



## Research Article

# Advanced Practice Nurses' Organization Commitment: Impact of Job Environment, Job Satisfaction, and Person-Organization Fit<sup>☆</sup>



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## SUMMARY

**Purpose:** The demand for advanced practice nurses (APNs) has increased globally due to a shortage of physicians and an increased demand for high-quality healthcare. Research is needed on the enhancement of advanced practice nurses' organization commitment. Organization commitment (OC) directly impacts the retention of APNs. This study aims to identify the key factors affecting the OC of advanced practice nurses.

**Method:** A cross-sectional survey was conducted at the largest hospital in South Korea. A total of 189 APNs answered survey questions. A partial least squares-structural equation modeling method was employed to analyze the survey responses.

**Results:** A pay scale of APNs is positively associated with person-organization fit (POF). However, the effect of job location and computer self-efficacy on POF is not significant. Job satisfaction plays a salient direct role in supervision and POF. Job satisfaction is also a significant moderator in the relationship between supervision and POF. POF is significantly associated with both OC and supervision. Supervision has a positive effect on organization commitment.

**Conclusions:** Pay scale, job satisfaction, supervision, and POF are significant factors affecting organization commitment. Establishing an intra-organization entity, such as APN steering committee, to ensure mutual consensus and transparent communication between administrators and APNs would enhance POF, the rating of supervision, and organization commitment.

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## Introduction

Advanced practice nurses (APNs) are registered nurses working as “nurse practitioners, clinical nurse specialists, nurse anesthetists, and nurse midwives” [1]. They are “registered nurses who have

acquired the expert knowledge base, complex decision-making skills, and clinical competencies needed for expanded practice, the characteristics of which are shaped by the context and/or country in which she/he is credentialed to practice” [2]. The demand for APNs has increased globally [3]. There are two major reasons. One is a shortage of physicians. The other is the need to deliver quality healthcare at lower medical costs. In many countries, APNs perform primary physician duties and/or work alongside physicians as full team members. As a strong force contributing to increased access to quality healthcare at lower costs [4], APNs have been described as hidden but essential healthcare workers [2,5].

APNs, however, encounter barriers in many countries. Barriers include lack of autonomy, professional under-recognition, lack of understanding of their unique role, and lack of support from administrations and from other clinicians [6]. These barriers can

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prevent APNs from fulfilling their responsibilities and fully integrating themselves within the healthcare system. There is much work to be done to utilize APNs to the fullest extent possible, but there has been little research on the improvement of the work conditions for APNs and the efficient management and retention of APNs. The relatively recent emergence of APNs in healthcare systems and the relatively small number of APNs in the general nurse population contribute to the scant research on them. Given the crisis in healthcare, however, the demand for APNs has increased and will continue to increase. The retention of APNs and the enhancement of their commitment to their profession and organization have thus become crucial global topics in healthcare management.

The current study focuses on the organization commitment (OC) of APNs. OC is defined as “an individual’s loyalty or bond to his or her employing organization” [7]. It is an established finding that a high level of OC plays an important role in determining employee retention, low overall turnover in a profession, and the sustainability of the organization itself [8].

Researchers have identified a number of factors impacting OC. They include motivation, job satisfaction, job environment, inter-relationships within the workplace, person-organization fit (POF), and turnover intentions [7]. So far, most nursing research has focused on two or three factors impacting OC among nurses [9].

Among various factors affecting organization commitment, our study employs job environment (pay scale, supervision, and job location), job satisfaction, computer self-efficacy (CSE), and POF as variables. Job location and pay scale are, respectively, measures that reflect the adjustment to the working environment and monetary magnitude of a person’s job performance [10]. Supervision is defined as “the provision of guidance or direction, evaluation and follow-up by the supervisor” [11]. CSE refers to “judgment of one’s capability to use a computer” [12, p. 192]. POF is defined as “the compatibility between people and organizations that occurs when: (a) at least one entity provides what the other needs, or (b) they share similar fundamental characteristics, or (c) both” [13, pp. 4–5]. Job satisfaction is defined as a positive feeling that one holds toward one’s job, resulting from the appraisal and various experiences one has at a workplace [14].

Given these definitions, we posit direct and moderating effects among variables. For example, pay scale and job location are posited as positively associated with POF as direct effects. Job satisfaction is posited as moderating the relationship between POF and supervision. The Theoretical Background and Research Model section discusses detailed associations among these perceptual constructs.

The goal of our study is to examine direct and moderating effects on APNs’ OC using partial least squares - structural equation modeling (PLS-SEM). This is done to (1) explore precursory job environmental factors affecting APNs’ perception of POF, (2) identify moderating factors affecting POF and supervision, and (3) understand the direct effects of POF and supervision on APNs’ OC. The Partial Least Squares (PLS) is a unique assessment method that can identify the direct effects of variables and moderating effects on a dependent variable (e.g., commitment).

The current study was conducted on APNs in the largest hospital in South Korea (‘Korea’ hereafter). This hospital has employed the largest number of APNs ( $n = 378$ ) and has the longest-running (20 years) APN program in Korea. The Korean healthcare system exceeds global standards for excellent medical care, and APNs play a pivotal role in it. However, the Korean healthcare system is experiencing the same problems that healthcare systems over the world are: physician shortages in residency programs and an urgent need to deliver optimal care at low costs. In Korea, as in many other countries, APNs perform some of the functions that physicians do

or work as full team members with physicians. They are experiencing the same barriers experienced the world over by APNs. The findings of this study are likely to have relevant implications for APNs in general.

## Literature review and theoretical background

Some research on various factors affecting OC has been previously conducted. A brief review of the research on the six factors under consideration in our study— pay scale, job location, supervision, job satisfaction, CSE, and POF follows.

### *Job environment – pay scale, job location, and supervision*

Our study considers three aspects of the job environment and personal fit: pay scale, supervision [15], and job location [10]. A prior study suggested that these factors play an important role in determining the personal expectations of a job position and in building a strong connection between employees and organizations [15]. According to Porter & Steers (1973), immediate work environment, job satisfaction, and pay scale are three essential elements influencing employee turnover rate and absenteeism. In our study, supervision is taken to be a part of the immediate work environment, while pay scale counts as an organization-wide factor.

Pay scale measures an employee’s emotional satisfaction at a pay level and reflects the organization’s judgment of employee work performance. Pay scale is considered a salient factor, along with promotion, affecting an employee’s compensation for her job performance and the potential possibility of withdrawal from her duties [16].

Job location is an important part of the job environment. Job location matching an employee’s interests and values boosts his/her job satisfaction [17].

Supervision is an important immediate work environment factor within an organization [15]. Studies on supervision have focused on well-fitted dyadic relationships between a supervisor and a subordinate. For instance, similar personalities, similar values, and goal congruity among supervisors and subordinates are considered important factors in achieving a strong supervisor-employee relationship [10]. A supervisor’s support for employees is crucial in securing positive employee responses and behaviors in challenging and troublesome situations [18]. Our study focuses on the relation of APNs’ pay scale and job location to her OC, and on supervisors’ support for APNs’ performance, recognition of successful job performance, and assistance to APNs in resolving conflicts in the medical setting.

