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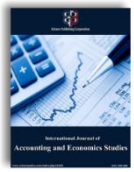

The Impact of Perceived Competency on Motivation and Innovative Working Behavior: A Case Study of Lecturers in Vietnam

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Abstract

This study aims to examine the influence of perceived competence on the motivation and innovative work behavior of university lecturers in Vietnam. A mixed-methods research approach was employed, incorporating focus group discussions to refine the scale to suit the context and structural equation modeling (SEM) analysis to test the hypotheses. Data were collected from 459 university lecturers through a convenience sampling method. The results showed that all hypotheses were statistically significant. Specifically, perceived competence (PEC) directly and indirectly affects innovative work behavior (IWB) through two mediating variables: intrinsic motivation (INM) and extrinsic motivation (EXM). The study provides empirical evidence on the mediating role of motivation and offers managerial implications for educational leaders to promote innovation in the university environment in Vietnam, thereby improving the effectiveness of teaching, research and knowledge transfer in the context of global integration.

Keywords: *Innovative Work Behavior; Motivation; Perceived Competence; Vietnam.*

1. Introduction

In the era of globalization and rapidly advancing technology, higher education is facing numerous challenges and the need for continuous innovation. To enhance the quality of teaching and research, lecturers must be creative and constantly update effective teaching methods. One of the important factors that can influence creativity and innovation in the work of lecturers is perceived competence, which is not only a personal feeling about their ability to perform tasks but also strongly influences their motivation and innovative work behaviour (Lau & Roeser, 2002; Bandura, 1997).

Research has shown that positive perceptions of competence can lead to higher motivation, which in turn promotes innovative behavior at work (Bandura, 1997). University lecturers with high awareness of their competence tend to engage in learning and personal development activities, thereby contributing to improving the quality of education (Deci & Ryan, 2000). Conversely, the lecturers who lack confidence in their abilities may fall into a state of demotivation, leading to limited creativity and hindering the development of personal thinking (Ryan & Deci, 2000).

Although there have been many studies on work motivation and innovative behavior, there are still many gaps in understanding the relationship between perceived competence and these factors, especially in the context of higher education. Many previous studies have focused mainly on individual or environmental factors without fully considering the role of lecturers' perceived competence in the context of universities (Deci & Ryan, 2000; Bandura, 1997). This creates a research gap that needs to be filled, especially in understanding how perceived competence can influence lecturers' motivation and innovative behavior. In addition, self-determination theory (SDT) is used as a background theory to explain the relationships between the concepts in the model in this study (Weiner, 1990). Unlike most traditional theories that consider motivation as a unitary concept, SDT divides motivation into autonomous and controlled motivation (Deci & Ryan, 2008).

This study will use the survey method to collect data from lecturers at universities in Vietnam to analyze the relationship between perceived competence, motivation, and innovative work behavior. The research results not only help clarify the relationships between variables in the model but also provide practical recommendations for university administrators in developing training programs and supporting lecturers. Through this, the study hopes to contribute to the academic literature on motivation and innovative behavior in education, and also provide important insights for educational administrators in building a positive working environment for lecturers. From there, the study will clarify the role of perceived competence in promoting creativity and innovation in the field of higher education.

2. Literature review

2.1. Theoretical background

This study applies Self-Determination Theory (SDT) to explain the relationship between the research concepts. Unlike traditional motivational theories that view motivation as a single concept, SDT considers motivation to be a multidimensional construct, developed through six novels: (1) Cognitive Evaluation Theory (CET), (2) Organizational Integration Theory (OIT), (3) Causal Orientation Theory (COT), (4) Basic Psychological Needs Theory (BPNT), (5) Goal Content Theory (GCT), and (6) Relationship Motivation Theory (RMT) (Adams et al., 2017). CET emphasizes the impact of social context; an environment that supports autonomy will increase intrinsic motivation, and vice versa will weaken it (Lepper & Greene, 1975). OIT explains the process of internalization, which is the transformation of external values and beliefs into intrinsic motivation (Ryan et al., 1985). COT focuses on individual differences in motivational styles, with three orientations: autonomous, controlled, and passive (Deci & Ryan, 1985a). BPNT identifies three innate psychological needs: competence, autonomy, and relatedness, as the foundation of motivation (Deci & Ryan, 1985a). GCT classifies goals as intrinsic (e.g., affection, self-actualization) and extrinsic (e.g., money, prestige), with intrinsic goals better satisfying psychological needs (Ryan et al., 1999). RMT explains how intimate relationships become stronger through autonomy support (Ryan & Deci, 2017). The application of SDT in this study helps explain how perceived competence affects motivation, thereby affecting the innovative work behavior of lecturers.

