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# Modelling Adoption of Serious Games in Corporate Training: Analysis of Adoption Drivers

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## ABSTRACT

**The growth of outsourced corporate training (OCT) services continues because organizations need to adapt to digital transformation and rising requirements for (re)skilling. The research investigates OCT digital serious game adoption and value through quantitative data analysis. The research used Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyze survey data from n=200 US employees who received corporate-sponsored SG training through Amazon's Mechanical Turk©. The results showed that five factors affect employee adoption behavior intention through their interest in learning and social influence and their ability to work flexibly and their expectations for success and their desire for enjoyment, revealing which organizational elements generate value in organizational digital Serious Games (SG), but these elements do not effectively support knowledge exchange, information sharing and innovation management. The research is supported by the UTAUT2 framework to confirm previous studies about organizations and SGs, while allowing practitioners to create people-oriented training approaches that use SGs as continuous learning resources.**

**Keywords:** Outsourced Corporate Training (OCT), Serious Games (SG), Employee Learning Motivation, Knowledge Transfer.

## INTRODUCTION

The modern workplace faces multiple obstacles which affect how organizations manage their workforce skills and maintain employee expectations. The present workforce availability of skilled workers leads to changes because it influences employee work preferences and required qualifications for their positions (Lawler & Benson, 2022; Moritz, 2020). Organizations maintain their use of outdated recruitment methods to find candidates, but these methods prove ineffective for discovering employees who can learn new skills within their organization (Fuller et al.,2021). The modern workforce views work as a chance to develop themselves and find purpose so organizations need to adopt modern hiring and training approaches, which build stronger employee connections to their work and workplace environment (Hastwell, 2021).

Organizations need to solve their essential skill deficiencies through employee development programs or by using outsourced corporate training (OCT) services (Stroh & Treehuhoff, 2003). The worldwide e-learning market has all but eliminated conventional educational methods (GMI, 2020), opting for OCT solutions which provide interactive customized training that meets both client organization (CO) needs and requirements, and their employees' expectations (Giannakos et al.,2021). Human resource success depends on digital training system results which exceed traditional training methods because organizations can adjust their strategies through continuous planning and redeployment (Gegenfurtner et al.,2014).

Organizations that focus on longlife learning achieve competitive advantage through their systematic training programs, maximizing employee learning effectiveness (Hannola et al.,2018; Trevor & McCracken, 2009). Organizations that develop customized training systems achieve better competitiveness through their ability to deliver faster learning cycles and flexible work-life balance, as well as local market adaptation under reduced operational expenses (Bekmanova et al.,2021). The evaluation process for digital SGs used in training requires assessment of employee responses to various learning approaches. The study of technology adoption has investigated how social influences from peers and superiors' impact behavioral intentions since the beginning of this research domain (Alvelos et al.,2015). The extended Unified Theory of Acceptance and Use of Technology (UTAUT2) framework is an accepted reference model for studying behavoral intentions' (BI) drivers in technology adoption research (Venkatesh et al.,2012). This research uses UTAUT2 as its theoretical framework to study factors that influence US workplace employees to adopt SG-based OCT training programs. The original UTAUT2 drivers, however, may not fully explain why employees would either refuse to use SG-based training methods or they could face difficulties in transferring acquired knowledge into actual skills (Velada & Caetano, 2007).

Organizational readiness and cultural conditions can determine OCT program success, but training programs show different structural approaches and varying levels of implementation (Alvelos et al.,2015). Managers encounter difficulties when trying to create training programs, because they must handle employee involvement shortages while making sure the programs fulfill company needs - instead of following pro-forma regulations (Clochard & Westerman, 2020). Employee engagement levels depend on three types of facilitating conditions, which operate independently from managerial control. The research investigates US-based client organizations' OCT strategies to create detailed knowledge about SG training acceptance among employees while building a new framework for organizational and training science (Mehra et al.,2014).

Finally, the research about employer perspectives on digital SGs and outsourced corporate training adoption factors remains scarce because these technologies have become vital for modern workplace operations. The original UTAUT2 framework enables strong technology adoption analysis but its existing dimensions fail to fully unpack a more detailed process of SG-based training engagement, regarding knowledge transfer,skill consolidation and organizational readiness. The research fills an existing knowledge gap through PLS-SEM analysis of survey data, obtained from US workers who received SG training in corporate programs. The research identifies vital behavioral factors which determine adoption rates while creating conceptual models for business SG system deployment. The research produces

two main outcomes, which include academic development through UTAUT2 extension for OCT and SGs and practical guidance for organizations to create training approaches that boost organizational learning results.

## METHODS AND MATERIALS

### Research Design

The research used quantitative methods to study how employee behavior affects their acceptance of digital SGs for OCT. The research design used the UTAUT2 framework (Venkatesh et al., 2012), which created functions as a standard framework for technology adoption studies, yet researchers have not explored its effectiveness for SG-based training.

### Sampling Strategy

The research team distributed an online survey to 200 US-based employees who received SG training through their company's corporate programs. The research team used the Amazon Mechanical Turk (AWS Turk©) platform as their participant recruitment venue, because it serves as an effective crowdsourcing site for organizational and behavioral studies. The survey instrument used validated scales from UTAUT2 constructs which measured performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation and behavioral intention. The study included additional items to measure SG training related factors, which influence SG adoption: learner interest, flexible learning schedules, predicted transfer success.

### Respondent Profile, Participation and Sampling Composition

The targeted sampling profile aimed at respondents identified as 'SG-trained professionals', who experienced through a digital SG training session or program 'in the last 12 months' (to the date of the survey). As they were ideally positioned for exploring technology-based drivers with user adoption, our online survey questionnaire instrument was supported using AWS'© Mechanical Turk [www.mturk.com] crowdsourcing platform (Peer et al., 2017). Data analysis was performed with SmartPLS 3.0©. We have ultimately selected AWS©'s crowdsourcing solution (MT) as it has been gaining traction among scholars. The MT respondent pool has a relatively high educational attainment level and younger age which aligns well with the intended population of this study: SG users conversant with digital platforms. The platform reportedly delivers high-quality and reliable data outputs, with a satisfactory participant rate degree, ensuring data adequacy in relation to the chosen theme and generating a more cohesive sample (Peer et al., 2017). As we aimed at maximizing diversity in our sample (covering any industry where corporations have sponsored, directly or indirectly, employee digital SG training), the platform adequately produced a sample with a good fit for our purposes. That is not to say that there are no downsides, such as profile misrepresentation, survey novelty selection, non-naiveté, etc.. Nonetheless, we argue that these are not significant to our survey, as our sample should present a profile relatable to 'professional respondents' (Hulland and Miller, 2018). Our MT sample included 200 responses, out of which we validated 195 (losing 2,5%), which may be deemed acceptable (Liu and Wronski, 2018). We have filtered responses using a survey trap question method to control for inattention bias and thus reducing potential variance error by placing it prior to substantial content questions (Malone and Lusk, 2019). Our sample unit of research had the following requirements: both genders, within the'legal age range to work' in the, with any educational level, in any industry , from different job hierarchical


