



Increasing the Adoption of Performance Management Application at PT. Kaltim Prima Coal

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ABSTRACT: Traditional performance management systems often suffer from bureaucracy and inefficiency in providing timely feedback and support (Awan et al., 2020). To address these issues, KPC implemented Entomo, a performance management platform with advanced features like goal creation, progress tracking, continuous feedback, and data analytics. This technology-driven approach aims to improve the effectiveness and efficiency of performance management practices. KPC's Entomo implementation provides an opportunity to research the adoption of performance management system technology. This study evaluates KPC's experiences, identifies factors with a positive and significant relationship with the application and performance management application, and offers recommendations to enhance the performance management system.

The research employed the technology acceptance model (Davis et al., 1989) and a quantitative approach using questionnaires. Multiple linear regression analysis revealed several important insights. The findings indicate that perceived usefulness, perceived ease of use, and attitude toward using are key determinants of the intention to use the technology or system. Notably, attitude toward using has the strongest influence on users' intention to adopt and use the system, followed by perceived usefulness and perceived ease of use. The research suggests that organizations should prioritize improving user attitudes, enhancing perceived usefulness, and ensuring the system is easy to use when implementing new performance management applications to drive successful adoption.

KEYWORDS: Performance Management System, Performance Management Application, Technology Adoption, Technology Acceptance Model.

1. INTRODUCTION

PT. Kaltim Prima Coal (KPC) is a coal producer in Indonesia, located in the Sangatta, East Kutai Regency, and East Kalimantan. KPC has two coal mine areas located in Sangatta and Bengalon regions. On April 8th, 1982, KPC signed an agreement with the government for a Coal Contract of Work (CCoW) with a total area of 90.960 ha. Referring to the year of agreement has made KPC a one-off first-generation contractor mining company. KPC has the permit to mine up to 2031 and allows proposing a ten-year extension permit.

Performance management helps PT. Kaltim Prima Coal (KPC) achieves its goals and boosts employee motivation, productivity, and performance. Traditional performance management systems are slow, bureaucratic, and ineffective at providing real-time feedback and support (Awan et al., 2020).

KPC chose Entomo, a performance management platform, to address these issues. Entomo's goal creation, progress tracking, continuous feedback, and data analytics help companies improve performance management. KPC's Entomo implementation allows for performance management system technology adoption research. This research evaluates KPC's adoption and ongoing implementation of the Entomo application and makes performance management system recommendations. This research can teach us about performance management technology adoption and deployment best practices and their implications for industry peers.

KPC began using the performance management system application to record and monitor the implementation of performance management in 2023. The application's name is Entomo. This application facilitates the performance planning, monitoring, and evaluation processes. This application is used to record critical tasks that were previously recorded on paper documents, as well as accomplishments and reviews. The application eliminates and simplifies many processes. To save time and resources.

Introducing new technologies into the workplace can often be disruptive and require employees to adapt their current working methods. For instance, implementing a new performance management system may involve using unfamiliar software applications, necessitating employees to acquire new skills and break old habits (Bentaher, 2023). This adjustment process can present significant challenges, particularly if individuals are reluctant to embrace change.



Moreover, the adoption and implementation of new technologies in organizations can pose significant challenges. Not only do these technologies come with a hefty price tag, but they also demand considerable time and effort to integrate them into existing processes. The organization must allocate resources to procure the technology, provide training sessions for employees on its usage, and make any requisite adjustments to streamline workflows effectively (Zhang et al., 2022). Thus, this undertaking represents a substantial investment that compels organizations to carefully evaluate whether the benefits outweigh the costs involved.

1.1 Performance Management

Performance management is a critical component in organizations, requiring a collaborative process for setting goals and reviewing performance. This process includes activities such as joint goal setting, continuous progress review, frequent communication, feedback, coaching, implementation of employee development programs, and rewarding achievements to improve individual and overall organizational performance. An effective performance management system should also include clear job descriptions, a well-designed selection process, and accomplishment-based performance standards (Arachchige, 2020). Furthermore, to ensure the success of a performance management system, it must be directly linked to the strategic priorities and goals of the organization. Performance management is a continuous process that should be ongoing throughout the year. By following the steps outlined above, organizations can create a performance management system that is effective and fair (Kusrini et al., 2014).

1.2 Performance Management Application

Applications for performance management enable organizations to monitor, assess, and analyze employee productivity and performance. Distribute feedback forms, collect data, administer administrative tasks such as signoffs, analyze performance information, and securely store feedback (Nasiri, 2021).

An additional set of essential features comprises automated workflows, ongoing feedback, access control, peer, upward, and downward reviews, customizable review forms, goal monitoring, a unified sign-on process, integrated reporting capabilities, anonymous feedback mechanisms, electronic signatures, email reminders, and flexible review scheduling (Ishak et al., 2019).

Performance data can be utilized to inform business objectives, recruiting choices, career paths, compensation, succession planning, and any other decisions involving human capital when it is appropriately gathered and maintained (AlShowair & Alkhatabi, 2015). Furthermore, maintaining official and consistent records of employee performance is a crucial liability defense. Complications like lost signatures, annual evaluations that occur four months later than planned, and managers deviating dangerously from the script can all be avoided with dedicated software.

Lastly, an outstanding performance management system has the capacity to significantly optimize an established performance management approach. For managers, employees, and HR, this may yield significant time savings. Organizations may also seize this occasion to increase the volume of feedback data they collect regarding their personnel. While simultaneously decreasing the administrative expenses associated with performance management, optimal software will enable your team to enhance the frequency of feedback and invite input from a greater number of individuals (AlShowair & Alkhatabi, 2015).

2. BUSINESS ISSUE

The Entomo application was implemented beginning in 2023. Employees are trained in how to use the application at the beginning of the year. Then, all employees are required to complete critical tasks as performance plan in the application. The previous critical task is mentioned as scorecard in the Entomo application. HR allocated two months to employees to create their scorecard, beginning in April 2023, and ending in May 2023. Moreover, in the beginning of scorecard development the scorecard published only 1.34% as shown in Figure 1 below.

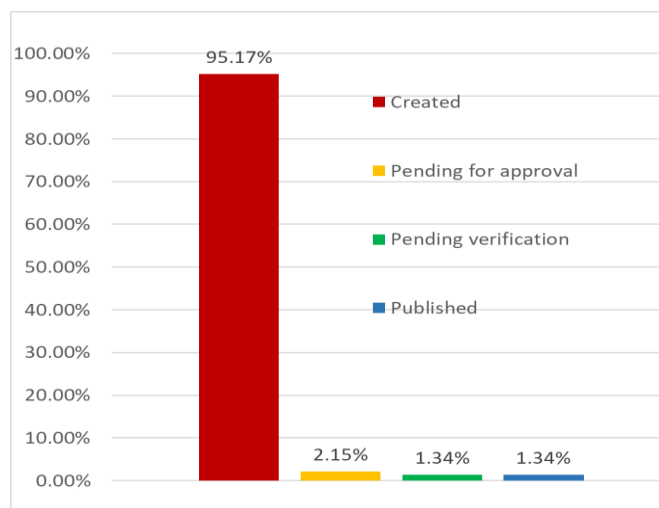


Figure 1. Scorecard status 04 May 2023.

