Article

The Impact of Operant Resources on the Task Performance of Learners via Knowledge Management Process

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Abstract: In human resource management, training is considered one of the most effective ways to improve employees' task performance. However, the effectiveness of training depends mostly on the resources and effort of learners, especially the operant resources. This study investigates the influence of operant resources on individual task performance within the framework of knowledge management. Building on existing research, a quantitative model was developed and tested using data from 296 Vietnamese managers and senior employees. Data analysis employed SPSS 21 and AMOS 24 software. The findings provide strong support for all nine proposed hypotheses, demonstrating a positive impact of operant resources on both learner behavior and subsequent task performance. The research highlights the significant role of individual operant resources in enhancing learning outcomes and employee effectiveness. Managerial implications are derived from these results, offering practical guidance for businesses to improve training activities and ultimately boost employee task performance.

Keywords: operant resource; task performance; training effectiveness; learning outcome; knowledge management; Vietnam

1. Introduction

Since Vietnam's economic reforms in 1995, the country has become a magnet for foreign direct investment (FDI). This influx of foreign businesses has opened doors for Vietnamese companies to acquire new technical and management expertise from their international partners. However, these advancements have also required Vietnamese enterprises to improve their capabilities continuously to thrive in an increasingly integrated global environment and enhance their performance. A 2021 report by ManpowerGroup [1] revealed that Vietnam ranked low in labor skills (11.6% out of a workforce of 57.5 million) and English proficiency (5%) compared to the top seven FDI recipients in Asia. These findings highlight the critical need for workforce training to improve Vietnamese employee task performance. Companies currently utilize various training methods, including in-house programs, external expert-led courses, training centers, and e-learning platforms. However, measuring the effectiveness of these training activities remains a challenge. Managers struggle to determine whether company-sponsored training surpasses self-directed learning programs. Furthermore, not all training programs deliver the desired results, and some employees fail to demonstrate performance improvement after completing a course.

In practice, the outcomes of training programs are often limited, with some acquired skills never being utilized, rendering the entire process ineffective [2]. Therefore, a more rigorous approach is necessary to monitor and evaluate the connection between training outcomes and employee task performance.

The concept of service-dominant logic [3] emphasizes the importance of customer participation in the service delivery process. This approach encourages businesses to leverage a value co-creation process between service providers and users to gain a competitive advantage [4,5]. This strategy is particularly well-suited for interactive service sectors such as health care, education, and—crucially—training. In the context of training services, learners are not simply passive recipients; they are active participants in the learning process, beneficiaries of the knowledge, and ultimately, co-determinants of the service's value [3].

However, research on the combined impact of learners' and training providers' resources on the interaction process, and consequently on learner task performance, remains limited. This gap in knowledge is particularly pronounced in developing economies like Vietnam [6,7]. The reason for this limitation could be in the separate view of operant resources (inside vs. outside) and of the knowledge management process (knowledge acquisition vs. utilization). Therefore, a research question should be investigated as follows: is there a relationship between the operant resources (of both learners and training institutions) and the task performance of individuals after completing a training course?

To summarize, this study aims to (1) assess how operant resources from learners and training institutions affect the learning journey and later task performance of short-course participants in Vietnam, and (2) offer strategies to enhance the task performance of learners' post-completion of short courses.

The paper's structure includes the following: Section 2 summarizes the main concepts and literature review; Section 3 presents the research methods; Section 4 summarizes the analysis results; and Section 5 describes the discussion, managerial implications, and conclusions.

2. Literature Review

This section describes the main related concepts, operand and operant resource, knowledge, knowledge transfer, knowledge management, and task performance. Then, relevant studies are reviewed, a research framework is proposed, and research hypotheses are set up.

2.1. Main Concepts

Co-created value refers to value which is determined by the combination of different stakeholders in service-dominant logic (SD logic perspective) [3]. The value co-creation process is the process where all stakeholders co-produce value [8] and customers and providers have an interactive process; collaboration is beyond the monetary system [9,10].

Organizational learning refers to the learning process of an organization in a collective way [11] or a process by which the organization's knowledge changes, leading to improved problem-solving ability for action [12]. Learning organization refers to "an organization" focused on learning or in the process of learning and it also offers people the image of continuously learning and improving an organization [11]. In a learning organization, learning (the knowledge acquisition process) is encouraged inside or outside of the organization through the value co-creation process between learners and the training institutions. Then, the acquired knowledge is be shared between employees and used in the organization to improve task performance.

