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**CONTRIBUTION OF SELF DETERMINATION TO ENCOURAGE STUDENT
ACADEMIC PERFORMANCE IN ONLINE LEARNING**

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ABSTRAK

Tujuan penelitian ini adalah untuk mengkaji peran penentuan nasib sendiri dalam mendorong prestasi akademik mahasiswa melalui pembelajaran daring. Dengan menggunakan framework TTF, penelitian ini menggunakan pendekatan kuantitatif dengan analisis jalur. Populasi yang digunakan adalah mahasiswa Yogyakarta sedangkan sampel yang digunakan adalah 162 siswa. Analisis menggunakan analisis regresi parsial (Partial Least Square-Structural Equation Model (PLS-SEM)). Software yang digunakan adalah smartPLS 3.0. Hasil penelitian menunjukkan bahwa terdapat peran mediasi kepuasan pengguna terhadap pengaruh penentuan nasib sendiri siswa terhadap prestasi akademik. Penelitian ini menunjukkan bahwa penentuan nasib sendiri adalah variabel yang harus dipertimbangkan oleh manajer pendidikan tinggi ketika menerapkan pembelajaran online. Penelitian ini menambahkan variabel penentuan nasib sendiri ke kerangka TTF. Hal ini didasari oleh fenomena minimnya partisipasi dalam pembelajaran daring. Penelitian ini juga menegaskan kerangka TTF tentang kinerja yang belum pernah dipelajari di lingkungan pendidikan tinggi. Implikasi dari penelitian ini menggarisbawahi pentingnya SD sebagai komponen dalam pembelajaran online yang harus diperhatikan oleh manajer pendidikan tinggi. Hasil penelitian ini menjelaskan bahwa SD mempengaruhi AP melalui kepuasan siswa dalam mengikuti pembelajaran daring.

Kata-kata kunci: Penentuan nasib sendiri, Technology Task Fit, Online Learning.

ABSTRACT

The aim of this study is to examines the role of self-determination in encouraging student academic performance through online learning. Using TTF framewor, this study uses a quantitative approach with path analysis. The population used is Yogyakarta students while the sample used is 162 students. Analysis using partial regression analysis (Partial Least Square-Structural Equation Model (PLS-SEM)). The software used is smartPLS 3.0. The results showed that there is a mediating role of user satisfaction in the influence of student self determination on academic performance. This research shows that self-determination is a variable that higher education managers should consider when implementing online learning. This research adds a self-determination variable to the TTF framework. This is based on the

phenomenon of minimal participation in online learning. This research also confirms the TTF framework on performance which has never been studied in a higher education setting. The implications of this research underscore the importance of SD as a component in online learning that higher education managers should pay attention to. The results of this study explain that SD effects AP through student satisfaction in participating in online learning.

Keywords: *Self determination, Technology Task Fit, Online Learning.*

INTRODUCTION

Online learning is an alternative that can be developed to overcome the lack of flexibility in the implementation of learning (Müller & Mildenerger, 2021). The advantage of implementing online learning is that it can be used anywhere and anytime. Another advantage is that the implementation of online learning can be widely accessed (Dumford & Miller, 2018). (Aldholay et al., 2018) demonstrated that online learning can improve education, communicative and administrative qualities, and use scarce resources through the effective use of time. Online learning gives teachers the opportunity to teach a large number of students around the world and allows students to connect to the best universities and the best professors in the world (Khan et al., 2018). The various advantages mentioned have made online learning not only a solution during the Covid 19 pandemic crisis but has developed into an alternative to face-to-face learning in the future.

Given the positive impact and interest of university managers in carrying out online learning, a study is needed so that it can support student satisfaction and academic performance (AP) in online learning. In this study will use the Technology Task Fit (TTF) framework. TTF is the level of suitability of technology in helping individuals carry out their job duties. More specifically, TTF is a match between task demands, individual abilities and functions of the technology used (Goodhue & Thompson, 1995). Thus TTF is an interaction between individual abilities, task requirements, and the use of technology.