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level or position, with any number of years of work experience, either employed or unemployed (at that moment), having at least once participated in a digital SG training session sponsored or organized by the company for which the respondent works (or worked) for. Our sample profile was ideally balanced, with a 2:1 range between Male and Female respondents, centered around 25 and 54 years of age (88.5%), currently employed (98%), with at least some college degree education (57.5% bachelors) and working in a junior (13%), middle (61%) or senior (15%) capacity. They used more than one device for digital SGs access, mostly through land and/or wireless broadband connections. We estimated that survey response duration did not exceed 15 minutes, in average. All responses were conducted online through the MT platform to validate using internal processes. The final output was delivered in a Microsoft Excel© (.XLSX) file format.

The online survey instrument was prepared on Google Forms, generating a link which was inserted in the MT system. The survey was structured in incremental steps, beginning with a screening of the respondent's familiarity with SGs and SG dynamics and processes, and SG contextualized, training and motivation-related content, leading to the proposed exploratory (Edgar and Manz, 2017), conceptual model's variables, coupled with the necessary sociodemographic and moderating variables data. To ensure adequate statement structure, we have piloted and revised the survey several times before validating a final format, thus avoiding ambiguity and redundancy in our statements. We have followed Podsakoff et al. (2003) orientation on minimizing common method bias (CMB) through positive/negative statement wording inversion, scale format and anchors compensation (mostly using variances on Likert Scales: ordinal, interval, ratio and semantic differential), and also preventing context-inducing and intermixing by interlocking first and last statements between grouped variables. Based on our statistical results, it is likely that our precautions successfully prevented CMB impact. The constructs measuring performance expectancy, effort expectancy, social influence, hedonic motivation (comprising "technology adoption") and behavioral intention were adapted from Morris et al. and Venkatesh et al. (2003; 2012) and adapted to our OCT research theme. These items were measured using 5-point Likert scales, having adopted both numerical and semantical differential scale formats. We have adapted our remining variables from Clochard and Westerman (2020): Social Capital (SC), Meeting Professional Expectations (MPE), Increased Competence (IC) and Interest in Learning (IL) comprising 'motivations for training' as intrinsic and extrinsic training goals. The constructs Time Flexibility (TF), Self-Efficacy (SE), Expected Transfer Success (ETS) and Training Visibility (TV) comprise 'facilitating conditions', being either situational, dispositional or institutional.

**Measurement Model**

All constructs were measured using multi-item Likert scales (from 1 = strongly disagree to 5 = strongly agree). The research evaluated reliability and validity through three methods which included Cronbach's alpha and composite reliability (CR) and average variance extracted (AVE). The Fornell–Larcker criterion together with heterotrait–monotrait (HTMT) ratio served to evaluate discriminant validity (Hair et al., 2017).

**Analytical Technique: PLS-SEM**

The research data underwent analysis through Partial Least Squares Structural Equation Modeling (PLS-SEM because this method works best for exploratory studies and complex

models and prediction-based research goals. The analysis method PLS-SEM provides optimal results when researchers work with limited data samples and irregular data distributions and formative constructs (Hair, Ringle, & Sarstedt, 2011). It has been recognized as a "silver bullet" for management and social science research, due to its flexibility and robustness in handling complex models (Hair et al.,2011). The new educational and behavioral research methods provide PLS-SEM with complete guidelines that explain how to build models and evaluate them and present results (Hair & Alamer, 2022). The research followed best practices through a two-stage methodology, which first verified measurement model reliability and validity before examining structural model relationships (Hair et al., 2019), performing 5,000 bootstrapping resamples to establish statistical significance for all path coefficients. The analysis was performed using SmartPLS© software (Ringle et al., 2024), in line with established methodological recommendations (Hair et al., 2017). The research design enabled researchers to assess measurement and structural models fully which produced strong empirical data about OCT SG adoption factors.

### Ethical Considerations

All participants gave their free consent to participate in the study before researchers started collecting data. The study protected participant anonymity through its policy of not collecting any personally identifiable information.

## HYPOTHESES

Twelve hypotheses are tested, as follows:

### H1: Interest in Learning → Behavioral Intention

Employee Interest in Learning serves as the main factor which determines their speed of adopting new technologies. The modern workforce learns new abilities while searching for purposeful employment according to Hastwell (2021) which supports the motivational elements of UTAUT2 (Venkatesh et al. 2012). SGs create curiosity and engagement which leads to increased behavioral intention (BI) for training method adoption.

### H2: Social Influence → Behavioral Intention

Research shows that Social Influence stands as a significant main factor which determines how users will behave when they start using new technological systems (Venkatesh et al.,2012). The extent of organizational support for training programs depends on the degree of support that employees receive from their colleagues and their supervisors (Alvelos et al.,2015).

### H3: Time Flexibility → Behavioral Intention

Modern workplaces need flexible training systems because they operate in fast-changing environments (Lawler & Benson, 2022; Moritz, 2020). The OCT training program allows staff members to choose their training schedule which matches their work responsibilities (Bekmanova et al.,2021). SGs achieve improved Behavioral Intention through their scheduling flexibility which allows them to match their methods to employee requirements.

### H4: Expected Transfer Success → Behavioral Intention

The way employees view the ability of training to deliver useful workplace abilities determines their willingness to adopt new methods. Employee Behavoral Intention increases when OCT


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programs demonstrate successful skill consolidation because employees choose methods which produce exact results (Gegenfurtner et al.,2014).