2.2. Operand and Operant Resources

Based on Constantin and Lusch [13], resources are classified as operand resources and operant resources. While an operation or an act is performed to produce an effect on operand resources, operant resources are employed to act on operand resources and/or other operant resources. Baron and Warnaby [14] discussed firm operant resources in the view of customers with three dimensions: (1) representational: reputation, goodwill, comfort/congeniality; (2) cultural: ethos, knowledge, capabilities; and (3) social: staff friendliness/helpfulness, social atmosphere. In the case of training services, customers are the learners and service providers are the training centers.

As said by Arnould and Price [15], learners' operant resources consist of physical, social, and cultural resources. In terms of physical operant resources, different learners

might be distinguished because of different physical (e.g., energy, strength) and mental endowments (e.g., sensorimotor emotions). Social operant resources are categorized into two groupings: traditional demographic groups (e.g., ethnic groups, social class) and emergent groups (e.g., consumer communities, friendship groups). Cultural operant resources include the attitude, knowledge, and specialized skills of learners.

2.3. Knowledge, Learning, and Knowledge Transfer

Knowledge can be defined as personal justified belief that enhances the capacity of an individual for effective action [16]. Traditionally, two categories of knowledge, tacit knowledge and explicit knowledge, are proposed [17]. Tacit knowledge is defined as knowledge which is nonverbalized or even non-verbalizable, intuitive, or unarticulated, making it difficult to communicate or share with others. Explicit knowledge, in contrast, deals with more rational, objective, and technical knowledge. It is articulated knowledge, which can be specified verbally or in writing, computer programs, patents, drawings, or the like. Knowledge assets refer to all intellectual resources (a part of operant resources) an individual/organization has access to that they may use, invest in, and leverage for growth.

Learning is also a process that occurs through experience and knowledge, through reflective thinking, in which intuition and emotion are considered. At the individual level of learning, the individual gains knowledge and skills as a system, such as single participation in communities of practice [18]. Organizational learning is the process by which an organization improves itself over time through gaining experience (in its employees) and using that experience to create knowledge, and then to transfer it within the organization.

Knowledge transfer could occur whenever there is a source and recipient. Knowledge transfer is a process where knowledge is transmitted from the source to the recipient then the recipient acquires and uses the transferred knowledge [19,20]. Knowledge receipt has been analyzed by the "absorptive capacity" of the recipient [21]. At both the individual and organizational levels, knowledge absorption depends on the recipient's ability to add new knowledge to existing knowledge.

2.4. Knowledge Management (KM)

Knowledge management is a process of managing knowledge assets to improve organizational efficiency and to increase the organizational ability to innovate, through knowledge use and reuse. There are three generations of knowledge management which has been categorized by Dalkir [22]: (1) container of knowledge, (2) flow of knowledge, and (3) context of knowledge use. The third generation focuses on the linkages between knowing and action, which may help to improve performance. According to Dalkir [22], the KM process includes knowledge acquisition, knowledge sharing, and knowledge use.

Operant resources include knowledge assets, which are the important inputs of the knowledge management process. Following service-dominant logic, knowledge assets are considered the main operant resources and they have been valued as the necessary instrument for improving sustainable competitiveness and performance [23]. According to earlier studies [24], knowledge management has a strong relationship with innovation and task performance. In this study, the KM process is an integration of the learning process (knowledge acquisition) and value co-creation process (knowledge sharing and use) between learners and training centers.

2.5. Individual Task Performance

Performance is distinguished between task and contextual performance [25]. Task performance refers to the "technical core" and shows the work-related performance an individual contributes to organization. Contextual performance does not refer to core performance but supports the organizational, social, and psychological environment in which the organization would like to, for instance, support workers in being dependable members in the organization or improve work procedures.

Individual task performance has also been discussed with knowledge sharing in organizations. It also resolves the issues of lacking individual knowledge, behavior, and task performance at work. This study focuses on only how task performance could improve through knowledge sharing propensity and knowledge sharing behavior. However, the relationship between how employees could acquire knowledge from different sources and later affect their task performance in another working environment is not clear. Research by Saks and Belcourt [26] suggests that only 47% of employees can apply their learnings directly to their jobs after a training program. Similarly, Velda et al. [27] found that only 10–15% of knowledge gained in training translates into improved task performance. These findings raise concerns about the actual benefits of traditional training programs for organizations. The individual task performance has focused on knowledge creation in the organization and the eight items of individual task performance of Williams and Anderson [28] have been applied in this study.

