

Teachers' Research Beliefs, Research Attitude, Research Motivation, and Research Utilization: A Structural Model

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ABSTRACT

Given the main mandate of universities in the trilogy of research, teaching, and societal interaction, universities are expected to have a firm tradition of research. This study established a model that explains research utilization in terms of teachers' research beliefs, research attitudes, and research motivation in a private non-sectarian university in Southern Philippines. More than two hundred teachers from the university participated in the study. The data collection tool was a researcher-made Teachers' Research Beliefs, Research Attitude, Research Motivation, and Research Utilization Survey Questionnaire, which was adapted from existing literature and studies, content validated, and pretested for reliability. Descriptive statistics and structural equation modeling (SEM) were used to organize the data. Confirmatory factor analysis in the SEM further supported the validity of the constructs. Findings reveal that research motivation mediated the impact of research beliefs and attitudes towards research on research utilization. The results of this study will be utilized to enhance the current academic efforts

not only to encourage more teachers to engage in research but also to strengthen the link of research to instruction.

Keywords: research beliefs, research attitudes, research motivation, research utilization

INTRODUCTION

Universities around the globe are experiencing increased pressure brought about by globalization in the 21st century and rapid expansion of the knowledge-based economy moving towards innovation-based economy (Morar, Moran, & Mousa, 2017). This globalized pressure, which is cultural, economic, political, business, and power in nature, has pushed higher education into greater international involvement (Altbach and Knight, 2007; Bond, 2006; Cinches et al., 2015). Greater international involvement also points to the essential roles of higher education in the knowledge-based economy that is gravitating towards the innovation-based economy. The “general roles of higher education include training/teaching (as knowledge economies need skilled human resource), research (higher education conducts both basic and applied research for knowledge economies), innovation, social and cultural criticism, and repositories of knowledge for society” (Altbach, 2007).

Research and teaching are considered the main pillars of higher education and are significant key indicators of quality in institutions of higher learning. The relationship between teaching and research in modern universities is an international concern. International university ranking systems put a premium on teaching-research productivity (Altbach, 2012). Over the past three decades, university rankings have expanded in numbers and geographical coverage, where teaching and research are drawn in knowledge generation.

Universities stand to be on numerous advantages when research informs teaching. Studies have established the benefits of teachers engaging in research, such as students’ better school engagement, satisfaction with the course, and increased confidence as learners and independent thinkers (Baldwin, 2005; Wuetherick, 2009; University of South Carolina, 2019). The existence of such a fruitful link between teaching and research is considered an article of faith with many teachers believing that research informs and enhances teaching (Baldwin, 2005).

Brew (2012), however, suggested that drawing teaching and research more

firmly together should not be understood as educating all students to become academics, nor should it only be construed as an exercise to give impressions that all teachers are involved in the research. Rather, it should be regarded more as “a response to several changes in higher education that have challenged” the connectedness of teaching and research in generating knowledge (Brew, 2012). Among these challenges is the “gravitating of the rapidly expanding knowledge-based economy towards innovation-based economy” (Altbach, 2012; Morar, Moran, & Mousa, 2017).

There is a need for a model that explains the relationship between teaching and research amidst the changes that are rapidly taking place in the higher education context, considering the varied understandings of this relationship. Such a model can be used as a guide in bringing research and teaching closer and in enhancing both (Brew, 2012).

In the quality assurance framework of the Philippine Higher Education, knowledge generation is seen in the context of the trilogy (research, teaching, and societal interaction), thereby requiring HEIs to have firm traditions of research. Universities are expected to emphasize the development of new knowledge and skills through various academic programs at different levels. The Commission on Higher Education (CHED) mandates that “research orientation be emphasized in all degree programs” (CHED Handbook, 2014).

Research orientation is evident in the university under study. All degree programs require research outputs before degree conferment. Teachers are encouraged to engage in research by giving them not only monetary rewards but also ranking opportunities. However, only a few teachers are still engaged in research or utilize research for classroom instruction. For the past five years, less than 30% of the full-time teachers conducted faculty research, yet not regularly, and about 10% of the faculty utilized research results (RPE Office, 2019). This situation raises a question on what the teachers’ general conceptions of education research could be.