**H5: Hedonic Motivation → Behavioral Intention**

People tend to use technology more when they find it enjoyable and fun according to Venkatesh et al. (2012). SGs implement gamification elements to establish Hedonic Motivation which leads users to engage more deeply and results in higher adoption numbers. Research shows that interactive training methods, which provide enjoyment, led to better employee commitment than conventional training approaches (Giannakos et al.,2021).

**H6: Facilitating Conditions → Behavioral Intention**

The impact of Facilitating Conditions on Behavioral Intention exists, but research shows it is less significant than motivational factors. Organizations need to support OCT programs properly and their cultural environment needs to match the program structure for success (Alvelos et al.,2015). The implementation of SG-based strategies becomes difficult because their training programs vary significantly between organizations, and managers tend to oppose using these systems (Clochard & Westerman, 2020). Organizations need to merge enabling conditions with motivational factors and contextual elements, to achieve the best possible results for SG adoption success.

**H7: Performance Expectancy → Behavioral Intention**

The core element of UTAUT2, according to Venkatesh et al. (2012), is Performance Expectancy, which represents employee beliefs about how SGs enhance their work productivity. Velada & Caetano (2007) studied OCT environments to find that staff members choose training methods which prove their ability to boost operational performance and skill development. Research evidence indicates that employees adopt new systems because they discover these systems help them perform their work duties (Giannakos et al.,2021).

**H8: Effort Expectancy → Behavioral Intention**

The level of user convenience when using SGs determines the Effort Expectancy factor. The UTAUT2 framework shows that systems with reduced cognitive and technical requirements lead to higher Behavioral Intentions (Venkatesh et al.,2012). SG platforms attract more employees who handle multiple tasks because their user-friendly design and simple operation enable easy usage (Bekmanova et al.,2021). The adoption rate of SGs increases when these systems simplify learning processes and minimize complexity.

**H9: Facilitating Conditions → Knowledge Transfer Success**

Knowledge Transfer Success depends on facilitating conditions which operate independently from their effect on Behavioral Intention. The success of SG-based training depends on three organizational factors: readiness, infrastructure and managerial support (Alvelos et al.,2015). Organizations need to keep their existing structure while giving all staff members equal training opportunities to succeed with OCT knowledge transfer (Clochard & Westerman, 2020). The hypothesis demonstrates that SG adoption requires particular elements to establish successful knowledge exchange processes.

**H10: Behavioral Intention → Knowledge Transfer Success**

The strength of Behavioral Intention determines how well employees will use SGs and achieve learning results (Venkatesh et al.,2012). Staff members who plan to use SGs will achieve better knowledge transfer because they will participate more actively (Velada & Caetano, 2007). Research shows that training programs achieve better results when employees demonstrate strong motivation and commitment (Gegenfurtner et al.,2014).

**H11: Knowledge Transfer Success → Organizational Value Creation**

Organizations achieve value creation through their successful execution of knowledge transfer initiatives. Learning organizations use their training outcomes to establish market-leading positions (Hannola et al.,2018). The deployment of SGs results in improved skill maintenance, which reduces training costs and enhances operational performance and strategic alignment (Trevor & McCracken, 2009). Knowledge transfer success serves as a vital link between employee adoption of SGs and organizational achievement.

**H12: Hedonic Motivation → Knowledge Transfer Success**

The main force behind Behavioral Intention comes from Hedonic Motivation; yet this factor also impacts Knowledge Transfer Success. Employees who find pleasure in their work activities will process information at a deeper level, which results in better skill retention and application (Giannakos et al.,2021). Staff members who find SGs enjoyable will maintain their focus and work dedication, resulting in better transfer results. Research indicates that gamification produces enhanced learning outcomes because it develops positive learning environments (Mehra et al.,2014).

The full set of hypotheses is displayed in Table 1:

**Table 1: Hypotheses summary**

| Hypothesis | Relationship tested | Expected Effect | Theoretical Justification |
|---|---|---|---|
| H1 | Interest in Learning → Behavioral Intention | Positive | Motivational engagement drives adoption; younger employees seek self-development (Hastwell, 2021; Venkatesh et al., 2012). |
| H2 | Social Influence → Behavioral Intention | Positive | Peer and managerial encouragement strongly shape adoption behavior (Alvelos et al., 2015; Venkatesh et al., 2012). |
| H3 | Time Flexibility → Behavioral Intention | Positive | Flexible training models enhance adoption by supporting work–life balance (Lawler & Benson, 2022; Bekmanova et al., 2021). |
| H4 | Expected Transfer Success → Behavioral Intention | Positive | Perceived skill transfer predicts adoption; training effectiveness depends on consolidation (Velada & Caetano, 2007; Gegenfurtner et al., 2014). |
| H5 | Hedonic Motivation → Behavioral Intention | Positive | Enjoyment and gamification sustain engagement and adoption (Giannakos et al., 2021; Venkatesh et al., 2012). |
| H6 | Facilitating Conditions → Behavioral Intention | Weak/ Conditional | Organizational readiness matters but may be insufficient alone (Alvelos et al., 2015; Clochard & Westerman, 2020). |
| H7 | Performance Expectancy → Behavioral Intention | Positive | Belief in improved job performance predicts adoption (Venkatesh et al., 2012; Giannakos et al., 2021). |
| H8 | Effort Expectancy → Behavioral Intention | Positive | Ease of use increases likelihood of adoption (Venkatesh et al., 2012; Bekmanova et al., 2021). |
| H9 | Facilitating Conditions → Knowledge Transfer Success | Positive | Infrastructure and managerial support enable effective transfer (Alvelos et al., 2015; Clochard & Westerman, 2020). |
| H10 | Behavioral Intention → Knowledge Transfer Success | Positive | Strong BI predicts deeper engagement and skill consolidation (Velada & Caetano, 2007; Gegenfurtner et al., 2014). |
| H11 | Knowledge Transfer Success → Organizational Value Creation | Positive | Transfer outcomes build competitive advantage and strategic alignment (Hannola et al., 2018; Trevor & McCracken, 2009). |
| H12 | Hedonic Motivation → Knowledge Transfer Success | Positive | Enjoyment fosters retention and application of skills (Giannakos et al., 2021; Mehra et al., 2014). |

Figure 1 also shows the conceptual model, as follows:

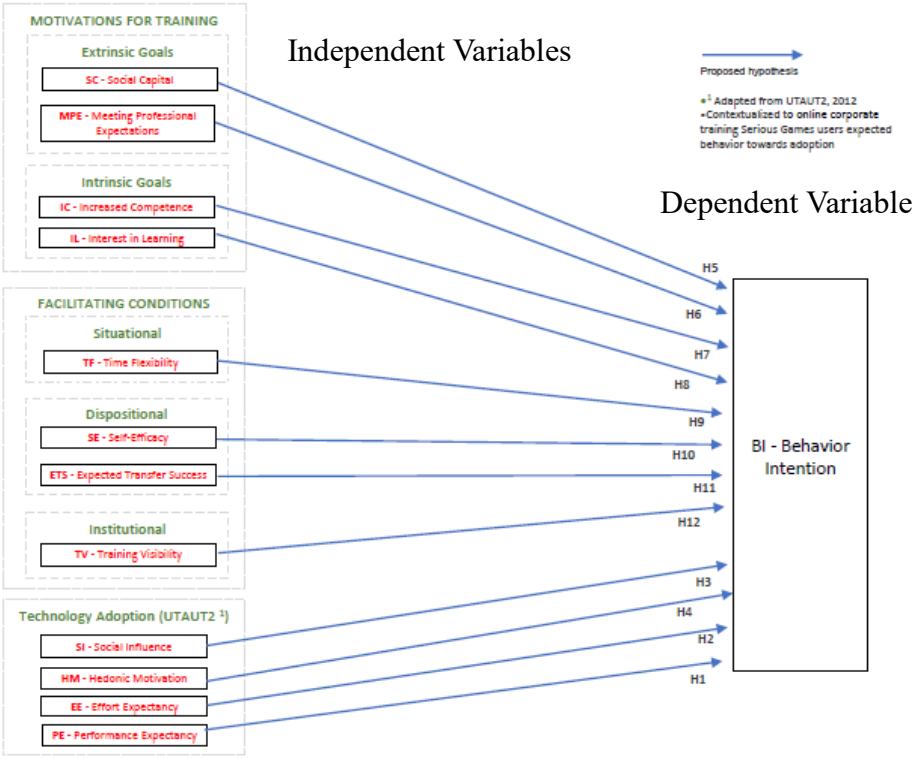


**Figure 1: proposed conceptual model, adapted from Venkatesh, et al. (2012)**

## RESULTS AND ANALYSIS

This chapter presents the outcomes of the PLS-SEM analysis, beginning with the measurement model assessment (validity and reliability) and followed by the structural model evaluation, including hypothesis testing (H1–H12). The factor loadings are illustrated in Appendix I. Except for variables EE01, BI04-REV, BI05-REV, I01, I02, I03, I05, I06, all II items 01 through 08, and IIL01, all other loaded properly within their theoretical constructs. Based on the Fornell-Larcker Criterion, all indicators grouped themselves around the analyzed factors, indicating the existence of a reliable model given that each construct loaded above the required minimum threshold, demonstrating adequate discriminant validity, illustrated in Table 2:

**Table 2: CFA – validating individual variable factor loadings**

| | BI | EE | ETS | HM | IC | IL | PE | PE | SC | SE | SI | TF | TV | XX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BI** | **0,865** | | | | | | | | | | | | | |
| **EE** | 0,611 | **0,851** | | | | | | | | | | | | |
| **ETS** | 0,798 | 0,536 | **0,857** | | | | | | | | | | | |
| **HM** | 0,796 | 0,663 | 0,7623 | **0,918** | | | | | | | | | | |
| **IC** | 0,728 | 0,561 | 0,788 | 0,8105 | **0,882** | | | | | | | | | |
| **IL** | 0,814 | 0,636 | 0,7879 | 0,8801 | 0,817 | **0,902** | | | | | | | | |
| **MPE** | 0,729 | 0,603 | 0,7433 | 0,7981 | 0,877 | 0,807 | **0,874** | | | | | | | |
| **PE** | 0,751 | 0,612 | 0,7704 | 0,8485 | 0,865 | 0,827 | 0,829 | **0,926** | | | | | | |
| **SC** | 0,579 | 0,309 | 0,6501 | 0,6559 | 0,683 | 0,587 | 0,663 | 0,654 | **0,898** | | | | | |
| **SE** | 0,724 | 0,745 | 0,6342 | 0,7587 | 0,69 | 0,769 | 0,705 | 0,72 | 0,428 | **0,836** | | | | |
| **SI** | 0,748 | 0,719 | 0,6814 | 0,7305 | 0,7 | 0,709 | 0,729 | 0,724 | 0,483 | 0,809 | **0,837** | | | |
| **TF** | 0,781 | 0,637 | 0,7539 | 0,7118 | 0,706 | 0,743 | 0,757 | 0,721 | 0,574 | 0,695 | 0,689 | **0,837** | | |
| **TV** | 0,695 | 0,718 | 0,6366 | 0,6083 | 0,61 | 0,614 | 0,625 | 0,595 | 0,369 | 0,742 | 0,768 | 0,691 | **0,869** | |
| **XX** | 0,43 | 0,202 | 0,508 | 0,5555 | 0,577 | 0,504 | 0,514 | 0,599 | 0,52 | 0,283 | 0,284 | 0,407 | 0,215 | **0,801** |

Source: Ringle et al., 2024

**Table 3: Discriminant validity**

| | Cronbach's Alpha | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|
| **BI** | 0.817 | 0.867 | 0.570 |
| **EE** | 0.811 | 0.888 | 0.725 |
| **ETS** | 0.819 | 0.892 | 0.734 |
| **HM** | 0.907 | 0.941 | 0.843 |
| **IC** | 0.858 | 0.913 | 0.778 |
| **IL** | 0.855 | 0.903 | 0.702 |
| **MPE** | 0.846 | 0.907 | 0.764 |
| **PE** | 0.916 | 0.947 | 0.857 |
| **SC** | 0.880 | 0.926 | 0.806 |
| **SE** | 0.857 | 0.903 | 0.698 |
| **SI** | 0.857 | 0.903 | 0.700 |
| **TF** | 0.786 | 0.875 | 0.701 |
| **TV** | 0.837 | 0.902 | 0.755 |
| **XX** [1] | 0.876 | 0.906 | 0.617 |

Source: Ringle et al., 2024

The resulting Structural Model, as depicted in Table 5, confirms that our initial hypotheses H1 (PE), H2 (EE), H5 (SC), H6 (MPE), H7 (IC), H10 (SE), H12 (TV ) and H13 (XX ) were rejected, while hypotheses H3 (SI $p = 0.020$, $p < 0.05$), H4 (HM $p = 0.048$, $p < 0.05$), H8 (IL $p = 0.001$, $p < 0.05$), H9 (TF $p = 0.001$, $p < 0.05$) and H11 (ETS $p = 0.013$ , $p < 0.05$) were accepted.