2.6. Relevant Studies

In Table 1, some relevant studies that examine the influence of operant resources on task performance via the knowledge management process have been reviewed from indexed journals (Scopus/ACI/VJOL) published within the last 10 years. The main keywords for research include (1) value co-creation, (2) knowledge management, (3) education/training service, and (4) task performance (sorting by its order of importance). These keywords and their several synonymous terms are targets of the search process. The review goes through the following two steps: an initial exploratory investigation into a pool of relevant concepts, followed by a more extensive investigation and gathering of information.

Table 1. Some relevant studies on operant resource, KM, and task performance.

Papers	Focus	Evaluating Factors
Ngo & O'Cass [29]	Innovation and business success: The mediating role of customer participation	Technical and non-technical innovation capabilities impact customer participation; then, they have impacts on service quality and firm performance. Customer participation plays a mediating role in these relationships.
Ho & Pham [30]	Operant resources, learner-oriented behaviour, and learners' value co-creation role in educational service.	Operant resources of the training institution and the learner-oriented behavior of teachers are confirmed to have a strong impact on learners' participation in Vietnam's educational service.
Dean et al. [31]	Applying Service Logic to Education: The Co-creation Experience and Value Outcomes	University facilitation of value, customer participation (student engagement, student connectedness), the co-creation experience, and students' expectations about independent value creation.
Le & Pham [32]	Customer participation to co-create value in human transformative services: a study of higher education and health care services	The results show that active and relevant participation behaviors are crucial to co-create value. Information sharing, responsible behavior, and voluntary in-role feedback have different roles in process and outcome value. Voluntary in-role feedback is more important in health care services, while responsible behavior is critical in higher education.
Nguyen et al. [33]	Communication effectiveness of firm and customer participation behaviors to co-create value: The role of customer operant resources	Analysis results showed that communication effectiveness impacts cultural and physical resources, and these resources have a direct impact on patient participation, while the social resources of patients have an indirect impact on participation through the 2 resources above.
Pham & Pham [34]	Intellectual capital, knowledge management, innovation, and organizational performance: A literature review study	Human capital, structural capital, and relational capital have positive impacts on knowledge management processes. Then, the KM process and innovation capability influence organizational performance. The KM process and innovation capability also have a bilateral relationship.

2.7. Research Framework and Hypotheses

The conceptual framework is presented in the relationships between resources and learning activities and later impacts individual task performance at work. Previous studies focused only on one aspect of operant resources (either learners or training centers). This study tries to evaluate the impact of both sides of operant resources on the value co-creation process. The framework consists of three major dimensions and their directional relationships. The first dimension group represents learners' and training centers' operant resources that are considered to have effects on knowledge acquisition in the studying environment. The second dimension is described as the learner's participation in the studying environment. During study time, different levels of knowledge will be acquired with the involvement of teaching staff's capability, learners' motivation, and absorptive capability [35]. The second dimension is like the KM process, which includes three components: knowledge acquisition, knowledge sharing, and knowledge utilization [36]. Task performance is presented as the third set of concepts to indicate the effects of learning on the task performance of learners. From the above analysis, the proposed research model is illustrated in Figure 1.
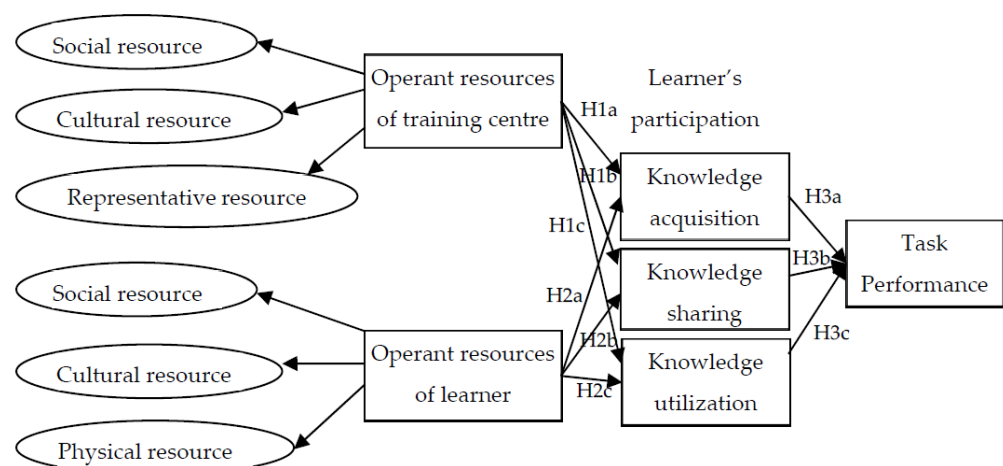

