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Perception and attitude toward applying e-learning in workplace training – an empirical study in Ho Chi Minh City enterprises

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Abstract: In globalisation and integration, many organisations evaluate corporate training as a valuable and essential tool to provide knowledge and skills for their employees to survive and enhance competitiveness. Moreover, the bloom of information technology and the revolution of Industry 4.0 have marked a milestone that has changed almost all enterprises' activities in the 21st century, including reshaping workplace training. This exploratory study investigates the perception and attitude of 193 enterprises in Ho Chi Minh City about applying technology for workplace training. Firstly, research results showed that around 50% of enterprises have positive attitudes towards technology transformation despite hesitation. Secondly, through exploratory factor analysis (EFA), the perception of advantages was grouped into 'convenience and cost-effectiveness' and 'employee's motivation,' while disadvantages of e-learning in corporate training were classified into benefits and drawbacks for individuals and organisations. In addition, the research pointed out that with the current status of e-learning applications, there is a difference in perception and attitude among companies towards the transformation of workplace training.

Keywords: workplace training; corporate training; e-learning; attitude; perception; organisation.

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Tien-Minh Nguyen is currently teaching for over eight years at Hong Bang International University – HCMC, Vietnam. He finished the Master's program in International Consulting in Business from Ludwigshafen University of Applied Sciences, Germany. He has experience working in both state and MNCs, from an executive role to business development manager (Bilfinger – Tebodin, Samsung). He is currently working and teaching in business management and operations. By working and collaborating on various functions and being involved in biz change, his practical cases help students discover the challenge and solution approach for enterprises. His capability is robust in connecting internal functions to actual demand from the market.

1 Introduction

In globalisation and integration, to survive and enhance competitiveness, many organisations evaluate corporate training as a valuable and essential tool to provide knowledge and skills for their employees. In other words, corporate training is an effective method because it helps employees improve their abilities and allows enterprises to enhance their performance (Hien Thi Tran et al., 2021; Jehanzeb et al., 2017; Zaraket and Halawi, 2017). Moreover, the bloom of information technology and the revolution of Industry 4.0 remarked a milestone that has changed almost all enterprises' activities in the 21st century, including reshaping workplace training (Cascio, 2019). Specifically, Docebo (2018) pointed out that enterprises of all sizes began to consider corporate e-learning training as a feasible solution because of the company's

budget and employees' continual learning. Hence, the development of information technology created conditions for the employees to learn continually and overcome the hurdle of space and time.

Although corporate e-learning training has developed and taken up a considerable investment of enterprises, this application has some benefits and drawbacks. On the one hand, applying e-learning in workplace training can maintain long-life learning of staff and "allows organisations to capture, transfer, and retain knowledge assets in effective ways" [Wang, (2018), p.2]. On the other hand, as with any reconstruction attempts in organisations, the change from traditional training to the new methodology requires such investment, the change management capability to reach the learning goal and effective as expected and overcome the challenges of culture, technology, and especially the employees' resistance (Kimiloglu et al., 2017; Wang, 2018).

Despite difficulties and challenges in the changing process, corporate e-learning training will continue to rise and bloom next time. According to the report 'Executive summary market. Overview E-learning market', Docebo (2018) showed that the increasing technology in workplace training in all kinds of enterprises was the critical cause pushing the growth of the e-learning market all over the world. The corporate e-learning training global is predicted to reach a CARG of 11.41% from 2018 to 2022 and more than 13% between 2020 and 2026. Besides, TechNavio (2021) forecast that the size of the worldwide e-learning market would go up by USD 147.7 billion between 2021 to 2025, soaring at a CARG of 16% during the forecast period. The report 'Global E-learning Market – Outlook and Forecast 2021–2026' also predicted that the size of the global e-learning market witnessed to reach more than 380 billion USD in all fields, including language education, skill training, and higher education, corporate training. Moreover, the report presented that corporate e-learning training would record a growth rate of around 13.4% during the forecast period. One thing worth noting here, besides the development of information technology, the COVID-19 pandemic has also contributed to promoting the change in workplace training at the enterprise.

According to those reports, e-learning and corporate e-learning training will continue to thrive, but both the size market and development are different between the regions and nations worldwide. According to Syahid (2020), Asia accounts for a haft of global worldwide at 55.1% and has nearly 50% of internet users. Moreover, Syahid (2020) mentioned that Asia has the highest rate of e-learning development.