For the purpose of this study, education research refers to teacher research that is intentional and systematically conducted with the goals of gaining insights into teaching and learning, seeking practical solutions, exploring innovations and changes in the classroom or school, and ultimately improving the lives of learners. Teacher research and action research are often used interchangeably in the literature, the latter being the preferred term in Britain (Cochran-Smith & Lytle, 1993). Education research also refers to action research.

There is a dearth of studies on research utilization relative to teachers’ research

motivation, research beliefs, and research attitude. On the assumption that individuals' behavioral intentions or reasoned actions are influenced by their beliefs and attitude, this study developed a model that explains research utilization in terms of research motivations, research beliefs, and research attitudes among teachers of the HEI in focus. Results of this study are hoped to strengthen existing structures, policies, and practices of the university to encourage more teachers to engage in research regularly so that the current teaching-research practices may be enhanced not only to optimize student learning but also to inform university decisions on faculty and instruction.

FRAMEWORK

This study is grounded on the premise that teachers' research beliefs, attitude towards research, and research motivation cause research utilization in support of teaching. This premise is supported by Fishbein and Azjen's (1975) theory of reasoned action and Deci and Ryan's (2008) self-determination theory.

Research Beliefs and Attitudes. The theory of reasoned action (Fishbein and Azjen, 1975) is useful for understanding how teachers' attitudes towards and beliefs about research may relate to their use of research findings for classroom teaching. The theory explains that teachers' behavioral intentions are swayed by their attitudes and beliefs. The interplay of attitudes, beliefs, intentions, and actions is central to this theory. The theory asserts that what had previously been called "attitude" is made up of three components: affective, cognitive and conative, or attitudes, beliefs, and actions. The affective component (attitude) refers to a person's emotions toward an object, person, issue or event, while the cognitive component (beliefs) includes a person's knowledge, opinions, thoughts, and views about an object, person, issue, or event. The conative component (action) refers to a person's behavioral intentions and actions toward an object (Fishbein et al., 1975). The authors further suggest that people's beliefs determine their attitudes toward an object. Thus, when teachers believe that research is part of teaching that improves curriculum, they would most likely have a positive attitude towards research. In turn, people's attitudes influence their behavioral intentions, which influence their actions. Because teachers' beliefs are likely to guide and define practice (Ashour, 2012), research beliefs refer to teachers' convictions and assumptions about research in relation to teaching or classroom experiences. Teachers, for instance, believe that research findings enhance pedagogy and improve curriculum. The educational beliefs of teachers

are strongly believed “to guide the decisions they make and the action they take in the classroom, which in turn has an impact on students” (Pedersen & Liu, 2003; Byrnes, 2009).

Intentions to engage in and utilize research are outcomes of positive attitude towards research. In this current study, the object toward which attitude was directed is teacher research or action research. Thus, attitude towards research is defined as a disposition to respond favorably or unfavorably to education research as a construct (Holincheck, 2012). Research attitude, therefore, includes a position on responding to students’ needs, improving teaching, and increasing student achievement (Byrnes, 2012). Determining teachers’ research attitude is beneficial because teachers’ attitudes have strong bearing on their professional development experience (Guskey, 2000, as cited by Byrnes (2012). Also, the theory of reasoned action suggests that looking into teachers’ research beliefs and research attitudes may help in further understanding teachers’ behavioral intentions and actions related to education research towards the use of research findings in improving classroom practices (Ajzen et al., 1975). More recently, however, some scholars have criticized the theory because it ignores one’s needs prior to engaging in a certain action, needs that would affect behavior regardless of expressed attitudes (Sniehotta, 2009; Sussman, & Gifford, 2019). Thus, the construct of research motivation.

Research Motivation. The Self-Determination Theory (SDT) of Deci and Ryan (2008) explains that humans have innate needs that promote their psychological health and well-being. These innate psychological needs (competence, autonomy, and relatedness) are deemed necessary for healthy development and effective functioning. Present in individuals is their beliefs and attitudes that may gravitate towards behavioral intention or action. Teachers have their research beliefs and research attitudes that may result in behavioral intention or action, which is research utilization. However, while research beliefs and research attitudes may lead to research utilization, such action may depend upon the needs of the teachers that promote their psychological health and well-being.

