Journal of Positive School Psychology http://journalppw.com
2022, Vol. 6, No. 6, 2775 – 2788

THE CAUSAL RELATIONSHIP MODEL OF PRIMARY SCHOOL TEACHERS' RESEARCH SUCCESS IN THE SOUTHERN BORDER PROVINCES OF THAILAND

[1]Piyawan Krainara, [2]Dr. Niran Chullasap, [3]Dr. Idsaratt Rinthaisong

[1]Doctor of Education Program in Educational Administration, Hatyai University, Thailand, E-mail: fonfarsai@yahoo.com
[2]Faculty of Education and Liberal Arts, Hatyai University, Thailand, E-mail: 09042498@hotmail.com
[3]Faculty of Management Sciences, Prince of Songkla University, Thailand, E-mail: idsaratt.r@psu.ac.th

Abstract

Study subject The causal relationship model of research success of primary school teachers in the southern border provinces The objective was to develop a causal relationship model for research success among primary school teachers in the southern border provinces. It is quantitative research. By analyzing the structural equation model, The sample consisted of 400 primary school teachers in the southern border provinces, the academic year 2021, by multistage randomization. The questionnaire was used with content accuracy between .98 and 1.00, and the confidence factor was between .922 and .966. The results of developing a causal relationship model for research success among primary school teachers in the southern border provinces were found. that the model was consistent with the empirical data (= 417.316, p – value < .001, df = 158, = 2.641, RMSEA = 0.065, CFI = 0.963, TLI = 0.955 and RMR = 0.015). external motivation, intrinsic motivation, and research competency positively affect research success. Able to explain 73.80 percent of the variation in research success. Intrinsic motivation positively affects research competency 49.50% variation in research competency could be explained. Positively affects intrinsic motivation Able to explain the variation of intrinsic motivation by 24.60%. intrinsic motivation and research competence direct influence on research success external motivation intrinsic motivation direct influence on research competence and external motivation direct influence on intrinsic motivation.

Keywords: causal relationship model, research success, action research.

Introduction

Research and development is an essential mechanism for creating a body of knowledge and driving the economic and social development of the country. Progress and improvement to quality -of life, including enhancing the country's competitiveness, is an indicator that shows the state of research and development in the country. People experience happiness, convenience, comfort, and peace (Siriruek Songsiriwilai, 2020; Wiporn Ketkaew, 2019). Research has been accepted as a tool for seeking knowledge to create progress and extend academic expertise in each field, Including using research to develop various innovative products. (Rattana Buason, 2017). The way to enhance the research development of the country must start with developing students to become professional researchers.

To have a sufficient amount and potential to conduct research that has contributions and impacts on society, the country's research and development personnel are critical in enabling research and

development to be driven efficiently. Countries that emphasize technology development and innovation as the engine of the country's economy have many national research and development personnel (Siriruek Songsiriwilai, 2020). Developed countries often use research as an indicator of a country's progress by highlighting research issues as a critical policy of the government, as well as allocating budgets to support research operations to encourage the increase of a greater number of research personnel (Narisara Phuengphosap, 2020). The National Education Plan 2017-2036 mentions the production and development of research and innovation in Strategy 2 as a way to build the country's competitiveness. It lists research and development goals in an effort to create a body of knowledge, and innovations that generate productivity and added economic value (Education Council Secretariat, 2017). Several research studies were used to plan policy implementation, however there was a lack of evaluation across all aspects to consider both the pros and cons of each element. This is because most of the country's researchers are in the education sector on campus. Research shows there has been a bias towards research to creagte knowledge, coupled with the development of the country's economy in the past that focused on rapid growth by region and the persuadin of foreign industries to invest in Thailand while buying technology from abroad. This demonstrates that the majority of Thai research has historically been put on the shelf and criticized. Research conditions in Thailand are a problem that must be resolved seriously and urgently. For Thailand to be able to walk on the development path effectively, keep up with the advancement of the world, and be equal to those of other countries that recognize the importance of research, Thailand must promot and support research at home until it can be used to develop the country in various fields, from products that are beneficial to the economy and society to increased national security and human rights. (Suthiporn Jit Mittraphap, 2015).

The Teachers' Council of Thailand stipulates regulations on professional standards, which specifies knowledge and competencies related to research and results selected to be used in learning management to improve teaching and developing learners in knowledge standards (Teachers Council Regulations On Professional Standards (No. 4) B.E. 2562, 2020). Teacher quality is the key to the development of education, in line with the trend of educational reforms worldwide. Teachers play the role of researchers in research-based work. Teachers use the research process to find practical methods, solve problems in their classrooms, or improve teaching and learning in the development of children's education. A teacher's research is, therefore, classroom practice research. However, while research teachers are not professional researchers, with statistical expertise strictly adhering to research protocols, they are teachers who perform teaching and learning tasks in parallel with research. They develop learners according to standards of work as teachers by using their knowledge and knowledge-building processes in collaborative teaching and research (Babkie and Provost, 2004; Kosol Phusri, 2011)

Developing a teacher to be a researcher - teacher as researcher - is one of the essential factors in the development of learning, as specified in the National Education Act B.E., Section 4, Guidelines for Educational Management, Section 24 (5), which encourages teachers to use research as part of the learning process. Section 30 encourages educational institutions to enable teachers to conduct research in order to develop appropriate learning at each education level (National Education Act, B.E. 2542, 2542, Section 30, and the Teachers and Educational Personnel Council Act B.E. 2546, 2003. It is essential for the development of both teachers and students, which requires research as a base. The teacher must know research theory and research design to improve learning and problem-solving in the classroom and be able to apply the research results to use in learning management and learner development (Teachers and Educational Personnel Council Act, B.E. 2546, 2003)

The condition of research and development in education in Thailand is not as widespread as it should be. Research and development results or innovations can be effectively used to improve the quality of education. The influences of

educational research are increasing, which in the early stages is often based on the researcher's interest. Research is therefore scattered. Subsequently, research data has been gathered to provide an overview, which can indicate the status of research in Thailand. From the research synthesis, it was found that most of the research work is a thesis and is the research of educational institutions. The majority of them are applied research. When considering the overall picture, it was found that research and development studies and basic research accounted for less than 1% of the total research being done.