Figure 1. Proposed research framework.

The impact of training centers' resources on learners' participation: According to Ho and Pham [30], there is a positive relationship between the operant resources of training institutions and learner participation. These operant resources decide the approach of teachers to students during the learning process. For learners, the operant resources of the training center will help them to learn more effectively. The learning process is the interaction process between lectures and students in a certain context (facility, time, space, subject) to acquire the necessary knowledge and skills. Therefore, the learner's participation will be affected by the teacher's capability and the physical environment of the training institution. Moreover, learners' feelings about the training center, such as fame and management capability, also affect their participation in the learning process. Learners' participation could be viewed as the learning process and value co-creation process, which include three components: knowledge acquisition, knowledge sharing, and knowledge utilization [36,37].

The impact of learners' resources on their participation: Based on Nguyen et al. [33], there is a positive relationship between the operant resources of learners and their participation in the service process. Moreover, learners must spend their resources (time, money, effort, knowledge...) to maximize the benefit of the learning process [38]. So, learners' operant resources could have positive impact on their participation in a training course.

Impact of learners' participation on task performance: There is evidence from earlier research about the positive impact of learners' participation on their task performance or learning outcome [39,40]. Another study by Ngo and O'Cast [29] also found that

customer participation had a direct impact on the service quality, which may lead to a higher individual task performance. In the context of training services, learner participation may have a positive impact on task performance because it is the main reason a learner joins a training course.

In summary, the hypotheses of this study could be stated as follows:

Hypothesis H1a: *Operant resources of training centers positively affect the knowledge acquisition of learners.*

Hypothesis H1b: *Operant resources of training centers positively affect the knowledge sharing of learners.*

Hypothesis H1c: *Operant resources of training centers positively affect the knowledge utilization of learners.*

Hypothesis H2a: *Operant resources of learners positively affect the knowledge acquisition of learners.*

Hypothesis H2b: *Operant resources of learner positively affect the knowledge sharing of learner.*

Hypothesis H2c: *Operant resources of learner positively affect the knowledge utilization of learner.*

Hypothesis H3a: *Knowledge acquisition of learner positively affects the task performance of learner.*

Hypothesis H3b: *Knowledge sharing of learner positively affects the task performance of learner.*

Hypothesis H3c: *Knowledge utilization of learner positively affects the task performance of learner.*

3. Research Methods

The research process includes 3 main steps as follows: (1) literature review and qualitative research, (2) quantitative research, and (3) managerial implications suggestions. The main research process and details can be summarized in Figure 2.

Step	Main Task	Process	Details
1	Literature review and qualitative research	Review literature → Propose model	Review the literature based on relevant keywords, propose the research model, and create the draft version of measurement scales. Then, interview with 10 learners to finalize the questionnaire for the survey.
2	Quantitative research	Finalize the measurement scales → Collect data, test the scales & hypothesis	The final questionnaire is used to collect data from working students in Vietnam. The data will be assessed by some methods such as Cronbach Alpha, EFA, CFA, and SEM (using SPSS/AMOS).
3	Managerial implications suggestions	Discuss results and suggest implications → Conclusion	Interviews are conducted with various stakeholders to explain the results and to discuss the managerial implications for improving the task performance of short-course learners in Vietnam.

Figure 2. The process for this study.