### *Job satisfaction*

In general, satisfaction is defined as “the summary psychological state resulting when emotion surrounding disconfirmed expectation is coupled with the consumer’s prior feelings about the consumption experience” [19]. Specifically, job satisfaction is referred to as a positive feeling that one holds toward one’s job, resulting from the appraisal and various experiences one has at a workplace [14,20]. Our study focuses specifically on the satisfaction that an APN experiences in 1) providing medical interventions to clients/patients, 2) being recognized by the supervisor because of successful performance of duties, and 3) interacting with patients/clients. A study of APNs’ job satisfaction reveals that it is an integral part of healthcare performance, retention, and the delivery of quality work [21]. It is also an important factor affecting turnover intention [15].

Prior studies also emphasized that job satisfaction can be salient in playing a direct role but also in becoming a moderator among

various employee perceptions. Accordingly, we consider all of the above theoretical characteristics of job satisfaction as a direct indicator and a moderator between constructs within our research framework in the APNs' OC context.

Based on the theoretical characteristics of job satisfaction as a direct indicator and a moderator between constructs, we employed job satisfaction to examine its both direct and moderating effects on other variables to APNs' path to OC within our research frameworks.

#### *Computer self-efficacy*

CSE is rooted in the original concept of self-efficacy, which can be defined as the judgment of one's own capability to organize and execute courses of action required to attain designated types of performances [17]. Thus, an individual's degree of self-efficacy affects the selection of behavioral activities and their eventual performance, given their current state of motivation [22]. CSE can be defined as "a judgment of one's capability to use a computer" [12] to organize and execute computer-related courses of action. Since self-efficacy affects our behaviors and performances, it is likely that CSE does the same.

In today's work environment, CSE can be essential to the performance of an APNs' daily duties. CSE is not simply measuring an APN's computing proficiency in hardware and software management for the assigned daily duties. Rather, an APN's CSE reflects his or her judgment of capability to organize and execute computer-related medical duties assigned to him/her. Recent studies note a positive relation among CSE, work performance, and job satisfaction in a variety of work contexts [22]. In all likelihood, an APN with a higher level of CSE is capable of successfully mastering a more comprehensive array of duties in a computing environment than an APN with lower CSE. Almost by definition, a higher level of CSE indicates a greater ability to work in a clinical environment with diverse software or hardware. Belief in one's mastery of computer-related daily duties would produce higher job satisfaction for an APN. In our study, we did not measure "internet self-efficacy" which can be essential to the performance of APNs' daily duties and to job satisfaction.

#### *Person-organization fit (POF)*

POF indicates the congruence of values between an individual and an organization. In detail, unlike person-job fit, which concerns aspects of people's job-related qualifications (e.g., skill, knowledge, and capability), POF concerns an individual's and an organization's congruence of beliefs, values, and norms [23]. For instance, a good POF implies a close alignment of an individual's values with an organization's aims. If people perceive themselves as fitting well within an organization, they tend to regard themselves as a part of the organization and are more likely to join a "psychological group" within an organization [24]. This type of POF is the one under consideration in our research. Other types of POF include *needs – supplies fit and demands – abilities fit* [25,26]. *Needs – supplies fit* occurs when an organization fulfills an individual's needs and desires in response to or in return for an individual's service [24]. A *demands – abilities fit* between an organization and an individual occurs when an individual is capable of satisfying the organization's demands, resulting in high job performance [13].

Another significant aspect of POF is the distinction between actual and perceived POF. While actual POF refers to "the actual similarity of an employee and an organization on fundamental characteristics," perceived POF refers to "the extent to which individuals believe they fit the organization" [27]. In our research, we focus on perceived POF, since our research is based on the perception of APNs.

Little work has been done on APNs' POF and its significance. Organizations have simply assumed that APNs have or will adopt their beliefs, values, and norms; mutual congruence has not been a question that organizations have had in mind [28]. But a study of RNs employed in a Midwestern hospital system shows that perceived POF produces positive work outcomes and impact [29].

#### **Hypotheses development and research model**

Based on a comprehensive literature review and the theoretical background stated above, we constructed a theoretical conceptual framework that organizational commitment is explained by Person-Job Environment, POF, CSE, and Job Satisfaction (see Figure S1 in the Supplementary Tables and Figures).

We developed the following six hypotheses on the direct and indirect associations of the variables affecting APNs' OC and a research model to test those hypotheses (see Figure 1).

#### *The role of job environment (job location, pay scale), computer self-efficacy, and POF*

Individuals who fit well in their job environment showed a high degree of job satisfaction, job motivation, mental health, socialization, and OC [12]. However, financial, structural, and social barriers in the job environment adversely affect individuals' work performance [30]. An organization that provides a better job environment will positively affect employees' POF. The literature indicates that job location and pay scale, as aspects of the job environment, influence APNs' POF. In particular, fewer environmental barriers in pay scale and job location tend to result in the perception of higher compatibility with an organization.

The concept of CSE records a computer user's self-judgment about his or her capability to use a computer to successfully complete a specific task, as well as his or her perception of what can be done in the future [31]. In today's work environment, CSE is essential to the performance of an APN's daily duties. In all likelihood, an APN with a higher level of CSE is capable of successfully mastering a more comprehensive array of skills in a computing environment than an APN with lower CSE. A study found that an individual's anxiety about computer capability is a barrier to successful performance and liable to result in a lower perception of POF [32]. We claim that APNs who have successfully adapted to a work environment and attained high CSE tend to share their organization's values and beliefs and positively perceive their fit to the organization (H3). Thus, we posit:

**H1-3.** An APN's job location (**H1**), pay scale (**H2**), and CSE (**H3**) are positively associated with his or her POF.

#### *The role of job satisfaction, POF, and supervision*

An APN's job satisfaction is an integral factor affecting retention and the delivery of quality work [21]. It is also a crucial factor affecting an employee's turnover intention [15].

Higher job satisfaction is derived from active and positive interactions with other organization members. Prior studies show that APNs' job satisfaction is positively associated with supervision. Thus, we argue that job satisfaction increases when APNs are acknowledged by their supervisors or other nurses [6,21,33]. A supervisor is an active member of an organization who represents the organization's values and who interacts directly with APNs. Job satisfaction is derived from interactions with other organization members. Accordingly, APNs with higher job satisfaction tend to perceive supervision more positively if a little conflict occurs, and harmonious job performance is