As one country in Asia, Vietnam also has much potential for e-learning development. According to Ken Research (2019), Vietnam promises many information technology advancement opportunities as a country with high economic prospects in the Pacific Asia region. The report showed that the rate of internet users in Vietnam is predicted to increase up to 78%, and the proportion of people having smartphones will rise to 48% at the end of 2023. Based on the positive signs, Ken Research (2019) believed that the e-learning growth in Vietnam will reach a CARG of 20.2% from 2019 to 2023. Besides, Hien Thi Tran et al. (2021) showed that more than 50% of Vietnamese enterprises use e-learning in corporate training because of its high flexibility. The researchers indicated that many groups such as FPT, Viettel, or BIDV bank had provided internal training through e-learning systems.

Although having much development potential, there is little research in the e-learning field in Vietnam. Based on the report's data summarising e-learning research in Asia from 1996 to 2018, Vietnam had only 49 papers related to this topic (Syahid, 2020). This number is lower than the publications in Taiwan, Japan, Malaysia, Singapore, and

Thailand. Moreover, Hien Thi Tran et al. (2021) presented some studies in Vietnam on the relationship between corporate e-learning training and job performance, but they just focused on the integration stage and did not provide an overview of this relationship. The researchers also commented that the e-learning studies in Vietnam corporate training under the perspective of organisations or leaders are still rare. So, Syahid (2020) noted that the gap is critical in enhancing the publication's quantity and quality in the e-learning field in Vietnam and Asia.

With the strong growth prospects of corporate e-learning training in the global and optimistic forecast of Vietnam's online market, in order to fill the research gap, this study aims to explore the general perceptions and attitudes of applying the e-learning in workplace training under the views of organisations as followings:

1 What is the enterprise attitude toward using e-learning in corporate training?

2 What are the enterprise perceptions about the advantages and disadvantages of applying e-learning?

3 Is there any difference in attitude and perception of enterprises based on the current e-learning status?

This study contributes to the current literature on applying e-learning in workplace training at Vietnamese enterprises. As mentioned above, current research topics on e-learning in Vietnam are still not widespread, especially studies on workplace training from an organisational perspective (Syahid, 2020). Several topics related to this field mainly give personal opinions from learners and users (Le et al., 2018). Therefore, the main contribution of this study is providing an organisational overview of e-learning adoption than an individual one. Specifically, critical positions from 193 enterprises had the opportunity to show their opinions on perceptions and attitudes towards the e-learning application in workplace training instead of individual points of view and experience.

Another significant contribution is the empirical research results. There are many theories and empirical studies on the perception, attitude, and motivation of individual learners and users toward the e-learning application. In contrast, few empirical studies generalise and adjust the cognitive scales to fit different research contexts on workplace training organisation perspectives. This study synthesised and tested the perceived advantages and disadvantages scales from the organisation's perspective rather than the user's behaviour mentioned in past studies.

Moreover, the research results point out opportunities and challenges in this potential market in Vietnam. In other words, based on the study, enterprises have multi-dimensional information from both individual and organisational perspectives to plan and strategise that they can develop e-learning workplace training effectively. In addition, they also have policies on human resources and technology in line with their business goals. These results also provide a reference source for e-learning solution providers to exploit and approach this potential market in Vietnam.

The study is structured as follows. The following section outlines the theoretical underpinnings of this study and reviews the previous studies in the field. The methodology section follows, as well as the results section. Finally, we summarise conclusions and discuss the results, limitations, and future research directions.

2 Literature review

2.1 E-learning definitions

As part of the new dynamics that characterise education systems in the 21st century, the definitions of e-learning are considered to be constantly changing with many different approaches (de Souza Rodrigues et al., 2021). Al-Fraihat et al. (2020) stated that due to the development of information technology, it is impossible to have a single definition of e-learning. Many recent research works, such as Sadeghi (2018), and Kumar Basak et al. (2018), have made many efforts to synthesise e-learning materials.

By systematising 280 documents to select 126 articles with Arksey and O'Malley (2005) method, Kumar Basak et al.(2018) clarified the difference between the three learning tools such as d-learning, m-learning, and e-learning in terms of concepts, standard terms, differences, and advantages and disadvantages to help scientists and educators overcome confusion and ambiguity when studying and using these terms. Besides, the authors also pointed out that e-learning and m-learning are subsets of d-learning.