All scales in this study are 5-level Likert scales. Of these, the operant resources of the training center (rep. resources—3 items; cultural resources—8 items; social resources—3 items) are from Baron and Wanabi [14] and Dagger et al. [41]; the operant resources of the learner (physical resources—3 items; cultural resources—4 items; social resources—3 items) are from Baron and Wanabi [14] and Arnould et al. [42]; the learner's participation (knowledge acquisition—5 items; knowledge sharing—4 items; knowledge utilization—6 items) are from Pham and Swierczek [36]; and task performance (8 items) is from Williams and Anderson [28]. From the original scales of 47 items, after qualitative research, only 43 items remain (4 items removed because of their irrelevance in the context of training services). Some items have been revised to make it easy to understand and suitable for the context. The final measurement scales could be found in the Appendix A.

4. Analysis Results

The data were collected conveniently through a survey conducted from June 2021 to September 2021, both online and offline. Respondents are short-course learners at several training centers in Vietnam.

4.1. Descriptive Statistics of Sample Data

There were 296 valid samples in 305 of total questionnaires received (in which 247/250 were online samples, and 49/55 were offline samples). The valid samples are described in Table 2.

Table 2. Summary of valid samples by some categories.

Categories	Sub-Categories	Frequency	Percentage (%)
Gender	Male	177	59.8%
	Female	119	40.2%
Years of experience	<3 years	60	20.3%
	3–5 years	122	41.2%
	5–10 years	82	27.7%
	>10 years	32	10.8%
Educational level	High school	35	11.8%
	College/vocational school	45	15.2%
	University	121	40.9%
	Postgraduate level	95	32.1%
Learning program	Soft skills program	69	23.3%
	Specialized skills program	64	21.6%
	New skills program	82	27.7%
	Language skills program	81	27.4%
Learning location	In-company facility	136	65.5%
	Training center facility	52	17.6%
	Online learning environment	50	16.9%
Learning period	<1 week (<15 h)	156	52.7%
	1–4 weeks (15–60 h)	75	25.3%
	5–12 weeks (61–180 h)	39	13.2%

Table 2. *Cont.*

Categories	Sub-Categories	Frequency	Percentage (%)
	>12 weeks (>180 h)	26	8.8%
Job Position	Employee	93	31.4%
	Team leader	107	36.1%
	Head of the department	92	31.1%
	CEO/Board of Directors	4	1.4%

The collected survey sample has the following characteristics: The working seniority of the respondents is mainly from 3 to 5 years (accounting for 41.2%). The position of the largest group of respondents is team leaders (36.1%). The educational level of the respondents varied from high school to post-graduate, in which the highest proportion was college/university (accounting for 40.9%). Types of training (based on popular courses) are evenly distributed across the following areas: soft skills (communication, IT...), specialized skills, new skills (critical thinking, leadership, data analytics...), and foreign language skills (English, Japanese, Chinese...). The duration of the training courses is mainly about <1 week or <15 learning hours (52.7%). The location of the training courses is mainly within the company (accounting for 65.5%).

The survey encompasses a diverse cohort from various professional backgrounds and hierarchical levels. These participants have undergone the organization's training regimen and have subsequently integrated this knowledge into their professional practices. This integration allows for a holistic understanding of how the interplay between the organization's educational resources and the collaborative resources among learners influences their engagement in the educational program.

4.2. Cronbach's Alpha Analysis and Exploratory Factor Analysis

Cronbach's alpha analysis was used to test the reliability of measurement scales [43]. The results showed that after removing variables TP6 and TP8 (because item–total correlation <0.3), all the Cronbach alpha coefficients were satisfied (>0.6). Then, Exploratory Factor Analysis (EFA) was used to test the convergence and discrimination of the scales. The results showed that EFA could be used because the KMO coefficient = 0.913 (>0.5). Ten factors were extracted from 41 variables, and the variance was 60.18%. Following the removal of 2 unsuitable variables (CRF1, KU4), 39 variables remained, as shown in Table 3. Then, all criteria were satisfied, and these variables could be used for CFA and SEM analysis.

Table 3. Summary of Cronbach's alpha and EFA results.