In actual, the dateline must move to end of July. The scorecard development was stated done event not 100% users completed scorecard published as show Figure 2.

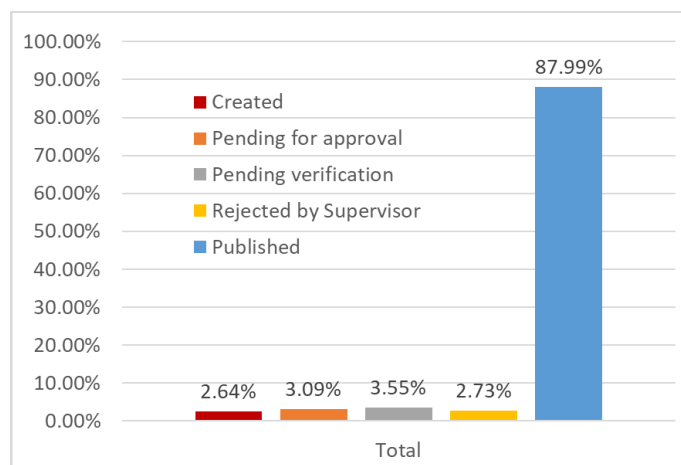


Figure 2. Scorecard status 31 July 2023.

Similarly, the mid-year review process, which was supposed to be completed by the beginning of September, was not completed by the end of August because so few individuals had completed it.

Based on data gathered during the initial implementation of Entomo, some things need to be improved or enhanced before this application can be utilized as optimally as anticipated. Therefore, it is necessary to determine which factors can speed up adapting the Entomo application's implementation. Adopting digital technology can bring benefits to a business according to Thomass (2019). However, some company cultures can struggle with the changes required by digital transformation according to Westerman, George; et al. (2014).

3. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

3.1 Performance Management System

Performance management is important for several reasons. First, it helps to ensure that employees are aligned with the organization's goals. When employees know what is expected of them and how their performance will be measured, they are more likely to work towards those goals. Second, performance management helps to identify areas where employees need improvement. By tracking

progress and providing feedback, managers can help employees identify their strengths and weaknesses and develop their skills. Third, performance management can be used to reward and recognize employees for their good performance. This can help to motivate employees and encourage them to continue working hard (Abdullah & Malik, 2022).

Performance management is a continuous process that should be ongoing throughout the year. By following the steps outlined above, organizations can create a performance management system that is effective and fair (Kusrini et al., 2014). Performance management is a critical component in organizations, requiring a collaborative process for setting goals and reviewing performance. This process includes activities such as joint goal setting, continuous progress review, frequent communication, feedback, coaching, implementation of employee development programs, and rewarding achievements to improve individual and overall organizational performance. An effective performance management system should also include clear job descriptions, a well-designed selection process, and accomplishment-based performance standards (Arachchige, 2020). Furthermore, to ensure the success of a performance management system, it must be directly linked to the strategic priorities and goals of the organization.

3.2 Entomo – PMS Application

Entomo is a performance management platform that can help organizations measure and drive performance, engage employees, and provide actionable insights. Some of the key features of Entomo:

- Goal setting: Entomo helps organizations set SMART goals for employees. Goals can be aligned with the organization's strategic objectives and tracked over time.
- Feedback: Entomo provides a variety of ways for employees to give and receive feedback. This includes 360-degree feedback, peer feedback, and self-assessments.
- Performance management: Entomo helps organizations track employee performance against goals and objectives. This information can be used to make informed decisions about compensation, promotions, and development opportunities.
- Engagement: Entomo offers a variety of tools to help organizations engage employees. This includes surveys, polls, and gamification.
- Insights: Entomo provides organizations with insights into employee performance. This information can be used to identify areas for improvement and make strategic decisions.

3.3 Technology Acceptance Model

The Technology Acceptance Model is a well-known theory that explores the factors influencing individuals' acceptance and utilization of new technology (Fathema et al., 2015). It was first introduced by Fred Davis in 1986 (Figure 3) and since then, it has gained significant recognition in both academia and industry.

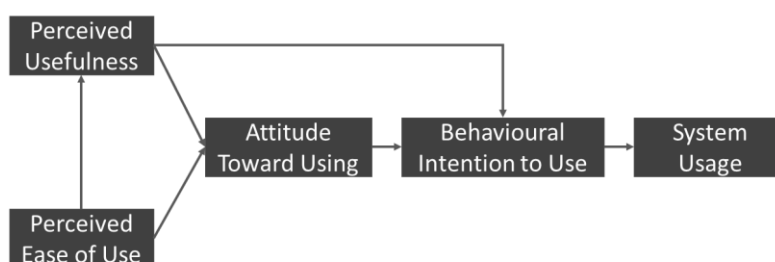


Figure 3. Technology Acceptance Model (Davis)

According to the TAM, these two factors are the main determinants of a person's intention to use a new technology. That is, people are more likely to use a new technology if they believe that it will be useful and easy to use.

The TAM has been used to explain the adoption of a wide variety of technologies, including computers, software applications, and e-commerce websites (Abbad et al., 2009) (Rafique et al., 2020). It has also been used to develop interventions to increase the adoption of new technologies.

Overall, the TAM is a valuable tool for understanding how people accept and use new technology. It can be used to predict the adoption of new technologies, develop interventions to increase adoption and improve the design of new technologies.



Moreover, the TAM's utility goes beyond mere theoretical understanding. Its practical implications lie in its ability to predict technology adoption rates accurately. This predictive power enables researchers and practitioners alike to develop targeted interventions aimed at increasing user acceptance rates (Erasmus et al., 2015).

For instance, pre-implementation strategies like minimizing initial resistance from users through effective change management practices have shown promising results when combined with providing realistic previews of the system's capabilities throughout the implementation process.

In conclusion, recognizing how critical factors like perceived usefulness and ease of use impact individual decision-making processes plays an indispensable role in driving successful technological innovations forward (Yeou, 2016).

3.4 Perceived usefulness (PU).

According to Davis (1987) perceived usefulness refers to the extent to which a person believes that using a specific system would improve their job performance. If people find technology beneficial for their work, it can help them perform better. The initial study of TAM revealed that the most common and significant factor affecting technology adoption is its usefulness. A positive perception of usefulness influenced the acceptance of telemedicine in general hospitals in Malaysia as shown by previous research on this topic (Kamal et al., 2020). When technology is seen as useful, it's more likely to be utilized effectively. When individuals perceive technology to be useful, it increases the likelihood of their acceptance and effective utilization of that technology (Zaineldeen et al., 2020). In the context of the Technology Acceptance Model, perceived usefulness refers to an individual's belief in the extent to which using a specific system would improve their performance or productivity. This belief in the usefulness of a technology influences their attitude towards using it and their intention to adopt and utilize it effectively.

