



Factors affecting research motivation among lecturers in the Institute of Teacher Education

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ABSTRACT

Motivation to conduct research among lecturers is an important issue that needs to be addressed to ensure that the research culture at the Institute of Teacher Education (ITE) can be nurtured. This study was conducted to identify factors that influence research motivation among lecturers at ITE. This study uses a correlational study design involving a total of 271 lecturers. The selection of the sample is carried out by using a clustered random sampling method. Data was collected using a questionnaire adapted from previous studies. Statistical package for social science and SmartPLS version 3.0 software were used to analyze the data. Findings from the analysis that has been conducted shows that the efficacy belief factor ($\beta=0.312$, $p<0.001$) and institutional support ($\beta=0.230$, $p<0.001$) have influenced the intrinsic motivation to conduct research. Meanwhile, the efficacy belief factor ($\beta=0.353$, $p<0.001$) and institutional support ($\beta=0.187$, $p<0.001$) also influenced the extrinsic motivation to conduct research directly. Overall, the factors studied explained 21.4% and 21.8% of the variance in intrinsic and extrinsic motivation to conduct research among lecturers at ITE. The findings of this study can be used by various parties to improve the aspect of increasing research motivation among lecturers.

Keywords: research motivation, research self-efficacy, institutional support, intrinsic research motivation, extrinsic research motivation

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INTRODUCTION

Excellence in high-impact research and innovation is one of the elements contained in the Institute of Teacher Education (ITE) transformation plan 2016-2025 (Kementerian Pendidikan Malaysia [Malaysia Education Ministry], 2017). Therefore, Malaysia Institute of Teacher Education (MITE) has encouraged all lecturers to actively engage in research activities. Accordingly, the research aspect has been made one of the evaluation criteria and part of the lecturer's essential duties. This matter has been embodied in the task specification book issued by MITE, which has set one of the lecturer's task specifications to carry out research, innovation and produce writing as well as publishing and widely disseminating the results (Kementerian Pendidikan Malaysia [Malaysia Education Ministry], 2016).

Involvement in research activities is one of the best approaches to improve the professionalism of a lecturer (Hosseini & Bahrami, 2020). This is in line with ITE's vision, which is "ITE leading excellence in teacher education." In order to produce quality teachers with a high level of professionalism, it is a must for every teaching staff or lecturer to also have a high level of professionalism. Therefore, research activities are seen as the best vehicle that can be used by MITE as an effort to improve the level of professionalism among lecturers.

An individual's tendency to engage in research activities is dependent on the level of research motivation he possesses (Peng & Gao, 2019). According to Stupnisky et al. (2019) research motivation can be divided into two categories, namely intrinsic research motivation and extrinsic research motivation. This is in line with the self-determination theory (SDT) introduced by Ryan and Deci (2000). They argue that the individual's motivation related to a particular task is caused by the satisfaction or failure to meet three basic psychological needs. First, people want to feel that their behavior is autonomous, in other words, "voluntary and regulated by themselves and not by others." A highly autonomous lecturer will feel empowered to make choices, follow their interests, and act willingly. Alternatively, a lecturer who lacks autonomy will feel pressured to engage in research.

Apart from autonomy, the second basic requirement is competence, which is the desire to interact effectively with one's environment. A lecturer's competence can be nurtured through the research-related challenges they face, as well as through feedback that encourages them to improve their self-efficacy. Next, the third individual need is a sense of relatedness, which is a positive relationship with other people who are important and have a sense of belonging. An organization made up of members who support each other and have good relationships with

students tends to feel a strong sense of belonging (Stupnisky et al., 2019).