SDT best explains motivation, asserting that the type of motivation present is more relevant than the amount of motivation when trying to predict behavior (Mayer, 2012). Thus, in this current study, research motivation is discussed in the context of intrinsic and extrinsic categories. SDT defines intrinsic motivation as the “inherent tendency to seek out novelty and challenges, to extend and exercise one’s capacities, to explore, and to learn” (Deci & Ryan, 2000b). It is an essential part of healthy cognitive and social development and a central

component of well-being and optimal functioning. According to Deci (1975), intrinsically motivated behaviors are based on people's needs to feel competent and self-determined. In intrinsic motivation, individuals are energized by the satisfaction they receive from a given activity that is independent of external pressures or rewards. Thus, teachers' satisfaction in doing and utilizing research can be attributed to their desire to 'explore and learn,' which is a manifestation of teachers' need to feel competent.

Extrinsic motivation, on the other hand, involves behavior that is not autonomously driven (Deci & Ryan, 2008). SDT also recognizes that many activities that people perform in their daily lives are not self-regulated (Deci & Ryan, 2000a). When a behavior is driven by external sources such as rewards or social pressures, it is extrinsically motivated. For example, complying with research requirements given the university standards may not be inherently an interesting activity to all academics, but it is essentially necessary for maintaining one's professional status in the university (Mayer, 2012). Proponents of SDT suggest that there are types of extrinsic motivation, some of which represent suboptimal forms of motivation, and others are linked to positive outcomes. What encourages teachers to engage in research or use research results in classroom teaching may be borne out of the desire to grow professionally or maybe because of the external pressure of the current structure. Mayer's (2012) investigation among doctoral students found that both intrinsic and extrinsic motivations were strong predictors of research interest. Hence, in this current study, research motivation is assumed to mediate the effects of research beliefs and research attitude on research utilization.

Research Utilization. In this study, the notion of research utilization was taken from literature and studies that discussed how research is used in teaching or vice versa. Thus, the research utilization construct was conceptualized by Griffith (2004) and Tillman (2013). Griffith (2004) described four types of teaching relative to research. The first type is research-led teaching, wherein teaching revolves around subject content with an emphasis on understanding research findings, rather than research processes; often based teaching on a traditional 'information transmission' model where the emphasis tends to be on understanding research findings rather than research processes. The second type is research-oriented teaching, which places emphasis on understanding the processes by which knowledge is produced. Such teaching type guides students in self-exploration and acquisition of knowledge through a scientific method. The third type is research-informed teaching, which emphasizes teaching and

learning processes largely designed around inquiry-based activities, rather than the acquisition of subject content. The fourth type is research-based teaching, which emphasizes systematic inquiry into the teaching and learning process. In this case, the experiences of teachers are highly integrated into student learning activities, and the role distinctions between teacher and student are minimized, with resolve in exploiting the interaction between research and teaching.

Tillman (2013), in a study, reviewed research utilization studies in various fields and identified determinants of research utilization across various fields that were summarized into four themes, namely individual, contextual, innovation, and communication. The individual dimension includes teachers' individual characteristics, abilities, and outlooks that impact research utilization. Teachers' skills or capabilities and previous exposure to research (Squires, Estabrooks, Gustavsson, & Wallin, 2011) have been frequently cited as either facilitators or barriers to research utilization. Confidence in using research results or one's own research result is a manifestation of an individual's research utilization. Contextual factors, on the other hand, are seen to be among the most influential, whether or not research results are utilized. Included in these factors are organizational support such as encouragement in the use of research or provision of resources for research use. Access to resources (Internet, databases, library, etc.) also facilitates or hinders research use. Another theme refers to the characteristics of research results called innovation factors. The nature of research evidence, whether it is convincing or not, determines the utilization of findings (Ratcliffe, 2010); or when research results are conflicting, these may not be likely to be used (Boström, Kajermo, Nordström, & Wallin, 2008). Furthermore, Tillman (2013) cited that even when research results are convincing, if teachers cannot see the relevance of the findings to their discipline, these findings are not likely to be used (Ratcliffe, 2010; Schoonover, 2009). Meanwhile, communication factors refer to the ways that research results are disseminated. Communicating the implications of research findings and their applicability to the practitioners' context was found to be positively related to research utilization. However, the inability to understand the analyses used by researchers can prevent many teachers from utilizing the findings (Boström et al., 2008; Schoonover, 2009). Lack of understanding of statistical language was also a common problem among practitioners (Tillman, 2013). In summary, the following four dimensions of research utilization were considered in this study: individual factors, contextual factors, innovation factors, and communication factors.