3.4.1 Perceived Ease of Use (PEOU)

Davis (1987) says that perceived ease of use is how easy someone thinks it is to use a certain tool. According to his study, people are more likely to use a technology if they think it is easier to use. Many studies on the acceptance of fintech have found a strong link between how easy something is seen to be used and how people feel about adopting technology.

In 1989, Davis also discovered that the ease of use of a technology impacts how useful people perceive it to be. When technology is easy to understand and operate, individuals are more likely to find it useful. On the other hand, if they struggle with understanding or using the technology, they may perceive its usefulness as limited. Therefore, technology with user-friendly features can improve performance and drive increased usage. In the context of performance management systems, the perceived usefulness and perceived ease of use play a crucial role in their successful implementation and adoption (Kamal et al., 2020).

The relationship between perceived ease of use and technology adoption has been widely explored in various research studies. For instance, Davis (1987) suggests that individuals are more inclined towards using technologies that they perceive as user-friendly or convenient. Such findings highlight the significance of usability in shaping attitudes towards new technological advancements.

3.4.2 Attitude Towards Using (AT)

The extent to which a person's evaluative reaction (sentiments) toward a given behaviour is referred to as attitude (Zhong-qing et al., 2019). People form intentions to do an action that benefits them; therefore, attitude is tied to behavioural intention. The TAM research relies heavily on this attitude-behavioural correlation. In the TAM perspective, when a person has a good attitude toward a given technology, that person's desire to use that technology is also positive (Granić, 2023). Additionally, this leads us to consider other factors influencing behavioural intention and ultimately usage behaviour in the context of technology adoption. The perceived ease of use and attitude towards using a performance management system are crucial factors in determining its successful adoption (Park et al., 2012).

3.4.3 Behavioural Intention to Use (BI)

Behavioural intention refers to the inclination to take a certain action. When individuals have a strong desire to do something, they are likely to follow through with it (Ajzen, 1991). It encompasses the desire of an individual to repeatedly utilize a product or service until it becomes ingrained as a habit. Customer sentiment towards technology can offer insights into their willingness to continue using it and even advocate for its use among others. Previous research has indicated that an individual's attitude towards using technology significantly influences their intention to incorporate it into their routine (Aldunate & Nussbaum, 2013). Consequently, people generally tend to persist in utilizing a specific device if they perceive it as beneficial. In summary, attitudes towards using a technology or system, such as a performance management system, can greatly influence an individual's intention to adopt and use

it in the future (Saadé, 2007). The successful implementation and adoption of a performance management system greatly depend on individuals' perceptions of its ease of use and their attitude towards using it (Setiawan & Widanta, 2021)

3.5 Conceptual Framework

The Technology Acceptance Theory provides insight into how individuals perceive and accept a new technology based on its impact on their performance. And more specifically, trust has an impact on the adoption of performance management application. The TAM contributes to the conceptual framework by providing a model that focuses specifically on the factors of perceived ease of use and perceived usefulness in technology acceptance and adoption processes. In this research, researchers simplified Davis's framework to see the direct relationship between perceived usefulness, attitude toward use and perceived ease of use on behavioural intention to use. This conceptual framework is shown in Figure 4.

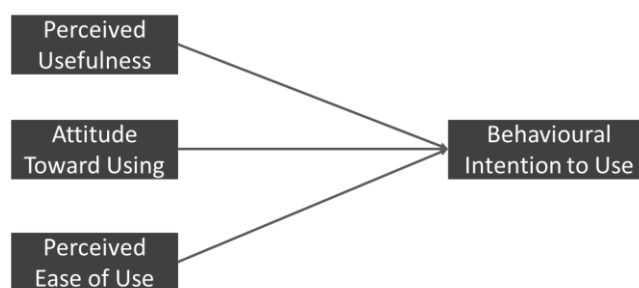


Figure 4. Conceptual Framework.

For PT. Kaltim Prima Coal to be able to increase the use of performance management application, they need to know employee adoption to ensure the success of application implementation. Therefore, this study will employ the Technology Acceptance Model (TAM) by Davis (1989) to identify how people adopt performance management application. There are many theories and frameworks for assessing factors that influence users' technology adoption. On the other hand, TAM has established itself as a reliable, effective, and cost-effective model for studying user adoption over the last 21 years (Venkatesh & Davis, 2000). TAM's robustness has been demonstrated using a variety of technologies such as word processors, email, online shop, and medical information systems, and several control factors, including gender, organizational type, and size (Lee et al., 2003).

3.6 Hypotheses Development

Hypothesis development is a crucial step in research as it helps to narrow down the scope of investigation and provide focus on specific issues (Pilato & Chukwuere, 2022). In this study, the hypothesis is derived from a comprehensive review of previous research findings, allowing for a clearer and more targeted exploration of relationships between variables. The proposed research model can be seen in Figure 5, where arrows represent the connections between variables.

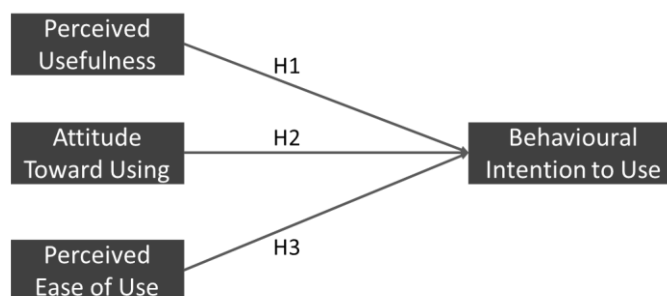


Figure 5. Research Model.

The conceptual model in this study is simplified from previous study that has been done by some researchers. For the final output, the usage will show the result of acceptance whether it is accepted or not accept. The hypothesis listed below



3.6.1 Perceived usefulness (PU) to Behavioural Intention to use (BI).

The concept of usefulness refers to the extent to which an individual believes that a particular approach can improve their performance at work. Perceived usefulness, on the other hand, relates to an individual's belief regarding how using a tool will enhance their job execution (Grant, 2008). Previous research has consistently demonstrated that perceived usefulness significantly influences people's acceptance and utilization of information systems (Scherer et al., 2019). Studies indicate that it is among the key factors impacting attitude, intention, and actual behaviour toward technology adoption.

Perceived Usefulness has long been recognized as important in online systems. Extensive research has consistently shown a positive relationship between Perceived Usefulness, the intention to use application systems, and attitudes toward them. Academics emphasize the crucial role of Perceived Usefulness in enhancing technology acceptance models such as TAM (Scherer et al., 2019). Research also indicates that Perceived Usefulness is among the most influential factors driving user adoption of new applications. Ultimately, perceived usefulness strongly impacts users' feelings, intentions, and usage behaviour (Park et al., 2012).

