

ARTICLE

The Use of the Unified Theory of Acceptance and The Use of Technology (UTAUT) to Analyze the Implementation of the Massive Open Online Course (MOOC) at the Indonesian Financial and Development Supervisory Agency

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ABSTRACT

The training and development program for the State Civil Apparatus in the public sector is very important because it is related to public performance and services. This study aims to analyze the implementation of the Massive Open Online Course (MOOC) for financial supervision training. The basic concept of this study uses an integrated Unified Theory of Acceptance and Use of Technology (UTAUT). This qualitative research was conducted at the Center for Education and Training of Auditors of the Financial and Development Supervisory Agency (Pusdiklatwas BPKP), which is responsible for training financial and development auditors. The subjects of this study were twelve informants who were selected using purposive sampling. Research data collected during the Covid-19 pandemic used electronic correspondence. The results of this study showed that training conducted using the massive open online course (MOOC) model is very effective and efficient because learning can be done flexibly and easily. Through MOOC, teachers and participants get physical facilities and troubleshooting services so that the learning process runs well without experiencing significant obstacles. This ICT-integrating training program has also positively contributed to the discipline of human resource management, especially concerning human development in organizations.

A. INTRODUCTION

Indonesia aspires to improve public services through performance-based governance, including citizen participation, decentralization, performance-based salary reforms, results-based management, standard setting, and transparency (Brinkerhoff & Wetterberg, 2013). Because training improves the quality of public services and job satisfaction (Zumrah et al., 2013), officials are encouraged to master various knowledge, skills, and abilities to become more competent and professional in serving society as a culture (Rice, 2007). Several countries

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have systematically and regularly organized competency-based education and training for public sector officials (Skorkova, 2016).

Training and development programs for the public sector are vital because they influence public service performance and policy (Rajasekar & Khan, 2013). Implementing learning activities for public officials in Indonesia refers to Government Regulation of the Republic of Indonesia Number 11 of 2017 concerning the Management of Civil Servants, or PNS. The regulation stipulates competency development for civil servants through a minimum of 20 hours of training each year. In the same year, Regulation of the Minister of Administration and Bureaucratic Reform Number 38 of 2017 concerning Competency Standards for Positions of State Civil Servants established competency quality standards for each position level. Both regulations oblige the government to educate and train officials to improve public services (Buehler, 2011).

It is difficult for the Indonesian government to fulfil this commitment in the context of bureaucratic reform (Tjiptoherijanto, 2018) because of the large number of civil servants in Indonesia and the absence of various vital resources (Gerton & Mitchell, 2019). According to the 2019 Civil Servant Statistics Book published by the National Civil Service Agency, the number of civil servants in Indonesia has reached 4,189,121 people. Therefore, the government must determine the most efficient way to facilitate a massive learning process. As a result, Massive Open Online Courses (MOOCs) are considered a rational choice to fulfil the government's commitment to increase the competence of apparatus efficiently and effectively. The Education and Training Center for Auditors of the Financial and Development Supervisory Agency, in the future, referred to as Pusdiklatwas BPKP, is one of the government agencies in Indonesia that has implemented the MOOC. This is applied as an instrument in carrying out the mandate of Presidential Regulation Number 192 of 2014 concerning Article 3 Letter j of the Financial and Development Supervisory Agency (BPKP), which requires the BPKP to conduct capacity building for the Government Internal Supervisory Apparatus (APIP). In creating APIP skills, BPKP also considers budget and schedule constraints and the number of participants. Currently, 6,152 civil servants are working at BPKP.

In addition to many participants, BPKP also considered budget and time constraints in developing APIP competencies. The current number of BPKP civil servants is 6,152 people. In comparison, civil servants in the supervision field who work in the Inspectorate of Ministries/Institutions/Regional Government (KLPD) number around 11,000 individuals. Therefore, it is difficult to train around seventeen thousand people in a limited amount of time regularly by relying only on traditional learning methods. BPKP can be called the first tertiary institution in Indonesia that has utilized MOCC as a forum for education and training since 2018. Article 3, letter k of Presidential Regulation Number 192 of 2014 concerning the BPKP states that one of the BPKP's functions is "organizing education, training, research and development in the field of supervision and the government's internal control system." Technically, this role is carried out by the Pusdiklatwas BPKP under BPKP Regulation Number 5 of 2019 concerning BPKP Organization and Work Procedures.

