

# Impact of Psychological Capital and Technology Adaptation on Performance of Teachers

<sup>1</sup>Worakamol Wisetsri, <sup>2</sup>Thunyakorn Chuaytukpuan, <sup>3</sup>Manoch Prompanyo, <sup>4</sup>Mohsin Raza, <sup>5</sup>Luigi Pio Leonardo Cavaliere, <sup>6</sup>Shamim Akhter

<sup>1</sup>*Department of Manufacturing and Service Industry Management, Faculty of Business and Industrial Development, King Mongkut's University of Technology North Bangkok (KMUTNB), Thailand, worakamol.w@bid.kmutnb.ac.th*

<sup>2</sup>*Department of General Science Faculty of Science, Srinakarinwirot University, thunyakorn@g.swu.ac.th*

<sup>3</sup>*School of Management, Shinawatra University, Thailand, manoch.p@siu.ac.th*

<sup>4</sup>*Faculty of Management Sciences, Phuket Rajabhat University, Phuket, Thailand, mohsinraza006@gmail.com*

<sup>5</sup>*Department of Economics, University of Foggia, Via Romolo Caggese, 1, 71121 Foggia FG, Italy, luigi.cavaliere@gmail.com*

<sup>6</sup>*School of languages, civilization and philosophy, Universiti Utara Malaysia, misschudry96@gmail.com*

## Abstract

In today's global workplace, psychological capital has gained prominent place. So, educational institutions face a real challenge while developing the psychological capital in teachers. The purpose of this research is to explore the mediating role of technology adaptation on the relationship between psychological capital and performance of physical education teachers. The research framework was developed to assess the factors that influence the performance of teachers in educational institutions. Data was collected using survey questionnaire from Thailand, and Partial Least Square Structural Equation Modeling (PLS-SEM) was employed to analyze the mediating effect of technology adaptation on relationship between psychological capital and performance of physical education teachers. Analysis of data revealed that psychological capital has significant direct effect on the performance of teachers. Furthermore, results also revealed that technology adaptation positively mediates the relationship between psychological capital and teacher performance.

**Keywords:** Teacher performance, psychological capital, technology adaptation, educational institutions.

## INTRODUCTION

The growth of psychological capital in teachers have gained attention of academicians and researchers these days. Most of the literature found that psychological capital development is completely linked with instructor's performance including their work engagement, motivation, and job satisfaction. The positive impact of psychological capital in businesses has increased the demand of its development within educational institutions as well. The challenges faced by people within educational

institutions and business organizations can be compared (Raza et al., 2020).

Similar to businesses, people in educational institutions experience burnout, demotivation, stress, and other negative aspects because of their workload. Therefore, psychological capital has been recognized as an important psychological resource to be developed in teachers for better performance and increased output in their students. The demand for development of psychological capital in teachers has increased for better

output as well as their wellness and prevention of negative consequences faced by increased workload. Development of psychological capital has been positively associated with producing better outcomes (Zhang et al., 2021).

In spite of the positive outcomes, little research has been done about the development of psychological capital in educational institutions. Most of the research about psychological capital is focused on business organizations, and it is agreed that research regarding development of psychological capital in educational institutions is still scarce. Therefore, establishing the results of psychological capital development in educational institutions is necessary to recognize the effects it has on the people in educational institutions (Khalid et al., 2022).

Moreover, it could potentially add to increased academic results. Although research exists on psychological capital, further studies are required to examine its application and development in educational institutions. Hence, there is a need for systematic literature review to amalgamate the available research on development of psychological capital in educational institutions. This will increase the understanding about the influence of psychological capital on the people working in educational institutions such as teachers as well as similar influence of psychological capital on businesses. This will help in identifying the research gaps and providing suggestions for further research (Sarraz et al., 2022).