Based on previous studies we develop hypothesis H1: Perceived usefulness positively influences behavioural intention to use a system.

3.6.2 Attitude Toward Use (AT) to Behavioural Intention to use (BI).

Attitude plays a significant role in marketing and information systems research. The Technology Acceptance Model is an important framework for studying information systems, as it predicts the use of Perceived Ease of Use, attitude, intent, and use. Psychological constructs have been found to influence and predict a wide range of behaviours in this context (Boeck et al., 2023).

Attitude encompasses a complex blend of emotional, cognitive, and behavioural components that shape our responses to individuals, events, objects, activities, thoughts, and more (Granić, 2023). It reflects our predisposition towards holding either positive or negative views on a wide range of matters. In its original form the TAM suggested that attitude plays a crucial role in influencing behavioural goals with its positive impact.

Attitudes towards self-service have captivated the attention of researchers in consumer behaviour literature for decades. Numerous studies have delved into this complex topic, revealing that customers' perceived usefulness plays a critical role in shaping their attitudes toward self-service. It is widely recognized that the concept of behavioural attitude holds pivotal importance in accurately predicting customer intentions and subsequent behaviour (Hsu et al., 2017).

Based on previous studies we develop hypothesis H2: Attitude toward use (AT) has a positive effect on Behavioural Intention to use (BI).

3.6.3 Perceived ease of use (PEOU) to Behavioural Intention to use (BI).

Perceived ease of use is defined as a person's expectation that using a particular system will be simple. Davis (1987) stated that how easy something is seen to be to use has a significant impact on a person's attitude. He explained this using two important mechanisms: self-efficacy and instrumentality. If a method is simple to use, the user should have greater confidence in their ability to do a task. Many academics, like Yeou (2016) and Murillo et al. (2020), have explored the relationship between how simple something is to use and how valuable it is, according to Money & Turner (2004) A person's success can also be significantly influenced by how simple they believe something is to use. An easy-to-use technology requires less effort, allowing the user to perform tasks quickly and effectively.

Therefore, we develop hypothesis H3: Perceived ease of use has a positive effect on Behavioural Intention to use the Performance Management Application.

4. DATA COLLECTION

4.1 Data Collection Technique

In scientific research, data collection is a carefully designed process aimed at acquiring the necessary information (Boca et al., 2016). Various methods such as data collection, questionnaires, interviews can be employed to gather relevant data. In this study, statistical analysis will be utilized to examine hypotheses and analyse the collected data. Given the nature of this study, utilizing a questionnaire is deemed the most suitable approach for gathering the required information. The questionnaire allows for standardized data collection and can be easily distributed and completed by participants (Ragab & Arisha, 2017).



4.1.1 Population.

The population is known as the generalization of associated objects or subjects that match the quality and specific characteristics set by the research to be studied and take the data (Duncan, 2008). In this study, the population consists of staff employees at PT. KPC who are directly involved in the utilization, maintenance, and implementation of Entomo - a performance management system within their respective departments. They will be the target group for data collection and analysis to understand their perceptions and experiences with the performance management system (Masudin et al., 2020).

4.1.2 Sampling.

The sample size is determined by the level of accuracy or error desired by the researcher. In social studies, a common maximum error rate of 5% (0.05) is used (Krejcie & Morgan, 1970) (Bolarinwa, 2020). A higher error rate corresponds to a smaller sample size, while a larger sample more closely represents the population and reduces the chances of generalization errors (Indrayan & Mishra, 2021). Conversely, a smaller sample increases the risk of generalization errors as it deviates further from accurately representing the population.

4.1.3 Sampling Technique.

The sampling method used in this study is purposive sampling. Purposive sampling is a non-probability sampling technique, where the selection of sample elements does not follow an equal probability distribution (Palinkas et al., 2013). Instead, specific criteria chosen by the researcher are used to select the sample. In this study, respondents will be carefully chosen to ensure representation from all levels and divisions within PT.KPC's employee base.

4.1.4 Sample size.

The sample is a component of a subject or thing that symbolizes the population. Flow sampling that considers a population's qualities and traits. A study will be prejudiced, untrustworthy, and the conclusions may be incorrect if the sampling is not in agreement with the standards and characteristics of the population. This is because it does not adequately represent the population.

It has been stated by some sources that the minimum sample size for multiple linear regression is $50 + 8m$, where m is the number of independent variables (Lisnatiawati & Lukertina, 2020) (Khan & Johannes, 2018). In this case, the number of independent variables is 3 (Perceived Ease of Use, Perceived Usefulness, and Attitude Toward Using), so the minimum required sample size would be $50 + (8 * 3) = 74$ (Khan & Johannes, 2018) (Wibowo et al., 2023). However, other sources suggest a minimum sample size of 146 to 160 when the researcher does not know the value of the path coefficients (Wibowo et al., 2023).

To determine the appropriate sample size, the researcher should consider the target population size, the desired level of statistical significance, and the expected effect size. According to the provided sources, for a known population size of 613, the recommended sample size is 242 to ensure a 95% confidence level and 5% margin of error (Wibowo et al., 2023). So, for this study the target sample size should be around 242 participants (Wibowo et al., 2023).

4.2 Questionnaires Design

This section elaborates about how the researcher constructs a variable questionnaire based on secondary data, like literature reviews and other credible references. The purpose of this is to develop the variable constructs into questionnaire to gather and collect primary data.

The questionnaire consists of two sections: first section is the basic demographic characteristics of the participants, including information regarding gender, age, department, grade, and education.

The second section contains questions for various factors presented in the conceptual framework (Figure 2.2). In this section, the questionnaire comprises close-ended questions and constructed using Likert scale. The Likert scale was easy to construct and easily understood by the respondents (Mcleod, 2023). All the items in the second section of the survey are designed as agree-disagree statements on a Likert scale with five points, where each point carries equal weight (Boca et al., 2016). This ensures that the responses can be quantified and analysed effectively (Rafique et al., 2020). The table 1 below consists of the factor and variables to build up the questionnaire.

Table 1. Factor and Variables of Questionnaire.

Variable	Code	Indicator	Sources
Perceived Usefulness	PU1	Technology has the potential to enhance work productivity	Davis (1989)
	PU2	Perceive the potential for technology to enhance work effectiveness	
	PU3	Recognize that technology has the potential to streamline operational processes	
Perceived Ease of Use	PEOU1	Perceiving PMS apps as an easy skill to learn and use	Davis (1989)
	PEOU2	Perceive that communication can be coherent and comprehensible	
	PEOU3	Adapting to technology is perceived as simple.	
Attitude toward behavior	AT1	Feel optimistic about the potential of Online Performance Management.	Payne et al. (2009)
	AT2	It is logical to consider the use of Online Performance Management.	Ranjetha et al. (2022)
	AT3	Believe that the utilization of Online Performance Management is a favorable choice	
Behavioral intention to use	BI1	Desires to engage in a behavior	Alsharida et al. (2021)
	BI2	Desire to continuously utilize products or services	
	BI3	Continue in the future and make sure to inform others about it	

Based on the questionnaire design table above, to make it easier for the respondents in answering the questions, the questionnaire items are designed with the adjustment in terms of the language (Reynolds et al., 2021). The questionnaire items are provided in the table 2 below.