BPKP and APIP KLPD must meet the Government of Indonesia's Internal Audit Standards (SAIPI). According to SAIPI, Internal Audit is an independent and objective activity in the form of assurance and consulting designed to provide added value and improve organizational operations. These activities can assist the organization in achieving its objectives with a systematic and structured approach to assessing and enhancing the effectiveness of risk management, control, and governance processes. Auditing Standards are a guideline for auditors and APIP leaders in carrying out their duties. APIP is responsible for achieving organizational goals. To assist the organization in achieving its goals, APIP requires competent staff with expertise in risk management, control, and governance. Besides that, APIP must have qualified personnel with competence according to established standards. Auditing standards

are adapted from international standards issued by the Institute of Internal Auditors (IIA). This international standard is accompanied by various implementation guidelines that are continuously evolving and must be carefully adapted in all components by APIP. Therefore, a tool is needed to adapt, identify, and apply dynamic guidelines so that the knowledge transfer process can be carried out quickly, effectively, and efficiently. In this context, the MOOC is a relevant tool to meet these needs. This international standard is complemented by a range of implementing guidelines that are continuously evolving and must be carefully adapted in all components by APIP ([Aparicio et al., 2019](#)).

This study aims to analyze and explain the implementation of the Massive Open Online Course (MOOC) in financial supervision training at the Financial and Development Supervisory Agency. The basic concepts used to describe the implementation of MOOC-based training are the Unified Theory of Acceptance and Use of Technology or UTAUT. UTAUT is a developed conceptual model of technology acceptance to determine an individual's motives for using an information system and subsequent usage behaviour ([Venkatesh et al., 2016](#)).

B. LITERATURE REVIEW

MOOCs play an important role in improving the quality of individuals through training programs ([Monika, 2018](#)). As a result, it attracted the attention of many people. However, the research seeks to promote MOOCs and raises criticisms of their shortcomings and the policies and methods that must be developed to overcome the multiple obstacles. MOOCs are a new dynamic education and learning method that demands optimal personalization strategies ([Qaffas et al., 2020](#)). Meanwhile, [Shukor & Abdullah \(2019\)](#) used learning analysis to improve MOOC instructional design. [Sadhasivam \(2014\)](#) proposes that general management levels establish effective policies by providing the necessary resources for MOOC implementation. Besides that, [Sanchez-Gordon & Lujan-Mora \(2018\)](#) offer strategies for successful MOOC implementation, such as carefully considering pedagogical characteristics, choosing the most appropriate model according to the features of the organization and participants, and managing various challenges in performance effectively.

One thing that should be underlined is that MOOC is becoming popular in its application at universities. [Alhazzani \(2020\)](#) shows that the use of MOOC classes in learning positively impacts higher education. In contrast, only a few studies have been conducted to test the applicability of MOOCs to benefit learning in the public sector, particularly government agencies. Due to its limited scope, [Deng et al. \(2019\)](#) propose various alternative recommendations for conducting evidence-based research for the public sector as non-mainstream MOOC customers. In response to these recommendations, this descriptive study begins a study of MOOC implementation in the learning process in the Indonesian public sector.

MOOC, as a learning system, consists of several vital components. It is a framework for an open learning process ([Tseng et al., 2022](#)) with various components in the form of digital materials that are freely and openly available to educators, students, and self-learners that can be reused for educational purposes ([OECD, 2007](#)). However, [Ross et al. \(2014\)](#) reminded us that an essential component of MOOC that cannot be ignored is the educator, the primary student facilitator.