The construct of research utilization is a blend of Griffith's (2004) typology of research-teaching nexus and Tillman's factors of research utilization. This construct was indicated by the manner research is used in teaching (Griffith, 2004) and some determinants of research utilization (Tillman, 2013).

With adequate theoretical underpinnings, this study theorizes that when teachers believe that research as part of teaching improves curriculum, they will most likely have a positive attitude towards research, which, in turn, will influence their behavioral intentions vis-à-vis their actions on research utilization. However, while research beliefs and research attitudes may result in research utilization, teachers possess innate needs that are directed towards psychological health and well-being. Behavioral intentions on research utilization, therefore, may depend upon the needs of teachers for competence, autonomy, and relatedness and whether such actions promote their psychological health and well-being.

OBJECTIVES OF THE STUDY

This study aimed to establish a model that would explain research utilization in terms of teachers' research beliefs, research attitudes, and research motivation.

METHODS

Conducted in a distinguished 65-year-old private non-sectarian university in Southern Philippines, this study involved 96% or 211 full-time teachers. Data were collected using a researcher-made instrument based on existing literature and studies. The four-point scale instrument was content validated and had acceptable reliability coefficients (Cronbach's Alpha). The range of responses was 1 to 4, where four was the highest, indicating always true to me, and 1 was the lowest indicating not true to me. Items that measured research beliefs ($\alpha=0.88$) were based from the study of Ashour (2012); research attitude items ($\alpha=0.94$), Byrnes (2009); intrinsic research motivation items ($\alpha=0.84$) and extrinsic research motivation items ($\alpha=0.87$), Mayer (2012); and research utilization items ($\alpha=0.91$), Tillman (2013) and Griffith (2004).

The study employed a causal-comparative research design utilizing Structural Equation Modeling (SEM). SEM analysis via Amos 20 feature of SPSS 21 was used to establish path coefficients for further analysis of interrelationships. The presentation of research results was guided by literature on SEM, as reported by Kenny, Kaniskan, and McCoach, (2014) and Kenny (2012). The estimation

procedure utilized “model fit,” “strength of the postulated relations between variables of interest,” and “reliability of the parameter estimates.” Thus, chi-square and the root mean square Error of Approximation or RMSEA were used for judging model fit. Kenny et al. (2014) contended that the RMSEA is currently the most popular measure of model fit; “it is now reported in virtually all papers that use CFA or SEM.” MacCallum, Browne, and Sugawara (1996) used 0.01, 0.05, and 0.08 to indicate excellent, good, and mediocre fit, respectively. However, others suggested 0.10 as the cutoff for poor fitting models (Kenny et al., 2014). According to Hooper, Coughlan, & Mullen (2008), in reporting fit indices, it is sensible to include X2 statistics, the RMSEA, the CFI, and one parsimony fit index, PGFI.

RESULTS AND DISCUSSION

Table 1

Scale Reliabilities, Means, Standard Deviation, and Zero-Order Correlation

Variable	R	Mean	SD	1	2	3	4
1. Research Beliefs	.88	3.48	.48				
2. Research Attitude	.94	3.53	.54	.848**			
3. Intrinsic Research Motivation	.84	3.35	.59	.777**	.814**		
4. Extrinsic Research Motivation	.87	3.27	.66	.724**	.722**	.829**	
5. Research Utilization	.91	3.22	.61	.749**	.704*	.772**	.823**

Correlations (n=211); **Correlation is significant at the 0.01 level (2-tailed)