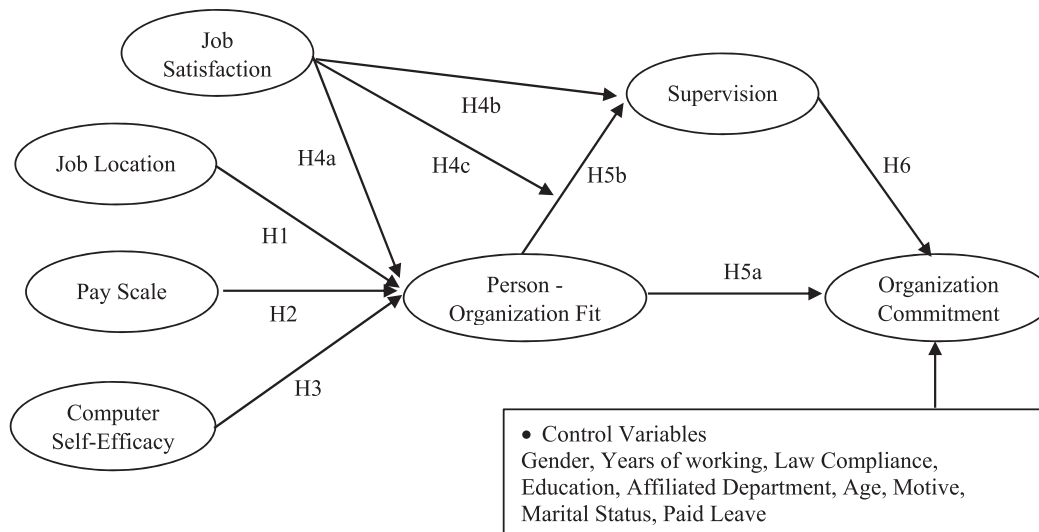


Figure 1. Research Model and Hypotheses.

achieved through smooth interaction with a supervisor. Job satisfaction is also significantly associated with POF [34]. The degree of APNs' job satisfaction is likely to affect the perceived value of the employer organization, the hospital.

Based on the review of the literature, we posit that job satisfaction positively affects both POF and supervision. Since APNs with high perception POF are likely to rate supervision more positively if they are satisfied with their jobs, we claim that APNs' job satisfaction moderates the relationship between POF and supervision. That is, we posit

**H4.** An APN's job satisfaction is positively associated with his or her POF (**H4a**) and supervision (**H4b**).

**H4c.** An APN's job satisfaction positively moderates the relationship between POF and supervision.

#### The role of person-organization fit (POF)

POF concerns an individual's and an organization's congruence of beliefs, values, and norms [23]. High POF indicates a close alignment of an individual's beliefs, values, and norms with those of an organization. Multiple studies show that POF has a significant effect on job satisfaction, commitment, and intention to leave a position [35].

An individual's desire to remain in an organization is stronger if his/her perceived POF is positive. That, in turn, affects employee turnover [36]. Highly positive POF is correlated with strong OC and a low turnover rate [37]. In addition, positive POF provides an employee with a sense of meaningfulness and psychological attachment to an organization. That leads to a higher employee engagement level and consequently a lower turnover rate [38].

Organizations have simply assumed that APNs have or will adopt the beliefs, values, and norms of their organizations; mutual adjustment has not been a question for organizations [28]. A study of RNs employed in a Midwestern hospital system, however, shows that highly positive POF, conceptualized in terms of supplementary adjustment and congruence, produces positive work outcomes [29]. Supplementary congruence occurs when an organization and an individual share similar fundamental characteristics [25]. Given these findings, we claim 1) that an individual's willingness to remain in an organization tends to be stronger if he/she perceives high congruence of his/her beliefs, values, and norms with those of the employing health care organization.

Research has also found that employees' POF plays a vital role in supervisor ratings and career success [27]. With organizational assimilation, based on shared values and organizational goals, mentees' relationships with mentors evolve positively [23]. A supervisor's role in supporting APNs is particularly significant as far as the POF perspective is concerned. APNs' supervision ratings are positive when they believe that their values and beliefs coincide with those of supervisors. Supervisors represent and promulgate a healthcare organization's culture when they support and assist APNs. The higher the perceived POF, the more positive the supervision rating [33]. Thus, we claim 2) that POF influences APNs' rating of supervision. On the basis of 1) and 2), we posit:

**H5.** An APN's POF is positively associated with his/her OC (**H5a**) and supervision performed within the healthcare organization (**H5b**).

#### The role of supervision

Supervision is referred to as a supervisor's managing style toward his or her subordinate, interaction with a working unit and peers, providing feedback based on his or her working experience, and the receipt of recognition as an important immediate job environment factor within an organization [15].

Supervisors can significantly influence workers' wellbeing, personal growth, and development. Workers who receive guidance and support from their supervisors exhibit higher OC levels [39]. Supervisors support for employees is crucial in securing positive employee responses and behaviors in challenging and troublesome situations [18]. An employee's relationship with his/her supervisor plays an important role in his/her OC [40]. In addition, a positive relationship between supervisors and employees is strongly associated with lower employee turnover rates, a more positive job attitude, and a higher satisfaction level [10]. When APNs perceive that their supervisors "are on their side" as far as their professional work and growth are concerned, their emotional bonds with them deepen and a strong OC results [33]. Given these findings, we claim that a higher APN rating of supervision leads to a stronger commitment to a healthcare organization.

**H6.** Supervision is positively associated with OC.

**Table 1** Characteristics of Participants.

Characteristics	N (%)
Gender	
Men	2 (1.1)
Women	184 (98.4)
No response	1 (0.5)
Age	
21–30	12 (6.4)
31–40	113 (60.4)
41–50	59 (31.6)
51–60	2 (1.1)
No response	1 (0.5)
Marital status	
Married	141 (75.4)
Single	45 (24.1)
Divorced	1 (0.5)
Education	
AND	3 (1.6)
BSN	54 (28.9)
Master	124 (66.3)
Ph.D.	6 (3.2)
Affiliated department	
Nursing	183 (97.9)
Medical	1 (0.5)
Others	2 (1.1)
No response	1 (0.5)
Paid leave	
Yes	34 (18.2)
No	152 (81.3)
No response	1 (0.5)
Years of working	
3–5 years	2 (1.1)
6–10 years	32 (17.1)
11–15 years	48 (25.7)
16–20 years	68 (36.4)
21–25 years	29 (15.5)
26 years or more	7 (3.7)
No response	1 (0.5)
Law compliance	
Yes	159 (85.0)
No	28 (15.0)
Motive	
Being assigned/transferred	17 (9.1)
Being interested in	18 (9.6)
Working in a more professional position	119 (63.6)
To avoid a work shift (e.g., 8-hours or night shift)	10 (5.3)
To pursue a self-development	22 (11.8)
Others	1 (0.5)

Note. ADN = Associate Degree in Nursing; BSN = Bachelor of Science in Nursing.

The research model from the literature review and the hypotheses we posit is shown in [Figure 1](#).

## Research method

### Study design

Our study identifies inter-relationships among the key factors affecting APNs' OC: job environment, job satisfaction, POF, and supervision. To this end, a cross-sectional research design employing a survey was used. Hypotheses were tested using the PLS method. The PLS method is one of the two analysis methods of the structural equation model (SEM). One method is covariance-based, the other is variance-based. The PLS method offers benefits that include: identifying the possible existence of nonlinear relationships among measured constructs, being well-suited for a small sample size, and recognizing mediating or moderating effects among constructs [41,42]. In addition, the PLS is well known for its capability to explore significant associations among latent

variables. That is a welcomed benefit: our research model recognizes the possibility of just such significant associations among latent variables.