Continuous improvement and development are required in order to raise the level of the country's education to be on par with international progress. It is vital, therefore, to promote and increase the role of teachers doing academic research in educational institutions at a variety of levels (Ministry of Education and Sports, 2013). Teacher competency arising from work as a researcher is called teacher-researcher competency, which creates context for studying and researching in the classroom, making the research process an integral part of teaching. The goal is to improve participants' learning (Phaiwan Duangphachan, Oranuch Srisaat, and Teerawut Ekakul, 2018). The research results under the past Thai education reform revealed that Thai teachers require development in their professional competency across various fields, especially in action research, because teachers want to be researchers, leading to the effective development of teachers and students, both in the short and the long term (the Queensland University of Technology, 2002 cited in Eternal Kakaew et al., 2017). It is expected that teachers conduct research and apply their findings to educational development. Management of effective learning is reflected in the Faculty of Education as a graduate teacher production unit. Teachers must prepare students to have the necessary characteristics expected by society and the country. However, a research report examines the problem of conducting action research among fifth-year student teachers in Thailand. It is found that these student teachers still have misconceptions about action research and have negative attitudes toward conducting objective research. Operations (Faikhanta & Clarke, 2015).

Qualitative research conducted through interviews with seven experts about the problems in researching teachers under the Narathiwat Primary Educational Service Area Office found a variety of results. Five experts, representing 71.43% of the total, concluded that the teachers' research satisfied the topics of research report writing but that there were limitations in certain areas, such as problems, objectives, and action methods. The results and conclusions of the research were inconsistent with the research objectives. It is unknown what those research objectives were. Moreover, teachers viewed doing research as separate and distinct from their teaching duties. Teachers viewed research and teaching as different subjects, with research adding to the workload of teachers. Doing research increased their burden. Teachers did not see the classroom as the source of the research problem. In addition, four experts (51.14%) found that another critical problem for teachers in doing classroom research was a matter of writing skills. Teachers wrote in formal and challenging language. One expert said writing skills come from the original foundation of the teacher but can be developed. In addition, the quality of the tools used in the research was lacking because teachers did not see its importance, which is the weak point that affects the destination, that is, the results of the teacher's research itself. (Piyawan Krainara, 2021)

The experts encouraged teachers to conduct research to continually improve their teaching and learning. Consistent with research-based reform, the idea focuses on teachers using research results to improve the quality of the teacher's learning management process, resulting in a final product quality learner (Datnow, 2000). Despite policy and resource support to enable teachers to continue their research, teachers still face problems and obstacles in conducting research, resulting in a lack of continuity in research work (Suwimol Wongvanit).

Moreover, there is impact from the perspective that teachers view research as academic work,

which can done only when they want to do academic work for promotion purposes. Teachers have limitations in doing research, such as an already large workload, which leaves them little time to develop their knowledge and research skills. Additionally, even with a substantial research framework, doing research takes a lot of time. Therefore, the research results often cannot be completed on time.

Such perspective and impact causes teachers to be unhappy when having to conduct research. A lack of motivation creates an inconsistency between the teacher and the desire to do responsible research, leading to limited application of the research results. Therefore, these factors result in teachers having a minimal commitment and a lack of desire to continue doing ongoing research (Borg & Alshumaimeri, 2012).

The results from the report on educational standards administration at Narathiwat Primary Educational Service Area Office 3 for the fiscal year 2020 of the supervision and follow-up group (Office of Narathiwat Primary Educational Service Area, Region 3, 2020) in Standard 1, Knowledge Management towards Excellence, Indicator 2, Development towards a Learning Organization. Issue 2: Promoting Knowledge Management (KM) and Building a Professional Learning Community (Professional Learning Community: PLC) showed that teachers have to conduct simple research for self-improvement. Most teachers, however, write incorrect interpretations due to a lack of mentorship, resulting in the teachers becoming discouraged and not wanting to do any research, although teachers doing research affects their academic qualifications and thus their chance of being promoted. During the academic year 2019, there were 55 people, including 31 Thai learning subject groups, six foreign language learning subjects, Mathematics, occupations, technology, social studies, religion, culture, health and physical education, and early childhood education. Teachers should be encouraged to do research to solve problems and develop the professional teaching and learning process on an ongoing basis and support the budget for analysis to improve the quality of education, as well as reporting on the supervision results to enhance the quality of education of the supervision and follow-up groups. Narathiwat Primary Educational Service Area Office 2 (2020) found that teachers gave importance to and solved classroom problems with research in only seven schools, totaling 42 issues out of 567 teachers, or 13.5 percent. Of the follow-up supervision group, Narathiwat Primary Educational Service Area Office 1 (2020) conducted a survey of research work in 2020, excluding academic results created to promote academic standing.

There were only five subjects, and they found that teachers could not apply their knowledge. Instead, they received training to utilize research to solve class problems. In addition, research was divided into learning activities. The teachers did not analyze the actual issues in the classroom, consistent with Panrawee Yongyuthwichai and Danai Usub (2009; Table 1), Wirt Muenthep, 2018). Teachers did little research, which was inconsistent with educational management, because teachers used a research process separate from teaching and learning management. This made teachers feel that research was a burden rather than a teaching and learning opportunity. As a result, teachers' research findings could not be applied to develop learners' knowledge as they should have been Therefore, most teachers do not conduct research, doing only what is necessary or when required to as part of a request for work or salary adjustments.