TTF describes how the actual use and user satisfaction should take into account the characteristics of the task, whether the technology is suitable for the task or not. Thus this theory adds to previous theories regarding the use of technology by focusing on the suitability of technology for tasks or not. Added by Lu & Yang (2014) that TTF discusses the extent to which technology helps users in carrying out their work or courses. as the level of suitability of a system that provides sufficient assistance to complete tasks and meet their needs. TTF is defined as the suitability of online learning to support students in achieving academic achievement. This can be measured through indicators, namely: Online learning is in accordance with how students complete their assignments, online learning is needed to complete student work and online learning meets job needs

One aspect that should be considered in the implementation of online learning is student self-determination. What is meant by self-determination (SD) is students' self-motivation to regulate their own behavior (Ryan & Deci, 2000). Add SD will answer the direction of developing online learning readiness which so far has only focused on technology readiness. Meanwhile, university administrators forget that the serious consequences of online learning place students as subjects who must be able to be active. Thus, in online learning, students have a large portion of determining their own academic performance (Howard et al., 2021). The fact shows that there are not a few teachers who complain that as long as students experience a decrease in interest in participating in online learning. In other matters, students are also considered less active in participating in online learning activities. Therefore, creating online classrooms that are supported by SD makes it possible for students to engage and engage with the online learning process (Alturki &

Aldraiweesh, 2023).

This research adds SD variables to the TTF framework. This is based on placing students as subjects in online learning, thus, students as individuals must be able to determine their own destiny as users of technology, and make decisions taken by users without outside motivation and/or influence.(Hew & Kadir, 2016). In other cases, self-determination is expected to be the answer to the phenomenon of students during online learning not actively participating.

This study also confirms the model of the relationship between information quality factors and user satisfaction with TTF and performance. According to Park & Raven (2015) the quality of information is no longer only about what is created by the system, but also describes the important content that is stored and managed in the system. This is a fundamental difference, and the role of information quality is further extended to modern systems. This increased role need to be reflected in the TTF model. According to Candrawati et al. (2023) Information Quality (IQ) is defined as the extent to which internet users believe that internet information is up-to-date, accurate, relevant and precise and complete with good display and format, easy to understand and easy to interpret.

Satisfaction factor is the response or feelings of the user after using an information system (Petter et al., 2012). Lin & Wang, (2012) describes the user's satisfied disposition of the system in terms of function, quality, format, and speed of the system. Students who have satisfaction using online learning will indicate a decision to rely on these services and how well they meet expectations. Added by Isaac et al., (2019a) that user satisfaction is also described as the extent to which users consider the system useful and want to reuse it, temporarily According to Delone & McLean, (2003) user satisfaction is often used as a measure of the effectiveness of information systems. If an effective system is defined as one that provides added value to the company, then an effective system must have some positive effect on user behaviour i.e. increase productivity, decision making, and so on. In this study user satisfaction (US) is defined as the positive feelings felt by students towards the performance of the online learning system. US is measured through indicators, namely: online learning is the student's best decision, students are satisfied with the use of online learning, students feel that online learning meets expectations. Various studies have tested TTF on performance but none has ever linked it to higher education settings (Adhitya Mahatva Yodha et al., 2023; Isaac et al., 2017).

RESEARCH METHODS

Participant

According to Sekaran & Bougie (2016), The entire group to be studied, whether in the form of groups of people, events or otherwise, is called the study population. The population in this study were Yogyakarta students. For this reason, the number of participant samples will be determined based on the results of the minimum sample calculation. According to Hair et al (2012) to determine the minimum number of samples for SEM is: (Number of indicators + number of latent variables) x (5 to 10 times). There were 19 indicators used in the study, so the expected research sample was 95 to 190. Meanwhile, the sample used in this study was 162 students, so it complied with the sample requirements suggested by Hair et al (2012). The research was carried out by distributing questionnaires offline (paper based) to research participants. This is to ensure that the sample criteria are appropriate during the ongoing learning period in the post-pandemic learning transition period. The research sample was determined randomly based on the convenience sampling method with the criteria being active students who had participated in online learning.

Research Design and Procedure

This research is a quantitative research and based on its objectives, it is a type of explanatory research, namely a type of research aimed at testing the influence of hypothesized variables (Casula et al., 2021). In the context of this study, the independent variables are SD and IQ; the dependent variable is (AP) and the mediating variable is TTF and US

Instruments

The data collection technique used was a questionnaire. A questionnaire is a list of questions or items used to collect data from respondents about their attitudes, experiences or opinions. The scale used is a 5-level Likert scale. The self-efficacy (SE) instrument consists of six question that developed from Bandura's 3 dimensions of self-efficacy, namely level, strength, and generality (Ghufron & Risnawati, 2014). The information quality (IQ) measurement instrument consists of 3 questions and Academic Performance (AP) consisted of four questions adopted from Candrawati et al. (2023b) research. User Satisfaction (US) and Task Technology Fit (TTF) instrument modified from Isaac et al. (2017) research, each consists of three questions.