### Ethical considerations

The current study (Proposal #2018-1400) was approved by the IRB in the Asan Medical Center in which the research was conducted.

### Selection of measurement items

To measure the core dependent variable of organization commitment, five measurement items were adopted from a prior study [43]. Selected survey items correspond to organization commitment, defined as “the strength of an individual's identification with and involvement in a particular organization” [16]. Next, three items to measure POF were adopted [24]. The items represent employees' perception of organization fitting, with organization fit conceptualized in terms of congruence of personal values with an organization's culture [24]. APNs' job satisfaction (three items), supervision (three items), and pay scale (two items) were adopted from Sutton and Griffin [15]. The items measure APNs' emotional responses to their daily duties, current working environment, and position compensation. Five items to measure CSE were adopted from Comeau and Higgins [12]. All five are rooted in the theory of self-efficacy proposed by Bandura [17]. The theory is constructed to explain “people's judgments of their capabilities to organize and execute courses of action to attain designated types of performance”. Finally, two items measure APNs' perceptions of job location as an environmental factor affecting POF. Nine additional items concern demographics for control variables (gender, years of working, law compliance, education, affiliated department, age, motive, marital status, and paid leave).

All survey items were assessed using a 7-point Likert scale ranging from “1 (strongly disagree)” to “7 (strongly agree)”, except for the construct of CSE. The CSE items were measured using a bipolar continuum of 10 scales. Survey questions were translated into Korean by the authors. Four bilingual nursing professionals with a master's or higher degree validated the translation. One author later reverse-translated the survey questions into English and confirmed the validity of the Korean translations.

With PLS-SEM/variance-based SEM models as guides, three or four items were selected for each construct on the basis of cross-loadings. It indicated the best reflective latent variable and qualified the uni-dimensionality and the maximum of latent variable identification of each construct [44].

### Participants

The survey was conducted at the largest hospital in South Korea. The hospital is located in Southeast Seoul. It has 2705 beds and serves, on average, 11,885 outpatients and 2540 inpatients per day. The survey was limited to APNs. APNs are divided into two groups: clinical nurse specialists (CNSs) and physician assistants. The hospital employs approximately 120 CNSs. Nurses are certified as CNSs through a CNS exam. CNSs have been engaged in nursing research, have acquired professional knowledge in clinical nursing, and have served patients in practice areas designated by the APN executive council. The hospital also employs 258 physician assistants. Among them, 86 are members of the Department of Medical Specialty, while 172 are members of the Department of Nursing.

**Table 2** Summary Statistics of Constructs, Convergent Validity and HTMT.

Constructs	Items	M ± SD	Composite Reliability	Cronbach's $\alpha$	Heterotrait-Monotrait Ratio (HTMT)							
					OC	SUP	JS	PAY	POF	JL	CSE	
Organization Commitment (OC)	OC1	5.85 ± 0.94	.90	.86	1.00							
	OC2	6.06 ± 0.90										
	OC3	5.86 ± 1.03										
	OC4	5.75 ± 1.23										
	OC5	6.43 ± 0.84										
Supervision (SUP)	SUP1	5.28 ± 1.21	.86	.76	.48	1.00						
	SUP2	4.93 ± 1.37										
	SUP3	4.83 ± 1.34										
Job satisfaction (JS)	JS1	5.83 ± 0.86	.89	.81	.71	.55	1.00					
	JS2	5.88 ± 0.80										
	JS3	5.71 ± 0.91										
Pay Scale (PAY)	PAY1	4.83 ± 1.24	.94	.87	.37	.41	.45	1.00				
	PAY2	4.75 ± 1.27										
Person-Organization Fit (POF)	POF1	5.44 ± 0.92	.96	.93	.69	.50	.72	.48	1.00			
	POF2	5.39 ± .95										
	POF3	5.33 ± 0.98										
Job Location (JL)	JL1	5.50 ± 1.29	.84	.62	.48	.32	.53	.46	.50	1.00		
	JL2	4.96 ± 1.39										
Computer Self Efficacy (CSE)	CSE1	8.42 ± 1.421	.93	.90	.36	.30	.46	.19	.36	.42	1.00	
	CSE2	8.57 ± 1.30										
	CSE3	9.16 ± 1.09										
	CSE4	9.06 ± 1.09										
	CSE5	8.77 ± 1.27										

Note. CSE = Computer Self-Efficacy; JL = Job Location; JS = Job Satisfaction; PAY = Pay Scale; POF = Person-Organization Fit; SUP = Supervision; OC = Organizational Commitment.

Paper survey materials were sent to 200 APNs in the hospital. One hundred and eighty-nine participants (95.5%) answered and returned the survey. In determining the minimum sample size, a prior study suggested calculating the statistical power and effect sizes *a priori* [45]. Assessing *a priori* by power analysis in PLS-SEM benefits minimizing Type II errors (false negative – not declining a false hypothesis). Therefore, we set the standard values of effect size  $f^2$  (a value of .1), error probability  $\alpha$  (a value of .05), and power ( $1-\alpha$ ) (a value of .8) using G\*Power 3.1 [46] to gain prior knowledge of the required sample size. Doing so enables the avoidance of Type II errors [47]. The number of predictors is set for two reasons. First, the maximum number of paths directed to a single construct in a valid research model is four; and second, on the research model, POF is influenced by job satisfaction, job location, pay scale, and CSE [42]. The minimum required sample size for securing valid results was determined to be 125. Detailed demographic information about the participants is shown in Table 1.

Ninety-eight percent ( $n = 184$ ) of ANPs surveyed were female. The age range was 21 to 60 and was divided into four groups. Ninety-two percent of the participants ( $n = 172$ ) fell into two age groups. The range of the two age groups was 31 to 50. Seventy-five percent of participants were married at the time of the survey. More than 60.0% of the participants had earned a master's degree, and more than 90.0% at least a bachelor's degree. Almost all participants (98.0%) were working in the nursing department. 152 participants (81.3%) answered that they did not have paid leave.

#### Data collection process

After the IRB approval, a briefing on the research was conducted at a meeting of APNs at the hospital. Names of volunteering APNs were collected by the Department of Nursing and sent to the research team. The research team then sent emails to volunteering APNs to confirm their willingness to participate in the study. APNs who confirmed their willingness to participate received a package in which the paper survey, a consent form, and a self-addressed and stamped envelope were included. Participating APNs completed the survey, signed the consent form, and mailed them to the research team. After remaining sealed for two weeks, the surveys were opened for analysis.

#### Data analysis

WarpPLS 7.0 software was used to test the hypotheses and analyze the research model [48]. Two model assessments of the data were conducted. A measurement assessment confirmed the validity and reliability of the data, measured by convergent validity and discriminant validity. A structural model assessment identified path coefficients, effect sizes, and  $p$ -values. Details can be found below.

## Results

#### Measurement model assessment

We assessed a measurement model using internal consistency, convergent validity, and discriminant validity per PLS-SEM reporting standard [42]. Internal consistency is examined by composite reliability and Cronbach's  $\alpha$ . Convergent validity is examined by indicator reliability. Our analysis shows that the composite reliabilities ranged from .96 to .84 and Cronbach's  $\alpha$  ranged from .62 to .93 (see Table 2). All indicator reliabilities are higher than the minimum of 0.6 (see Table 2). Thus, measures of internal consistency and convergent validity met or surpassed the recommended minimum thresholds [42,44].