From the analysis of research results and past research methods related to factors affecting the research success of teachers in the southern border provinces, It was found that most of the problems were caused by the research behavior of teachers. Lack of knowledge in conducting research, lack of motivation, and lack of research skills were the main obstacles that prevented teachers from successfully conducting research. Moreover, the researcher also found that research that used knowledge variables in research skills and motivation be used as a variable in the study to find a way to solve the research problems of teachers in the southern border provinces in order to be successful. There are still very few. Therefore, the researcher is interested in

applying the above variables involved in the development of a causal relationship model to find a solution to the problem of successful research by teachers in the southern border provinces.

Research studies in the area of solving issues of efficiency and effectiveness found that the approach (IMB Model) of (Fisher & Fisher, 1992) consists of three essential factors: information and knowledge, motivation, and behavioral skills, which are consistent and appropriate to apply to reduce the impact of the problem of a lack of knowledge and motivation, along with a lack of research skills, leading to the discovery of knowledge in the development of teachers conducting research. This will positively affect research to develop learning management that is suitable for primary education institutions in the southern border provinces. It is also a development method for producing teachers with increased research capability with the potential to improve the research abilities of other groups. This research will provide guidelines for developing successful teacher research behavioral skills, which are an essential force in the development of learners and will further improve the education of the nation. The causal relationship model of primary school teachers' research success in the southern border provinces of Thailand aims to study the factors affecting the research success of primary school teachers in the southern border provinces, with specific objectives, as follows: To study the conditions of research success of primary school teachers in the southern border provinces and To develop a causal relationship model for research success of primary school teachers in the southern border provinces.

LITERATURE REVIEW

Research Competencies and Research Success. The theory of information or knowledge modeling motivating and behavioral skills (Information, Motivation, Behavioral Skills Model) (Fisher & Fisher, 1992) has explained if a person receives appropriate information or learning. This will result in the person being able to change their behavior appropriately and successfully, where knowledge and skills are the structure of competence (Boyatzis, 1982) and related research. It was found that research competency directly influenced research success (Pattama Phusawas and Samran Meejang, 2012, 2015). 78 – 79; Culture Raiubsri, 2013, p. 12; Piyawan Boonphen, Yuttana Chaijukul, and Dusadee Yola, 2018, pp. 73 – 88; Jutamas Isarapinyo, Ploenphit Thammarat and Rapeepan Roiphila, 2019, p. H1: Research competency directly influences research success.

Intrinsic motivation and research success. Piyawan Boonphen, Yuttana Chaijukul, and Dusadee Yola (2018) that when researching to gain new knowledge Along with developing themselves through experience in doing research. It makes me feel happy that I enjoy doing research. In addition, such works can promote work in other tasks, helping to reach the top of own career path. In addition, Frederick Herzberg's two-factor theory (Herzberg, Mausner, and Snyderman, 1959, pp. 113–115) states that motivating and sustaining factors are correlated with job satisfaction. In addition, the theory of the form of information or knowledge motivating behavioral skills (Information, Motivation, Behavioral Skills Model) (Fisher & Fisher, 1992) explains that motivation factors affect behavioral modifications for successful performance. Also found that Intrinsic motivation directly influenced research success (Piyawan Boonpen, Yuttana Chaijukul, and Dusadee Yola, 2018, pp. 82-85; Sanit Siriwisitkul and Somyot Awakiat, 2016, pp. 55–56; Boyatzis, 1982) are also consistent with Theresia, C. and Verina V., (2015). who found that intrinsic motivation significantly impacts job satisfaction, affecting the operation's success. The researcher has therefore formulated the hypothesis of the research in item 2 as follows: H2: Intrinsic motivation directly influences research success.

Intrinsic motivation and research competency. Theory of information or knowledge modeling motivating and the Behavioral Skills Information, Motivation, Behavioral Skills Model (Fisher & Fisher, 1992). Make an effort to seek knowledge to be able to change behavior or perform tasks according to goals. In line with

the two-factor theory of Frederick Herzberg (Herzberg, Mausner, and Snyderman, 1959, pp. 113 – 115) explains that Motivation Factors or intrinsic motivation. As a result, individuals are required to acquire the necessary knowledge and skills or competencies. Enough to be used in solving the problem to meet the goals in and timely; The researcher has therefore formulated the hypothesis of the research in item 3 as follows: H3: Intrinsic motivation directly influences research competency.

External motivation and research success. Theory of information or knowledge modeling motivating and the Behavioral Skills Information, Motivation, Behavioral Skills Model (Fisher & Fisher, 1992). cause efforts to seek knowledge to change behavior or perform tasks according to goals. In line with Frederick Herzberg's two-factor theory (Herzberg, Mausner, and Snyderman, 1959, pp. 113 – 115), it explains support factors (Hygiene Factors) or extrinsic motivation. As a result, individuals are required to acquire the necessary knowledge and skills or competencies. Enough to be used in solving the problem to meet the goals in and timely; The researcher has therefore formulated the hypothesis of the research in item 4 as follows: H4: Extrinsic motivation directly influences research success.

External motivation directly influences research competence. Theory of information or knowledge modeling motivating and the Behavioral Skills Information, Motivation, Behavioral Skills Model (Fisher & Fisher, 1992). Make an effort to seek knowledge to be able to change behavior or perform tasks according to goals. In line with Frederick Herzberg's two-factor theory (Herzberg, Mausner, and Snyderman, 1959, pp. 113 – 115), it explains sustenance factors (Hygiene Factors) or intrinsic motivations. As a result, individuals are required to acquire the necessary knowledge and skills or competencies. Enough to be used in solving the problem to meet the goals in and timely It can be seen that external motivation is the factor that helps a person to strive to obtain the competencies necessary to perform the job. The researcher has therefore formulated the hypothesis of the research in item 5 as follows: H5: Extrinsic motivation directly influences research competency.