2.2. Concepts

2.2.1. Perceived competence (PEC)

In SDT, the need for competence refers to feeling confident and effective in one's activities (Ryan & Deci, 2002). The need for competence is associated with a sense of being capable and effective at work. Competence is associated with a sense of mastery, and the one can succeed and grow. The need for competence is best met in well-structured environments that provide challenges, positive feedback, and opportunities for growth. Furthermore, competence represents a sense of perceived competence rather than an objective measure of ability. The more competent individuals perceive themselves to be in an activity, the more autonomously motivated they will be (Deci & Ryan, 1985b).

For university lecturers, the main competency requirements are (1) Extensive professional knowledge of the field they teach, updated with the latest advances in that field; (2) Teaching competency, that lecturers must have effective teaching skills, the ability to convey knowledge clearly, logically and interestingly to students; (3) Scientific research competency: University lecturers often have to participate in scientific research activities, write scientific articles, participate in specialized conferences and seminars; In addition, (4) lecturers need to have additional management and organizational competencies.

2.2.2. Motivation (MOT)

Unlike traditional motivational theories, self-determination theory (SDT) presents a different approach, explaining the impact of motivation based on internalization with a multidimensional approach to human motivation, in which motivation is driven by a series of distinct regulatory styles (Howard et al., 2020).

According to Ryan & Deci (2000), in addition to the state of non-motivation (amotivation) and intrinsic motivation (INM), extrinsic motivation (EXM) is divided into 4 levels according to increasing levels of internalization, including: external regulation, introjected regulation, identified regulation, and integrated regulation.

At the left end of the motivation axis is "amotivation," a state of lacking intention to act. In this state, individuals either do nothing at all or act passively. Individuals feel that they cannot achieve the desired outcome because of a lack of intention (Rotter, 1966) or a lack of perceived ability (Deci, 1975) or because they do not value the activity or its outcomes (Ryan, 1995).

At the right end of the motivation axis is intrinsic motivation, which is when individuals are in a state of performing an activity because of innate interest and satisfaction (Ryan et al., 1995). Intrinsic motivation indicates that individuals engage in an activity for its own sake and for the inherent satisfaction of performing the activity (Deci & Ryan, 1985b). Intrinsic motivation typically stems from people's interactions with the activity that they find interesting, not boring (Ryan & Deci, 2002). In other words, intrinsic motivation drives a variety of behaviors, and the rewards from these behaviors satisfy the needs for autonomy, competence, and relatedness (Deci & Ryan, 1985b).

Extrinsically motivated behaviors can vary significantly in their relative autonomy through four types of regulation (Gagné et al., 2010). Some extrinsically motivated actions are clearly pressured or coerced by external forces called external regulators, which include external pressure (External regulation-Social) and external regulation-Material (Gagné et al., 2015), or introjected regulation. In contrast, the remaining cognitively motivated actions are internally motivated, identified regulation, and integrative regulation, which are grouped together under the name of identified regulation (Gagné et al., 2015).

2.2.3. Innovative work behaviour (IWB)

According to Amabile (1983), creative behavior involves the generation of new ideas or creative products that have value in a particular social context. The author emphasizes three important factors that promote creativity: specialized knowledge, creative thinking skills, and intrinsic motivation.

In organizations, creativity is simply described as the process of "generating new ideas to innovate products, services, and processes to better achieve organizational goals" (Amabile et al., 2005). Meanwhile, innovative work behavior (IWB) is defined as the intentional behavior of individuals to generate or implement novel and useful ideas that bring tangible benefits to the individual, group, or organization. This definition suggests that IWB is broader and more than creativity (creativity is the generation of innovative ideas), although creativity is a necessary part of IWB, especially in the early stages, to generate unique and useful ideas (Scott & Bruce, 1994).

Therefore, there are many different views on creative work. Some authors view a creative worker from a behavioral perspective, while others evaluate an individual based on output or on global personality traits (De Jong & Den Hartog, 2010). According to the global personality trait perspective, it is quite consistent with the measurement in the sociological field. This perspective assumes that this trait is an inherent characteristic of the individual, it is innate and relatively stable in the individual's perception and behavior. It is these inherent natural characteristics that make one person different from another (Goldsmith & Foxall, 2003).