Factors	Alpha	Item–Total Correlation	EFA's Coefficients	Number of Items Removed
Representative resource—firm (RR)	0.766	0.590–0.622	0.643–0.772	0/3
Cultural resource—firm (CRF)	0.829	0.569–0.701	0.668–0.766	1/5
Social resource—firm (SRF)	0.856	0.713–0.738	0.793–0.826	0/3
Physical resource—learner (PRC)	0.764	0.589–0.612	0.590–0.772	0/3
Cultural resource—learner (CRC)	0.811	0.624–0.680	0.701–0.818	0/3
Social resource—learner (SRC)	0.814	0.637–0.682	0.673–0812	0/3
Knowledge acquisition (KA)	0.850	0.586–0.721	0.568–0.829	0/5
Knowledge sharing (KS)	0.839	0.631–0.703	0.567–0.876	0/4
Knowledge utilization (KU)	0.876	0.656–0.711	0.637–0.836	1/6
Task performance (TP)	0.804	0.652–0.740	0.621–0.794	2/8

4.3. Confirmatory Factor Analysis (CFA)

Then, the fitness of the model was tested by using CFA. The CFA results described that all criteria were satisfied: Chi-square/df = 1.095 (<2); GFI = 0.894; TLI = 0.987; CFI = 0.988 (>0.9); and RMSEA = 0.018 (<0.08). So, the model was fitted to the data. The result is presented in Figure 3.
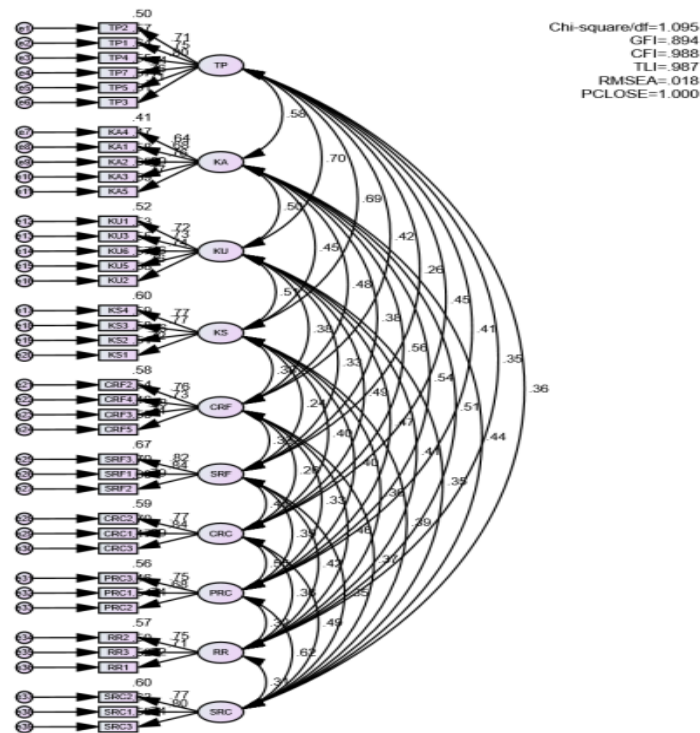

Figure 3. The final standardized CFA result.

4.4. Structural Equation Model (SEM) Analysis

The SEM results (Figure 4) showed CMIN/df = 1.110 (<2), which showed the fitness of the model. Moreover, all other criteria were satisfied: GFI = 0.887; TLI = 0.984; CFI = 0.985 (>0.9); and RMSEA = 0.019 (<0.08). Therefore, the analysis results were significant.
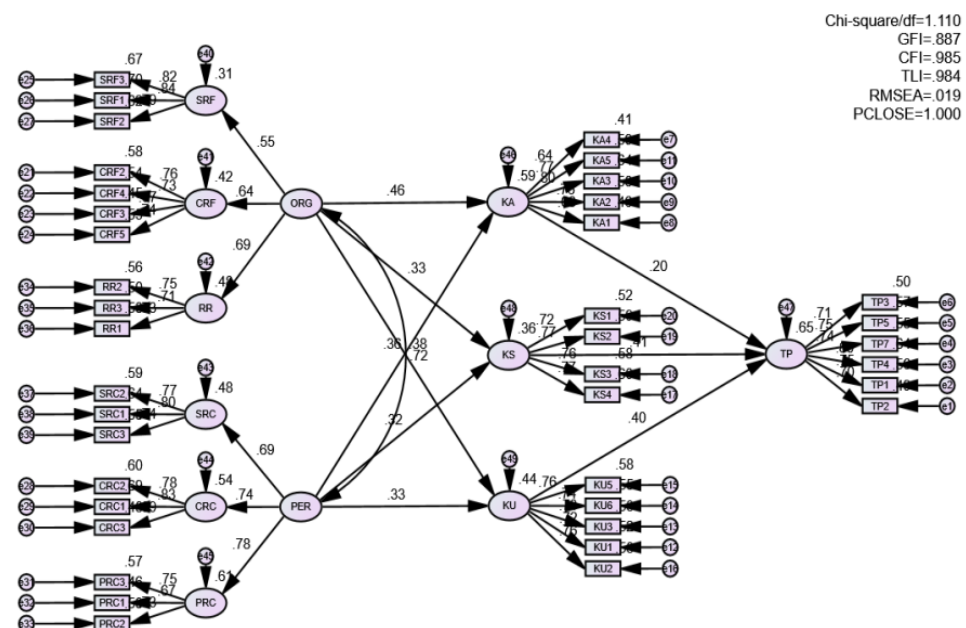