A series of methods and supporting factors are needed to ensure the effectiveness of implementing online learning ([Noesgaard & Ørngreen, 2015](#)). The number of learning participants and the diversity of characteristics must be evaluated as variables that determine the success of implementing online learning ([Zerr et al., 2018](#)). Work experience, age, maturity, interest and motivation to learn, and the ability to absorb knowledge are some study

participants' characteristics. As a learning system instrument, MOOC requires a model that integrates all the main components, processes, and component correlations (Deng et al., 2019; Ramadiani et al., 2019). Besides that, MOOC offers a variety of data and different parameters according to their characteristics (DeBoer et al., 2014). The data from the MOOC provides an opportunity for researchers because it simplifies the analysis of a large number of trainees and enlarges the breakdown of each trainee's character in effective detail.

Information and communication technology (ICT) is important in integrating information systems with training programs. Shaaban et al. (2019) have recommended increasing the integrated use of ICT because of the effectiveness of the training. This integration can utilize a concept that can explicitly explain the relationship between learning entities and the presence of technology in the learning process, namely the Unified Theory of Acceptance and Use of Technology or UTAUT. UTAUT is a conceptual model of technology acceptance for information technology to determine user intentions in each use of information systems and subsequent usage behaviour (Venkatesh et al., 2016).

Table 1. The Four Key Constructions of UTAUT

Key Construction	Definition & Scope	Indicator	Source
Performance expectations	- Determining the intensity of sustainable use of ICT in distance learning. - Perceived and perceived benefits, motivation, suitability for work, benefits, and results. - Defined as the belief that the system can help them to benefit from the execution of work.	1. Usefulness, namely the benefits obtained in using ICT 2. Quickness, speed up the execution of work 3. Productivity increased productivity as a result of using ICT.	(Nordin et al., 2016; Onaolapo & Oyewole, 2018; Sa Don et al., 2015; Venkatesh et al., 2003)
Social influence	- Defined as an individual's perception of the role of other parties who value using the new system. - The degree of confidence in the other party's ability to persuade others to use the new system	1. Social factors, namely the influence of someone near the user in using ICT 2. Subjective norm, namely the effect of the leadership in the use of technology on the people around him	(Alraja, 2016; Venkatesh et al., 2003)
Business expectations	- Ease of ICT used in the learning process. - The level of comfort associated with the use of ICT. - The strong correlation between activity at work, performance, and rewards received based on that effort	1. Complexity, namely complexity when learning technology 2. Ease of use, namely the comfort when using technology	(Ghalandari, 2012; Venkatesh et al., 2003)
Facilitating conditions	- Individual belief in the availability of various resources to support online activities - Ability to facilitate each party in need	1. Resources, the availability of resources in the use of ICT 2. Knowledge, namely knowledge about ICT 3. Compatibility, namely the suitability between the system and the technology used.	(Bakar & Razak, 2014; Onaolapo & Oyewole, 2018)

As a theory, UTAUT consists of four main constructs that can predict user acceptance and subsequent system/IT usage behaviour. By implementing UTAUT, Mulik et al., (2018) analyzed the perceived value constructs, which resulted in the finding that these four constructs

significantly strengthened the intention to use MOOC. If the user is more beneficiary, the choice to use MOOC will be higher. These four constructs are used as parameters to measure the significance of using MOOCs: performance expectations, social influence, business expectations, and facilitating conditions. UTAUT construction is described in Table 1.

In the context of the public sector, performance expectations can be interpreted as the extent to which the public sector perceives MOOCs as instruments to improve government officials. For social influence, MOOCs are considered effective and efficient with the widespread use of the latest and most advanced learning models by others. Effort expectancy is directly correlated with MOOC as an online learning model that benefits participants. If learning participants realize the ease of using MOOCs, the government can easily switch the mode of the learning process from the traditional model to an online-based model. The fourth key construct is the facilitation condition, which means individual trust in the availability of various resources to support MOOCs. The effectiveness of MOOC implementation by the government depends on the availability of organizational resources, both human and material, as well as the technical infrastructure needed to support the achievement of optimal performance. This aligns with [Alraj \(2016\)](#), who states that facilitation conditions refer to the extent to which people believe that the organizational and technical infrastructure is in place to support the system ([Venkatesh et al., 2003](#)).