Discriminant validity is identified by the heterotrait-monotrait ratio of correlations and examined by the cross-loadings of each construct. All heterotrait-monotrait ratio values in our measurement model are smaller than the conservative threshold of 0.85 [42]. Thus, all constructs are conceptually distinct (see Table 2). The rotated cross-loadings of each construct are much less than the indicator's outer loadings (see Table S1 in the Supplementary Tables and Figures). Thus, all results support discriminant validity.

#### Structural model assessment and hypothesis testing

In testing the hypotheses, our results show that APNs' pay scale is positively associated with POF ( $\beta = 0.21, p < .001$ ), indicating that H2 is supported (see Figure 2).

**Table 3** Total and Specific Indirect Effects.

Constructs		Indirect Paths	Specific indirect effects (p-value)	Total Indirect Effect (p-value)
OC	PAY	PAY → POF → SUP → OC	0 (.428)	.09 (.033)
		PAY → POF → OC	.09 (.045)	
	JS	JS → POF → OC	.20 (<.001)	.26 (<.001)
		JS → POF → SUP → OC	.02 (.338)	
	CSE	CSE → POF → OC	.04 (<.001)	-.03 (.246)
		CSE → POF → SUP → OC	-.03 (.264)	
JL	JL → POF → OC	0 (.473)	.05 (.166)	
	JL → POF → SUP → OC	.05 (.186)		
SUP	POF	POF → SUP → OC	0 (.462)	.04 (.239)
		POF → SUP → OC	.04 (.239)	
	PAY	PAY → POF → SUP	.06 (.138)	.06 (.138)
		JS → POF → SUP	.13 (.006)	
	CSE	CSE → POF → SUP	.13 (.006)	.13 (.006)
		CSE → POF → SUP	-.02 (.342)	
JL	JL → POF → SUP	.03 (.282)	.03 (.282)	

Note. CSE = Computer Self-Efficacy; JL = Job Location; JS = Job Satisfaction; PAY = Pay Scale; POF = Person-Organization Fit; SUP = Supervision; OC = Organizational Commitment.

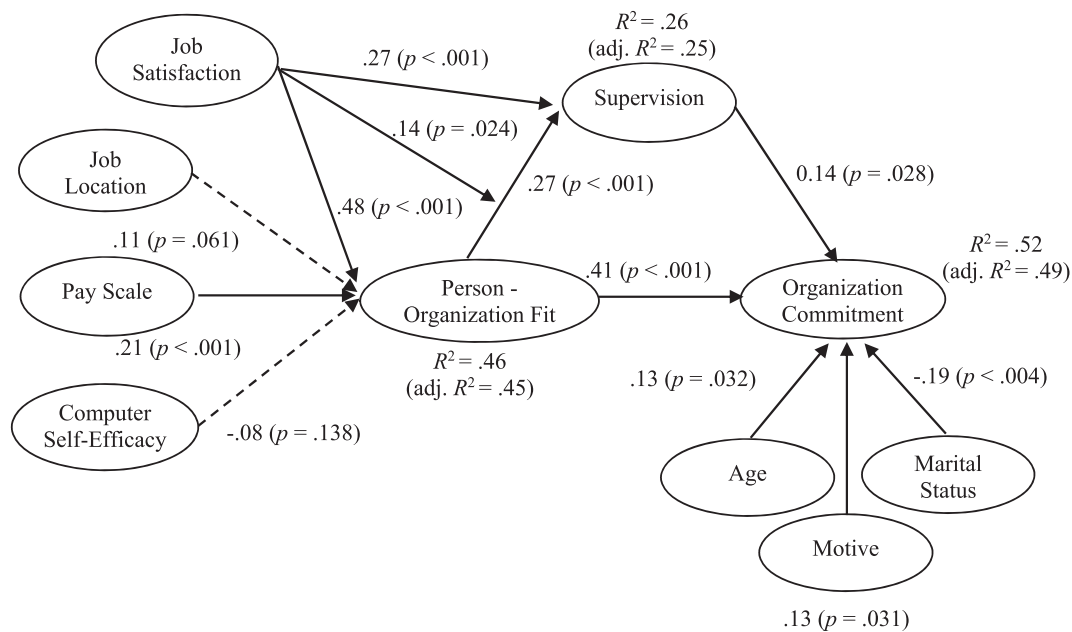


Figure 2. Testing Hypotheses. Note: Control variables – only statistically significant variables are included in the figure.

However, job location and CSE are not associated significantly with POF (respectively:  $\beta = 0.11, p = .061$ ;  $\beta = -0.8, p = .138$ ). H1 and H3 are thus not supported. As for H4, job satisfaction has a significant effect on both POF and supervision (respectively:  $\beta = 0.48, p < .001$ ;  $\beta = 0.27, p < .001$ ). H4a and H4b are thus supported. The results also show that job satisfaction positively and significantly moderates the relationship between a supervisor and person-organization fit ( $\beta = 0.14, p = .024$ ). H4c is thus supported. In particular, supervision is influenced by APNs' low and high job satisfaction levels as the degree of POF increases (that is, as toward the right side of the POF axis. See Figure S2 in the Supplementary Tables and Figures). Given a low job satisfaction level, the effect of supervision gets suddenly weaker when the POF becomes positive on the POF axis. However, given a high job satisfaction level, the supervision effect is greater when the POF increases. Note that the WarpPLS application assumes nonlinear relationships among people's perceptions and behaviors. This is because such nonlinear relationships are common and well-established in social studies [41].

Regarding H5, POF is positively and significantly associated with both an APN's commitment to healthcare organization and supervision (respectively:  $\beta = 0.41, p < .001$ ;  $\beta = 0.27, p < .001$ ). H5 is thus supported. Supervision has a positive effect on OC ( $\beta =$

$0.14, p = .028$ ). H6 is thus also supported. Among control variables, only age, motive, and marital status are statistically significant (respectively:  $\beta = 0.13, p = .032$ ;  $\beta = 0.13, p = .031$ ;  $\beta = -0.19, p < .004$ ).

Total indirect effects and specific indirect effects in this model are listed in Table 3. In examining indirect effects, the path of job satisfaction → POF → OC indicates both the highest total and specific indirect effects.

**Discussion**

The study investigated the key factors affecting APNs' OC in their healthcare organization. The results provide a number of insights.

The aspects of the work environment (i.e., job location – H1 and pay scale – H2) show mixed relations, resulting in mixed outcomes. Pay scale for APNs is a significant factor for POF, but job location is not. In the case of job location, 93.0% of the survey participants reported that they had worked in the hospital for more than 8 years. We infer that their place of residence is within a readily commutable distance; thus, job location does not significantly affect POF. Participants considered pay scale an important factor impacting POF. This finding aligns with the findings from prior

studies [49]. Well-paid APNs tend to perceive high congruence with their organizations.