Recent developments in post-pandemic education have highlighted the growing importance of digital transformation, which significantly affects teachers' perceived competence and motivation (Zhao & Watterston, 2023). Many studies have shown that teachers who are proficient in digital pedagogy are more likely to perceive themselves as competent, maintain higher motivation, and engage in innovative work behaviors, and online environments are an example. Although this study adopts SDT as the main framework, it is also necessary to place SDT in relation to other motivational theories. SDT emphasizes the satisfaction of three basic psychological needs as the core drivers of autonomous motivation (Deci & Ryan, 2012). This perspective shares some conceptual underpinnings with the Needs-Based Theory of Motivation, particularly Maslow's hierarchy of needs, which also considers competence (self-esteem) and interpersonal relationships (belongingness) as essential to motivation, but differs in focusing more on the qualitative nature of motivation rather than a fixed hierarchy. In contrast, Vroom's (1964) Expectancy Theory frames motivation as a rational process in which individuals evaluate the likelihood that effort will lead to performance and performance will lead to valued outcomes. While Expectancy Theory focuses on explaining perceived cost-benefit pricing, SDT and needs-based approaches emphasize psychological fulfillment as the intrinsic motivator of behavior. Integrating these perspectives may provide a deeper understanding of how both cognitive evaluation and need satisfaction jointly shape behavior.

2.3. Linkage among research concepts

BPNT has identified innate psychological nutrients essential to both psychological and physical health, with the innate needs for competence, autonomy, and relatedness serving as the foundation of human motivation (Deci & Ryan, 1985a), even for those who do not yet appreciate these needs (Vansteenkiste et al., 2010). Key findings of BPNT suggest that environments and contexts where psychological needs are satisfied are associated with greater well-being and better mental health (Ryan et al., 2010). BPNT suggests that the satisfaction of three innate psychological needs is critical to motivation, especially autonomous motivation (Ryan & Deci, 2000). In addition, according to SDT, individuals will have autonomous motivation when their innate needs for autonomy are satisfied (Deci & Ryan, 2000; Ryan & Deci, 2002). In addition, Gagné & Deci (2005) also affirmed that autonomy is the basis leading to intrinsic motivation. Recent research by Kruse et al. (2024); Nguyen & Pham (2023) in physical education found that when teachers felt perceived competence, their intrinsic motivation increased.

From the above evidence, it is affirmed that the lecturer's perceived competence will lead to the promotion of work motivation. Therefore, we can establish the following hypotheses:

H1a+: Perceived competence has a positive impact on the intrinsic work motivation of university lecturers.

H1b+: Perceived competence has a positive impact on the extrinsic work motivation of university lecturers.

COT proposes three personality orientations toward different sources of influence and behaviors according to these sources, specifying three types of orientations: (1) autonomous, (2) controlled, or (3) passive (Deci & Ryan, 1985a). Empirical studies have shown that autonomous motivation is associated with better performance on relatively complex tasks, while it is not different from controlled motivation on routine or simple tasks (McGraw & McCullers, 1979).

In addition, Gagné & Deci (2005) applied SDT to demonstrate the relationship between autonomous motivation and performance, such as creative work, happiness, and greater job satisfaction. In a study by Amabile (1983), it was affirmed that the way to promote creative work behavior is to promote autonomous motivation. In the study of Suzana et al. (2024) in the context of COVID-19 in businesses, it was concluded that intrinsic motivation significantly affects employees' innovative behavior. Awan & Ahmad's (2024) study also highlighted the significant mediating role of both extrinsic and intrinsic motivation in the relationship between work environment and innovative behavior among faculty members. The study emphasized the importance of motivation in promoting their intention to engage in innovative work behavior.

From there, we can establish the following hypothesis:

H2a+: Intrinsic motivation has a positive impact on the innovative work behavior of university lecturers.

H2b+: Extrinsic motivation has a positive impact on the innovative work behavior of university lecturers.

SDT theory posits a causal chain: autonomy leads to changes in perceived competence, which in turn leads to changes in intrinsic motivation. In other words, the actor feels both autonomous and competent to be motivated from within. Previous research by Ryan & Deci (1985b) has shown that people who demonstrate higher self-efficacy will affect related behaviors such as academic achievement, optimism, and innovative behavior. Similarly, the study by Sudirman et al. (2022) in the field of education during the COVID-19 pandemic also showed the relationship between self-efficacy and innovative behavior.