C. METHOD

This qualitative research was conducted at the Auditor Training and Education Center for the Financial and Development Supervisory Agency (Pusdiklatwas BPKP) in Ciawi, Bogor. This institution was chosen as the research base because Pusdiklatwas BPKP was a pioneer among government agencies in Indonesia in using MOOC as a learning platform. The informants of this study were twelve people. These informants were selected using a purposive sampling technique based on their expertise or skills. The twelve informants are officials in charge of the Pusdiklatwas BPKP and training participants, namely the Head of the Pusdiklatwas BPKP, the Head of Training Planning, Evaluation and Reporting the Head of SPIP Training Materials Development Subdivision, the Head of APIP Training Material Development Subdivision, the Head of Electronic-Based Education and Training Subdivision, and seven representatives of MOOC-based training participants.

The primary data for this research were collected by emailing interview guides to informants who had obtained permission from the Head of Pusdiklatwas BPKP. This was done for mutual convenience during the Covid-19 pandemic. Questions were prepared openly to informants to get answers and in-depth information. The answers given were written directly by each informant under each question. The answers the informant filled in were then sent to the researcher's email address. The questions were prepared concerning the four critical constructs used in the UTAUT-based MOOC research namely, performance expectations, social influence, effort expectations, and facilitating conditions.

The performance expectation in this study is the level of benefit from using ICT by users in their daily activities. The elements used to measure performance expectations are usefulness gained in using ICT (suitability), level of speed in carrying out work (quickness), and increased productivity as an effect of using ICT (productivity). Social influence is the level of individual trust in other parties when utilizing the new system. In this case, social influence can be measured through social factors and subjective norms. The social aspect is a person's credibility and its influence on ICT users or people who have a close relationship with ICT users in their use. Subjective norms are the role of the leader in the use of IT and its impact on the people around it.

Business expectations are the level of ease and comfort with which users use ICT. There are two elements of business expectations: complexity and ease of use. Complexity is the complexity of learning technology. Ease of use refers to the convenience of using information and communication technology. The facilitating condition in this research is the individual's belief in the ability of the organization to provide resources to support online activities. These facilitating conditions have elements, including the availability of organizational resources (human, financial, material, and technical infrastructure) to support online activities. The next element is knowledge of communication and information technology (inside), and finally, compatibility, namely compatibility between the system and the technology used.

After the interview answers were collected, the data were analyzed using qualitative analysis, carried out interactively and continuously until complete and saturated data were obtained. Interactive analysis steps were carried out in several stages. Interactive activities include data reduction, data presentation, conclusion and verification.

D. RESULT AND DISCUSSION

Pusdiklatwas BPKP has implemented electronic learning/e-learning since 2014 before using MOOC in 2018. In addition, several ministries and government agencies have also implemented e-learning in various forms. However, e-learning turns out to only change conventional methods to become online without special features (Niculescu et al., 2008). In fact, "traditional" e-learning contains various weaknesses because only a few participants can access it. Meanwhile, the inflexible implementation schedule made it difficult for the participants and required high costs, which burdened the organizers.

"Training has been based online since 2014, and there is already a training schedule for participants to choose from. But the schedule is not routine, no matter how many months there are. Because we used to have budget constraints too, many don't get it because we give them quota limits" (Source: interviews with BPKP Training and Education Sub-coordinators, 2021).

"Because of these limitations, we are making development efforts so that participants carry out training more flexibly and accessible at any time, regardless of schedule. If you use the MOOC, the capacity for participants is greater, so the costs required are also lower. Later, it is proposed that the rate for participants is around 300 thousand for one training period with a lot of accessible material" (Source: results of interviews with BPKP Training and Education Sub-coordinators, 2021).