Extrinsic motivation directly influences intrinsic motivation. In terms of extrinsic motivation directly influencing intrinsic motivation, Bahrulmazi Bin Edrak et al. (2015) conducted a comparative study on motivating and sustaining factors. According to Frederick Herzberg's theory, there was a correlation between intrinsic and extrinsic motivation and satisfaction. Job satisfaction according to correlation There is a positive correlation between intrinsic motivation and extrinsic motivation. Both internal and external motivation can be predictors of job satisfaction. Consistent with a study by Theresia, C. and Verina V. (2015, Abstract), the impact of extrinsic and intrinsic motivation on job satisfaction in the financial services department was found. Intrinsic motivation and extrinsic motivation have a significant effect on job satisfaction. This affects the work's success from the concepts, theories, and related research. The researcher has therefore formulated the hypothesis of the study in item 6 as follows: H6: Extrinsic motivation directly influences intrinsic motivation.

From literature review can be used to define the conceptual research framework, as shown in Figure 1.

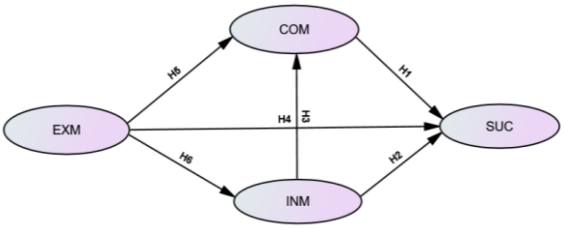


Figure 1 Research Conceptual Framework

RESEARCH METHODS

The Development of a Causal Relationship Model for Research Success of Primary Teachers in the Southern Border Provinces Uses a quantitative research methodology. The quantitative approach examined the coherence of the teacher research success causal relationship model with the empirical data. and to study the direct influence between variables

in the causal relationship model of research success of primary school teachers in the southern border provinces consistent with empirical data and research hypotheses

Population and Examples: The population includes teachers who know teachers with particular expertise or more. and teaching in elementary school under the Office of the Basic Education Commission in the three southern border provinces, consisting of Narathiwat Province, Pattani Province, and Yala Province, totaling 3,123 people.

For example, in this research, the researchers determined sample sizes based on the concept of Hair et al. 2010, p. 102, 117), who suggested that the ideal sample size should be greater than or equal to 200 samples for this study. There were 20 observable variables. The researcher assigned a sample size 20 times the visible variable. A total of 400 samples were obtained. The samples were obtained using multi-stage sampling, where the first step was stratified random sampling by categorizing the population by province, namely Narathiwat Province. Pattani Province and Yala Province Each section was divided into three primary education areas. Each province has a total of 9 locations. Samples were taken from each region. Each part was sampled by simple random sampling: Narathiwat Province with 205 people, Pattani Province with 121 people, and Yala Province with 74 people.

research tools

Data Collection Method: Data collection from the questionnaire on the causal factors of research success of primary school teachers in the southern border provinces By collecting information in the form of an online response (Google Form) by scanning a QR code. The researcher sends the QR code to the sample by himself. The results collected online in Google Sheet were used to analyze the causal factors of the research success of primary school teachers in the southern border provinces. The data returned did not result in missing data. Three hundred ninety-three questionnaires were produced, representing 98.25 percent of the specified sample number, sufficient to analyze the structural equation model Hair et al. (2010, p. 102).

DATA ANALYSIS

Data analysis of the causal relationship model for research success of primary school teachers in the southern border provinces. Develop a causal relationship model. by analyzing the structural equation modeling (Structural Equation Modeling: SEM) consistent with the empirical data.

The causal relationship model for research success was carried out on primary school teachers. Study in the southern border provinces following the empirical data: Using the assessment criteria according to Table 1 and analyzing the causal relationship model of research success of primary school teachers in the southern border provinces. according to the hypothesis of the research

Table 1 Criteria for evaluating the conformity index

Conformity Index	Values that are acceptable to be consistent	source
1. χ^2	$p < .05$	Arbuckle (2012, p. 53) Bollen, (1989, p. 278)
2. χ^2/df	$\chi^2/df \leq 3$	Schermelleh–Engel et al. (2003) Marsh (1985, p. 567)
3. Tucker – Lewis Index (TLI)	NFI ≥ .90	Hu & Bentler, (1995, p.95) Schumaker & Lomax, (2016, p. 112)
4. Comparative Fit Index (CFI)	CFI ≥ .90	Hu & Bentler, (1995, p.95) Schumaker & Lomax, (2016, p. 112)

Conformity Index	Values that are acceptable to be consistent	source
5. Root Mean Square (RMR)	RMR < .08	Bentler, (1995, p. 90) Schumaker & Lomax, (2016, p. 112)
6. Root Mean Equare Error of Approximation (RMSEA)	RMSEA < .08	Arbuckle (2012, p. 604) Browne & Cudeck, (1993, p. 146)