From the above reasons, the following hypothesis is established:

H3+: Perceived competence to perform work has a positive impact on the innovative work behavior of university lecturers.

From the proposed hypotheses, the conceptual model is established as follows (see fig.1). Figure 1 outlines the theoretical framework of the study. It illustrates the relationship between the key concepts in the study, namely Perceived Competence (PEC), Intrinsic Motivation (INM), Extrinsic Motivation (EXM), and Innovative Work Behavior (IWB). The figure depicts both direct and indirect effects, where PEC directly influences IWB, and also through the two mediators INM and EXM. The paths in the model (H1a–H3) hypothesize that PEC enhances both types of motivation, thereby promoting IWB.

3. Research methodology

3.1. Research process

Two phases comprised the research: a pilot study and a main survey.

1) The pilot study included a qualitative study and a quantitative survey. The pilot qualitative one was undertaken using a focus group with ten lecturers at LAU (Long An University of Economics and Industry). The purpose of this study was to modify the measures of the constructs in the model.
2) The quantitative pilot one was carried out through face-to-face interviews with one hundred and eighteen lecturers from HUIT (Ho Chi Minh City University of Industry and Trade), TDM (Thu Dau Mot University), and TGU (Tien Giang University) to refine the measurement scales. Cronbach's alpha reliability and EFA were employed to conduct a preliminary evaluation of the scales.
3) The main survey was also conducted through in-person interviews. It involved a convenience sample of 459 lecturers from various universities, including HUIT, UFM (University of Finance – Marketing), TGU, HOU (Ho Chi Minh City Open University), LAU, and TDM. The purpose of this main one was to validate the measurement instruments and test the structural model. First, CFA (confirmatory

factor analysis) was employed to assess the measurement scales. Subsequently, the conceptual model and hypotheses were tested using structural equation modeling (SEM) with AMOS 24.

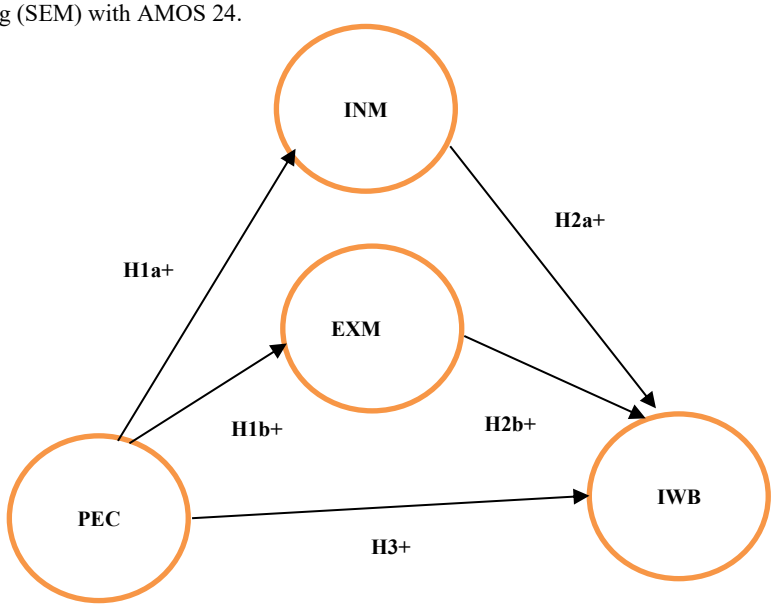

Fig. 1: Schematic Prepresentation of the Conceptual Model.

Authors' own research

3.2. Measurement

All constructs used established and validated scales with minor modifications to reflect the research context, including PEC (Perceived Competence) and INM (Intrinsic Motivation) were first-order constructs; EXM (Extrinsic Motivation) and IWB (Innovative Work Behaviour) were second-order constructs. PEC was assessed using four items adapted from Deci et al. (2001). INM was measured by three items adopted from Gagné et al. (2015). EXM consisted of three components: identified regulation (IDR), measured by three items; introjected regulation (INR), measured by three items; and extrinsic regulation (EXR), measured by six items. All three components together were assessed with twelve items, also adapted from Gagné et al. (2015). Finally, IWB comprised two components: willingness to try (WTT) and creative originality (CRO), both measured by ten items adopted from Goldsmith (2011).