Then, since 2018, Pusdiklatwas BPKP has implemented MOOC as an anti-thesis model for traditional learning methods, which can function as an instrument to eliminate various resource limitations. MOOC is considered capable of accommodating a massive number of participants. However, the Pusdiklatwas BPKP currently only limits 600 participants for each activity. The schedule for implementing learning carried out through the MOOC is also flexible. This MOOC is very efficient because its implementation requires low costs. The fact is in line with the argument from DeBoer et al. (2014) that MOOC offers more varied data and has different parameters according to its nature. Meanwhile, the MOOC development process at Pusdiklatwas BPKP was carried out through seven stages, including studying MOOC best practices, preparing MOOC designs, building MOOC platforms, compiling content, creating prototype classes, implementing trials, and implementing MOOCs. Pusdiklatwas BPKP is very serious about planning and designing learning programs using this new method.

"There are several stages of MOOC development, from design, platform, content, testing to implementation. We prepare human resources and budget for infrastructure. We design all stages as best as possible so that the training participants benefit from increasing their competence with this training" (Source: interviews with the Sub-Coordinator of Planning, Evaluation and Reporting of BPKP Training and Education, 2021).

The careful planning of Pusdiklatwas BPKP can be seen in its commitment to providing various resources to support MOOCs. These resources as roles and content venues (Babori et al., 2019) include procuring personnel who serve as administrators, multimedia experts, subject experts, instructional designers, and online tutors. Apart from personnel, Pusdiklatwas BPKP also prepares infrastructure procurement through servers, storage, networks, and various equipment. As Hollands and Tirthali (2014) recommended, Pusdiklatwas BPKP needs to meet all needs and budget for its effectiveness to develop and implement MOOC.

In providing a budget, Pusdiklatwas BPKP allocates sufficient funds for personnel costs, infrastructure maintenance, and bandwidth development. Based on the composition of costs, most of them are the fixed prices of Pusdiklatwas BPKP, so it can be concluded that MOOC PNPB revenues are used for future MOOC development. The Pusdiklatwas BPKP commitment is certainly related to ensuring the continued use of the MOOC platform. As Sa Don et al. (2015) analyzed, it is a rational belief that there are four important factors for carrying out MOOC sustainability: educational, institutional, financial, and sociocultural.

However, it should be underlined that Indonesia's vast territory consists of thousands of islands. The condition of communication infrastructure differs from one region to another. In this situation, MOOCs or all other online activities face bandwidth limitations, especially in remote areas in Indonesia. The Indonesian government is committed to overcoming this communication infrastructure obstacle by building the Palapa Ring, which can achieve the 4G network coverage target of 95.7 percent of the entire territory of Indonesia. Al-Shami et al. (2018) have convinced us that e-learning methods such as MOOC offer online courses to anyone with access to the internet. That is, no internet access is the same as no e-learning. However, if people experience internet constraints, they may consider integrated learning that integrates e-learning into traditionally taught courses, such as those recommended by Bralic and Divjak (2018).

Another positive support is related to the composition of civil servants in Indonesia. Currently, civil servants in Indonesia are dominated by the younger generation, known as the millennial generation. The main characteristic of the millennial generation is the mastery of information and communication technology (Pyöriä et al., 2017; Smith & Nichols, 2015). This generation is familiar with digital devices to facilitate the implementation of tasks and work. Several evaluation models can be used to identify MOOC effectiveness (Yousef et al., 2015). In their study, Tsironis et al., (2016) exploit the "usability training evaluation method" to ensure MOOCs are implemented effectively. Meanwhile, Kirkpatrick's training evaluation model is the most popular among researchers; however Gandomkar (2018) argues that it cannot provide information that informs the evaluator about some of the inhibiting factors or can facilitate the achievement of training program outcomes. In this case, the Pusdiklatwas BPKP conducted an internal evaluation to determine the impact of learning outcomes, which referred to two levels of reaction based on the Kirkpatrick evaluation model, and the evaluation results at each level are shown in Table 2.