## Literature Review

Psychological capital has four psychological constructs that include resilience, optimism, hope and self-efficacy. These four constructs work in synergy to yield notable demonstration across time and context (Luthans and Youssef-Morgan, 2017). Previous literature outcomes have shown that development of psychological capital in a person will increase job performance and results. Previous research has shown that psychological capital positively influences a person's outcomes containing work

engagement (Simons and Buitendach, 2013), job satisfaction (Luthans et al., 2008), work performance (Luthans et al., 2008), and organizational citizenship behavior.

A distinguished aspect of psychological capital is that it is "state-like" and hence can be developed and measured. Psychological capital can be explained as the exploration and implementation of affirmative human resource strong points and psychological abilities that can be developed, quantified, and accomplished for better performance at workplace (Luthans, 2002). It appeared as the result of positive psychology movement started by Martin Seligman. Psychological capital is defined as a notion that goes beyond social capital, human capital, and financial capital (Luthans, 2002). Psychological capital is viewed as "who you are" and "who you are becoming". It is a higher-level, principal paradigm that contains four proportions of hope, optimism, self-efficacy, and resilience.

Previous literature studies have associated psychological capital with different variables like job performance, job commitment, and job satisfaction, perceived stress, happiness, anxiety, ability to handle pressure, and well-being (Golparvar, 2013; Luthans, Youssef & Avolio, 2006). Moreover, psychological capital upsurges the value of human capital, and social capital and, consequently, is capable in lessening the negative encounters in the companies by trusting in productive psychological variables such as self-efficacy and hope (Luthans et al., 2007). Many previous studies show that psychological capital produces noteworthy relations with employees' workplace location and many other structural variables. Empirical evidence points that psychological capital has a significant part in battling difficulties faced by businesses as well as improving employee skills (Mortazavi et al., 2012; Alipoor et al., 2013; Gu, 2011; Madden, 2013).

Undoubtedly, technology has been around for a long time and all sectors are taking help from its use. But it is always considered a new in education because of its ongoing evolution. Avedisian (2019) identifies some kinds of

evolving technologies considered new to education in 2019 and are still having an impact on the field of technology in education. Totoraitis (2018) underlined the rapidity with which technology changes. Physical education teachers have a difficult time incorporating technology into their lessons for a variety of reasons. Hyndman (2019) sheds lights on the reasons by saying that instructors are reluctant to accept technology in the classroom because it can distract the pupils, educators must undergo additional training, and it can affect the pace of the course. To avoid these issues, teachers should use the proper equipment, acquire the proper training, and plan out their lessons. The application of technology in physical education classrooms is essential, since it offers the pupils the opportunity to integrate their classroom experiences with the real world (McVicker, 2018). Educators have been using technology in the classroom for decades and it is essential to the process (Jones, 2019).

Moreover, technology can become a valuable strength in higher education institutions. If efficiently employed, it offers a channel for vigorous, practical-level learning to occur (Hargis et al., 2013). Previously, technology has been employed to facilitate deep-rooted ways of learning and schooling but education system has not yet been transformed in an important way (Laurillard, 2007). Although technology aids in improving the availability, quality, and flexibility in classrooms, this may also be used in ways that allow teachers to aid learner accomplishment of developed levels of mental intricacy like assessment, creation, and analysis. Different technological devices and gadgets are bringing changes and innovations in education sectors. Presently, education sectors are becoming learner-centered. Previously, it was teacher-centered in which teachers were considered the authority and students remained passive. This shift is due to technology where cognitively intricate activities may happen. Additionally, integration of technology and syllabus improve knowledge with the help of advanced stages of learner assignment (Hargis et al., 2013). Earlier research examined the pupil's capability of

technology incorporation in higher education (Hargis et al., 2013; Manuguerra and Petocz, 2011; Stec et al., 2017); though, the perception of teachers is still uncertain. Consequently, the purpose of the undertaken research is to inspect the influence of technological adaptation on the performance of physical education teachers.