Data Analysis

This study uses partial least squares structural equation model (PLS-SEM) to test the hypothesis. Partial least squares structural equation modeling (PLS-SEM) is an alternative method to covariance-based SEM (CB-SEM), which has historically been more commonly used when analyzing data using structural equation modeling (SEM)

Analysis using SEM PLS consists of two steps, namely (1) evaluate the outer model using the model fit criteria Convergent validity, Discriminant Validity (Cross Loading) and Composite Reliability and AVE (2) evaluate the inner model using R-Square and t test as well as evaluate the role of mediation.

RESULTS AND DISCUSSION

Results

PLS is able to connect a collection of independent variables with several dependent (response) variables. On the predictor side, PLS can handle many independent variables even when the predictor displays multicollinearity. PLS can be implemented as a regression model, predicting one or more dependents from one or more independent sets.

PLS can also be implemented as a path model, dealing with causal paths connecting predictors to paths as well as linking predictors to response variables. SmartPLS is the most common implementation as a path model, even implemented as a regression model by SPSS. PLS analysis consists of two evaluation stages, namely evaluation of the outer model and inner model, along with the results of data analysis:

Assessing the Outer Model or Measurement Model

Outer model evaluation consist of three analysis, they are Convergent Validity, Discriminant Validity and Composite Reliability.

Convergent validity analysis

According to Hair et al. (2019), indicators with a nonsignificant weight should definitely be eliminated if the loading is also not significant. A low but significant loading of 0.50 and below suggests that one should consider deleting the indicator, unless there is strong support for its inclusion on the grounds of measurement theory. The results of data processing show that there are indicators that have a loading factor value below 0.60, namely INT5 and INT6, so they must be excluded from the model. The results of processing using SmartPLS on the outer model are then produce loading factor 0.646-0,984 so that the analysis can be continued at the next stage.

Discriminant Validity Analysis

The results of discriminant validity testing were the loading factor on each indicator used to represent the research variable has the highest value or the closest relationship when compared to the loading factor on other variables. This indicates that all indicators of research variables have passed the cross-loading test

Evaluating Reliability and Average Variance Extracted (AVE)

From reliability and AVE values for all variables can be concluded that all constructs meet the criteria of being reliable. This is indicated by the composite reliability value above 0.70 and AVE above 0.50 as the recommended criteria.

Assessing the Inner Model or Structural Model

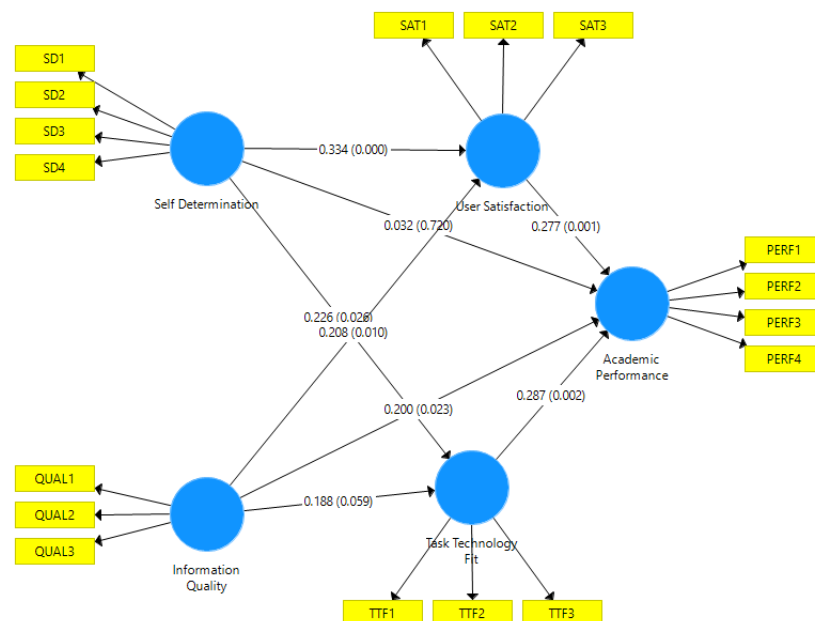
Evaluation of the inner model or structural model in this study is represented by the R Square value. The results of the analysis can be seen in the following table:

Table 1
R-Square.

	R Square	R Square Adjusted
Academic Performance	0.364	0.348
Task Technology Fit	0.125	0.114
User Satisfaction	0.217	0.207

Analysis of the R-square value shows that the User Satisfaction variable is 0.217. These results indicate that 21.7% of the User Satisfaction variable is affected by Student self-determination and Information Quality simultaneously. The R-square value for the Task Technology Fit variable is 0.125. These results indicate that 12.5% of the Task Technology Fit variable is affected by Student self-determination and Information Quality simultaneously. The R-square value for the Performance variable is 0.364. These results indicate that 36.4% of the Performance variable is affected by Student self-determination, Information Quality, User Satisfaction and Task Technology Fit simultaneously.