RESULTS

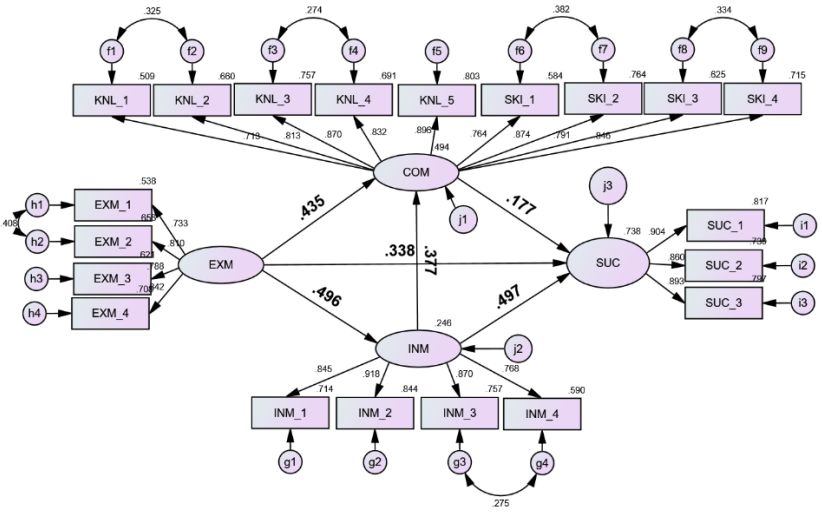
Measurement model verification results: The results of the verification of the measurement model by corroborative component analysis revealed that the measurement model was consistent with the empirical data (= 417.316, df = 158, = 2.641, TLI = 0.955, CFI = 0.963, RMSEA = 0.065 and RMR = 0.015) suitable for further analysis to answer research questions. The results of convergence validity include Factor loading analyses, composite reliability (CR), and average variance extracted (AVE). That the factor loading analysis resulted in analyzing the relationship between indicators or observable variables and components shows that the research competency variables (COM), intrinsic motivation variables (INM), extrinsic motivation variables (EXM), and research achievement variables (SUC) were observed variables that were capable of being used to measure latent variables. This is because the standard component weights of all indicators or observable variables are between 0.713 and 0.918, and all the indicators or observable variables are between 0.892 and 1.600. The criteria for considering the standard component weights should be values greater than 0.50 (Hair et al., 2010), indicating that the overall measurement model has observable variables with the ability to use latent variables. The results of the constituent confidence (CR) and mean extractable variance (AVE) of the overall measurement model found that the constituent confidence (CR) of the variables was between 0.811 and 0.892. From the criterion, the CR value should be greater than 0.70 (Hair et al., 2010), indicating that the confidence value of each component of the variable has an acceptable confidence value. For examining the mean extractable variance (AVE) of the overall measurement model variables, values between 0.631 and 0.785 met the AVE threshold, which should be greater than 0.50 (Hair et al., 2010. It was concluded that the results of the examination of the confidence component (CR) and the mean extractable variance (AVE) of the research competency variables (COM), intrinsic motivation variables (INM), and extrinsic motivation variables (EXM) were examined.) and the research success variable (SUC) was confident enough to continue analyzing the structural equation model (SEM).

The results of the causal relationship model test for research success of primary school teachers in the southern border provinces. Structural model testing to see the relationship of variables according to the conceptual framework. or as a hypothesis test the relationship between all latent variables is defined as an independent parameter, that is, all latent variables are related. The results of the harmonization analysis of the structural equations according to the research concepts revealed that the model was harmonized with the empirical data (= 417.316 , p – value < .001 , df = 158 , = 2.641, RMSEA = 0.065 , CFI = 0.963 , TLI = 0.955 and RMR = 0.015) The p-values were statistically significant at the .01 level, although significant p-values did not satisfy the structural equation model analysis criteria. But acceptable Since the chi-square test statistic is more valuable when the sample size is large, the p-value is statistically significant (Schumaker & Lomax, 2016, p. 157). assembly, which meets the criteria, and all statistical values are equal to the results of the measurement model verification, with a path coefficient showing the causal relationship of the latent variable. And the test results of the structural equation model as in Table 2.

Table 2. Route Coefficients Standard influence between latent variables

relationship between variable	β	b	S.E.	t	p	R^2
INM <- EXM	0.496	0.434	0.052	8.493	< .001	0.246
COM <- EXM	0.435	0.251	0.034	7.374	< .001	0.495
COM <- INM	0.377	0.249	0.035	7.021	< .001	
SUC <- EXM	0.338	0.327	0.049	6.690	< .001	0.738
SUC <- INM	0.497	0.549	0.052	10.542	< .001	
SUC <- COM	0.177	0.297	0.083	3.561	< .001	

From Table 2, the route coefficient The standard influences between the latent variables were found that extrinsic motivation (EXM), intrinsic motivation (INM) and research competency (COM) all three variables had a statistically significant positive effect on research success (SUC) (= 0.338, b = 0.284, t = 6.848, p < .001, = 0.497, b = 0.547, t = 10.837, p < .001 and 0.177, b = 0.184, t = 3.596, p < .001), where every The variables accounted for 73.80% of the variability in research success (SUC). In addition, the results of the analysis revealed that extrinsic motivation (EXM), intrinsic motivation (INM) had a statistically significant positive effect on research competency (COM) (= 0.435, b = 0.352, t = 7.946, p < .001, 0.377, b = 0.400, t = 7.402, p < .001), and it was found that extrinsic motivation (EXM) had a statistically significant positive effect on intrinsic motivation (INM) (= 0.496, b. = 0.378, t = 8.897, p < .001), able to explain the variation in intrinsic motivation (INM) 24.60% as shown in Figure 2.



χ^2 = 417.316, df = 158, χ^2 / df = 2.641, RMSEA = 0.065

CFI = 0.963, TLI = 0.955, RMR = 0.015

Figure 2. The causal relationship model test results for research success among primary school teachers southern border provinces.