After looking into literature review and above arguments, following hypothesis are established:

H1: Psychological Capital has a positive and significant effect on the performance of physical education teachers in China

H2: Technology Adaptation has a positive and significant effect on the performance of physical education teachers in China

H3: Technology adaptation positively mediates the relationship between psychological capital and performance of physical education teachers in China

## Research Framework

Subsequent research framework is suggested based on the literature review and hypothesis:

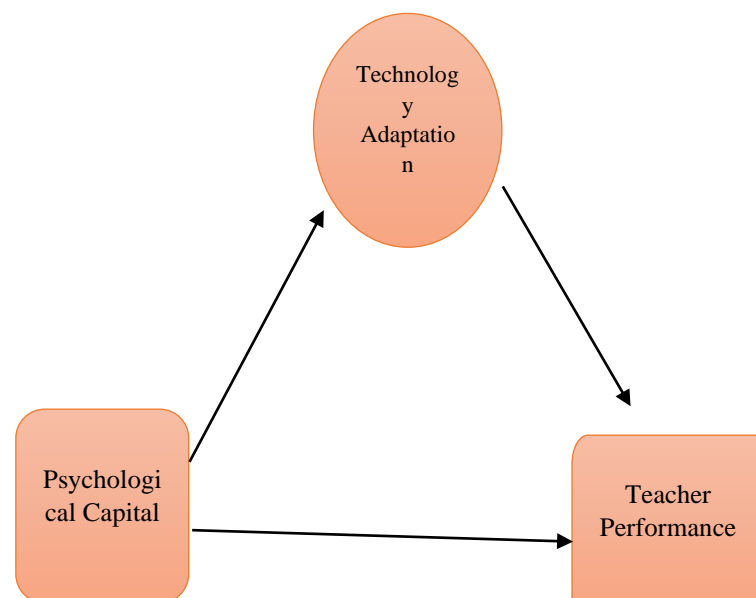


Figure 1: *Proposed Research Framework*

## Methodology

The undertaken study aims at studying the factors affecting the performance of physical education teachers. In this research, evaluation and summary tests have been used to explain the factors affecting the performance of teachers at educational institutions. Quantitative research methodology is utilized for data collection from Thailand. Survey questionnaires are employed as data collection instrument for this research, and questions have been formed to collect information that will help in realizing the objectives of this research. To encompass the diverse population of correspondents, probability sampling method has been used to disperse and collect responses. Also, evaluation and summary tests have been used in the undertaken research to describe the aspects that effect independent variable of psychological capital and performance of physical education teachers. The Smart PLS3 was used to evaluate and analyze the data obtained from survey questionnaires.

Table 1. *Response Ratio*

Responses	Frequencies/Rate
Total circulated	200
Returned questionnaires	163
Returned and usable questionnaires	163
Returned and excluded Questionnaires	0
Response rate	81.5%

Questionnaire

The undertaken study aims at knowing the aspects which effect the performance of physical education teachers working at different educational institutions of China. The questionnaire comprises of two sections. Section A was designed to identify demographic information about the respondents, such as gender, age, educational level and experience. The collection of this information assists in understanding the differences among respondents in relation to certain attributes (Kasunic, 2005). Section B was designed to test the research model through the constructs and items that were developed.

This part was focused on the determinants that were expected to influence the performance of physical education teachers, based on the proposed theoretical framework presented earlier. The Likert scaling method was found to be adequate for measuring the questionnaire items of this research (Likert, 1932).

Structural Equation Modelling (SEM) has been employed in investigating the data acquired, to analyse the study model and to evaluate the relationships between the research model constructs (Ringle et al., 2012). SEM refers to statistical processes that combine confirmatory factor analysis and path analysis to validate the measurement models and fit the structural model (Tabri & Elliott, 2012). SEM is a blend of two research phases: (i) a measurement model analysis and (ii) a structural model analysis. In the measurement model (Outer Model), the relationships between the constructs and the variables of the indicator are shown, whereas, the structural model (Inner Model) illustrates the relationships between the constructs (Joe F. Hair et al., 2012).

The inner model therefore defines the degree to which unique variables effect variations in the values of other latent variables in the model. The measurement model is tested in the first stage in order to ensure that the elements used to measure each construct are valid and effective. The second stage is the structural model, which involves analysing the relationships of the construct. First, by analysing composite reliability (CR) and internal consistency reliability (Cronbach's alpha), build reliability was assessed through Smart PLS3. Reliability test results are presented in the Table below.