Based on SDT (Ryan & Deci, 2000), an individual's motivation can be divided into two types, namely intrinsic motivation and extrinsic motivation. In the context of this study, intrinsic research motivation refers to the motivation that arises within the lecturer himself to conduct research. The motivation is likely to appear if a lecturer thinks that the research activity carried out by him is pleasant, interesting and can give him personal satisfaction. For example, a lecturer feels very motivated to conduct research because he realizes the findings of his research are very valuable and important. While extrinsic motivation is influenced by external factors, for example a lecturer may feel motivated to carry out research because he is bound by the requirements of the task, or to fulfill the conditions of grants, scholarships and so on. Both types of intrinsic and extrinsic research motivation of ITE lecturers was measured in this study.

The motivation to conduct research among lecturers is an important factor that contributes to increasing their research productivity, especially related to the production of research publications in high-impact journals (Peng & Gao, 2019). Therefore, as a lecturer, they should always try to improve research motivation to ensure that they can produce quality publications. In addition, Hosseini and Bahrami (2020) also think that the level of research motivation possessed by a lecturer can contribute to an increase in the development of their professionalism.

However, it was found that the level of involvement of ITE lecturers with research-related activities such as writing journal articles and presenting research at the national and international level is very limited. This is based on the percentage of article publications and lecturer participation in seminars that have been organized. This scenario has somewhat hindered MITE's efforts to ensure that the quality of ITE lecturers is comparable to lecturers in public universities. In addition, it has raised questions about the factors that contribute to the lack of involvement of ITE lecturers in research-related activities at a higher level. Therefore, this study was conducted to identify the factors that influence the involvement of lecturers in research activities, especially from the aspect of motivation. Although there have been studies conducted related to research motivation, the number is very limited (Stupnisky et al., 2019). In addition, studies related to research motivation among university lecturers that talk about the level and factors that influence their motivation to conduct research are very few (Peng & Gao, 2019).

Research Objectives

1. To identify the level of intrinsic research motivation, extrinsic research motivation and research self-efficacy among lecturers at ITE.
2. To examine the influence of research self-efficacy and institutional support factors on research motivation among lecturers at ITE.

THEORETICAL BACKGROUND & RESEARCH MODEL

Studies related to research motivation have been carried out since the 1940s (Weiner, 1990). However, research related to research motivation was only carried out more widely starting in the 1990s.

Among the earliest studies conducted related to research motivation are by Bailey (1999), Breen and Lindsay (1999), and Tien and Blackburn (1996). Most early research related to research motivation is focused on the influence of research motivation factors on research productivity and self-efficacy. The main theory that is often used as the basis for research related to research motivation is SDT.

Self-Determination Theory

The selection of SDT in this study is based on the appropriateness of the study context, which is the research motivation. SDT is a macro theory related to human motivation and personality related to natural psychological tendencies and needs. It is related to the motivation behind the choices made by a person without external influence. SDT focuses on the extent to which human behavior is self-motivated or self-determined (Ryan & Deci, 2000).

In the 1970s, research related to SDT has evolved from studies comparing intrinsic and extrinsic motivation, to studies related to the role of intrinsic motivation in individual behavior (Lepper et al., 1973). Then in the mid-1980s, Richard M. Ryan and Edward L. Deci wrote a book entitled "*Self-determination and intrinsic motivation in human behavior*" so SDT was formally introduced and accepted as a good empirical theory. Subsequently, since 2000, research that applies SDT to different fields in social psychology has increased.

The main research that led to the emergence of SDT was research on intrinsic motivation. According to Ryan and Deci (2000), intrinsic motivation refers to a person's tendency to start an activity because it is interesting and able to give satisfaction to him, compared to doing an activity for the purpose of getting something external (extrinsic motivation). A taxonomy of motivation has been explained based on the extent to which it is internalized. Internalization refers to the active effort to transform extrinsic motives into personally supported values and subsequently assimilate behavioral rules that were originally external in nature (Ryan, 1995).

Ryan and Deci (2000) later expanded their initial study by distinguishing between intrinsic and extrinsic motivation and presented three main intrinsic needs in self-determination. According to Ryan and Deci (2000), there are three basic psychological needs that motivate a person to initiate a behavior. These needs are said to be universal and natural needs, namely autonomy, competence and relatedness.

