t-statistics > 0. Although all have positive effects, in fact in this study, not all factors have a significant effect which are indicated by the t-statistics > 1,96 and p-values <0,05. In addition, there are other factors that influence the intention to use Simpan UGM including organizational culture, level of need, and student status. The researcher recommends outreaching the use of Simpan UGM and tutorials for the UGM community. The university must be able to explain that the use of Simpan UGM media has advantages over other similar media, namely the level of security, usability, and convenience. In addition, it is necessary to improve organizational culture by electronically storing records using Simpan UGM.

In future research, theoretical implications for the use of cloud repository for records could involve investigating how various theoretical models, like the Technology Acceptance Model (TAM), can be adjusted to better comprehend the aspects that impact users' willingness to use cloud repository solutions in different settings. Meanwhile, to be applied in practical contexts, future research should focus on identifying effective strategies and best practices for implementing and managing these solutions in various organizational contexts. This includes finding ways to address potential security and privacy concerns and providing adequate training and support for users to use and access cloud repository systems effectively.

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