Table 1 shows the descriptive data of the sample that included scale reliabilities, means, standard deviations, and zero-order correlations for all the study variables. The different scales had acceptable constructs as earlier discussed, and therefore reliable. In testing reliabilities, an alpha of 0.75 or greater is acceptable for instruments that assess knowledge and skills while 0.50 or greater is acceptable for attitude and preference assessments (Tuckman, 1999; Litzinger, Lee, Wise, and Felder, 2005; Golez, 2015). The range of responses was 1 to 4, where four is the highest indicating always true to me, and one is the lowest indicating not true to me. The responses were further interpreted as highly positive beliefs to very negative beliefs for research beliefs, a highly positive attitude to a very negative attitude for research attitude, very high motivation to very low motivation for research motivations. For research utilization, the responses were interpreted as very often utilized to not at all.

As shown in Table 1, the teachers had positive research beliefs research beliefs (M=3.48, SD = .48) and a very positive research attitude (M=3.53, SD=.54).

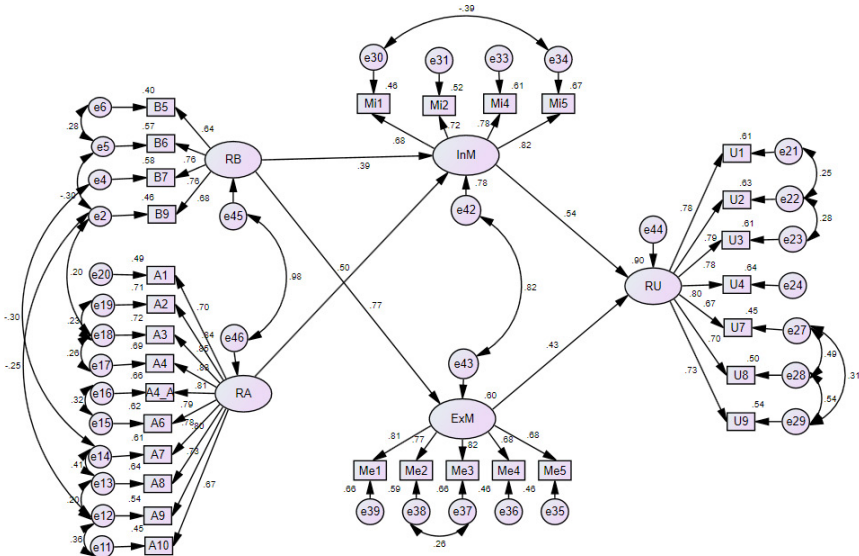
Moreover, the teachers had a high intrinsic motivation ($M=3.35$, $SD=.59$) and extrinsic motivation ($M=3.27$, $SD=.66$) to do research. Research utilization had the lowest mean ($M=3.22$, $SD=.61$), but still generally indicating high research utilization. At zero-order correlations, these variables were observed to be significantly interrelated.

Finding the Best Fit Model that Explains Research Utilization

Hypothesized Model 1 stating that research utilization is influenced by research motivations (extrinsic & intrinsic), research beliefs, and research attitudes are not acceptable given the value of $X^2=3.38$, which is more than the acceptable ratio of 2, and the value of RMSEA (.106), which is also beyond the acceptable limits. After a series of modifications, hypothesized model 2 was found more or less acceptable in the set criterion.

In the process of finding the best fit model, items having a factor loading of less than 0.6 were deleted from the measurement model as recommended by Awang (2012) in his SEM Handbook. Thus, after a series of modification, using string constraint parameters on regression weights estimates, research beliefs construct was left with four from ten-item indicators and research utilization with seven from ten-item indicators. One item indicator was trimmed from intrinsic research motivation. No items were trimmed down from research attitude and extrinsic research motivation scales.

Hypothesized model 2 stating that research utilization is directly influenced by research motivations (extrinsic & intrinsic), which are also caused by teachers' research beliefs, and research attitude was confirmed. Table 2 shows the results after the calculation of the overall model fit indices of the hypothesized model, showing that the hypothesized model best fits given the data set of the study. Figure 1 presents the best fit model, depicting the most parsimonious fit as shown in Table 2 where X^2 ratio is 2; for absolute fit, root mean square residual is nearing zero ($RMR=.033$), root mean square approximation, ($RMSEA=.07$) (Kenny et al. 2014), and comparative fit index ($CFI=.957$). The incremental fit indexes of CFI, NFI, and TLI have values $> .90$.