The results of the SmartPLS analysis of the effect of Internal Factor, Information Quality, User Satisfaction and Task Technology Fit products on Performance can be seen in the following figure:



Hypothesis Testing

The SmartPLS output result for inner weight shows the path coefficient of the variable relationship and the significance level of the relationship variable (p values).

Table 2
Path Coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Information Quality -> Academic Performance	0.200	0.213	0.088	2.274	0.023
Information Quality -> Task Technology Fit	0.188	0.204	0.100	1.892	0.059
Information Quality -> User Satisfaction	0.208	0.210	0.081	2.567	0.010
Self Determination -> Academic Performance	0.032	0.030	0.090	0.359	0.720
Self Determination -> Task Technology Fit	0.226	0.229	0.102	2.227	0.026
Self Determination -> User Satisfaction	0.334	0.354	0.093	3.575	0.000
Task Technology Fit -> Academic Performance	0.287	0.284	0.093	3.084	0.002
User Satisfaction -> Academic Performance	0.277	0.271	0.083	3.322	0.001

Table 3
Indirect Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Information Quality -> Task Technology Fit -> Academic Performance	0.054	0.056	0.031	1.758	0.079
Self Determination -> Task Technology Fit -> Academic Performance	0.065	0.067	0.039	1.662	0.097
Information Quality -> User Satisfaction -> Academic Performance	0.058	0.057	0.029	1.970	0.049
Self Determination -> User Satisfaction -> Academic Performance	0.093	0.095	0.038	2.460	0.014

Self Determination Impact

Self Determination Theory (SDT) is a theory that emphasizes the importance of individual motivation for self-regulation behaviour (Ryan & Deci, 2000). In this sense, self-determination theory (SDT) posits that people have a tendency to grow and function and, as such, move toward activities that satisfy their inner development resources and function optimally (Chiu, 2022). Through SDT, individuals are seen as subjects who have self-motivation and are represented by three basic psychological needs: autonomy, competence, and relatedness (Howard et al., 2021).

In this study, SD is defined as a student's ability to participate in, be involved in and complete all online learning activities. This is measured through being able to complete academic assignments, being confident in one's ability to overcome difficulties in completing

academic assignments, encouraging oneself to persist in every obstacle, being diligent in completing assignments, being able to perform tasks in different fields and being able to use life experiences.

Howard et al. (2021) identified that self-determination encourages students to have various types of motivation including ego involvement, personal values, and intrinsic interests. Later this motivation then forms a different academic performance among students. Chiu (2022) emphasized that self-determination encourages the formation of students' attachment to the learning process. These conditions encourage every student to achieve academic achievement. This statement is proven in this research, with several supported hypotheses, namely: First, Self Determination has a positive and significant effect on User Satisfaction ($p = 0.000$). This means that the higher student Self Determination, the higher the User Satisfaction. Second, Self Determination has a positive and significant effect on Task Technology Fit ($p = 0.026$). This means that the higher student Self Determination, the higher the Task Technology Fit

The research results show that Self Determination no significant effect on Academic Performance ($p = 0.720$). This means that student Academic Performance is not determined by Self Determination. The results of this research emphasize that the influence of self-determination on academic performance is based on student satisfaction with the online learning system implemented. The results of this research emphasize that the influence of self-determination on academic performance is based on student satisfaction with the online learning system implemented (Cheon et al., 2012).

Information Quality (IQ) Impact

According to Park & Raven (2015), the quality of information is no longer only about what is created by the system, but also describes the important content that is stored and managed in the system. This is a fundamental difference, and the role of information quality is further extended to modern systems. This increased role need to be reflected in the TTF model. According to Candrawati et al. (2023) IQ is defined as the extent to which internet users believe that internet information is up-to-date, accurate, relevant and precise and complete with good display and format, easy to understand and easy to interpret. In this study, IQ is associated with the quality of information conveyed by learning providers through online learning. This can be seen from how online learning can provide up-to-date information, provide accurate information and the ability to provide relevant information. This statement is proven in this research, with several supported hypotheses, namely First, Information Quality has a positive and significant effect on User Satisfaction ($p = 0.010$). This means that the higher student Information Quality, the higher the User Satisfaction. Second, Information Quality has a positive and significant effect on Academic Performance ($p = 0.023$). This means that the higher student Information Quality, the higher the Academic Performance.