The results of the causal relationship test for research success of primary school teachers in the southern border provinces from Figure 2 describe the direct influence size analysis between latent variables in the structural equation model. Intrinsic motivation (INM), with a weight of 0.496, directly influences research competency (COM) with a weight of 0.435. Intrinsic motivation (INM) directly influences research competency (COM), with a weight of 0.377. Research (COM) directly affects research success (SUC) with a weight of 0.1777. Extrinsic motivation (EXM) has a direct impact on research success (SUC) with a weight

of 0.338, intrinsic motivation (INM). There was a direct influence on research success (SUC) with a weight value of 0.497 with a statistical significance of .01. Structural equation research hypothesis test results the causal relationship model for research success of primary school teachers in the southern border provinces found that it was consistent with all six research hypotheses. Namely, research competency directly influenced research success. Intrinsic motivation directly influenced research success. Internal motivation directly influenced the research competence External stimulus affected research success. The external stimulation directly influenced the research competency. and extrinsic motivation directly influenced intrinsic motivation

DISCUSSION

The results of developing a causal relationship model for research success among primary school teachers in the southern border provinces consisted of 4 factors and 20 measurement variables. 1) Research competency factors. It consisted of 9 measurement variables, namely the definition of research problems. Literature review Research implementation design, research statistics, research report writing. Retrieval skills Research Tool Creation Skills data acquisition skills Data Analysis Skills 2) External Motivation Factors It consists of four measurement variables: salary or compensation, interpersonal relationships. Job security environment conducive to research; 3) intrinsic motivation factor; 4 measurement variables, namely, sense of responsibility. Satisfaction with the research results see the value of doing research Acceptance of research results 4) Research success factors It consists of 3 measurement variables, namely, doing research according to the objectives. The results of the research can be used to solve problems. Reflecting the results, it was found that the model was harmonious with the empirical data (= 417.316 , p – value < .001, df = 158, = 2.641 , RMSEA = 0.065 , CFI = 0.963 , TLI = 0.955 and RMR = 0.015)

External motivation, intrinsic motivation, and research competency positively affect research success. Able to explain 73.80 percent of the variation in research success. Intrinsic motivation positively affects research competency 49.50% variation in research competency could be justified. Positively affects intrinsic motivation Able to explain the variation of intrinsic motivation by 24.60%. Direct influence on intrinsic motivation and research competency External stimulation indirectly influences research competency. Through intrinsic motivation, Intrinsic motivation directly affects research competency. Research competence has a direct influence on research success. The external stimulus has an immediate effect on research success. and has an indirect impact on research success through research competence and intrinsic motivation. Intrinsic motivation has a direct influence on research success. and has an indirect effect on research success through research competence. This may be because the researcher has studied documents, concepts, theories, and research related to the causal factors of teacher research success. This is to be used as preliminary information for defining the terminology. The measurement variables' indicators and the questionnaire questions were complete. There was no problem with multicollinearity. The causal variable had a higher correlation with the outcome variable or the dependent variable. The researcher studied based on theories related to behavior modification, comprising model theory of information or knowledge. Motivating and Behavioral Skills (IMB Model) (Fisher & Fisher, 1992) and Job Performance Model, consisting of A Model of Effective Job Performance, Boyatzis (1982), and the Boyatzis (1982) model. The Job Demands (Resources Model) Demerouti et al. (2001, pp. 499-503) resulted in a questionnaire with straightforward, complete questions.

External motivation, intrinsic motivation, and research competency positively affect research success. Able to explain 73.80 percent of the variation in research success. Intrinsic motivation positively affects research competency 49.50% variation in research competency could be justified. Positively affects

intrinsic motivation Able to explain the variation of intrinsic motivation by 24.60%. Direct influence on intrinsic motivation and research competency External stimulation indirectly influences research competency. Through intrinsic motivation, Intrinsic motivation directly affects research competency. Research competence has a direct influence on research success. The external stimulus has an immediate effect on research success. and has an indirect influence on research success through research competence and intrinsic motivation. Intrinsic motivation has a direct impact on research success. and has an indirect effect on research success through research competence. This may be because the researcher has studied documents, concepts, theories, and research related to the causal factors of teacher research success. This is to be used as preliminary information for defining the terminology. The measurement variables' indicators and the questionnaire questions were complete. There was no problem with multicollinearity. The causal variable had a higher correlation with the outcome variable or the dependent variable. The researcher studied based on theories related to behavior modification, comprising model theory of information or knowledge. Motivating and Behavioral Skills (IMB Model) (Fisher & Fisher, 1992) and Job Performance Model, consisting of A Model of Effective Job Performance, Boyatzis (1982), and the Boyatzis (1982) model. The Job Demands (Resources Model) Demerouti et al. (2001, pp. 499-503) resulted in a questionnaire with straightforward, complete questions.

The theory of information or knowledge modeling motivating and Behavioral Skills (IMB Model) (Fisher & Fisher, 1992) is a theory that describes behavior modification. was created to explain the change in risk behavior consisting of 3 factors: information and knowledge factors. (Information), factors of motivation (Motivation) and factors of behavioral skills (Behavioral skills), if a person has received appropriate information or knowledge. And there is an incentive that meets the needs of the individual. It will make people have skills to arise. As a result, people have to change their behavior appropriately. The factors of (the IMB Model) consist of 1) factors in providing information or learning. (Information) The knowledge to make decisions to perform any behavior depends on the person's understanding. Solving problems in behavior modification must be created to make people aware of any issues that need to be solved. And how essential is that problem? to the success in behavior modification 2) Motivation factors in behavior modification Depend on the person's attitude. Social support and the family that the person holds influence decision-making if a person has a personal motivation. Confidence, knowledge, and self-confidence will result in being able to change behavior successfully. If the explanation is from friends or society in need of acceptance, Friends or association will be the motivation to change behavior to be successful. 3) Behavioral skills factor. It arises when a person has the knowledge and reason to change the behavior. Individuals will show their behavior. It was demonstrated that skills were developed more than ever. That is, how a person can change behavior depends on Knowledge, Information, and Motivation that will result in people being able to change their behavior effectively.