Although self-assessment has been criticized for being less accurate compared to objective criterion measures, it is valuable when anonymity is guaranteed. All items were measured by a 5-point Likert scale (1=strongly disagree, 2=disagree, 3= somewhat disagree or agree, 4=agree, 5=strongly agree). All the measures were initially prepared in English and then translated into Vietnamese by an academic fluent in both languages. This procedure was performed because not all lecturers are well-versed in English. Then, Back-translation ensured the equivalence of meaning. In qualitative research (focus groups), in addition to adjusting words and sentences to suit the research context, experts also consider the appropriateness of each item.

4. Results and discussion

4.1. Qualitative research results

Results of group discussion with ten experts who are university lecturers. The purpose of this discussion is to adapt the scale (adjust the wording, add content of missing items) to suit the research context. The results of the adjusted items are listed in the appendix.

4.2. Quantitative research results

4.2.1. Cronbach's alpha analysis

As previously mentioned, the measures were refined through Cronbach's alpha reliability analysis and Exploratory Factor Analysis (EFA), based on data collected from 118 university lecturers in the pilot study. The results indicated that all scales used in the study met the criteria for Cronbach's alpha reliability. However, one item from the Willingness to Try (WTT) scale and one item from the Creative Originality (CRO) scale were removed due to Item-Total Correlations below 0.3. Specifically, Cronbach's alphas of the scales measuring PEC, INM, IDR, INR, EXR, WTT, and CRO were 0.801, 0.811, 0.799, 0.844, 0.815, 0.822, and 0.828, respectively, and item-total correlations were favorable (>0.3) (Nunnally & Bernstein, 1994) (Table 1).

Table 1: Cronbach's Alpha Analysis

No	Latent Variable		Cronbach's Alpha Coefficient	Number of Items
1	PEC		.801	4
2	INM		.811	3
3		IDR	.799	3
4	EXM	INR	.844	3
5		EXR	.815	6
6	IWB	WWT	.822	4
7		CRO	.828	4

4.2.2. EFA analysis

Simultaneous EFA for seven latent variables (principal components with varimax rotation) attracted seven factors with 65.86% percent variance extracted at eigenvalue=1.285. The results of the preliminary assessment indicated that all the scales used in this study satisfied the requirements for reliability and validity. Accordingly, these measures were used in the main survey (Table 2).

Table 2: Analysis of Rotated Component Matrix

Items	Component 1	2	3	4	5	6	7
idr1					.795		
idr2					.753		
idr3					.831		
exr1	.823						
exr2	.752						
exr3	.664						
exr4	.792						
exr5	.714						
exr6	.696						
inm1						.766	
inm2						.767	
inm3						.773	
inr1							.827
inr2							.735
inr3							.769
pec1			.743				
pec2			.755				
pec3			.715				
pec4			.759				
wtt1				.788			
wtt2				.794			
wtt3				.738			
wtt4				.726			
cro1		.806					
cro2		.793					
cro3		.760					
cro4		.765					
KMO: .869							
Sig: .000							

4.2.3. Measurement validation

The primary quantitative analysis involved sending out 500 questionnaires for the survey, with 459 valid responses received, resulting in a 91.8% response rate. During the analysis, the CFA was utilised to assess the saturated model (Fig.2), showing a strong alignment with the data: $\chi 2[303] = 484.114$ ($p=.000$), $Cmin/df = 1.598 < 3$ (Carmines et al., 1981), GFI = 0.929, CFI = 0.962, TLI = 0.956, and RMSEA = 0.036 (fig.2). All indicator factor loadings exceed 0.5 and are statistically significant (Gerbing et al., 1988). The correlation coefficients between the constructs are all significantly different from 1. Therefore, the criteria for discriminant validity are met (with all AVE values greater than MSV, as shown in Table 3). Additionally, the composite reliability (CR) meets the acceptable threshold (all CR values above 0.5), and the average variance extracted (AVE) also fulfills the required standard (all AVE values above 0.5) (Nguyen et al., 2011).