There are many studies related to research motivation that have been conducted using SDT as the main theory. Among the most recent studies that use SDT is the study by Stupnisky et al. (2019). The study has tested the role of motivational factors on the success and productivity of a lecturer. A total of 1,846 lecturers from 19 universities in the United States were involved in the study. Findings from the study show that the autonomy and competence factors have influenced a lecturer's research motivation. In addition, it was found that research motivation can also influence the research success of a lecturer.

In addition, a study conducted by Zhang et al. (2019) on 310 university lecturers in China found that the mastery goal factor has influenced the intrinsic and extrinsic motivation of a lecturer to conduct research. In addition, it was found that the leader's support factor has also influenced the intrinsic and extrinsic motivation of a lecturer to conduct research directly. Findings from their study also show that the self-efficacy factor does not affect both the intrinsic and extrinsic motivation of a lecturer to conduct research. However, a

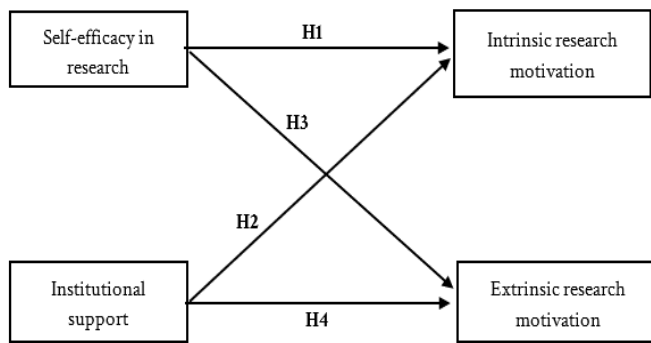


Figure 1. Research model (Source: Author)

previous study conducted by Kuo et al. (2017) also found that a person's self-efficacy factor can also affect research productivity. The study was conducted on 190 PhD students in counseling field.

Research Hypothesis

- H1.** Self-efficacy in research factor has a significant direct effect with intrinsic research motivation.
- H2.** Institutional support factors have a significant direct effect with intrinsic research motivation.
- H3.** Self-efficacy in research factor has a significant direct effect with extrinsic research motivation.
- H4.** Institutional support factors have a significant direct effect with extrinsic research motivation.

METHOD

Research Design

This study was conducted using a quantitative approach. A quantitative approach was chosen because this study involves testing hypotheses based on a specific theory that contains variables that are measured using numbers and analyzed using statistical procedures to determine whether the generalization of the theory's predictions is true. Therefore, based on the recommendations made by Cohen et al. (2011), a quantitative research approach is the most appropriate. The design of this study is in the form of correlation, which is to study important correlates that can explain variations in the dependent variable, which is research motivation.

Hypothesis testing is conducted based on data collected using a questionnaire. The unit of analysis of this research is the individual, limited to the lecturers currently serving in ITE campus, where each lecturer is considered as a data unit. **Figure 1** shows research model.

Population & Sample

In the context of this study, the study population consists of all lecturers currently serving at ITE. This study uses a clustered random sampling method. This method was chosen because this study was conducted on a population that involved a large area. Overall, the population for this study is 2,557 lecturers ($n=2,557$). Some of them have been used for pilot studies, namely 90 people, so the remaining population is 2,467 people. Based on the recommendations of Henseler et al. (2015), researchers who use the partial least squares modeling method in data analysis, the sample size is determined based on the maximum number of structural paths that lead to a specific latent variable. Determination of the total sample size made using G*Power

Table 1. Summary of research instruments

Construct	n	Sources
Intrinsic research motivation	7	Hosseini and Bahrami (2020)
Extrinsic research motivation	5	Hosseini and Bahrami (2020)
Self-efficacy in research	6	Zhang et al. (2019)
Institutional support	4	Zhang et al. (2019)

Note. n: Number of items

3.1 software (Erdfelder, 2009) found that for the effect size $f^2=0.15$ and the number of predictors=2, the appropriate sample number is 107 people. However, this study has involved a total of 271 sample.