In line with Arunee Hengyosmak, Surachai Meechan and Itthipat Suwatanpornkul (2020) have studied the conditions for success in promoting the research competency of nurses. To enhance educational quality assurance of nursing institutions and understanding of problems and obstacles to research success. It was found that the conditions for success in promoting research competency of nurses consisted of developing research knowledge. Developing research skills This reflects the research competency of the nurses. It was found that the research competency consisted of 3 main issues that contributed to the competency development: 1) research knowledge; (Information), 2) Attitude to research (Motivation), and 3) Research skills (Behavioral skills). Nursing teachers must have all three components: knowledge about research, research attitude, and research skills.

From the development of a causal relationship model for research success of primary school teachers in the southern border provinces

consistent with empirical data, The researcher took a set of observed variables for analysis. Research Knowledge (KNL) and Research Skills (SKI) are in the same composition. This is in line with the theory that knowledge and skills are competence. Boyatzis (1982) describes knowledge and skills. It is part of personal competence, which is expressed in the form of working behavior. As a result, the research hypothesis was adjusted: 1) Research competency directly influenced research success 2) Internal motivation directly influenced research success 3) Intrinsic direct motivation influenced on 4) The external motivation directly influenced the research success 5) The external motivation directly influenced the research competency and 6) The external motivation factor directly influenced the force. Internal motivation Structural equation model research hypothesis test results The causal relationship model of research success of primary school teachers in the southern border provinces is Consistent with all six research hypotheses, namely, research competency directly influenced research success. Intrinsic motivation directly influenced research success. Intrinsic motivation directly influenced research competency. External motivation directly influenced research success. The external motivation directly influenced the research competency. And the aspect of external motivation directly influenced the factor of intrinsic motivation.

According to the first hypothesis on research competency, the research results directly influenced research success. The literature review found that Research skills directly affect research success (Bloom's Taxonomy, 1956; emphasis added). Culture Rayabsri, 2013) and research knowledge directly affect research success (Fisher & Fisher, 1992; Pattama Phusawas and Samran Meejang, 2012), which is based on the theory that knowledge and skills are competencies (Boyatzis, 1982). The hypothesis testing results are based on research. The model theory of information or knowledge motivating and behavioral skills (IMB Model) that informs or knowledge affects behavior modification. Behavioral skills involve behavior modification. The researcher compares the information or knowledge and behavioral skills with research competence, consistent with the research findings that Research competency is a condition for success in promoting research competency. and research skills (Arunee Hengyosmak, Surachai Meechan, and Itthipat Suwatanpornkul, 2020) are in line with Piyawan Boonpen, Yuttana Chaijukul and Dusadee Yola (2018) who found that the research competency was Conditions under which research has been successful. (Hartinah et.al., 2020).

For research-based on hypotheses 2 and 3, intrinsic motivation directly influenced research success. and intrinsic motivation directly influenced research competency. From the literature review, it was found that intrinsic motivation is something that creates job satisfaction. It helps people to love and like their work and makes them work more efficiently, which is the factor that stimulates genuine work satisfaction able to reach the top of their careers (Herzberg, Mausner, and Snyderman, 1959; Bahrulmazi Bin Edrak et al., 2015; Piyawan Boonphen, Yuttana Chaijukul, and Dusadee Yola, 2018). Intrinsic motivation directly influences research competency (Herzberg, Mausner, and Snyderman, 1959; emphasis added). Sanit Siriwisitkul and Somyot Awakiat, 2016), by the model theory of information or knowledge motivating and Behavioral Skills (IMB Model) (Fisher & Fisher, 1992) that governs the intrinsic motivation of individuals. It will make that person competent, that is, an effort to acquire knowledge and develop skills, to change behaviors or perform tasks according to goals. (Sriyakul et.al., 2020)

As for the research based on hypotheses number 4, item 5, and item 6, external motivation directly influenced research success—directly influencing research competency and now controlling the aspect of internal motivation. From the literature review, it was found that External motivation affects research success and that individuals can apply their research results to teaching and academic services, allowing them to reach the top of their careers, which is the motivation for advancement in work or salary research compensation, which is a factor affecting the quality of classroom research (Herzberg, Mausner, and Snyderman, 1959;

emphasis added). Piyawan Boonphen, Yuttana Chaijukul, and Dusadee Yola, 2018; Sanit Siriwisitkul and Somyot Awakiat, 2016) by the model theory of information or knowledge motivating and behavioral skills (IMB Model) said that motivation affects behavior modification. Therefore, extrinsic motivation influences research success. In addition, extrinsic motivation directly influences research competence (Herzberg, Mausner, and Snyderman, 1959; Fisher & Fisher, 1992; Cooper and Jayatilaka, 2006). Theory of information or knowledge modeling motivating and Behavioral Skills (IMB Model) is a motivational effect on behavioral skills, knowledge, or competence. Boyatzis (1982) said that knowledge and skills are the structure of competence when an individual is externally motivated. They have salary requirements Compensation including benefits or other benefits want to interact with colleagues supervisor To help support or advise on classroom research. Or to need stability in a position or academic standing suitable environment educational atmosphere Facilities This will result in people trying to seek knowledge and skills to work until it becomes a research competency. As a result, individuals' value and take responsibility for successful research. Satisfied with the research results, it can be seen that external motivation is a factor that helps a person to continue to perform tasks. Achieve the objective. It's a never-ending need. But extrinsic motivation drives intrinsic motivation, which is more sustainable than external motivation. Therefore, both internal motivation and external motivation must be provided. Meeting the needs of the individual as appropriate creates motivation and eliminates dissatisfaction at work. To achieve satisfaction, have love and commitment to the organization Collaborate with enthusiasm for research, based on Herzberg's two-factor theory as a guideline for motivating research to power success. Resulting in increased efficiency in research and resulted in the organization's success.

References

[1] Arunee Hengyosmak, Surachai Meechan and Itthipat Suwatanpornkul. (2020). Conditions for success in Promote research performance of nursing teachers to enhance quality assurance Education of the Institute of Nursing. Police Nurse Journal, 12 (1), 265-276.