CSE was examined in relation to APNs' years of working experience, in conjunction with the length of electronic health records (EHR) and EHRs use in the hospital. Our finding is that CSE is not a significant factor affecting APNs' perceived POF. Some APNs, however, expressed a desire for hospital assistance with new EHRs systems. This indicates a need for future research concerning APNs' perception of CSE in updated computing environments and the impact of such perception on POF.

The study also shows that job satisfaction is a salient factor underlying precursory factors (e.g., supervision and POF) affecting OC. Job satisfaction thus plays a dual role: 1) it is a direct antecedent factor influencing both supervision and POF and 2) it is a simultaneous moderator between POF and supervision. In particular, in the examination of the moderating effects between POF and supervision, the level of job satisfaction plays a crucial role in explaining the relationship between POF and supervision; given a high job satisfaction level, POF and supervision are positively associated with each other; given a low job satisfaction level, POF and supervision are negatively associated with each other at a certain point.

Another salient aspect of job satisfaction is found in the path of JS → POF → OC in Table 3. This path shows the strongest indirect effect (.20) among other specific indirect effects. The total indirect effect between JS and OC is the greatest (.26) among all total indirect effects. Our findings indicate that APNs' job satisfaction cannot sufficiently explain his or her OC if the APNs' perception of POF is not considered in the relationship between JS and OC.

The findings point to an effective potential resource for the retention of APNs and for the improvement of overall quality healthcare: the enhancement of APNs' job satisfaction. APNs' job satisfaction can be enhanced effectively when patients and supervisors recognize the contribution and value of APNs' performances. Well-crafted institutional programs can promote such recognition and thus enhance APNs' job satisfaction.

Concerning POF, the findings indicate the important role of POF on supervision and OC. Both our research and earlier studies support POF's association with OC. Survey participants are strongly committed to their organizations when their perceived organization values fit well with their own personal values. Another significant finding is an association of POF with supervision rating. This finding deserves the attention of healthcare organizations because personal value congruence with an organization's value is strongly associated with the interaction between an individual and his or her supervisor at their duty stations.

The congruence of APNs' aims and values with those of their organization is not easy to achieve. Values tend to diverge in an institutional setting, but one-sided assimilation of APNs' values to those of a health organization is neither desirable nor possible. Neither is the converse assimilation. Necessary is a mutual effort by both parties through transparent communication and negotiation of values, led by the healthcare organization [50]. Such congruence requires that the organization strive to establish ethical and socially acceptable mission/value statements and policies on promotion, reward, and the resolution of conflicts and to secure the acceptance of such statements and policies from organization stakeholders, including APNs. Efforts need to be made to know and reflect on APNs' values and goals and to include APNs in the decision-making process. The decision-making process must be inclusive, transparent, and equitable for APNs and all stakeholders. APNs' POF would be best promoted with committed organizational support for the mutual congruence between APNs and their organizations. Committees or programs constructed to serve that purpose are indirect routes to improved POF.

The construct of supervision influences OC directly. Our finding is in keeping with other studies: a more supportive and helpful supervisor enhances APNs' commitment to a healthcare organization [21,33]. Our findings suggest that supervisors of APNs should develop positive relationships with them and be supportive in guiding, evaluating, and assisting them. Positive supervision results from a committed organizational effort to initiate and support clear and transparent communication and the professionalism of supervisors. Committed organizational support for effective supervision of supervisors for APNs is much needed.

## Implications

Our discussion has indicated the need for committed organizational support to enhance job satisfaction, POF, and supervision for the OC of APNs. At the hospital where the research was conducted, there is an APN steering committee which manages APN job duties. The committee consists of top-ranking officers and APN supervisor representatives in the hospital. Among its powers and duties are setting pay rates, promoting APNs, evaluation and recognition of job performance of APNs, and communication with supervisors regarding organization policies and activities. This steering committee has been recognized as an effective instrument in managing the APN system. APNs are managed by supervisors who communicate with administrators and convey organizational values and norms to APNs. The APN steering committee has been instrumental in enhancing the positive ratings of supervision, POF, and OC. Our results thus have important practical implications for reducing the APN turnover rate. They suggest that establishing an APN steering committee or establishing a procedure that ensures direct and transparent communication among the healthcare organization, supervisors, and APNs may help achieve high POF and high ratings of supervision, as well as secure higher OC levels.

## Limitations

Our research has limitations as follows; first, studies of the OC of APNs are relatively rare. Our findings are based only on data collected at a single hospital in Korea. Even though it is the largest hospital in Korea, the findings need to be further validated. To increase confidence in the results, more research in different social and cultural settings is needed. Additional research will help clinical policymakers devise effective strategies to improve APNs' OC.

Second, given that our data are cross-sectional, causal relationships cannot be inferred from our findings. For example, (1) job satisfaction can play a role as both an antecedent condition and as a target variable, and (2) POF may be, given only our data, an outcome variable influenced by supervision. Cross-sectional data alone are not sufficient to confirm the causal relationships that our results may suggest. Confirmation requires not just the collection and analysis of similar data over periods of time but a more rigorous test to draw inferences about causal relationships among constructs.

Last, our study offers useful insights into APNs' OC level at a specific place and point in time, but OC is always at least partly a function of place and time. We thus suggest that culturally disparate and in-depth longitudinal studies of APNs' OC be conducted. This is of some importance. Shortages of APNs already exist, and duties, positions, status, staffing, institutional arrangements, and other variables are ever changing. Identifying factors which significantly impact OC can provide a deeper managerial insight and thereby help to improve APN loyalty and enhance APN retention.



## Conclusions

Our conclusions are: 1) Job satisfaction significantly impacts APNs' POF and supervision. 2) POF significantly impacts APNs' OC. 3) Supervision has a high impact on APNs' OC. These findings suggest that healthcare organizations strive to retain APNs primarily by enhancing their job satisfaction, their POF, and supervision. If our study suggests one practical implication for nursing management, it is to establish an entity such as the APN steering committee or an official procedure to establish and enhance mutual consensus and transparent communication between administrators and APNs.

## Authors' contributions

Project administration: MHJ. Funding acquisition: YHK. Research Conceptualization: SIS, MHJ, YHK. Overall Introduction: YHK, MHJ. Hypotheses and research model development: SIS, MHJ, HKK. Data curation: YHK, MHJ. Formal analysis: SIS. Methodology: SIS, MHJ. Writing – original draft: SIS, HKK, MHJ. Writing – review & editing: MHJ, HKK, YHK, WM.

## Conflict of interest

No potential conflict of interest relevant to this article was reported.

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## Appendix 1. Measurement Items

### Organization Commitment

OC1. I talk up my healthcare organization to my friends as a great place to work.

OC2. I am proud to tell others that I am part of my healthcare organization.

OC3. I am extremely glad that I chose this healthcare organization to work for over others I was considering at the time I joined.

OC4. For me, this is the best of all possible healthcare organizations to work.

OC5. Deciding to work for my healthcare organization was a definite mistake on my part (RC).

### Supervision

SUP1. My Clinic Manager is helpful in resolving issues of conflict.