Our original hypotheses were also tested for a mediation relationship significance. Acceptable loading levels on discriminant, construction and convergent validity were reached, attesting to Goodness of Fit status. We have identified five confirmed partial mediations: MPE -> TF -> BI ($p = 0.014$, $p < 0.05$), SC -> TF -> BI ($p = 0.028$, $p < 0.05$), SE -> SI -> BI ($p = 0.018$, $p < 0.05$) and SE -> IL -> BI ($p = 0.029$, $p < 0.05$), TV -> TF -> BI ($p = 0.007$, $p < 0.05$) and TV -> SI -> BI ($p = 0.030$, $p < 0.05$). The mediated relationships between PE -> IL -> BI ($p = 0.053$, $p < 0.05$) was considered borderline, therefore we have decided to consider it as a valid 'partial mediation' effect, given the small sample obtained, bringing the total to seven partial mediations in our model, depicted in Table 4.

**Table 4: Accepted and Rejected Structural model hypotheses**

| | Beta | Standard deviation | T-score | P-values | Adjusted $R^2$ | VIF | Hypotheses |
|---|---|---|---|---|---|---|---|
| **EE -> BI** | -0.081 | 0.070 | 1.162 | 0.245 | **77,70%** | 3.008 | **Rejected** |
| **ETS -> BI** | 0.218 | 0.087 | 2.493 | 0.013 | | 4.126 | **Accepted** |
| **HM -> BI** | 0.186 | 0.094 | 1.975 | 0.048 | | 6.862 | **Accepted** |
| **IC -> BI** | -0.088 | 0.097 | 0.913 | 0.361 | | 6.801 | **Rejected** |
| **IL -> BI** | 0.272 | 0.079 | 3.446 | 0.001 | | 6.439 | **Accepted** |
| **MPE -> BI** | -0.076 | 0.092 | 0.830 | 0.407 | | 5.762 | **Rejected** |
| **PE -> BI** | 0.005 | 0.090 | 0.061 | 0.951 | | 6.155 | **Rejected** |
| **SC -> BI** | 0.027 | 0.058 | 0.469 | 0.639 | | 2.461 | **Rejected** |
| **SE -> BI** | 0.006 | 0.095 | 0.065 | 0.948 | | 4.667 | **Rejected** |
| **SI -> BI** | 0.169 | 0.073 | 2.322 | 0.020 | | 4.292 | **Accepted** |
| **TF -> BI** | 0.217 | 0.068 | 3.199 | 0.001 | | 3.538 | **Accepted** |
| **TV -> BI** | 0.139 | 0.073 | 1.914 | 0.056 | | 3.389 | **Rejected** |
| **XX -> BI** | -0.001 | 0.053 | 0.014 | 0.989 | | 1.964 | **Rejected** |

Source: Ringle et al., 2024

Table 4 shows the hypotheses accepted: ETS - Expected Transfer Success; HM - Hedonic Motivation; IL - Interest in e-Learning; SI - Social Influence; TF - Time Flexibility; Rejected: SC - Social Capital; MPE - Meeting Professional Expectations; IC - Increased Competence; SE - Self-Efficacy; EE - Effort-Expectancy; PE - Performance Expectancy; TV - Training Visibility; XX – TBD.

**Table 5: Mediation effects over proposed hypotheses**

| Relationships | Betas | T statistics | P-values | Mediation |
|---|---|---|---|---|
| MPE -> TF -> BI | 0.071 | 2.463 | 0.014 | Partial mediation |
| PE -> IL -> BI | 0.049 | 1.938 | 0.053 | Partial mediation |
| SC -> TF -> BI | 0.035 | 2.194 | 0.028 | Partial mediation |
| SE -> SI -> BI | 0.055 | 2.373 | 0.018 | Partial mediation |
| SE -> IL -> BI | 0.065 | 2.185 | 0.029 | Partial mediation |
| TV -> TF -> BI | 0.059 | 2.700 | 0.007 | Partial mediation |
| TV -> SI -> BI | 0.050 | 2.165 | 0.030 | Partial mediation |

Source: Ringle et al., 2024

As presented in Figure 2, our findings demonstrated that, out of our five variables depicting direct positive influence on BI, there is statistical significance for three independent variables Time Flexibility (TF), Social Influence (SI) and Intention to [e]Learn (IL) as mediating the following 5 variables: Meeting Professional Expectations (MPE), Performance Expectancy (PE), Self-Efficacy (SE), Social Capital (SC) and Training Visibility (TV).

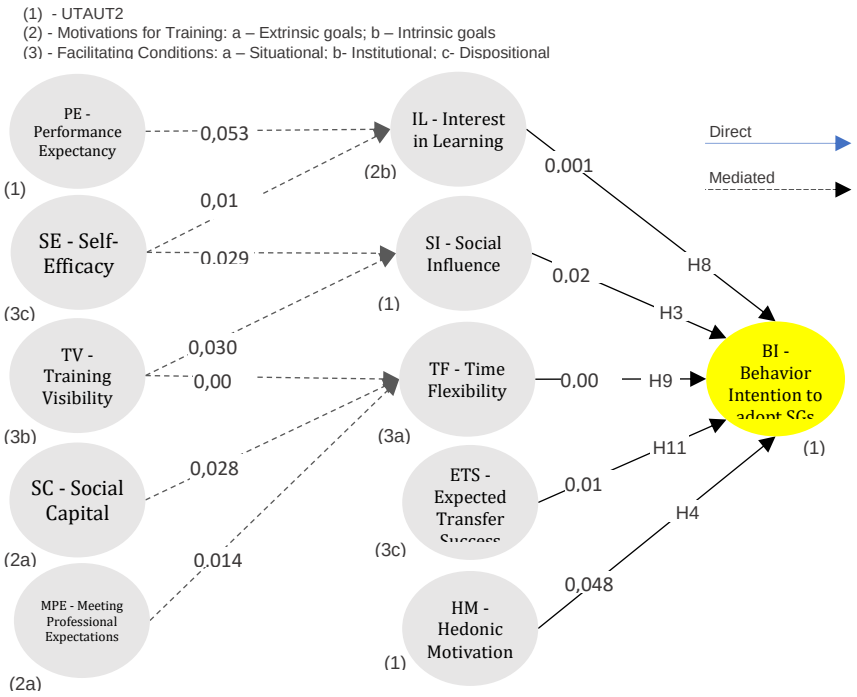


**Figure 2: Diagram validating direct and indirect relationships; Source: our own analysis over collected data**

Expected Transfer Success (ETS) and Hedonic Motivation (HM) established direct relationships with BI but did not have any significative mediating effects. Considering training motivational