Table 2. Questionnaire Items.

No	Code	Questions
1	PU1	The Entomo has the potential to significantly improve my work productivity.
2	PU2	Entomo can enhance my work by allowing for KPI and clearer target and performance tracking.
3	PU3	Entomo can simplify and improve operational processes within the company, such as monitoring and performance reviews.
4	PEOU1	Learning and using the Entomo is straightforward with clear instructions and user interface.
5	PEOU2	Communication within the Entomo, such as scorecard development, seems clear and easy to understand.
6	PEOU3	Adapting to and using the Entomo on daily seems easy and does not disrupt my workflow much.
7	AT1	I believe in the potential benefits of using Entomo for better communication and goal setting.
8	AT2	Using an Entomo is a logical and positive step for our company to improve performance management processes.
9	AT3	I think using the Entomo as an excellent choice for improving transparency and fairness in performance evaluation.
10	BI1	I am interested in actively using Entomo to manage my performance goals and progress
11	BI2	I will continue to use Entomo for performance management, including setting goals, receiving feedback, and self-evaluations
12	BI3	I am likely to recommend using the Entomo to my colleagues if I find it valuable and user-friendly.

5. ANALYSIS

This chapter examines the research findings and the results of the data analysis using multiple linear regression and path analysis techniques to address the research questions. The first section assessment of the validity and reliability of the data collected through the questionnaire, which serves as a critical foundation for the subsequent research steps.

The second section provides a comprehensive examination of the respondent profile utilized in this study, offering valuable insights into the sample characteristics and demographics. This information is essential for contextualizing the research findings and understanding the scope and generalizability of the results.

The last section delves into the details of the data analysis using multiple linear regression and path analysis techniques. This comprehensive examination will shed light on the relationships between the variables, their relative strengths of influence, and the overall causal models that emerge from the research. The depth of this analysis will provide a robust foundation for answering the research questions and generating impactful insights.

5.1 Validity and Reliability

Prior to conducting the main analysis, it is crucial to establish the validity and reliability of the research instruments and measurements (Shukaili et al., 2021). Validity refers to the extent to which the data and analysis accurately reflect the intended concepts, while reliability ensures the consistency and dependability of the measurements. The purpose was to identify potential issues, test the validity and reliability of the data collection process, and refine the research instruments (Teijlingen & Hundley, 2002).

5.1.1 Validity

In the validity analysis, this research uses Pearson correlation to check that each indicator is valid in representing the variable. Regarding Benesty et al. (2009) an acceptable correlation value is 0.5 or more, indicating a strong relationship between the indicator and the variable it is intended to measure. The result of validity test can be seen in appendix 4 and the summary in table 3 below.

Table 3. Validity Test Result.

Variable	Indicator	r-count	r-table	Sig.	α	Remarks
Perceived Usefulness (PU)	PU1	0.811	0.161	<0.001	0.01	Valid
	PU2	0.890	0.161	<0.001	0.01	Valid
	PU3	0.827	0.161	<0.001	0.01	Valid
Perceived Ease of Use (PEOU)	PEOU1	0.854	0.161	<0.001	0.01	Valid
	PEOU2	0.841	0.161	<0.001	0.01	Valid
	PEOU3	0.796	0.161	<0.001	0.01	Valid
Attitude toward behavior (AT)	AT1	0.860	0.161	<0.001	0.01	Valid
	AT2	0.900	0.161	<0.001	0.01	Valid
	AT3	0.879	0.161	<0.001	0.01	Valid
Behavioral intention to use (BI)	BI1	0.898	0.161	<0.001	0.01	Valid
	BI2	0.867	0.161	<0.001	0.01	Valid
	BI3	0.873	0.161	<0.001	0.01	Valid

Based on the results presented in Table 3, all items have a Pearson correlation (r-count) score above 0.5, indicating that they are valid indicators representing their respective variables. Additionally, the r-count > r-table, and the significant < α (alpha) for each item, further confirming the validity of the measures. These findings suggest that the research instruments used in the study are valid.

5.1.2 Reliability

The researcher conducted a reliability analysis using Cronbach's Alpha, which is a standard measurement for testing the reliability of the research instruments.

Table 4. Reliability Test Result.

Variable	Cronbach's Alpha	Standard	Remarks
Perceived Usefulness (PU)	0.795	0.70	Reliable
Perceived Ease of Use (PEOU)	0.772	0.70	Reliable
Attitude toward behavior (AT)	0.854	0.70	Reliable
Behavioral intention to use (BI)	0.853	0.70	Reliable

to the reliability analysis presented in Table 4, all the Cronbach's Alpha score are above the recommended threshold of 0.70 (George and Mallery, 2003). This indicates an excellent level of internal consistency and reliability of the research instruments used in the study. The high Cronbach's Alpha score suggests that the items within each construct or variable are closely related and consistently measure the same underlying concept.

This strong reliability of the measures is a crucial aspect of the research, as it ensures the stability and consistency of the data collected. It provides confidence that the responses obtained from the participants are reliable and can be used to draw meaningful and trustworthy conclusions. The high reliability also implies that if the study were to be replicated, the results would likely be consistent, further strengthening the validity and generalizability of the findings (Sharts-Hopko, 2002). Overall, the reliability analysis presented in the paper demonstrates that the research instruments are well-designed and appropriate for the intended purpose of the study.

5.2 Classical Assumption Test

5.2.1 Normality Test

The result of normality test can be seen in the Figure 6 below:

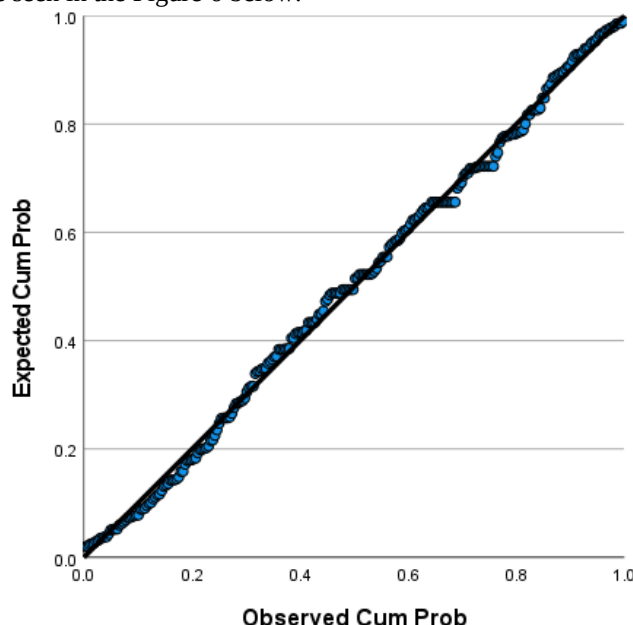


Figure 6 Normal P-P Plot of Regression Residual.