- Legend:**
 RB Research Belief
 RA Research Attitude
 InM Intrinsic Research Motivation
 ExM Extrinsic Research Motivation
 RU Research Utilization

Figure 1. Hypothesized Model No. 2: The Best Fit Model

Table 2

Results of the Calculation of Overall Model Fit Indices of the Hypothesized Model

Models & Fit Criterion	Absolute Fit			Incremental Fit			Parsimonious Fit
	RMR	RMSEA	GFI	CFI	NFI	TLI	χ^2/df
Hypothesized Model 1	.137	.106	.624	.746	.676	.729	2330/694 = 3.36
Hypothesized Model 2	.033	.07	.905	.915	.903	.904	816.93/392 = 2.0
Standard Fit Criterion	Nearing Zero	<.06 to .08	>.90	>.90	>.90	>.90	Ratio of χ^2 to $df \leq 2$

The generated model confirmed the second hypothesis that research utilization is directly influenced by research motivations (extrinsic & intrinsic), which are also caused by teachers’ research beliefs and research attitudes. In Figure 1, the SEM model shows that both research motivation constructs are cause and effect variables. Direct effects on research utilization (RU) are observed from intrinsic research motivation (InM) where $\beta = .54$ and extrinsic research motivation (ExM) where $\beta = .43$. As further shown, 90% of research utilization can be predicted by research motivations. Furthermore, 78% of the teachers’ intrinsic research

motivation (InM) is explained by research beliefs (RB) with $\beta = .39$ and research attitude (RA) where $\beta = .50$. Although ExM is not influenced by the research attitude, it is indirectly affected since RA covaries with RB ($\text{covRB,RA} = .98$). This result implies a linear relationship between teachers' research beliefs and research attitudes, indicating a direct proportion between the two constructs; that is, the more positive the beliefs, the more positive the research attitude.

The figure further shows that about 90% of the changes in RU were caused by these motivation variables. Specifically, the 54% direct effect of intrinsic research motivation on research utilization can be further explained by the teachers' self-report ($M=3.35$, $SD=.59$, high intrinsic motivation) as follows: "I enjoy doing research" ($\beta_{Mi1} = .68$), "research can help me understand the world better" ($\beta_{Mi2} = .72$), "research can help me grow professionally" ($\beta_{Mi4} = .78$), and "I can contribute to the growth of my discipline" ($\beta_{Mi5} = .82$). These responses are reflected in the definition of Deci & Ryan (2000b) of intrinsic motivation as the "inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn." Deci (1975) also said that intrinsically motivated behaviors are based on people's needs to feel competent and self-determined. Thus, teachers' satisfaction in doing and utilizing research can be attributed to their desire to 'explore and learn,' which is a manifestation of their need to feel competent.

Extrinsic motivation bears 43% of research utilization. Teachers had a mean score of 3.22 (high extrinsic motivation), $SD=.61$. The SEM in Figure 1 shows that the teachers' motive for research utilization was driven by external sources as reflected by the following responses: "I am inspired by my peers to do research" ($\beta_{Me1} = .81$), "doing research is highly regarded and always supported by the university" ($\beta_{Me2} = .77$), "the present University structure inspires me to do research" ($\beta_{Me3} = .82$), and "I am motivated to conduct research for promotion" ($\beta_{Me4} = .68$). SDT also recognizes that many activities that people perform in their daily lives are not self-regulated (Deci & Ryan, 2000a). Rewards such as promotion and social pressures like peers or university requirements are extrinsic motivators. For example, complying with research requirements given the university standards may not be an inherently interesting activity to all academics, but it is essentially necessary in maintaining one's professional status in the university. Proponents of SDT identified types of extrinsic motivation, some of which represent suboptimal forms of motivation and others are linked to positive outcomes.