Figure 4. The final standardized SEM result.

From the above results, all hypotheses were accepted (sig. < 0.05). Table 4 summarizes the conclusions of the hypothesis test.

Table 4. Conclusions of hypothesis test.

Code	Hypothesis	Beta	*p*-Value	Conclude
H1a	Operant resource of center → Knowledge acquisition	0.749	0.001	Accepted
H1b	Operant resource of center → Knowledge sharing	0.595	0.020	Accepted
H1c	Operant resource of center → Knowledge utilization	0.671	0.007	Accepted
H2a	Operant resource of learner → Knowledge acquisition	0.438	0.005	Accepted
H2b	Operant resource of learner → Knowledge sharing	0.425	0.021	Accepted
H2c	Operant resource of learner → Knowledge utilization	0.442	0.012	Accepted
H3a	Knowledge acquisition → Task performance	0.198	0.002	Accepted
H3b	Knowledge sharing → Task performance	0.368	***	Accepted
H3c	Knowledge utilization → Task performance	0.373	***	Accepted

(Note: ***: *p*-value < 0.001).

5. Discussion and Conclusions

5.1. Discussion of the Results

The analysis results showed that all constructs satisfied the criteria for reliability, unidimensionality, convergence, and discrimination. The research model is suitable for the sample data. All nine hypotheses are accepted at 95% of significance level (*p*-value < 0.05). Therefore, the research model is confirmed in the context of training services in Vietnam.

According to the results, the impacts of firm operant resources are stronger than the impacts of learner operant resources on learners' participation. Among these, the impact of the operant resources of the training center on knowledge acquisition is the highest one (beta = 0.749), while the impact of the operant resources of the learner on knowledge utilization is the highest one (beta = 0.442). Moreover, knowledge utilization is found to have the highest impact on the task performance of learners (beta = 0.373).

These results are like those of previous studies about the impact of firm operant resources on customer participation [31], and the impact of customer operant resources on customer participation [30]. Moreover, the results confirmed the positive impact of learner participation on task performance, which is an under-researched area.

Therefore, training centers' resources are important in all phases of the KM process, while learners' resources contribute the most in the knowledge utilization phase of the KM process, which is very important to turn operant resources into task performance improvements for learners. The knowledge acquisition phase has less impact on task performance, which shows the important role of the KM process in sharing and to applying learnt knowledge in practice to gain the real benefits of training courses on improvements in task performance.

5.2. Managerial Implications

This study's findings offer valuable insights for managers seeking to optimize the effectiveness of short training courses and improve learner task performance. Some main managerial implications could be summarized as follows:

- Prioritize training centers with well-equipped facilities, reliable curriculums, and renowned instructors. These factors enhance learner engagement and knowledge acquisition. Foster robust interaction between training center staff and learners during the consultation phase. Consider upskilling consultation staff and leveraging online platforms to facilitate continuous communication.

- Encourage learners to actively participate in the learning process. This includes self-directed learning through researching courses online; consulting with advisors and colleagues; and preparing beforehand by arranging work schedules, attending sessions, actively asking questions, and completing assignments.
- Establish an open organizational culture that fosters knowledge sharing and lifelong learning among employees. Consider implementing policies such as financial support for further education, internal seminars where course participants share their learning, and encouraging creative ideas and innovation. This fosters knowledge application and broader task performance improvement.
- Regularly evaluate the effectiveness of internal and external training programs. Utilize these assessments to tailor training programs to specific employee groups, select relevant courses, and choose high-quality training providers. This data-driven approach ensures continuous adaptation and improvement of employee task performance.