The graph showed that the data is normally distributed where the data is only scattered around the diagonal line. Furthermore, the Kolmogorov-Smirnov tests confirmed the normality of the data distribution, with significant values greater than 0.05 (Prasetyaningtyas et al., 2021) that is 0.200. We can see in the table 5 below.

Table 5. Result of Kolmogorov-Smirnov Test.

		Unstandardized Residual
N		254
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	1.05343043
Most Extreme Differences	Absolute	.037
	Positive	.037
	Negative	-.031
Test Statistic		.037
Asymp. Sig. (2-tailed) ^c		.200 ^d

- Test distribution is Normal.
- Calculated from data.
- Lilliefors Significance Correction.
- This is a lower bound of true significance.

5.2.2 Multicollinearity Test

The result of the multicollinearity test can be seen in the table 6 below:

Table 6. Multicollinearity Test Result.

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	PU	.391	2.560
	PEOU	.667	1.499
	AT	.393	2.543
a. Dependent Variable: BI			

Based on the output of results in Table 6, the analysis shows that all variables have Tolerance Values greater than 0.10 and Variance Inflation Factors (VIF) less than 10. This indicates that there is no issue of multicollinearity in the data. This finding adds further confidence in the reliability and validity of the research instruments used in the study.

5.2.3 Heteroscedasticity Test

The result of heteroscedasticity test can be seen from the value of output in the Table 7 below:

Table 7. Heteroscedasticity Test Result.

			Unstandardized Residual
Spearman's rho	PU	Correlation Coefficient	-.011
		Sig. (2-tailed)	.867
		N	254
	PEOU	Correlation Coefficient	-.005
		Sig. (2-tailed)	.940
		N	254
	AT	Correlation Coefficient	.009
		Sig. (2-tailed)	.883
		N	254
	Unstandardized Residual	Correlation Coefficient	1.000
		Sig. (2-tailed)	.000
		N	254
**. Correlation is significant at the 0.01 level (2-tailed).			

From the table shown, the results of the heteroscedasticity test indicate that there is no heteroscedasticity issue in the data. Specifically, the significance values for the key variables are: Perceived Usefulness (0.867), Perceived Ease of Use (0.940), and Attitude Toward Use (0.883). Since all these values are greater than 0.05, it suggests that the assumption of homoscedasticity, or constant variance of the residuals, is met.

5.3 Multiple Linear Regression Analysis

In this section, calculating multi linear regression consists of 3 tests which are: F-Significance (F-Sig) Test, Coefficient of Determination (R²), and T-Significance Test.

5.3.1 F-Significance Test

After testing the classical assumptions, the F-Significance test is conducted to determine whether the overall regression model is statistically significant. The result can be seen in table 4.6 below.

Table 8. F - Significance Test Result.

ANOVA ^a				
Model		Mean Square	F	Sig.
1	Regression	323.350	287.92	.000 ^b
	Residual	1.123		
	Total			
a. Dependent Variable: BI				
b. Predictors: (Constant), AT, PEOU, PU				

In this research, the F-count statistic is 287.92 with a significant value less than 0.001. F-count (287.92) is greater than F-table (2.64) and significantly less than 0.01. This indicates that the regression model is highly statistically significant. In other words, the independent variables (perceived usefulness, perceived ease of use, and attitude toward use) collectively have a significant influence on the dependent variable (behaviour intention to use).

The high F-value and low significant value (less than 0.01) suggest that the sample data is representative of the overall population and the regression model is a good fit for the data. This provides strong evidence that the research instruments are well-designed and appropriate for the intended purpose of the study. The significant F-test result adds confidence in the reliability and validity of the research findings.

5.3.2 R-Squared Test

Following that, the R-Squared Test is needed to discover the relationship between the independent variables and the dependent variable. The result indicates that the R value is 0.881, which suggests a strong positive correlation between the independent and dependent variables. Furthermore, the R-squared value is 0.776, meaning that the independent variables can explain 77.6% of the variability in the dependent variable. This is considered an important result, as the R-squared number in this research is needed to assess human behaviour and psychology. The high R-squared value indicates that the regression model is a good fit for the data and the independent variables included in the model are effective in predicting the dependent variable. The result can be seen in table 9 below.

Table 9. R-Square Test Result.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.881 ^a	.776	.773	1.060
a. Predictors: (Constant), AT, PEOU, PU				

5.3.3 T-significance Test

Specifically, the significance value of the perceived usefulness variable is less than 0.001, meaning that perceived usefulness has a strong, statistically significant effect on behavioural intention to use. This suggests that users' perceptions of the usefulness of the technology or system play a crucial role in determining their intention to adopt and use it.

The significance value of the perceived ease of use variable is 0.018, which also indicates a significant effect on behavioural intention to use. This implies that the extent to which users perceive the technology or system as easy to use and learn is an important factor in shaping their intention to utilize it.

Similarly, the significance value of the attitude toward use variable is less than 0.001, meaning that users' overall attitude and disposition toward using the technology or system has a significant influence on their behavioural intention to use it. This highlights the importance of fostering a positive attitude among users to promote greater adoption and usage.

Table 10. T - Significance Test Result.

Coefficients ^a				
Model		Unstandardized Coefficients		Sig.
		B	Std. Error	
1	(Constant)	.171	.378	.652
	PU	.372	.050	.000
	PEOU	.093	.039	.018
	AT	.468	.043	.000
a. Dependent Variable: BI				

From the table 10 above, we can create a multiple linear regression equation by referring to the existing beta value. The equation is:

$$BI = 0.171 + 0.372PU + 0.093PEOU + 0.468AT$$

The variable with the greatest influence on behavioural intention to use is attitude toward use, with a beta coefficient of 0.468. This suggests that users' perceptions of the technology's or system's utility and effectiveness are the primary driver of their intention to use it.

The variable with the next highest influence is perceived usefulness, with a beta coefficient of 0.372. This indicates that users' overall attitudes and feelings about using the technology or system also play a significant role in shaping their behavioural intention. Finally, perceived ease of use has the smallest, but still significant, effect on behavioural intention, with a beta coefficient of 0.093. This suggests that while ease of use is an important factor, it is not as crucial as perceived usefulness and attitude toward use in determining users' intention to adopt and use the technology or system.