A structural model was established and the evaluation of the relationship between constructs in the model is involved in the evaluation of a structural model. Three parameters are used in the PLS analysis: (1) the determination coefficient ( $R^2$ ), (2) the path coefficients and (3) effect size (Urbach N., 2010), to evaluate the explanatory power of the structural model.

Table 2. *Reliability Test Results*

Construct	No. of Items	Cronbach's Alpha
Psychological Capital	07	0.831
Teacher Performance	08	0.794
Technology Adaptation	06	0.727

#### Measurement Model

The approach utilized to analyze and evaluate the data in this research was primarily Partial Least Squares-Structural Equation Modelling (PLS-SEM) of 200 surveys distributed. Moreover, it can recognize the predicted relationships between the latent variables by executing a statistical analysis. PLS-SEM gives an image of the hypotheses in the research framework (Joe F. Hair et al., 2012). PLS-SEM was preferred because it has the most sense in analyzing the research framework's analytical relationships. There are two categories of models in Smart-PLS: measurement, and structural models. The measurement model is to measure the unobserved variables of the indicators in the structural model. The results of the questionnaire have been proved valid and reliable with the help of construct validity of the measurement model.

#### Structural Model

Next step in the undertaken research is to examine the structural model. Structure equation model (SEM) provides the means which show the hypothesized path by the support of theoretical model. Fundamentally, SEM model comprises with the hypothesized relationship between the independent, mediator and dependent variables in the projected research model. The structural model predicts that how well the theoretical model foresees the hypothesized pathways. In other terms, the structural model is tested to assess the hypothesized relationship within the inner model.

As indicated earlier, the three parameters that govern the hypothesized relationships between constructs in current research are:

#### Coefficient of Determination ( $R^2$ )

##### Effect Size ( $f^2$ )

##### Path Coefficients

#### Coefficient of Determination ( $R^2$ )

$R^2$  Evaluation in structural model assessment is a critical step (Hair et al., 2011). It indicates the variance of dependent variable (Henseler et al., 2014). The range of  $R^2$  has been prescribed from 0 to 1. Values of  $R^2$  in between 0 to 1 displays the weak, moderate and strong variance. Outcomes of the current research show the  $R^2$  values of 0.624 teacher performance which is strong. This shows that the independent variable has 62% variance in teacher performance.

##### Effect Size ( $f^2$ )

Effect size shows the comparative influence a certain exogenous underlying variable has on the endogenous underlying variable with  $R^2$  alterations (Avkiran et al., 2018). As a stagnant measure, the outer construct is important for enlightenment about the endogenous structure. Effect size also represented as  $f^2$  is employed in data analysis to examine whether detached construct has any significant impact on the endogenous constructs. Additionally, effect size can be computed by equating the increase in  $R$  square to the proportion of change in the residual inexplicable endogenous latent variables. Generally, 0.02-0.14 values are defined as minimal, 0.15-0.34 as moderate, and above 0.35 as high effect values.

##### Path Coefficients

PLS-SEM uses path coefficient to estimate the influence and worth of the theorized relations of the latent constructs. Values are derived with +1 or closer coefficient values showing significant positive link and -1 or closer coefficient values indicate a significant negative relation, similarly, for structural model links with unchanging values between +1 and -1.

#### Direct and Mediating Relationships

Examination of the structural model started with the assessment of direct relation between

independent and dependent variable. PLS-SEM has been employed for observing the size of path coefficients, whereas effect of the relation between variables has been supposed using PLS-SEM bootstrapping method. First model contained the assessment of direct relationships

among variables shown in the hypothesis 1 and 2 (Table below). Subsequently, second model presented a mediating variable, and relation among mediating and independent variable is examined as shown in hypothesis 3 (Table 4).