Table 2. Results of the Internal Evaluation of Pusdiklatwas BPKP Kirkpatrick Evaluation Model

	Level 1: Reaction	Level 2: Learning/Knowledge
Scope	Participant reactions to implementation, materials, trainers/instructors, infrastructure, and learning services	The participant's ability to absorb MOOC material by comparing their abilities before and after the training
Results	Participant satisfaction level = 3.95 out of 5	1559 out of 1638 (95.18%) participants passed the post-test scores above 7.0

Source: Pusdiklatwas BPKP, 2021

The data shows that the MOOC at Pusdiklatwas BPKP is easy to follow and useful for all participants. In this case, increasing participants' APIP competence will be quickly achieved, and in the end, the role of APIP in assisting KLPD in achieving its development goals can be realized soon. In addition, Pusdiklatwas BPKP also conducts a thorough external evaluation. Evaluation is carried out for MOOCs and routinely by the ISO Audit Team, the Inspectorate of the Financial and Development Supervisory Agency, and the Supreme Audit Agency of the Republic of Indonesia.

MOOC implementation will be more effective if it is supported by stakeholder involvement. At Pusdiklatwas BPKP, the main stakeholders for implementing MOOC are the heads of ministries, agencies, local governments, and auditor supervisors. Stakeholders in BPKP and KLPD are involved in proposing training materials every year in the Training Needs Analysis (TNA) activity. BPKP stakeholders are more involved, starting with selecting materials, preparing learning materials, preparing and providing teaching staff or trainers, preparing evaluation methods, and determining the right participants. Currently, MOOC and Fraud Prevention investigative audits of all materials and teaching staff are carried out by the Deputy for Investigations BPKP.

MOOC implementation is highly dependent on the availability of digital material related to its completeness, such as teaching materials or modules. All digital materials are offered freely and openly to educators and trainees. In 2014, Pusdiklatwas BPKP built an e-learning platform, at which time digital materials had already begun to be prepared in stages. Then, in 2018, they started making MOOCs by presenting digital material. MOOC will also be more effective if it supports the individual characteristics of educators/trainers/instructors at Pusdiklatwas BPKP. Initially, the teaching staff actively involved in the learning process were teachers in the young age category. Apart from the trainers, the individual characteristics of the training participants at Pusdiklatwas BPKP also affect the effectiveness of the MOOC implementation. In this case, there are two types of MOOCs: compulsory learning and voluntary learning. All employees must participate in mandatory learning activities following the goals and objectives of the training program. Meanwhile, participants in a relatively young age group generally take part in voluntary learning activities. Pusdiklatwas BPKP also provides consulting assistance for participants who experience difficulties, but the facts show that more than 75% of participants can take part in learning without needing help.

The implementation of MOOC at the Pusdiklatwas BPKP shows a tendency for the active role of trainers but cannot be classified as a teacher-oriented approach. This condition can be seen from the series of activities carried out by the training participants, including taking part in the pre-test and post-test, reading material, video/animated material, discussing, doing all assignments, evaluating, evaluating the implementation of the MOOC, and printing certificates independently. Meanwhile, the teacher's position is only considered a support to help participants who experience difficulties or deadlocks in each discussion and assignment.

To find out the impact of learning outcomes, Pusdiklatwas BPKP has conducted internal and external evaluations, as stated by the Sub-coordinator of BPKP Training, Evaluation, and Training Planning:

"There are internal and external evaluations. Internally, we surveyed training participants regarding their training, whether the service was satisfactory, or if we needed to improve anything. So there is a questionnaire they can advise. We also evaluate the ability of the participants. Before and after the training, we do tests to determine if there is an increase in competency. If it is an external evaluation, it is thorough with the Inspectorate, BPK, and an external audit team" (Source: results of interviews with the Sub-Coordinator of Planning, Evaluation, and Reporting of BPKP Training and Education, 2021).

Therefore, evaluating participants is a strategic step for Pusdiklatwas BPKP to ensure that the learning process through the MOOC platform goes well. The participants were evaluated using the ten elements of strategic steps, as presented in Table 3.