Data Collection

After identifying the study population and sample, then the appropriate data collection method is planned to answer the research questions presented. There are two types of data collected in this study, namely data related to respondents' demographic information and data related to ITE lecturers' perceptions of factors that influence their research motivation. The data collection method used is to conduct a survey using a questionnaire. Before conducting the survey, first a set of questionnaires containing the information needed to answer the research questions was prepared.

Measures

The questionnaire used was adapted from a study conducted by previous researcher that is relevant to this study. Since the instruments used have met the aspects of validity and reliability, then the aspects of content validity have been met (Sanchez-Franco & Roldán, 2010). The original instrument for this study was taken from a previous study prepared in English, so the back to back translation method was used. Through this method, the instrument was translated into Malay and translated back into English (Cha et al., 2007). This process was assisted by two English and Malay language experts from ITE Tengku Ampun Afzan Campus. A discussion was held to ensure that the original meaning of the instrument did not change after being translated. **Table 1** shows summary of research instruments.

After generating items for an instrument, the validity and reliability aspect need to be examined (**Table 2**). The validity of this study refers to measuring what should be measured (Kerlinger, 1986). While the reliability of the study refers to the consistency of a measure and the stability of a measure over time (Cohen et al., 2011; Creswell, 2014). Among the forms of validity and reliability that must be met before the actual study is conducted are internal reliability, content validity, predictive validity and construct validity (Nunnally & Bernstein, 1994).

When using multiple measures for an individual construct, the researcher should take into consideration the extent to which the measures demonstrate convergent validity (Hulland, 2002). Hair et al. (2011) has stated that a composite reliability (CR) of 0.70 or above and an average variance extracted (AVE) of more than 0.50 are considered acceptable. The result of confirmatory factor analysis (CFA) stated in **Table 3** shows that all CR values are above 0.70 and AVE is all above 0.50. Therefore, based on CFA result obtained, we can conclude that convergent validity for this measurement model has been fulfilled.

Besides convergent validity, the researcher also needs to take into consideration about discriminant validity in order to make sure the items used to measure a certain construct are different with another construct in the model. According to Fornell and Larcker (1981) discriminant validity can be established by calculating the square root

Table 2. Reliability & validity analysis of research instruments

Construct	Item	IR-CA	Convergent validity		
			FL	CR	AVE
Intrinsic motivation	IM1	0.955	0.903	0.962	0.786
	IM2		0.902		
	IM3		0.860		
	IM4		0.933		
	IM5		0.873		
	IM6		0.839		
	IM7		0.892		
Extrinsic motivation	EM1	0.868	0.870	0.906	0.660
	EM2		0.861		
	EM3		0.836		
	EM4		0.638		
	EM5		0.835		
Self-efficacy	SE1	0.844	0.669	0.885	0.564
	SE2		0.660		
	SE3		0.779		
	SE4		0.811		
	SE5		0.787		
	SE6		0.786		
Institutional support	IS1	0.951	0.934	0.963	0.838
	IS2		0.942		
	IS3		0.941		
	IS4		0.926		
	IS5		0.830		

Note. IR-CA: Internal reliability (Cronbach alpha) & FL: Factor loading

Table 3. Correlation between constructs

Constructs	(1)	(2)	(3)	(4)
(1) Extrinsic research motivation	0.813			
(2) Institutional support	0.344	0.916		
(3) Intrinsic research motivation	0.581	0.369	0.886	
(4) Self-efficacy	0.436	0.445	0.414	0.751

of AVE. Besides that, Hair et al. (2011) also stated that discriminant validity also can be established by assessing the cross loading and heterotrait-monotrait ratio of correlations value. For this study, only square root of AVE was used to assess the discriminant validity. If the square root of AVE for each construct is higher than its correlations with the other constructs, then the discriminant validity is established (Fornell & Larcker, 1981). As shown in **Table 3**, all of the square roots of AVE for each construct were higher than the correlations. Diagonal elements are the square roots of AVE for the corresponding construct.