5.3.4 Second Model.

To further strengthen the robustness of the research model, the researcher develops second model by included several control variables that were assessed through the survey questionnaire. These control variables comprised demographic factors such as gender, age, education level, grade or position, and the division or department of the respondents. By incorporating these control variables into the analysis, the researchers were able to examine their potential impact on the relationships between the key independent and dependent variables.

This test utilizes dummy data created for each control variable, as detailed in the respondent demographics section. For gender, male becomes the control group. Similarly, grades D through G are combined to represent "middle management." The division variable is split into two groups: operations and non-operations, with the test focusing on the operations division. In education level, all groups except D1/D2/D4 are included. Finally, the test uses the "over 40 years old" age group. T-Test with control variable can be seen in this table 11 below.

Table 11. T-Test Result with Control Variable.

Coefficients ^a					
Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	.018	.608	.029	.977
	PUTotal (X1)	.367	.051	7.227	.000
	PEOUTotal (X2)	.096	.039	2.444	.015
	ATTTotal (X3)	.478	.043	11.122	.000
	JenisKelamin=Laki-laki (X4)	-.503	.198	-2.536	.012
	GradeTrans=MidleManagement (X5)	.113	.304	.373	.710
	DivTrans=Operation (X6)	.255	.219	1.161	.247
	Pendidikan=D4/S1 (X7)	.300	.200	1.500	.135
	Pendidikan=S2/S3 (X8)	.170	.235	.724	.470
	Pendidikan=SMU/SMK (X9)	.152	.241	.629	.530
	UsiaTrans=Over40 (X10)	-.048	.152	-.315	.753
a. Dependent Variable: BITotal (Y)					

The multiple linear regression equation derived from the data provides a nuanced and comprehensive understanding of the key factors that influence technology adoption and usage behaviour within the organizational context. The equation takes the form:

$$Y = 0.367X_1 - 0.096X_2 + 0.478X_3 - 0.503X_4 + 0.113X_5 + 0.255X_6 + 0.300X_7 + 0.170X_8 + 0.152X_9 - 0.048X_{10} + 0.018$$

A closer examination of the control variables included in the model reveals important insights. The analysis indicates that the significance values for age, education, and grade are all well above the commonly accepted 0.05 threshold, suggesting these demographic factors are not statistically significant predictors of the dependent variable. This finding implies that the relationships observed between the key independent variables and the outcome of behavioural intention to use the technology or system are relatively consistent across different age groups, educational levels, and job grades within the organization.

In contrast, the significance values for the control variables of gender are found to be less than 0.05, indicating that these characteristics do have a meaningful influence on the results. This underscores the importance for organizations to consider the potential impact of demographic factors when implementing new technologies or systems. Tailoring strategies and approaches to address the nuanced needs and preferences of different user segments can be a critical factor in enhancing the overall likelihood of successful technology adoption and usage.

Turning to the independent variables, the analysis shows that their significance values have remained unchanged from the previous findings. This consistency reinforces the validity and reliability of the original results, which had identified perceived usefulness, perceived ease of use, and attitude toward use as the dominant predictors of behavioural intention to use the technology or system. The robust beta coefficients associated with these key variables further confirm their significant role in driving technology acceptance and usage among the organization's employees.

5.4 Business Solution

Ensuring widespread adoption and user buy-in is essential for organizations to maximize the benefits of implementing new technologies or systems. Based on the research findings, there are several crucial implications and recommendations that organizations should consider:

Firstly, organizations must prioritize fostering a strong perception of usefulness among users. This involves clearly communicating the advantages and value-added benefits of the new technology, demonstrating how it can improve employee performance, productivity, and efficiency. By highlighting the practical utility and effectiveness of the system, organizations can cultivate a deeper understanding and appreciation among users, which will significantly drive their intention to adopt and use the technology.



Secondly, organizations should focus on enhancing the perceived ease of use of the new technology or system. This can be achieved through intuitive design, comprehensive training programs, and ongoing user support. By making the system more user-friendly and accessible, organizations can lower the barriers to adoption and encourage greater utilization among employees.

Lastly, fostering a positive attitude toward the new technology or system is crucial. This can be facilitated by actively involving users in the implementation and improvement process, addressing their concerns, and promoting a culture that embraces technological change. When users feel that their voices are heard and their needs are met, they are more likely to develop a favourable disposition toward the technology, further supporting its successful adoption.

By strategically addressing these key factors of perceived usefulness, perceived ease of use, and attitude toward use, organizations can significantly improve the likelihood of successful technology adoption and utilization among their employees. This comprehensive approach will enable organizations to maximize the benefits of their technology investments and drive sustained performance improvements.

6. CONCLUSION

Corresponding with research question what are the factors that has positive and significant relationship with adoption application of performance management system (PMS)? The results of this study reveal that perceived usefulness, perceived ease of use, and attitude toward using are key determinants of behavioral intention to use the technology or system, it can be concluded that:

- Perceived Usefulness has a positive and significant effect on Behavioral Intention to Use. This means that the first hypothesis is proven.
- Perceived ease of use has a positive and significant effect on Behavioral Intention to Use. This means that the second hypothesis is proven.
- Attitude toward Using Technology has a positive and significant effect on Behavioral Intention to Use. This means that the third hypothesis is proven.

Specifically, the results indicate that attitude toward using has the strongest influence on user's intention to adopt and use the system, followed by attitude perceived usefulness, and then perceived ease of use. These findings align with the well-established Technology Acceptance Model (TAM) which posits that an individual's behavioral intention to use a technology is primarily determined by their perceptions of the system's usefulness and ease of use, as well as their overall attitude towards using the system. Furthermore, the high R-squared value of 0.776 suggests that the independent variables included in the model - perceived usefulness, perceived ease of use, and attitude toward using - are collectively effective in explaining a substantial portion of the variability in the dependent variable, behavioral intention to use.

The results of this study clearly demonstrate the applicability and validity of the Technology Acceptance Model (TAM) in predicting and explaining users' behavioral intention to adopt and use a new technology or system. The multiple linear regression analysis reveals that the three key variables - perceived usefulness, perceived ease of use, and attitude toward use - collectively have a strong and statistically significant impact on users' intention to utilize the technology.

Specifically, perceived attitude toward uses as the most influential factor, suggesting that users' perceptions of the system's functionality, effectiveness, and benefits are the primary driver of their intention to accept and use the technology. This finding is consistent with prior research, which has consistently highlighted the critical role of attitude toward use in shaping technology acceptance and adoption behaviors.

The implications of these findings are important for organizations to define initiatives to increase adoption of application performance management. Some recommendations are:

- Organizations should focus on highlighting the usefulness and benefits of the new technology or system to potential users. Efforts should be made to clearly communicate the advantages and value-add of the system in terms of improving employee performance, productivity, and efficiency.
- Additionally, organizations should prioritize enhancing the perceived ease of use of the system through intuitive design, comprehensive training, and ongoing user support.
- Building a positive attitude towards the system is also crucial, which can be achieved by involving users in the development and implementation process, addressing concerns, and fostering a culture of technology acceptance.