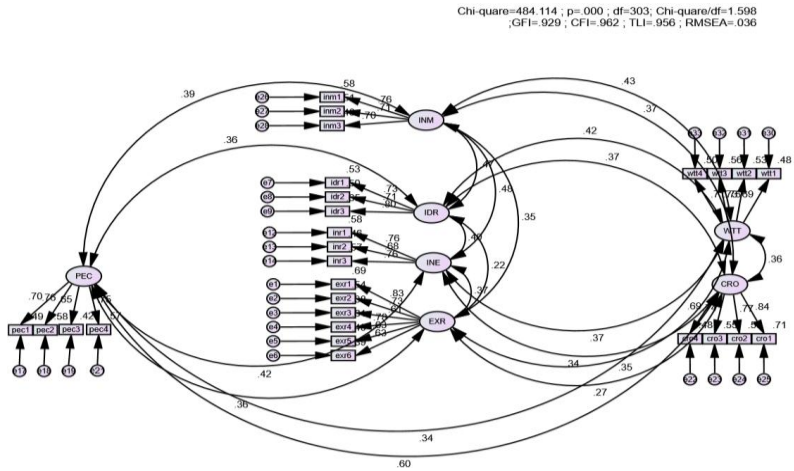

Fig. 2: The saturated CFA model.

Source: Authors' own research.

Figure 2 presents the results of Confirmatory Factor Analysis (CFA), a statistical method used to test the validity of the scales in the research model. CFA determines whether the measurement factors are consistent with the theoretical hypotheses about the structure of the latent variables, and also assesses the convergent and discriminant validity of the scales. In Figure 2, the factor loadings of the measurement factors are all greater than 0.50, which demonstrates convergent validity (Kline, 2015), that is, the measurement indicators all accurately reflect the theoretical concepts they are intended to measure. In addition, the model fit indices (GFI = 0.929, CFI = 0.962, TLI = 0.956,

RMSEA = 0.036) all exceed the acceptance criteria, demonstrating that the structural model fits the collected data well. This confirms that the scale and theoretical structure of the study are valid and can be used in subsequent analyses.

Table 3: Model Validity Measures

	CR	AVE	MSV	MaxR(H)	EXR	IDR	INE	PEC	CRO	INM	WTT
EXR	0.856	0.502	0.135	0.873	0.708						
IDR	0.792	0.560	0.220	0.799	0.223***	0.748					
INE	0.776	0.536	0.230	0.780	0.367***	0.403***	0.732				
PEC	0.810	0.516	0.364	0.815	0.356***	0.364***	0.421***	0.718			
CRO	0.848	0.583	0.364	0.859	0.266***	0.375***	0.343***	0.603***	0.764		
INM	0.766	0.522	0.230	0.769	0.346***	0.469***	0.480***	0.387***	0.368***	0.723	
WTT	0.811	0.518	0.186	0.813	0.346***	0.416***	0.370***	0.339***	0.356***	0.431***	0.720

4.2.4. SEM Analysis Results

Structural Equation Modeling (SEM) analysis was employed to test the theoretical model and research hypotheses (refer to fig.3 and Table 4). The results from the standardized SEM show that all five hypotheses are statistically significant. In this study, the Sobel test is used to assess the indirect effect. This is a test proposed by the statistician Michael Edward Sobel, in which the value of the Sobel coefficient is calculated by the formula:

$$Sobel = \frac{bA * bB}{\sqrt{bB^2 * seA^2 + bA^2 * seB^2}} = \frac{tA * tB}{\sqrt{tA^2 + tB^2}}$$

$t_{H1a} + t_{H2a} = 7.076^2 * 2.805^2 = 57.938$ => SQRT(57.938)=7.612; Sobel=$T_{value\ (H1a,H2a)}$= 19.848/ 7.612=2.608. Significance level α=5%, then Zα/2=(0.5-0.025= 0.475); Zα/2=1.96, Tvalue(H1a, H2a) > Zα/2, so INM is a positive mediator between PEC and IWB. By a similar practice, it can be seen that EXM is also a positive mediator between PEC and IWB.

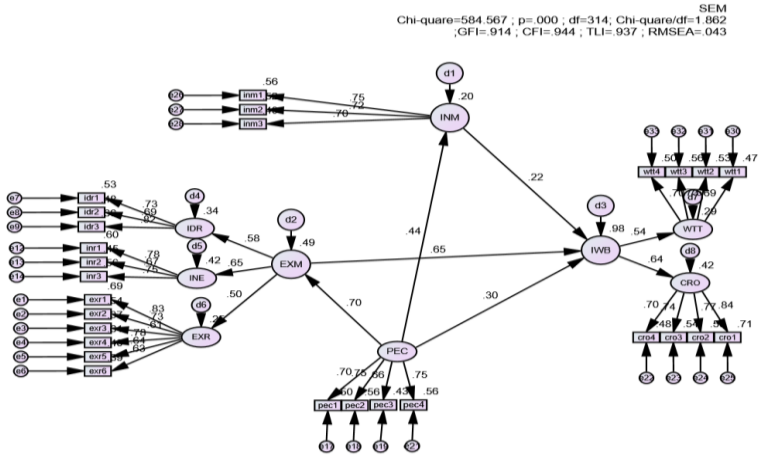

Fig. 3: SEM Analysis.