The research results also show that Information Quality no significant effect on Task Technology Fit ($p = 0.059$). This means that student Task Technology Fit is not determined by Information Quality. The unsupported hypothesis proposed could be due to the quality of the information not being accompanied by the ability to digest the information, encouraging inappropriate use of technology to complete student assignments.(Coman et al., 2020).

Technology Task Fit Impact

The TTF theory was presented for the first time by Goodhue & Thompson (1995). TTF describes how the actual use and user satisfaction should take into account the characteristics of the task, whether the technology is suitable for the task or not. Thus this theory adds to previous theories regarding the use of technology by focusing on the suitability of technology for tasks or not. Added by Lu & Yang (2014) that TTF discusses the extent to which technology

helps users in carrying out their work or courses. as the level of suitability of a system that provides sufficient assistance to complete tasks and meet their needs. TTF is defined as the suitability of online learning to support students in achieving academic achievement. This can be measured through indicators, namely: Online learning is in accordance with how students complete assignments, online learning is needed to complete student work and online learning meets job needs.

Yamin & Sweiss (2020) gives the notion that performance is the extent to which quality work can be completed with more efficient resources. According to Lopes & Daniel (2022), performance refers to the intentional actions of individuals producing actions that are guided by results, with conscious goals or prior motivation.

According to Isaac et al., (2019) that AP refers to the extent to which online learning affects the preservation of resources, skills, capabilities, and acquisition of knowledge. In another statement it was stated that academic performance is a point of comparison of a person's progress both from the level of attitude, skills, mastery of materials and knowledge

In this study, AP is a student's academic achievement during online learning. Measurements are carried out subjectively through indicators, namely: increasing motivation to complete assignments on time, helping to improve writing skills for assignments and scientific papers, being a source of availability of learning resources and helping students get good grades.

The research results show that Task Technology Fit has a positive and significant effect on Academic Performance ($p = 0.002$). This means that the higher student Task Technology Fit, the higher the Academic Performance. Task Technology Fit did not act as a mediating variable on the influence of Self Determination on Academic Performance ($p = 0.097$) or the influence of Information Quality on Academic Performance ($p = 0.079$).

User Satisfaction (US)

Lin & Wang, (2012) describes the user's satisfied disposition of the system in terms of function, quality, format, and speed of the system. Students who have satisfaction using online learning will indicate a decision to rely on these services and how well they meet expectations. Added by Isaac et al., (2019a) that user satisfaction is also described as the extent to which users consider the system useful and want to reuse it, temporarily According to Delone & McLean, (2003) user satisfaction is often used as a measure of the effectiveness of information systems. If an effective system is defined as one that provides added value to the company, then an effective system must have some positive effect on user behaviour i.e. increase productivity, decision making, and so on.

In this study US is defined as the positive feelings felt by students towards the performance of the online learning system. US is measured through indicators, namely: online learning is the student's best decision, students are satisfied with the use of online learning, students feel that online learning meets expectations.

Glowalla & Sunyaev (2014) proposed that the acceptance model in the context of online learning is influenced by satisfaction. this statement is confirmed by the results of the study of Butt et al. (2023) . Where the results of the study show that user satisfaction has a positive effect on the suitability of task technology. This is because the more satisfied students are with the quality of technology used in online education, the more likely they are to predict that technology is suitable to support the learning process.

The research results show that User Satisfaction has a positive and significant effect on Academic Performance ($p = 0.001$). This means that the higher student User Satisfaction, the higher the Academic Performance. User Satisfaction not act as a mediating variable on the influence of Self Determination on Academic Performance ($p = 0.014$) or the influence of Information Quality on Academic Performance ($p = 0.049$).

CLOSING

The results of hypothesis testing show that the effect of US on AP, the effect of SD on US, the effect of SD on TTF, the effect of IQ on US, the effect of IQ on AP are supported. Meanwhile, the effect of SD on AP and the effect of IQ on TTF is not supported. The results of the mediation analysis show that there is a mediating role of US between SD to AP is significant. Where the mediating role that appears is partial. Meanwhile the mediating role of US between IQ to AP; the mediating role Task Technology Fit between SD to AP ; the mediating role of TTF between IQ to AP is not significant

The implications of this research underscore the importance of SD as a component in online learning that higher education managers should pay attention. The results of this study explain that SD effects AP through student satisfaction in participating in online learning. The limitation of this research is that the time span was carried out in the ongoing learning period in the post-pandemic learning transition period. Therefore, this research should be carried out continuously considering the ongoing implementation of the online system. Furthermore, this study was only conducted on students. For further research development, this theme can be applied to determine the application of self-determination in technology task fit which supports student academic performance.

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