SUP2. My Clinic Manager is supportive when I need to increase or decrease my scope of practice for the needs of my patients.

SUP3. Good performance is acknowledged.

### Job Satisfaction

JS1. Patients and my Clinic Manager value my intervention.

JS2. Work is rewarding.

JS3. My intervention makes a difference to patients and my Clinic Manager.

### Pay Scale

PAY1. I am content with my level of compensation.

PAY2. My compensation is an adequate reflection of my performance.

### Job Location

JL1. My clinic location fits my interests.

JL2. My community matches my interests for outside of work activities.

### Person-Organization Fit

POF1. The things that I value in life are very similar to the things that my healthcare organization values.

POF2. My personal values match my healthcare organization's values and culture.

POF3. My healthcare organization's values and culture provide a good fit with the things that I value in life.

### Computer Self-Efficacy

#### I could complete the job using the software package.....

CSE1 .... If I could call someone for help if I got stuck:

CSE2 .... If someone else had helped me get started:

CSE3 .... If I had a lot of time to complete the job for which the software was provided:

CSE4 .... If I had just the built-in help facility for assistance:

CSE5 .... If someone showed me how to do it first:

### Demographic Information

#### (Gender) What is your gender?

1. Male
2. Female

#### (Age) What is your age? ( )

#### (Affiliated Department) Please select your current working department

1. Nursing office
2. Medical office
3. Others

#### (Marital Status) Please select your marital status

1. Married
2. Single
3. Divorced

#### (Motive) Please select your motivation to become an NP or ANP

1. Being assigned/transferred
2. Being interested in
3. Working in a more professional position
4. To avoid a work shift (e.g., 8-hours or night shift)
5. To pursue self-development
6. Others

#### (Years of working) Please indicate years of working in the current hospital ( )

#### (Paid leave) I can use all my available vacation or leave days whenever I wish.

1. Yes
2. No

**(Law compliance) I am worried about working in the current position of NP or ANP because of a lack of relevant protective laws and compliance.**

1. Yes
2. No

**(Education) Please indicate your terminal degree.**

1. AND
2. NSN
3. Master
4. Ph.D.

**Appendix A. Supplementary data**

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.anr.2023.03.002>.