drivers, intrinsic training goals (IL) have a significant positive influence on behavior intention to adopt SGs, while extrinsic goals (SC, MPE) need to be mediated by facilitating conditions to exert a positive influence as well. Facilitating conditions exert a direct (TF, ETS) and mediated (SE) positive influence, through situational and dispositional contextualization, on intention to adopt SGs. Institutionalized facilitating conditions (TV) required mediation in order to exert influence on intention behavior adoption. These are followed by UTAUT2's direct (SI, HM) and mediated (PE) positive influences on behavior intention. Finally, the proposed model's overall goodness-of- fit was assessed (Table 7) by evaluating the standardized root mean square residual (SRMR), unweighted least squares (ULS) discrepancy (dULS), and geodesic discrepancy (dG) (Henseler et al., 2014). The value of SRMR is 0.077, which is right below the ideal recommended threshold value of 0.08 (Benitez et al., 2019). Discrepancies, being less than the 95% and a Chi-Square of 2.5 suggest that our conceptual model can be accepted, which provides a good explanation of the key drivers leading to behavioral intention to adopt SGs as a legitimate corporate training tool (Benitez et al., 2019).

**Table 6: Conceptual Model Goodness-of-Fit test**

| Test | Saturated Model | Estimated Model | Baseline | Fitness |
|---|---|---|---|---|
| **SRMR** | 0.077 | 0.078 | 0,08< X ≤ 0,10 | Good FIT |
| **d_ULS** | 6.396 | 6.576 | | |
| **d_G** | 2.416 | 2.519 | | |
| **Chi-Square** | 2.481.034 | 2.543.064 | ≤2 | Good FIT |

Source: Ringle et al., 2024

## IMPLICATIONS

The results about knowledge transfer and behavioral intention would enhance this field of study by showing how SG-based training helps negotiators learn and use frameworks for intangible asset valuation which leads to better negotiation management of abstract and non-financial resources. The negotiation models developed by Dias (2020) and Dias and Navarro (2020) consist of two main frameworks which are the Four-Type Negotiation Matrix and the Three-Strategy Level Negotiation Model. The research data about time flexibility and social influence effects in our study enables model improvement through the addition of elements which describe how motivational and contextual factors influence negotiation behavior. Organizations can assess their decision-making and adaptability through digital training knowledge combined with negotiation research for complex bargaining scenario evaluation. The SG-based OCT system enables researchers to analyze nonverbal communication and trust and legitimacy during negotiations through its capability to create simulated social environments that include peer effects. The research findings about Social Influence and Self-Efficacy validate previous studies which allow researchers to study how digital negotiation systems affect team performance and individual confidence. The research conducted by Dias et al. (2021) and transformative trust by Dias and Lopes (2021a, 2021b) can benefit from the social capital and interest in learning effects discovered in our study. The controlled environments of SG-based OCT enable researchers to analyze trust dynamics and epistemic perspectives through the development of new models which demonstrate how internal and external motivational factors influence each other. The research method used PLS-SEM to study behavioral intention and mediating effects in our study which complements nonparametric approaches by providing strong statistical models that measure motivational and contextual elements. The combination of these methods allows researchers to perform thorough

investigations which unite behavioral models with negotiation theory through enhanced negotiation research analysis capabilities. The research findings from this study create new opportunities for negotiation science to study intangible assets and structured negotiation models and role-play simulations and nonverbal behavior and mediation and trust and methodological approaches. Research that unites SG-based OCT with established negotiation fields will develop complete frameworks to study mental processes and motivational elements which will result in enhanced business and organizational strategies.

## CONCLUSIONS

The increasing use of SG-based outsourced corporate training (OCT) for digitally native employees entering the workforce helps organizations meet their employee development requirements but creates advanced training service requirements for organizations. The training equation needs employees to become essential stakeholders because they directly benefit from SG initiatives which support maintaining a competitive workforce. The classification of SGs depends on two essential elements which include organizational stakeholder sophistication and corporate requirements and Serious Game Developer (SGD) expertise. The study shows that SG training from corporate sponsors increased employee engagement better than traditional learning methods yet employees needed help to apply their new skills in their actual work environment. The three variables Time Flexibility (TF) Social Influence (SI) and Interest in Learning (IL) had a significant impact on Behavioral Intention (BI). Time Flexibility (TF) functioned as a situational factor which let staff members join training sessions based on their work requirements while building their professional relationships. Social Influence (SI) served as a mediator between Training Visibility (TV) and Self-Efficacy (SE) to demonstrate how group approval influences both organizational group membership and professional acceptance. The validation process of training value from social groups determines how employees build their self-assurance and capability recognition which goes beyond their individual characteristics. The research shows that social groups establish training value which affects how people learn and their career development. The Interest in Learning (IL) variable served as a mediator to show that employees who actively want to learn will develop their skills but those who only follow rules will not. Evidence show that employees base their decision to use SGs for OCT through multiple direct and indirect factors. SGs prove their value in corporate training because they teach new skills while creating diverse learning environments which unite organizational and personal incentives to build effective and interesting training initiatives. SGs create value in corporate training because they teach new skills while building diverse learning environments which link organizational objectives to individual interests to develop meaningful and successful training programs.