DATA ANALYSIS

Descriptive Data Analysis

In the descriptive analysis, the statistical package program for the social sciences (SPSS) version 26 software was used. Descriptive analysis was used to obtain information such as mean values, percentages, standard deviations, normality tests, missing data analysis and multivariate analysis. Normality testing, missing data analysis and multivariate analysis are important to be performed before hypothesis testing analysis is conducted. Therefore, SPSS software is most suitable to be used to analyze the data.

SPSS software was also used to analyze the data to answer the first research question, which is related to the level of motivation and self-efficacy in research. In addition, to analyze the data related to the

Table 4. Levels of intrinsic research motivation, extrinsic research motivation, & research self-efficacy (number of males [n]=271)

Constructs	Maximum	Minimum	Mean	SD
Intrinsic research motivation	5	1	3.93	0.807
Extrinsic research motivation	5	1	3.24	0.676
Self-efficacy in research	5	1	4.02	0.568

demographic information of the study respondents, SPSS software was also used. While for research hypothesis testing, smartPLS 3.0 software was used.

Partial Least Squares-Structural Equation Modeling Analysis

Partial least squares-structural equation modeling (PLS-SEM) analysis technique was created by Wold (1974) and became an alternative to the covariance-based structural equation model analysis (covariance-based SEM) that was developed by Jöreskog (1978). This study chose to use PLS-SEM approach because it is exploratory and not a theory testing, so the use of PLS-SEM is more appropriate (Hair et al., 2011).

FINDINGS & DISCUSSION

RQ1. What Is Level of Intrinsic Research Motivation, Extrinsic Research Motivation, & Research Self-Efficacy Among Lecturers at ITE?

Findings from the analysis that has been conducted show that the level of intrinsic research motivation and research self-efficacy are high (mean [M]=3.93, standard deviation [SD]=0.807) and (M=4.02, SD=0.568), respectively. Meanwhile, the level of extrinsic research motivation among lecturers at ITE is at a moderately high level (M=3.24, SD=0.676). **Table 4** shows the level of intrinsic research motivation, extrinsic research motivation and research self-efficacy among lecturers at ITE.

This finding clearly shows that although MITE has stipulated that all lecturers engage in research activities, the level of research motivation among lecturers is still at a moderate level, especially the aspect of extrinsic motivation. This situation is likely to occur because they feel that the research activities carried out are due to their own initiative and are not influenced by other parties. Findings from a study conducted by Zhang et al. (2019) showed that the extrinsic motivation factor is influenced by the mastery goal factor.

In addition, the level of extrinsic research motivation is also influenced by competency factors. Findings from a study conducted by Stupnisky et al. (2019) showed that competency factors have significantly influenced extrinsic research motivation. This situation explains that a person's level of competency to conduct research can influence their research motivation. Therefore, various parties need to play a role so that the level of competency in conducting research among lecturers can be increased. This can indirectly increase the level of research motivation among lecturers in the future.

RQ2. What Is Influence of Research Self-Efficacy Factors & Institutional Support on Research Motivation Among Lecturers at ITE?