By strategically addressing these key factors of perceived usefulness, perceived ease of use, and attitude toward use, organizations can significantly improve the likelihood of successful technology adoption and utilization among their employees. The findings of this study provide a valuable framework for understanding and predicting user acceptance of new technologies or systems, which can guide organizations in their efforts to drive successful implementation and maximize the benefits of their technology investments.

REFERENCES

1. Awan, S H., Habib, N., Akhtar, C S., & Naveed, S. (2020, October 1). Effectiveness of Performance Management System for Employee Performance Through Engagement.
2. Davis, F D., Bagozzi, R P., & Warshaw, P R. (1989, August 1). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models.
3. Yeou, M. (2016, January 28). An Investigation of Students' Acceptance of Moodle in a Blended Learning Setting Using Technology Acceptance Model. SAGE Publishing, 44(3), 300-318.
4. Davis, F D. (1987, January 1). User acceptance of information systems: the technology acceptance model (TAM).
5. Kamal, S A., Shafiq, M., & Kakria, P. (2020, February 1). Investigating acceptance of telemedicine services through an extended technology acceptance model (TAM).
6. Zaineldeen, S., Li, H., Koffi, A L., & Hassan, B M A. (2020, October 1). Technology Acceptance Model' Concepts, Contribution, Limitation, and Adoption in Education. Horizon Research Publishing, 8(11), 5061-5071.
7. Zhong-qing, H., Ding, S., Li, S., Chen, L., & Yang, S. (2019, March 7). Adoption Intention of Fintech Services for Bank Users: An Empirical Examination with an Extended Technology Acceptance Model.
8. Granić, A. (2023, January 1). Technology Acceptance and Adoption in Education.
9. Park, Y., Son, H., & Kim, C. (2012, March 1). Investigating the determinants of construction professionals' acceptance of web-based training: An extension of the technology acceptance model.
10. Ajzen, I. (1991, December 1). The theory of planned behavior.
11. Aldunate, R G., & Nussbaum, M. (2013, May 1). Teacher adoption of technology.
12. Saadé, R G. (2007, June 20). Dimensions of Perceived Usefulness: Toward Enhanced Assessment. Wiley-Blackwell, 5(2), 289-310. <https://doi.org/10.1111/j.1540-4609.2007.00142.x>
13. Setiawan, P Y., & Widanta, A A B P. (2021, January 1). The effect of trust on travel agent online use: Application of the technology acceptance model.
14. Grant, A M. (2008, January 1). Designing jobs to do good: Dimensions and psychological consequences of prosocial job characteristics.
15. Scherer, R., Siddiq, F., & Tondeur, J. (2019, January 1). The technology acceptance model (TAM): A meta-analytic structural equation modelling approach to explaining teachers' adoption of digital technology in education.
16. Boeck, P D., Pek, J., Walton, K M., Wegener, D T., Turner, B E., Andersen, B L., Beauchaine, T P., Lecavalier, L., Myung, J I., & Petty, R E. (2023, October 2). Questioning Psychological Constructs: Current Issues and Proposed Changes.
17. Hsu, C., Chang, C C., & Yansritakul, C. (2017, January 1). Exploring purchase intention of green skincare products using the theory of planned behavior: Testing the moderating effects of country of origin and price sensitivity.
18. Murillo, G R G., Novoa-Hernández, P., & Rodríguez, R S. (2020, September 28). Technology Acceptance Model and Moodle: A systematic mapping study.
19. Money, W H., & Turner, A. (2004, January 1). Application of the technology acceptance model to a knowledge management system.
20. Nasiri, M. (2021, February 5). Performance management in digital transformation: A sustainability performance approach.
21. Boca, G D., Mukaj, L., & Marsida, V. (2016, July 1). CREATING A MODEL CULTURE OF MANAGEMENT CHANGE.
22. Ragab, M., & Arisha, A. (2017, December 12). Research Methodology in Business: A Starter's Guide.
23. Duncan, G J. (2008, November 1). When to promote, and when to avoid, a population perspective.



24. Masudin, I., Jie, F., & Widayat, N. (2020, January 1). Impact of halal supplier service quality and staff readiness to adopt halal technology on halal logistics performance: a study of Indonesian halal meat supply chain.
25. Krejcie, R V., & Morgan, D W. (1970, September 1). Determining Sample Size for Research Activities.
26. Bolarinwa, O A. (2020, January 1). Sample size estimation for health and social science researchers: The principles and considerations for different study designs.
27. Indrayan, A., & Mishra, A. (2021, January 1). The importance of small samples in medical research.
28. Palinkas, L A., Horwitz, S M., Green, C A., Wisdom, J P., Duan, N., & Hoagwood, K. (2013, November 6). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research.
29. Lisnatiawati, L., & Lukertina, L. (2020, January 1). Does Working Environment and Working Motivation have Big Impact on Employee Performance.
30. Khan, H U., & Johannes, F. (2018, January 1). Alignment of IT/IS in business strategies and conceptual knowledge of employees: a case study of national planning commission of Namibia.
31. Wibowo, W S., Fadhil, A., Sensuse, D I., Lusa, S., Putro, P A W., & Yulfitri, A. (2023, January 1). Pinpointing Factors in the Success of Integrated Information System Toward Open Government Data Initiative: A Perspective from Employees. *Science and Information Organization*, 14(1).
32. Mcleod, S. (2023, February 26). Likert Scale Definition, Examples and Analysis.
33. Rafique, H., Almagrabi, A O., Shamim, A., Anwar, F., & Bashir, A K. (2020, February 1). Investigating the Acceptance of Mobile Library Applications with an Extended Technology Acceptance Model (TAM).
34. Reynolds, C R., Altmann, R A., & Allen, D N. (2021, January 1). Item Development.
35. Benesty, J., Chen, J., Huang, Y., & Cohen, I. (2009, January 1). Pearson Correlation Coefficient.
36. George, D., & Mallery, P. (2003, January 30). *SPSS for Windows step by step: a simple guide and reference*, 11.0 update. Allyn and Bacon, Boston, 4, 386.
37. Ullah, M I. (2021, February 10). Heteroscedasticity Archives.
38. Teijlingen, E V., & Hundley, V. (2002, June 19). The importance of pilot studies.
39. Nyatanga, B. (2005, July 1). Do pilot studies have any value in research?
40. Sharts-Hopko, N C. (2002, March 1). Reliability in Testing: Clinical and Research Applications.
41. Prasetyaningtyas, S W., Aishah, A., Hansen, B., & Kuspriandani, D. (2021, November 15). The Effect of Technological Innovation on Employee Performance in Pandemic Era: Case from Banking Industry in Indonesia. *Universitas Terbuka*, 17(2), 122-136.

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