## FUTURE RESEARCH

The research results indicate various promising research paths which scientists should investigate. The study demonstrates that employees participate inSGs for training because these games offer motivational aspects and they can be played at flexible times while receiving social influence and showing interest in learning. Research should analyze employee adoption patterns through studies of organizations that operate in various industries and cultural settings and have different organizational structures and resource availability and workforce diversity. The research shows that Hedonic Motivation, together with Expected Transfer Success, directly influences Behavioral Intention, compeling SG developers to create games that


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unite entertainment value with useful learning content. Research should analyze how particular design components including narrative elements and adaptive difficulty and feedback systems affect both learning enjoyment and knowledge transfer, to develop better game-based learning methods. Research needs to perform extended investigations to determine the effects of SG-based outsourced corporate training (OCT) on organizational performance outcomes. The study showed that SG-based OCT produces positive results for Behavioral Intention and knowledge transfer. Nonetheless, researchers should study its effects on employee retention, innovation capacity and organizational ambidexterity during extended periods. The research will prove that SGs generate lasting organizational value through their strategic impact. Research should unite SG-based OCT with negotiation science and leadership development and organizational culture studies to achieve cross-disciplinary results. Research into digital training environments should study their effects on trust development, collaborative work and decision-making processes to expand SGs research beyond training success. The research needs to develop new methods for studying SG adoption. As the PLS-SEM method in this research study produced essential findings about the mediating factors, future studies need to use experimental designs together with qualitative case studies and mixed-methods analyses to further expand the understanding of SG adoption, because these methods will unpack the process complexities. The combination of different research methods will produce more reliable results, which can be applied to various business environments.

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## APPENDIX I – FACTOR LOADINGS