Findings from the analysis of the structural model as attached show that **(H1)** research self-efficacy factor has a significant direct effect with intrinsic research motivation ($\beta=0.312$, $p < 0.001$), **(H2)** institutional support factor has a significant direct effect with intrinsic research

Table 5. Hypothesis testing

Hypothesis	β	t	Result
H1. Self-efficacy→Intrinsic research motivation	0.312**	5.158	Yes
H2. Institutional support→Intrinsic research motivation	0.230*	3.164	Yes
H3. Self-efficacy→Extrinsic research motivation	0.353**	6.197	Yes
H4. Institutional support→Extrinsic research motivation	0.187*	2.861	Yes

Note: * $p < 0.050$ & ** $p < 0.001$

motivation ($\beta=0.230$, $p < 0.050$), (H3) research self-efficacy factor has a significant direct effect with extrinsic research motivation ($\beta=0.353$, $p < 0.001$), (H4) institutional support factor has a significant direct effect with extrinsic research motivation ($\beta=0.187$, $p < 0.050$). Overall, the model explained 21.4% and 21.8% of the variance in intrinsic and extrinsic motivation to conduct research among lecturers at ITE.

As the findings of the study displayed in Table 5, it was found that intrinsic and extrinsic research motivation among lecturers is directly influenced by research self-efficacy and institutional support factors. The most dominant factor influencing intrinsic and extrinsic research motivation of lecturers is research self-efficacy. This is likely because lecturers feel that their efficacy to conduct research has increased their motivation to perform research. Continuous professionalism development programs and staff development training that are often organized are also likely to contribute to increasing the level of self-efficacy and research motivation among ITE lecturers. The findings of this study are contrary to the study conducted by Zhang et al. (2019) who found that the efficacy belief factor did not affect both intrinsic and extrinsic motivation. According to them, only the factors of mastery goals and institutional support affect the intrinsic and extrinsic research motivation of university lecturers in China.

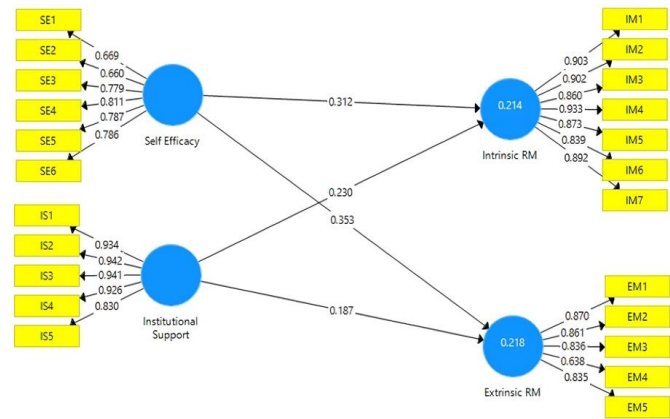
In addition, it was found that institutional support factors can also influence the intrinsic and extrinsic research motivation of ITE lecturers. This is likely because the support from ITE management through the organizing of research workshops and seminars has successfully increased their motivation to conduct research. Findings from a study conducted by Zhang et al. (2019) also found that the leader's support factor has influenced the intrinsic and extrinsic motivation of university lecturers. Figure 2 shows final research model.

Limitations & Further Research

Research related to research motivation is still relatively under-conducted, especially in the context of Malaysia. Based on the systematic literature review that has been carried out, it has been found that research related to factors influencing research motivation is very limited. Therefore, in the future, it is suggested that research related to factors influencing research motivation in Malaysia can be increased. In addition, it is also suggested that future research should test the role of mastery goal and performance goal factors as predictors of research motivation. Testing the role of mediators and moderators can also be conducted in future studies.

CONCLUSIONS

Findings from this study clearly show that the level of extrinsic research motivation among lecturers at ITE is at a moderate level. In addition, it was found that both factors, namely self-efficacy in research and institutional support, have influenced intrinsic and extrinsic research motivation. The self-efficacy in research factor was found to

**Figure 2.** Final research model (Source: Author)

have a greater influence than institutional support. Overall, these two factors accounted for 21.4% and 21.8% of the variance in intrinsic and extrinsic motivation to conduct research among lecturers at ITE. This study has also made a great contribution to stakeholders because it is able to report empirical data that can be used to formulate policies related to research motivation.

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Data availability: Data generated or analyzed during this study are available from the author on request.

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