Table 3. *Outcomes for Direct Relations*

Theorized Path	Path coefficient	Standard Error	T Value	P Value	Verdict
H1 PC -> TP	0.534	0.213.00	9.257	0.001	Accept
H2 TA -> TP	0.497	0.372	8.493	0.000	Accept

\*p<0.05

Table 3 shows that hypotheses H1 and H2 are supported. Similarly, Table 4 shows that H3 is also supported.

Table 4. *Results of Mediating Tests*

Theorized Path	Path coefficient	Standard Error	T Value	P Value	Verdict
H3 PC -> TA> TP	0.573	0.245	7.584	0.001*	Accept

\*p<0.05

Hereafter, the previous literature proves the authenticity of the outcomings.

## Discussion

The primary objective of undertaken study is to explore the link between psychological capital, technology adaptation, and teacher performance. Next, mediating role of technology adaptation on the relation between psychological capital and teacher performance has been examined.

First hypothesis (H1) is, "Psychological capital has a positive and significant effect on the performance of physical education teachers in China." Table 3 about direct relationships demonstrate that first hypothesis H1 path coefficient was 0.534, and t-value was 9.257 in the results. P-value for hypothesis was 0.001 which is higher than  $t > 1.96$  with p-value of less than 0.05. Based on this analysis and discussion, hypothesis 1 was accepted. Additionally, previous literature also supports this relationship by revealing that a significant relationship between psychological capital and physical education teacher performance is found (Shabbir et al., 2019).

Second hypothesis (H2) is, "Technology Adaptation has a positive and significant effect on the performance of physical education teachers in China." Table 3 about direct relationships shows that second hypothesis H2 path coefficient was 0.497, and t-value was 8.493 in the results. P-value for hypothesis was 0.000 which is higher than  $t > 1.96$  with p-value of less than 0.05. Based on this analysis and discussion, hypothesis 2 was accepted. Additionally, previous literature also supports this relationship by revealing that there is a significant relationship between technology adaptation and physical education teacher performance.

Third hypothesis (H3) is, "Technology Adaptation positively mediates the relationship between psychological capital and performance of physical education teachers in China." Table 4 about mediating relationships shows that third hypothesis H3 path coefficient was 0.573, and t-value was 7.584 in the results. P-value for hypothesis was 0.001 which is higher than  $t > 1.96$  with p-value of less than 0.05. Based on this analysis and discussion, hypothesis 3 was

accepted. Additionally, previous literature also supports this relationship by revealing that there is a significant mediating role of technology adaptation on the relationship between psychological capital and physical education teacher performance.

### **Limitations and Future Research Directions**

Additionally, the undertaken research is not free from limitations. The current research examined the impact of psychological capital on teacher performance and mediating role of technology adaptation on the performance of teachers. More variables can be added in the future research. For this research, data have been collected from the educational institutions in China only. The same study can be conducted by using same model in other countries apart from China. More research instruments can be used for further study to replicate.

### **Conclusion**

Psychological capital and technology adaptation play a core part in the inclusive performance of physical education teachers. It is believed that educational institutions with high level of technology adaptation produce better performance as compared with the institutions that are not in favor of technology adaptation. Technology adaptation is considered an integral part of educational institutions for better performance in this global era. Correspondingly, those institutions having higher levels of psychological capital along with higher level of technology adaptation perform better. The performance of instructors in any way can be influenced by numerous issues. If educational institutions don't show better performance even in presence of technology, it doesn't mean that technology is responsible for bad performance.

P.E. classes are mandated for all students in elementary schools. Technology can assist students in learning and make learning process interesting. Similarly, technology has both

positive and negative effects. We must be on guard against the potentially detrimental impacts of technology on children. There are numerous good effects of technology on physical education classrooms, and physical education teachers should begin lobbying for the use of technology so they can witness the long-term benefits for themselves and their students. The undertaken research has highlighted and assessed the relationship of psychological capital and instructor's performance. The findings of the study suggest that psychological capital effect the performance of instructors. As well, technology adaptation has been presented as mediating factor in the model and results are in favor of the mediating role of technology adaptation on the relationship between psychological capital and performance of physical education instructors.

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