| | BI | EE | ETS | HM | IC | IL | MPE | PE | SC | SE | SI | TF | TV | XX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BI**01 | **0.847** | 0.532 | 0.704 | 0.696 | 0.633 | 0.735 | 0.644 | 0.647 | 0.512 | 0.601 | 0.602 | 0.740 | 0.601 | 0.379 |
| **BI**02 | **0.790** | 0.522 | 0.609 | 0.627 | 0.531 | 0.663 | 0.551 | 0.557 | 0.469 | 0.583 | 0.592 | 0.611 | 0.568 | 0.282 |
| **BI**03 | **0.862** | 0.530 | 0.748 | 0.735 | 0.713 | 0.757 | 0.682 | 0.733 | 0.519 | 0.689 | 0.743 | 0.670 | 0.629 | 0.442 |
| **EE**02 | 0.432 | **0.851** | 0.397 | 0.474 | 0.393 | 0.454 | 0.476 | 0.445 | 0.172 | 0.662 | 0.603 | 0.527 | 0.643 | 0.021 |
| **EE**03 | 0.487 | **0.886** | 0.401 | 0.509 | 0.401 | 0.477 | 0.461 | 0.459 | 0.170 | 0.603 | 0.599 | 0.496 | 0.626 | 0.110 |
| **EE**04 | 0.567 | **0.816** | 0.547 | 0.678 | 0.603 | 0.662 | 0.577 | 0.629 | 0.410 | 0.633 | 0.619 | 0.589 | 0.569 | 0.341 |
| **ETS**01 | 0.678 | 0.416 | **0.822** | 0.696 | 0.654 | 0.752 | 0.617 | 0.661 | 0.618 | 0.553 | 0.572 | 0.620 | 0.489 | 0.492 |
| **ETS**02 | 0.611 | 0.415 | **0.889** | 0.630 | 0.675 | 0.690 | 0.641 | 0.658 | 0.548 | 0.488 | 0.528 | 0.642 | 0.515 | 0.414 |
| **ETS**03 | 0.644 | 0.544 | **0.859** | 0.630 | 0.693 | 0.683 | 0.648 | 0.659 | 0.502 | 0.585 | 0.656 | 0.675 | 0.628 | 0.396 |
| **HM**01 | 0.710 | 0.558 | 0.649 | **0.915** | 0.755 | 0.806 | 0.744 | 0.788 | 0.641 | 0.661 | 0.631 | 0.609 | 0.493 | 0.568 |
| **HM**02 | 0.711 | 0.634 | 0.698 | **0.914** | 0.721 | 0.778 | 0.716 | 0.754 | 0.573 | 0.710 | 0.672 | 0.664 | 0.586 | 0.458 |
| **HM**03 | 0.751 | 0.632 | 0.749 | **0.925** | 0.755 | 0.824 | 0.734 | 0.795 | 0.593 | 0.718 | 0.712 | 0.690 | 0.596 | 0.503 |
| **I**04 | 0.411 | 0.131 | 0.425 | 0.431 | 0.477 | 0.450 | 0.408 | 0.504 | 0.481 | 0.201 | 0.247 | 0.328 | 0.215 | **0.818** |
| **I**07 | 0.343 | 0.102 | 0.347 | 0.400 | 0.409 | 0.407 | 0.369 | 0.444 | 0.368 | 0.176 | 0.185 | 0.262 | 0.117 | **0.766** |
| **I**08 | 0.299 | 0.171 | 0.388 | 0.400 | 0.447 | 0.392 | 0.359 | 0.450 | 0.338 | 0.208 | 0.211 | 0.301 | 0.183 | **0.784** |
| **I**09 | 0.448 | 0.210 | 0.492 | 0.533 | 0.541 | 0.530 | 0.533 | 0.551 | 0.425 | 0.334 | 0.288 | 0.421 | 0.230 | **0.860** |
| **I**10 | 0.350 | 0.179 | 0.358 | 0.442 | 0.420 | 0.415 | 0.364 | 0.435 | 0.470 | 0.184 | 0.210 | 0.300 | 0.096 | **0.775** |
| **ICO**01 | 0.678 | 0.535 | 0.715 | 0.751 | **0.901** | 0.787 | 0.819 | 0.797 | 0.625 | 0.643 | 0.635 | 0.635 | 0.570 | 0.523 |
| **ICO**02 | 0.600 | 0.459 | 0.625 | 0.670 | **0.857** | 0.710 | 0.707 | 0.726 | 0.577 | 0.552 | 0.551 | 0.594 | 0.487 | 0.501 |
| **ICO**03 | 0.586 | 0.487 | 0.740 | 0.721 | **0.888** | 0.736 | 0.788 | 0.765 | 0.604 | 0.628 | 0.668 | 0.641 | 0.553 | 0.502 |
| **IL**02 | 0.727 | 0.644 | 0.708 | 0.837 | 0.752 | **0.904** | 0.739 | 0.762 | 0.513 | 0.758 | 0.683 | 0.695 | 0.574 | 0.423 |
| **IL**03 | 0.714 | 0.564 | 0.756 | 0.746 | 0.766 | **0.872** | 0.732 | 0.769 | 0.586 | 0.643 | 0.607 | 0.696 | 0.546 | 0.520 |
| **IL**04 | 0.751 | 0.510 | 0.666 | 0.797 | 0.694 | **0.864** | 0.708 | 0.704 | 0.488 | 0.678 | 0.632 | 0.620 | 0.540 | 0.421 |
| **MPE**01 | 0.508 | 0.402 | 0.564 | 0.607 | 0.739 | 0.645 | **0.845** | 0.677 | 0.653 | 0.526 | 0.544 | 0.582 | 0.417 | 0.474 |
| **MPE**02 | 0.682 | 0.624 | 0.710 | 0.783 | 0.783 | 0.782 | **0.894** | 0.777 | 0.555 | 0.690 | 0.721 | 0.736 | 0.655 | 0.449 |
| **MPE**03 | 0.642 | 0.531 | 0.662 | 0.686 | 0.776 | 0.727 | **0.882** | 0.711 | 0.547 | 0.616 | 0.631 | 0.653 | 0.541 | 0.431 |
| **PE**01 | 0.721 | 0.591 | 0.711 | 0.780 | 0.786 | 0.794 | 0.776 | **0.930** | 0.563 | 0.684 | 0.718 | 0.685 | 0.601 | 0.535 |
| **PE**02 | 0.695 | 0.560 | 0.688 | 0.780 | 0.781 | 0.771 | 0.754 | **0.917** | 0.626 | 0.655 | 0.649 | 0.661 | 0.528 | 0.572 |
| **PE**03 | 0.660 | 0.547 | 0.739 | 0.796 | 0.836 | 0.801 | 0.770 | **0.929** | 0.628 | 0.662 | 0.649 | 0.659 | 0.522 | 0.557 |
| **SC**01 | 0.449 | 0.281 | 0.569 | 0.548 | 0.582 | 0.535 | 0.551 | 0.580 | **0.913** | 0.364 | 0.419 | 0.512 | 0.325 | 0.479 |
| **SC**02 | 0.524 | 0.268 | 0.608 | 0.628 | 0.653 | 0.620 | 0.621 | 0.615 | **0.893** | 0.420 | 0.454 | 0.527 | 0.343 | 0.457 |
| **SC**03 | 0.463 | 0.282 | 0.570 | 0.586 | 0.602 | 0.571 | 0.615 | 0.564 | **0.887** | 0.367 | 0.438 | 0.514 | 0.324 | 0.467 |
| **SE**01 | 0.459 | 0.724 | 0.383 | 0.508 | 0.451 | 0.488 | 0.473 | 0.456 | 0.199 | **0.830** | 0.681 | 0.477 | 0.636 | -0.001 |
| **SE**02 | 0.521 | 0.616 | 0.468 | 0.518 | 0.493 | 0.563 | 0.514 | 0.490 | 0.222 | **0.867** | 0.661 | 0.553 | 0.629 | 0.148 |
| **SE**03 | 0.752 | 0.531 | 0.716 | 0.830 | 0.775 | 0.805 | 0.744 | 0.802 | 0.573 | **0.818** | 0.686 | 0.648 | 0.575 | 0.476 |
| **SE**04 | 0.569 | 0.650 | 0.481 | 0.604 | 0.514 | 0.623 | 0.560 | 0.581 | 0.353 | **0.827** | 0.663 | 0.607 | 0.649 | 0.224 |
| **SI**01 | 0.623 | 0.615 | 0.563 | 0.655 | 0.569 | 0.608 | 0.603 | 0.599 | 0.488 | 0.702 | **0.845** | 0.611 | 0.613 | 0.250 |
| **SI**02 | 0.530 | 0.637 | 0.499 | 0.565 | 0.503 | 0.518 | 0.566 | 0.542 | 0.261 | 0.681 | **0.846** | 0.512 | 0.677 | 0.111 |
| **SI**03 | 0.623 | 0.658 | 0.504 | 0.580 | 0.554 | 0.595 | 0.598 | 0.586 | 0.317 | 0.719 | **0.845** | 0.571 | 0.717 | 0.161 |
| **SI**04 | 0.675 | 0.495 | 0.711 | 0.642 | 0.708 | 0.698 | 0.662 | 0.690 | 0.540 | 0.602 | **0.809** | 0.604 | 0.564 | 0.422 |
| **TF**01 | 0.563 | 0.481 | 0.591 | 0.494 | 0.514 | 0.584 | 0.599 | 0.543 | 0.369 | 0.597 | 0.599 | **0.784** | 0.657 | 0.240 |
| **TF**02 | 0.622 | 0.570 | 0.610 | 0.619 | 0.576 | 0.662 | 0.613 | 0.578 | 0.457 | 0.567 | 0.560 | **0.846** | 0.530 | 0.332 |
| **TF**03 | 0.626 | 0.549 | 0.689 | 0.669 | 0.676 | 0.720 | 0.685 | 0.685 | 0.607 | 0.584 | 0.577 | **0.879** | 0.552 | 0.440 |
| **TV**01 | 0.538 | 0.528 | 0.582 | 0.477 | 0.514 | 0.539 | 0.536 | 0.517 | 0.318 | 0.567 | 0.608 | 0.639 | **0.833** | 0.183 |
| **TV**02 | 0.563 | 0.715 | 0.544 | 0.557 | 0.537 | 0.567 | 0.565 | 0.514 | 0.273 | 0.725 | 0.722 | 0.586 | **0.896** | 0.129 |
| **TV**03 | 0.593 | 0.622 | 0.535 | 0.549 | 0.538 | 0.581 | 0.522 | 0.519 | 0.372 | 0.637 | 0.664 | 0.573 | **0.876** | 0.250 |

## APPENDIX II – LIST OF ABBREVIATIONS

| Driver | Abbreviation |
|---|---|
| Behavior Intention to adopt | BI |
| Effort Expectancy | EE |
| Expected Transfer Success | ETS |
| Hedonic Motivation | HM |
| Increased Competence | IC |
| Interest in Learning | IL |
| Meeting Professional Expectations | MPE |
| Performance Expectancy | PE |
| Social Capital | SC |
| Self-Efficacy | SE |
| Social Influence | SI |
| Time Flexibility | TF |
| Training Visibility | TV |
| Source: created by the autor | |