**References**

1. American Nurses Association (ANA). Advanced practice registered nurses (APRN) [Internet]: American Nurses Association, American Nurses Credentialing Center, American Nurses Foundation [cited 2022 December 31]. Available from: <https://www.nursingworld.org/practice-policy/aprn/>.
2. International Council of Nurses. Guidelines on advanced practice nursing. Geneva, Switzerland: ICN; 2020 [cited 2023 January 8]. Available from: [https://www.icn.ch/sites/default/files/inline-files/ICN\\_APN%20Report\\_EN\\_WEB.pdf](https://www.icn.ch/sites/default/files/inline-files/ICN_APN%20Report_EN_WEB.pdf)
3. Schober M. Global emergence of nurse practitioner/advanced practice nursing roles. *J Am Assoc Nurse Pract*. 2018;30(4):182–4. <https://doi.org/10.1097/JXX.000000000000029>
4. George C. The future of health care depends on reducing cost and raising quality [Internet]. Texas Medical Center; 2018, April 13 [cited 2022 February 22]. Available from: <https://www.tmc.edu/news/2018/04/the-future-of-health-care-depends-on-reducing-cost-and-raising-quality/#single-article-body>
5. Choi SJ, Kim YH, Lim KC, Kang Y. Advanced practice nurse in South Korea and current issues. *J Nurse Pract*. 2022. <https://doi.org/10.1016/j.nurpra.2022.10.015>
6. Faris JA, Douglas MK, Maples DC, Berg LR, Thraikill A. Job satisfaction of advanced practice nurses in the Veterans Health Administration. *J Am Acad Nurse Pract*. 2010;22(1):35–44. <https://doi.org/10.1111/j.1745-7599.2009.00468.x>
7. Bozeman DP, Perrewé PL. The effect of item content overlap on organizational commitment questionnaire–turnover cognitions relationships. *J Appl Psychol*. 2001;86(1):161–73. <https://doi.org/10.1037/0021-9010.86.1.161>
8. Benson J, Brown M. Knowledge workers: what keeps them committed; what turns them away. *Work Employ Soc*. 2007;21(1):121–41. <https://doi.org/10.1177/0950017007073623>
9. Bratt MM, Felzer HM. Predictors of new graduate nurses' organizational commitment during a nurse residency program. *J Nurses Staff Dev*. 2012;28(3):108–19. <https://doi.org/10.1097/NND.0b013e31825515c4>
10. Tak J. Relationships between various person–environment fit types and employee withdrawal behavior: a longitudinal study. *J Vocat Behav*. 2011;78(2):315–20. <https://doi.org/10.1016/j.jvb.2010.11.006>
11. Finkelman AW. Professional nursing concepts: competencies for quality leadership. Burlington, MA: Jones & Bartlett Learning; 2023.
12. Compeau DR, Higgins CA. Computer self-efficacy - development of a measure and initial test. *MIS Q*. 1995;19(2):189–211. <https://doi.org/10.2307/249688>
13. Kristof AL. Person-organization fit: an integrative review of its conceptualizations, measurement, and implications. *Pers Psychol*. 1996;49(1):1–49. <https://doi.org/10.1111/j.1744-6570.1996.tb01790.x>
14. Blegen MA, Mueller CW. Nurses' job satisfaction: a longitudinal analysis. *Res Nurs Health*. 1987;10(4):227–37. <https://doi.org/10.1002/nur.4770100405>
15. Sutton G, Griffin MA. Integrating expectations, experiences, and psychological contract violations: a longitudinal study of new professionals. *J Occup Organ Psychol*. 2004;77(4):493–514. <https://doi.org/10.1348/0963179042596487>
16. Porter LW, Steers RM, Mowday RT, Boulian PV. Organizational commitment, job satisfaction, and turnover among psychiatric technicians. *J Appl Psychol*. 1974;59(5):603–9. <https://doi.org/10.1037/h0037335>
17. Bandura A. Social foundations of thought and action. 1st ed. Englewood Cliffs: Prentice Hall; 1986.
18. Chen CC, Chiu SF. An integrative model linking supervisor support and organizational citizenship behavior. *J Bus Psychol*. 2008;23(1-2):1–10. <https://doi.org/10.1007/s10869-008-9084-y>
19. Oliver RL. Measurement and evaluation of satisfaction processes in retail settings. *J Retailing*. 1981;57(3):25–48.
20. Locke EA, Dunnette MD. Chapter, The nature and causes of job satisfaction. In: *The handbook of industrial and organizational psychology*. Chicago: Skokie: Rand McNally; 1976. p. 1297–349.
21. Steinke MK, Rogers M, Lehwaldt D, Lamarche K. An examination of advanced practice nurses' job satisfaction internationally. *Int Nurs Rev*. 2018;65(2):162–72. <https://doi.org/10.1111/inr.12389>
22. Abun D, Javier JPG, Gamponia JIB, Magallanes T, Julian FP. The effect of employees' computer and internet self-efficacy on job satisfaction. *IJRBS [Internet]*. 2022;11(3):130–4. <https://doi.org/10.20525/ijrbs.v11i3.1727>
23. Wan CS, Yang Jt, Cheng Sy, Su C. A longitudinal study on internship effectiveness in vocational higher education. *Educ Rev (Birm)*. 2012;65(1):36–55. <https://doi.org/10.1080/00131911.2011.634969>
24. Cable DM, DeRue DS. The convergent and discriminant validity of subjective fit perceptions. *J Appl Psychol*. 2002;87(5):875–84. <https://doi.org/10.1037/0021-9010.87.5.875>
25. Kim S. Does person-organization fit matter in the public -sector? Testing the mediating effect of person-organization fit in the relationship between public service motivation and work attitudes. *Public Adm Rev*. 2012;72(6):830–40. <https://doi.org/10.1111/j.1540-6210.2012.02572.x>
26. Caplan RD. Person-environment fit theory and organizations: commensurate dimensions, time perspectives, and mechanisms. *J Vocat Behav*. 1987;31(3):248–67. [https://doi.org/10.1016/0001-8791\(87\)90042-X](https://doi.org/10.1016/0001-8791(87)90042-X)
27. McCulloch MC, Turban DB. Using person-organization fit to select employees for high-turnover jobs. *Int J Sel Assess*. 2007;15(1):63–71. <https://doi.org/10.1111/j.1468-2389.2007.00368.x>
28. Kwon JO, Kang JM. The effect of person-environment fit (person-job fit, person-organization fit, person-supervisor fit) and job embeddedness on turnover intention in clinical nurses. *J Korean Converg Soc*. 2019;10(3):307–17. <https://doi.org/10.15207/JKCS.2019.10.3.307>
29. Risman KL, Erickson RJ, Diefendorff JM. The impact of person-organization fit on nurse job satisfaction and patient care quality. *Appl Nurs Res*. 2016;31:121–5. <https://doi.org/10.1016/j.apnr.2016.01.007>
30. Duffy RD, Autin KL, Bott EM. Work volition and job satisfaction: examining the role of work meaning and person-environment fit. *Career Dev Q*. 2015;63(2):126–40. <https://doi.org/10.1002/cdq.12009>
31. Sam HK, Othman AEA, Nordin ZS. Computer self-efficacy, computer anxiety, and attitudes toward the internet: a study among undergraduates in Unimas. *J Educ Technol Soc*. 2005;8(4):205–19 <https://www.jstor.org/stable/jeductechsoci.8.4.205>
32. Thatcher JB, Perrewé PL. An empirical examination of individual traits as antecedents to computer anxiety and computer self-efficacy. *MIS Q*. 2002;26(4):381–96. <https://doi.org/10.2307/4132314>
33. Seong JS, Yeom EY. Experience of the performance of the Korean physician assistants duties. *J Qual Res*. 2015;16(2):122–34. <https://doi.org/10.22284/qr.2015.16.2.122>
34. Chen X, Liu M, Liu C, Ruan F, Yuan Y, Xiong C. Job satisfaction and hospital performance rated by physicians in China: a moderated mediation analysis on the role of income and person-organization fit. *Int J Environ Res Public Health*. 2020;17(16):5846. <https://doi.org/10.3390/ijerph17165846>
35. Verquer ML, Beehr TA, Wagner SH. A meta-analysis of relations between person-organization fit and work attitudes. *J Vocat Behav*. 2003;63(3):473–89. [https://doi.org/10.1016/S0001-8791\(02\)00036-2](https://doi.org/10.1016/S0001-8791(02)00036-2)
36. Kristof-Brown AL, Zimmerman RD, Johnson EC. Consequences of individuals' fit at work: a meta-analysis of person-job, person-organization, person-group, and person-supervisor fit. *Pers Psychol*. 2005;58(2):281–342. <https://doi.org/10.1111/j.1744-6570.2005.00672.x>
37. Saks AM, Ashforth BE. A longitudinal investigation of the relationships between job information sources, applicant perceptions of fit, and work outcomes. *Pers Psychol*. 1997;50(2):395–426. <https://doi.org/10.1111/j.1744-6570.1997.tb00913.x>
38. Memon MA, Salleh R, Baharom MNR, Harun H. Person-organization fit and turnover intention: the mediating role of employee engagement. *Global Bus Manag Res*. 2014;6(3):205–9.
39. Frederico Ferreira MM. Organizational commitment and supervisor support, perception of procedural fairness, tenure in the hospital: the mediating effect of work-life balance - study in nurses. *Clin Nurs Stud*. 2014;3(2):17–23. <https://doi.org/10.5430/cns.v3n2p17>
40. Casper WJ, Harris C, Taylor-Bianco A, Wayne JH. Work–family conflict, perceived supervisor support and organizational commitment among Brazilian professionals. *J Vocat Behav*. 2011;79(3):640–52. <https://doi.org/10.1016/j.jvb.2011.04.011>
41. Kock N. Using WarpPLS in e-collaboration studies: an overview of five main analysis steps. *Int J e-Collab*. 2010;6(4):1–11. <https://doi.org/10.4018/jec.2010100101>
42. Hair JF, Hult GTM, Ringle C, Sarstedt M. A primer on partial least squares structural equation modeling (PLS-SEM). 2nd ed. Los Angeles: Sage Publications; 2016.
43. Mowday RT, Steers RM, Porter LW. The measurement of organizational commitment. *J Vocat Behav*. 1979;14(2):224–47. [https://doi.org/10.1016/0001-8791\(79\)90072-1](https://doi.org/10.1016/0001-8791(79)90072-1)
44. Hair JF. Multivariate data analysis. 6th ed. Upper Saddle River, NJ: Pearson Prentice Hall; 2006.
45. Cohen J. Quantitative methods in psychology: a power primer. *Psychol Bull*. 1992;112(1):155–9. <https://doi.org/10.1037//0033-2909.112.1.155>

46. Faul F, Erdfelder E, Buchner A, Lang AG. Statistical power analyses using G\*Power 3.1: tests for correlation and regression analyses. *Behav Res Methods*. 2009;41(4):1149–60. <https://doi.org/10.3758/BRM.41.4.1149>
47. Russo D, Stol KJ. PLS-SEM for software engineering research. *ACM Comput Surv*. 2022;54(4):1–38. <https://doi.org/10.1145/3447580>
48. Kock N. WarpPLS User Manual: Version 7.0 [Internet]. Laredo: ScriptWarp Systems; 2021 [cited 2022 August 18]. Available from: [https://www.scriptwarp.com/warppls/UserManual\\_v\\_7\\_0.pdf](https://www.scriptwarp.com/warppls/UserManual_v_7_0.pdf)
49. Salami SO. Demographic and psychological factors predicting organizational commitment among industrial workers. *Anthropologist*. 2017;10(1):31–8. <https://doi.org/10.1080/09720073.2008.11891026>
50. Marquis BL, Huston CJ. *Leadership roles and management functions in nursing: theory and application*. 10th ed. PA: Wolters Kluwer Health/LWW; 2022.