Table 3. Strategic Steps for MOOC Implementation

No.	Strategic Steps	Information
1.	Provision of facilities	Participants get resources in the form of appropriate orientations for preparation for participating in online learning activities.
2.	Schedule and clarity of learning direction	The time for implementing learning activities is through setting a schedule that can be implemented consistently. Participants are also provided with information regarding the direction of learning from each training program.
3.	Accessibility	All participants have easy access to the e-Learning module.
4.	Visual design	Visual displays are designed to be effective and attractive, making them easy to understand and comfortable to follow. Visual design relates to layout, display colours, features, and more.
5.	Navigation	Display navigation must be easily understood and followed by participants.
6.	Feature completeness	They are ensuring the completeness of learning features and functions so that they are more effective through chats, forums, wikis, blogs, exams, etc.).
7.	Zero-error	Ensure there are no errors when participants access features and functions in the learning platform.
8.	Relevance	The learning experience with the integrated platform follows what participants expect.
9.	Motivation	Participants are motivated and encouraged to complete learning activities on time or on a predetermined schedule.
10.	Practice	Participants are guided to complete each learning module.

Source: Pusdiklatwas BPKP, 2021

Based on the ten strategic steps in implementing the MOOC, Pusdiklatwas BPKP believes that various learning objectives will be achieved more effectively and efficiently. Implementing learning with the MOOC platform at Pusdiklatwas BPKP can be explained based on the four key UTAUT constructs described in Table 4.

Table 4. MOOC Implementation Based on the Four Key Constructs of UTAUT

Key Construction	Element	Results
Performance expectations	Expected improvement in participant performance	Very promising/positive proven by pre-and post-test results
	Expected usability of the MOOC platform	The results of the learning evaluation with the participant's score reached 3.66 on a scale of 5.
	Expected short-term and long-term effects	Improve APIP competency
Social influence	Inner influence	Encourage self-directed learning of APIP
	External influences	BPKP Pusdiklatwas management supports MOOC as an excellent means to improve competency
Business expectations	Expected convenience	Participants agree that MOOC is used because of their effectiveness and efficiency.
	Expected knowledge and insight	Participants realize that the MOOC platform is simple.
Facilitating conditions	Expected problem mitigation	Meaningful learning outcomes have a strong correlation with the participants' work activities.
	Organization and Technical Infrastructure	Relatively few barriers, with around 10% of participants using the help desk
		BPKP Pusdiklatwas facilities are adequate (server, storage, network, and various equipment)
	Material	Educators/trainers/instructors at Pusdiklatwas BPKP support MOOC
	External Conditions	Pusdiklatwas BPKP allocates sufficient funds for personnel costs, infrastructure maintenance, and bandwidth development.
		Tech literacy and the Covid-19 pandemic forced migration to new platforms.

Source: Analysis of Primary Data, 2021

The assumptions underlying UTAUT are positive perceptions and attitudes towards the presence of new technology in supporting the learning process, namely the focus on ICT acceptance. All elements of Pusdiklatwas BPKP and training participants agree to easily accept using ICT in supporting the training program.

Since the end of 2018, the use of MOOC as a continuous education and training platform has intensified based on the performance expectation framework. Self-encouragement, or intrinsic motivation, is given to Pusdiklatwas BPKP management regarding improving participant evaluation results. Tech-illiterate participants were instructed to take a mandatory approach to persuade officials unfamiliar with MOOCs to adopt them immediately. Ultimately, the MOOC platform is a way of fulfilling the various competencies BPKP is expected to have, including digital literacy.

On the other hand, stakeholders become an extrinsic motivation to reaffirm their determination to use MOOCs. They can achieve competence according to the participant's job fit as a supervisor/auditor. MOOCs can implement education and training programs at a minimal cost. This fact goes with [Karnouskos's \(2017\)](#) studies, which show that MOOCs are important in building a strong organizational culture, competence and knowledge, effective communication, and cost efficiency for innovation.

Regarding social impact, internal and external stakeholders in implementing education and training programs have strong beliefs. They urged the Pusdiklatwas BPKP to implement the MOOC system immediately. Besides that, [Witthaus et al. \(2016\)](#) have proposed a model as a guide for any MOOC implementer that can convince stakeholders of the efficacy of MOOC.