The model further shows that 78% of the teachers' intrinsic research motivation was caused by research belief ($\beta = .39$) and research attitude ($\beta = .50$).

Descriptive statistics on research beliefs ($M=3.48$, $SD = .48$, positive) included positive views on the following indicators: “research is about applying methods in the classroom” ($\beta=.64$), “...is about combining methods of data collection” ($\beta=.76$), “... improves curriculum ($\beta=.76$),” and “...findings of research can be applied in the classroom” ($\beta=.68$). Teachers’ research beliefs are covariants of research attitude, which implies a linear relationship; that is, the more positive the research beliefs, the more positive the research attitude.

Teachers had a response mean of $M=3.54$ with $SD=.54$ on research attitude. Prominent responses included “teacher research can help me make informed decisions that lead to positive changes in my teaching” ($\beta=.84$), “doing research can help me respond to students’ needs” ($\beta=.86$), “teacher research can help me pursue topics that are relevant to my teaching” ($\beta=.88$), teacher research can increase student achievement in class” ($\beta=.81$) and “...can help me pursue pedagogical practices that interest me” ($\beta=.80$). Positive outlook about teacher research can motivate teachers to do and utilize research owing to individuals’ “inherent tendency to seek out novelty and challenges, to extend and exercise their capacities, to explore, and to learn” (Deci & Ryan, 2000b). The theory of reasoned action also suggests that looking into teachers’ beliefs about and attitudes toward education research may help in further understanding teachers’ behavioral intentions and actions related to education research and the use of research findings to improve their pedagogical practices (Ajzen and Fishbein, 1975).

On the other hand, the factor loadings of research utilization variables were all observed to be significant after three items were trimmed. It is worth noting that the following responses that indicated utilization of research findings to improve pedagogy are supported by Griffith’s (2004) research-led teaching and Tillman’s (2013) individual factors: “I utilize research results in my discipline to improve pedagogy” ($\beta=.78$), “...take extra effort to search recent studies to enhance my lessons” ($\beta =.79$), “I am confident in using research results” ($\beta=.78$), “my teaching is structured around subject content with an emphasis on understanding research findings” ($\beta=.71$) and “...use results of student researches in my lesson” ($\beta=.74$). Contextual factors and communication factors of Tillman (2013) were also expressed in these statements, respectively: “...encouraged to utilize research results because of our access to the internet, research databases, or library” ($\beta =.80$) and “research results in the university are widely disseminated” ($\beta=.67$). The findings indicate that generally, the teachers, whether they have conducted research or not, utilize research in teaching, although in a limited manner.

The confirmed hypothesized model stating that research utilization is directly influenced by research motivations (extrinsic & intrinsic), which are also caused by teachers' research beliefs and research attitude, is explained by the Theory of Reasoned Action (Fishbein & Ajzen, 1975). The authors postulated that people's beliefs determine their attitudes toward an object. Earlier, the theory further asserted that the beliefs and attitudes of individuals gravitate toward behavioral intentions or actions. In this study, the action refers to research utilization. Studies contested this argument because one's needs prior to engaging in a certain action are overlooked (Sniehotta, 2009; Sussman & Gifford, 2019). Deci and Ryan (2008), in an attempt to explain motivation, theorized that there is in every person the innate needs to promote psychological health and well-being. That is, teachers' actions or research utilization is dependent upon their prior needs and whether doing so is of advantage to their psychological health and well-being.

CONCLUSIONS

The model explains that teachers' research beliefs and research attitudes do not directly cause teachers to utilize research or to conduct research; rather, it is research motivation that causes them to utilize research. However, the findings lead to a question of whether encouraging teachers to utilize research to enhance pedagogy helps to meet their innate psychological needs for competence, autonomy, and relatedness. The university may need to review its present structure of motivating teachers to conduct and utilize research to improve pedagogy. External structures to motivate teachers to engage in research and utilize research findings need to be studied because research beliefs and attitudes cause research motivation. One central point of this study is the importance of instilling among teachers highly positive research beliefs and attitudes to stimulate strongly their desire to explore and learn (intrinsic) and to comply with research requirements (extrinsic) for maintaining their professional status in the university.

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