[2] Babkie, A, M., & Provost, M. C. (2004). Teacher as Researchers. Intervention in School and Clinic, 5 (39), 260 – 268.

[3] Bahrulmazi Bin Edrak, et al. (2015). The Effectiveness of Intrinsic and Extrinsic Motivations: A Study of Malaysian Amway Company's Direct Sales Forces. International Journal of Business and Social Science. 4 (9), 96 – 103.

[4] Bloom, B.S. (1956). Taxonomy of Educational Objectives, the classification of educational goals – Handbook I: Cognitive Domain. New York: McKay.

[5] Boyatzis, Richard E. (1982). The Competent Manager: A Model for Effective Performance. New York: John Wiley & Sons.

[6] Cooper, R. B., & Jayatilaka, B. (2006). Group Creativity: The Effects of Extrinsic, Intrinsic, and Obligation Motivations. Creativity Research Journal, 18 (2), 153 – 172.

[7] Culture, Raiabsri. (2013). Analysis of factors affecting the quality of research in the classroom of school teachers. Primary school under the Office of the Basic Education Commission. Doctoral Thesis Graduate School of Educational Administration and Leadership of Change Eastern Asia University, Pathum Thani.

[8] Demerouti, E., Bakker, B A., Nachreiner, F. and Schaufeli, B W. (2001). The Job Demands-Resources Model of Burnout. Journal of Applied Psychology. 86 (3), 499 – 512.

[9] Fisher, J. D., & Fisher, W. A. (1992). AIDS-risk behavior Psychological Bulletin, 111 (3), pp. 455-474. Retrieved November 12, 2021, from http://dx.doi.org/10.1037/0033-2909.111.3.455

[10] Hair, F. Joseph, et al. (2010). Multivariate Data Analysis. (7 th ed). New Jersey: Pearson Education.

[11] Hartinah, S., Suharso, P., Umam, R., Syazali, M., Lestari, B., Roslina, R., &

Jermsittiparsert, K. (2020). Teacher's Performance Management: The Role of Principal's Leadership, Work Environment and Motivation in Tegal City, Indonesia. Management Science Letters, 10(1), 235-246.

[12] Herzberg, F., Mausner, B., & Snyderman, B.B. (1959). The Motivation to Work. New York: John Wiley & Sons.

[13] Juthamas Isarapinyo, Ploenphit Thammarat and Rapeepan Roipila. (2019). Management factors affecting Successful results of conducting research in the classroom under the Office of the Basic Education Commission in Sakon Nakhon Province. Journal of Educational Administration and Leadership, 7 (28), 75 – 86.

[14] Narisara Phungpho, Police Station (2020). Outstanding Research Work of the National Outstanding Researcher: Characteristics, Meanings, and Factors. Success. Social Development Journal, 22 (1), 100 – 122.

[15] Office of the Education Council Secretariat. (2017), National Education Plan 2017 – 2036. Bangkok: Sweet Chili Graphic Co., Ltd.

[16] Paiwan Duangphachan, Oranuch Srisaat and Teerawut Ekakul. (2018). Indicators of research competency in the Classes of high school teacher's Lao People's Democratic Republic. Journal of Educational Measurement Mahasarakham University, 24 (1), 208 – 225.

[17] Pattama Phusawas and Samran Meejang. (2012). Factors affecting classroom research of teachers under Muang Tak Municipality Office. Education Journal Thaksin University, 12 (2), 71 – 79.

[18] Pimpawee Suwanno, (2017). Developing a Model for Assessing Research Competency of Instructors. Rajabhat University, Southern region. Doctorate of Philosophy Department of Research, Measurement and education statistics Burapha University, Chonburi.

[19] Piyawan Krainara. (2021). Teacher Development for Research Success of Teachers Under the Narathiwat Primary Educational Service Area Office. Doctor of Education Degree Research Report Department of Educational Administration Hat Yai University, Hat Yai

[20] Piyawan Boonphen, Yuttana Chaijukul and Dusadee Yola. (2018). Research Competency and Variables at Related to successful research: a case study of students in national universities. Kasem Bundit Journal, 19 (1), 73 – 88.

[21] Rattana Buason. (2017). Philosophy of Research. Bangkok: Chulalongkorn University Press.

[22] Sanit Siriwisitkul and Somyot Awakiat. (2016). The causal factor model influencing Effectiveness of research administration in private higher education institutions in Thailand. Thonburi University Academic Journal, 10 (23), 53-66.

[23] Sirirak Songsiriwilai. (2020). Report of the survey of expenses and personnel in research and development of Thailand for the year 2019. Bangkok: National Research Office (NRCT), Ministry of Higher Education, Science, Research and Innovation.

[24] Schumaker, E Randall. & Lomax, G Richard. (2016). A Beginner's Guide to Structural

[25] Equation Modeling (4 th ed.). New York: Routledge.

[26] Sriyakul,T., Rodboonsong, S., & Jermsittiparsert, K. (2020). Improving Quality of Education: Role of Human Development, Public Spending on Education and Trained Teachers' Availability. Journal of Security and Sustainability Issues, 9(4): 1297-1307.

[27] The Teachers Council's Regulations on Professional Standards (No. 4) B.E. 2562 (2020, 7 May). Government Gazette, Volume 137, Special Section 109 Ngor, Pages 2 – 3.

[28] Watchara Chantharat, Wasan Atisap, Opas Kaosaiyaporn, and Narongsak Kruat Classroom research of teachers under the Office of Primary Education Service Areas in the Southern Border Provinces with knowledge, skills and satisfaction of teachers' classroom research. Education Journal Prince of Songkhla University Pattani Campus, 31 (2), 211– 226.

[29] Wiporn Ketkaew. (2019). Research Methodology. Nonthaburi: Nititham Printing.