Based on the effort expectation construct, Pusdiklatwas BPKP can ensure that MOOC is an effective online learning model for training. They also anticipate that MOOCs will affect

the participants' physical and mental resilience when they return to their work units. However, the success of the learning process using the MOOC platform cannot be separated from the role of the trainer, namely the assigned teachers, who receive rewards in the form of career-enhancing.

Regarding facilitation, the availability of infrastructure and various technological facilities to support MOOC-based learning is considered sufficient at Pusdiklatwas BPKP Bogor. Various circumstances reinforce this optimism as supporting factors, including technical advances, technological literacy, and even the Covid-19 pandemic, forcing all groups to migrate from traditional to new platforms. There are several factors to consider when deciding on the right MOOC decision (Sandeem, 2013; Zhu et al., 2018), and Pusdiklatwas BPKP believes that the necessary organizational and technical infrastructure is in place. They can guarantee that the MOOC is relevant or consistent with the goals and objectives of each education or training program based on the learning content, methods, and facilities available. However, Pusdiklatwas BPKP underlined that not all education and training follow MOOC-based learning. Few education and training programs are suitable for basic knowledge and refresher courses. Based on Henderikx et al., (2018), an activity requiring technical skills is unsuitable for using MOOCs.

Pusdiklatwas BPKP's MOOC-based training program produces effective learning products. UTAUT's critical constructions, education and training programs are inseparable from learning outcomes. Therefore, Pusdiklatwas BPKP training activities show a strong link between MOOC and UTAUT, which shows the consistency of implementing learning that adopts technology.

Table 5. Number of Poor People in Indonesia in 2018 (thousands)

MOOC/UTAUT	Performance Expectations	Social Influence	Business Expectations	Facilitating Conditions
Digital Material	Ease of accessibility	The influence of technology and environmental changes	Ease of troubleshooting and troubleshooting	Provided reading in the form of teaching materials
Teacher	Knowledge transfer	Institutional and peer group influence	Consistency of function as educator and trainer	Facilities and infrastructure, as well as awards
Participant	Active engagement and positive pre & post-test results	Influence of Supervisors and peer groups	Perseverance and active involvement	Adequate facilities and infrastructure to be actively involved

Source: Analysis of Primary Data, 2021

E. CONCLUSION

This study found that public sector institutions use MOOCs for HR training and development due to limited resources and availability of training. Stakeholder-supported training and technology integration are human resource capacities. Pusdiklatwas BPKP's MOOC-based training program produces effective learning products. UTAUT's key constructions that follow education and training programs are closely related to learning outcomes. The strong link between MOOC and UTAUT shows consistency in implementing information and communication technology-based learning.

Meanwhile, the research results provide practical contributions to improving internal HR development practices in the public sector in Indonesia. The MOOC was successful because all parties supported the four basic constructs of UTAUT. As everyone becomes increasingly

aware of training technology, other public institutions must be able to overcome government funding constraints and promote MOOCs as effective tools.

F. LIMITATIONS AND FUTURE RESEARCH

“There is no ivory that is not cracked”. Thus, this study has significant limitations. First, this research only examines MOOC implementation from one point of view, but other alternatives need to be considered. Future studies should use more representative and different viewpoints or methodologies to describe MOOC implementation, such as cost-benefit analysis, stakeholder perspective, or systems thinking perspective. Second, because this study only used limited information from one public sector organization, informants were also limited to the Pusdiklatwas BPKP in Bogor, Indonesia. Future research can use the findings of this study to expand the object of research by including various types of public institutions to achieve a deeper and higher level of generalization. Thirdly, going to the place was impossible because this research was conducted during the Covid-19 outbreak. Interviews and observations were conducted via email, and the risk of superficial information is unavoidable. This weakness implies that the informant's information will reflect the actual situation. Future studies should use other “normal” research methodologies based on the actual situation to obtain representative data, such as the longitudinal method.

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