Figure 3 Not Only Presents the SEM Results But Also Shows the Standardized Path Coefficients of the Relationships between Variables in the The standardized path coefficients reflect the degree of influence of one variable on another variable in the model, with values ranging from -1 to +1. A standardized path coefficient close to +1 or -1 indicates a strong relationship, while a value close to 0 indicates a weak relationship. Specifically, in Figure 3, the standardized path coefficients between the variables are as follows:
PEC → INM (H1a): The standardized path coefficient is 0.444, meaning that PEC has a moderate positive impact on INM.
PEC → EXM (H1b): The standardized path coefficient is 0.702, indicating that PEC has a strong impact on EXM.
INM → IWB (H2a): The standardized impact coefficient is 0.217, indicating that INM has a moderate positive effect on IWB.
EXM → IWB (H2b): The standardized impact coefficient is 0.651, indicating that Extrinsic Motivation EXM has a strong effect on IWB.
PEC → IWB (H3): The standardized impact coefficient is 0.301, indicating that PEC has a direct effect on IWB, although the magnitude of this effect is not as strong as the indirect effects through INM and EXM.
The standardized impact coefficient helps assess the importance of each relationship in the model. For example, the relationship between PEC and EXM has a high standardized coefficient (0.702), which indicates that PEC has a large influence on EXM, while the impact of INM on IWB is weaker (0.217), but still significant. The model fit indices in SEM are also shown in Figure 3 (Cmin/df, CFI, TLI, RMSEA), which shows that the model fits the actual data well, supporting the conclusion that the relationships in the model are reliable.

Table 4: Structural Path Analysis (Standardized)

				Standardized Estimate	S.E.	C.R.	P
H1a	INM	<---	PEC	.444	.064	7.076	***
H1b	EXM	<---	PEC	.702	.051	7.183	***
H2a	IWB	<---	INM	.217	.041	2.805	.005
H2b	IWB	<---	EXM	.651	.188	3.612	***
H3	IWB	<---	PEC	.301	.078	2.084	.037

5. Discussion

This study makes important contributions to understanding the relationship between perceived competence (PEC), intrinsic motivation (INM), extrinsic motivation (EXM), and innovative work behavior (IWB) of university lecturers in Vietnam. The research method applied

is a mixed method with high suitability. The use of focus group discussion to adjust the scale helps ensure the suitability of variables in the research context (Hair et al., 2017). At the same time, the application of structural equation modeling (SEM) analysis is a powerful approach to test hypotheses and clarify the relationship between research variables (Kline, 2015). However, the selection of a convenient sample may reduce the generalizability of the results.

The relationship between variables in the study results confirms that perceptions of competence (PEC) have a significant influence on innovative work behavior (IWB), both directly and indirectly. This is consistent with Self-Determination Theory (SDT), which suggests that when individuals feel competent, they will have a stronger motivation to engage in creative activities (Deci & Ryan, 2000). This is an important finding, especially in the context of higher education in Vietnam, where lecturers play an important role in innovating teaching and research methods.

Motivation was identified as a mediating variable between perceived competence and innovative work behavior. The results showed that perceived competence not only directly influenced innovative behavior but also indirectly through motivation. This highlights the importance of creating an encouraging and supportive environment for teachers to help them develop their perceptions of their competence (Bandura, 1997).

The findings of this study are not only relevant to university-level governance but also important for both economics and policy. Specifically, from an economic perspective, innovative behavior (IWB) of lecturers is viewed as a form of human capital enhancement (Becker, 1993), directly contributing to improving organizational productivity and the long-term competitiveness of the economy as a whole. In the context of this study, innovation in teaching, program design, and research activities helps improve the quality of student outcomes and the ability to adapt to technological change. A workforce with these competencies will contribute to improving productivity and supporting Vietnam's economic growth goals (Hanushek & Woessmann, 2020).

At the institutional level, highly competent and motivated faculty will improve the performance of the university through improved research outcomes, improved student learning outcomes, and enhanced knowledge transfer to businesses and society. This is also consistent with the goals of Vietnamese universities to improve their rankings, expand international cooperation, and form innovative ecosystems associated with the university. Once innovation becomes a central goal in their development strategy, universities can reduce resource waste and attract more resources from both the public and private sectors.