5.3. Conclusions

This study investigated the relationships between operant resources (of both training centers and learners), learner participation, and task performance following a training course. An empirical survey conducted in Ho Chi Minh City and its surrounding provinces provided data that confirmed all nine proposed hypotheses.

The analysis revealed strong positive correlations between (1) Training Center Resources and Learner Participation: training centers with robust operant resources significantly enhance learner participation ($\beta = 0.595$–0.749); (2) Learner Resources and Learner Participation: learners with greater access to operant resources are more likely to actively participate in the learning process ($\beta = 0.425$–0.442); and (3) Learner Participation and Task Performance: increased learner participation in the training program leads to improved task performance after completion ($\beta = 0.198$–0.373).

These findings suggest that companies seeking to enhance employee skillsets and task performance should prioritize sending employees to external training centers with demonstrably strong resources. However, careful selection of training providers is crucial.

Some specific suggestions for the managers of Vietnamese companies are to (1) focus on training centers with well-equipped facilities, reliable curriculums, and renowned instructors to maximize learner engagement and knowledge acquisition; (2) encourage employees to actively participate by supporting self-directed learning (e.g., online research, consultations) and pre-course preparation (e.g., scheduling adjustments, active participation); and (3) foster an organizational culture that values knowledge sharing and lifelong learning by promoting internal knowledge sharing seminars and financial support for the continued education of all employees.

While this study provides valuable insights, it acknowledges some limitations, such as (1) a limited sample size, and (2) this study did not account for all factors influencing learning and task performance. Future research should (1) increase the sample size to enhance the generalizability of the findings, and (2) explore additional variables in the model, such as task characteristics, learner motivation, and the potential impact of educational technology (EduTech).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The original contributions presented in the study are included in the article, further inquiries can be directed to the corresponding author.

Appendix A

The final measurement scales.

Representative resource (of Training center)	
RR1	Training center is selected carefully
RR2	Training center is famous in their fields of education
RR3	Training center is introduced by many people
Cultural resource (of Training center)	
CRF2	The training program is clear and well-managed
CRF3	The lecturer has high expertise
CRF4	The lecturer is professional
CRF5	The lecturer has a strong experience
Social resource (of Training center)	
SRF1	The lecturer can connect with learners effectively during the course
SRF2	The lecturer has good relationship with other lecturers in the field
SRF3	The lecturer has a strong connection with the practitioner community
Physical resource (of Learner)	
PRC1	You can overcome difficulties in your job
PRC2	You can solve problems in your job
PRC3	You have the ability in searching and making solutions in doing your job
Cultural resource (of Learner)	
CRC1	You are instructed before joining the training course
CRC2	You knew the implementation process before joining the training course
CRC1	You knew the solution deployment process before joining the training course
Social resource (of Learner)	
SRC1	You knew about this training center through your friends/ colleagues
SRC2	You received learning experience shared by previous learners when joining the training course
SRC3	You read carefully about the learning program before starting the course
Knowledge acquisition	
KA1	You can develop new ideas/plan in the training course
KA2	You can improve your expertise during the training course
KA3	You can acquire new knowledge during the training course
KA4	You can evaluate your task by yourself in the training course
KA5	You can learn new task-related knowledge during the training course

Knowledge sharing		
KS1	You can share your knowledge easily with colleagues after the training course	
KS2	You and your colleagues can learn from each other after the training course	
KS3	You and your colleagues exchange knowledge and experience after the training course	
KS4	You and your colleagues often share knowledge with each other after the training course	
Knowledge utilization		
KU1	After the training course, you often suggest some improvements in business process	
KU2	After the training course, you often try new ways to do the task	
KU3	After the training course, you often document your new knowledge to reuse later	
KU5	After the training course, your organization often apply your new knowledge	
KU6	After the training course, your organization often try to innovate the working process	
Task Performance		
TP1	After the training course, you can finish your task completely	
TP2	After the training course, you can fulfill all your tasks in your job description	
TP3	After the training course, you are satisfied all requirements of your assigned task	
TP4	After the training course, you are doing tasks directly impact the KPIs	
TP5	After the training course, you can support your direct managers in doing their tasks	
TP7	After the training course, you can do the administrative tasks easily	

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