In terms of policy, these research results reinforce the policy directions in Resolution 29-NQ/TW on fundamental and comprehensive innovation in education and training, emphasizing improving teaching quality, encouraging innovation, and linking education to the needs of socio-economic development. The recognition that competency awareness strongly influences innovation through motivation is a practical basis for policymakers to develop training programs, incentive mechanisms, and working environments that support faculty autonomy. These solutions will further promote Vietnamese universities to become centers for research, innovation, and high-quality human resource development, in line with the Vietnam Education Development Strategy 2021–2030.

6. Conclusions and implications

5.1. Conclusions

The study uses SDT theory as the analytical framework and as the basis for establishing the relationship between the concepts in the model. A mixed method (qualitative and quantitative) is used in this study. Qualitative research (focus group) adapts the scale to the research context, while quantitative research aims to assess the reliability of the scale and test the hypotheses proposed in the conceptual model. The results show that, in the university research context, motivation is a partial mediator in the relationship between perceived competence and innovative work behavior.

5.2. Implications

Based on the research results, universities in Vietnam should focus on supporting lecturers to develop self-awareness. This not only helps increase motivation but also promotes innovative behavior, thereby improving the quality of education and research in universities. Specifically as follows:

1) Raising awareness of faculty competence: Universities should provide professional training programs, workshops, and development opportunities to help faculty feel more confident in their own competence (Ryan & Deci, 2017).
2) Promoting work motivation: Creating a work environment that supports, recognizes, and rewards creative efforts will help increase faculty motivation (Gagné & Deci, 2005).
3) Encouraging innovative behavior: Universities can establish policies and mechanisms to support faculty in implementing and applying innovative ideas in teaching and research (Janssen, 2000).

5.3. Limitations and future research directions

Although this study provides important insights into the relationship between PEC, INM, EXM, and IWB, some limitations need to be acknowledged as follows:

Convenience Sampling Limitations: The convenience sampling method used in this study may lead to limitations in the generalization of the results. Since the sample was selected from only lecturers in a few universities in Vietnam (Etikan et al., 2016), this may not fully reflect the diversity of organizational culture, resources, and educational innovation policies in other regions or countries. Therefore, the results of the study can only be applied to this context and target group and cannot be guaranteed to generalized to other populations or other countries.

Future research directions to test generalizability: The results of the study are limited in generalization due to the non-random nature of the sample. To enhance generalizability, future studies could apply probability sampling or extend the scope of the study to other universities in different regions and countries. This would help to examine whether the relationships between PEC, INM, EXM, and IWB can be applied to different contexts and target groups. Additionally, longitudinal studies would help to clarify the causal relationships between the factors in the model.

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Appendix

Latent variable		Items
Intrinsic Motivation		Because I have fun doing my job. Because what I do in my work is exciting. Because the work I do is interesting.
Extrinsic Motivation Gagné & cộng sự (2015)	Identification regulation	Because I personally consider it important to put efforts in this job. Because putting efforts in this job aligns with my personal values. Because putting efforts in this job has personal significance to me.
	Introjection regulation	Because I personally consider it important to put efforts in this job. Because putting efforts in this job aligns with my personal values. Because putting efforts in this job has personal significance to me.
	Extrinsic regulation-Material	Because others will reward me financially only if I put enough effort in my job (e.g., employer, supervisor …). Because others offer me greater job security if I put enough effort in my job (e.g., employer, supervisor …). Because I risk losing my job if I don't put enough effort in it.
	Extrinsic regulation- social	To get others' approval (e.g., supervisor, colleagues, family, clients …). Because others will respect me more (e.g., supervisor, colleagues, family, clients …). To avoid being criticized by others (e.g., supervisor, colleagues, family, clients …).
IWB Goldsmith (2011)	Willing to try	I am reluctant about adopting new ways of doing things until I see them working for people around me. I rarely trust new ideas until I can see whether the vast majority of people around me accept them. I am generally cautious about accepting new ideas. I often find myself skeptical of new ideas.
	Creative original	I consider myself to be creative and original in my thinking and behavior. I am an inventive kind of person. I seek out new ways to do things. I enjoy trying new ideas.
Competence Deci & cộng sự, (2001)		I do feel very competent when I am at work. People at work tell me I am good at what I do. I have been able to learn interesting new skills on my job. Most days I feel a sense of accomplishment from working.