According to Eze et al. (2018), e-learning is a learning method through technology and electronic devices such as hardware devices, software, and electronic documents to build a distance learning environment that empowers teachers and students in the interrelationship of teaching and learning (Lizcano et al., 2020

Wong et al., 2020). The definition of Eze et al. (2018) emphasised the Information Technology element in transforming the traditional learning model. Similarly, Al-Fraihat et al. (2020) also presented that e-learning is a modern means of supporting learning through the internet and integrating technology and education. Wang (2018) and Saxena et al. (2021) also mentioned e-learning as a learning method via the internet to create a flexible and personalised learning environment.

Also approaching e-learning based on the foundations of information and communication technology, Maatuk et al. (2021), Aljawarneh (2020); Lara et al. (2020) point out other forms of e-learning such as "Web-based education, digital learning, interactive learning, computer-assisted teaching, and internet-based learning" [Maatuk et al., (2021), p.3]. Through previous systematic studies, Alharthi et al. (2019, p.2) proposed an overview definition of e-learning as "an educational solution to deliver knowledge, facilitate learning and improve performance by creating, using and managing appropriate technological processes and resources".

2.2 Theoretical background

There are many studies related to the e-learning application in workplace training with approaches to diversity and research methods. One of the related models was the 'IS success mode' of DeLone and McLean (1992) which studied the impact of system quality, content quality, and user satisfaction. Based on the 'IS success model,' Wang et al. (2007) and Bhuasiri et al. (2012) developed and added some factors and adjusted the measurement scale to evaluate the success of e-learning implementation in many situations with a more comprehensive approach. Besides, the technology acceptance model (Davis, 1989) is one of the most popular models used in e-learning adoption research at enterprises, such as the extended TAM model (Lee et al., 2013) or the combination of the 'IS success model' and TAM of Mohammadi (2015).

Another prominent model used in this field is the UTAUT (Venkatesh et al., 2003). Through the UTAUT model and SEM analysis method, Lin et al. (2019) investigated the relationship between employees' perception of the e-learning system, organisational culture, and job satisfaction. Analytical results from surveying 297 employees of a telecommunications company showed that the adoption of e-learning has a positive impact on organisational culture and job satisfaction. The study also demonstrated the mediating role of organisational culture in this relationship. Lin et al. (2019) argued that when employees believe that e-learning is necessary for workplace training, helpful in providing relevant knowledge, and increasing work performance, they will help their colleagues learn together and feel more satisfied with the job. These employees are even more willing to share knowledge, and skills, a higher level of satisfaction.

Also, through the UTAUT model as the foundation, Mehta et al. (2019, p.1) integrated 'integrate values relating to conservation of the status quo and self-enhancement from Schwartz's Theory of Human Values' (Schwartz, 2012; Schwartz et al., 2012) to develop the values-enhanced technology adoption model (VETA) and verified it through empirical research in two companies in the Gambia and the UK. Mehta et al. (2019) argued that few studies discover the impact of values on adoption models and none within the scope of digital education. Therefore, this exploratory study aims to integrate values with technology adoption models and apply new conceptual models to the digital education context. Experimental results demonstrated the influence of self-enhancement values in the model through social influence, price value, and performance expectancy. The study concluded that VETA would be a valuable model for studying technology adoption within corporate online training.

Next, by combining three background theories including theories of behaviour theory (Ajzen, 1991), diffusion of innovation (Rogers, 1983), and the UTAUT, Kapo et al. (2020) examined the impact of four factors: professional, personal, information technology, and environment, on continued use of e-learning in workplace of 672 employees of different organisations. The structural equation model analysis results showed that personal factors have the most impact, followed by technical and environmental factors. These factors all positively impact employees' decision to continue using e-learning in the learning process. In addition, the study also showed a correlation between continued use of e-learning and job performance. In other words, continued use of e-learning would create advancements in work. Research has contributed to making evaluations after applying e-learning in organisations and providing references for companies and educational institutions in understanding the needs of adult learners to stay motivated, create appropriate learning environments to help them continue learning, and improve work performance.

Approach from a different perspective and method, Costello and McNaughton (2018) used qualitative research with representatives of 12 organisations in New Zealand to demonstrate that e-learning could be used and supported for dynamic capacity development. Research results showed that organisations with a dynamic organisational environment tend to use e-learning to support the process of creating and adapting to changes in the environment. The research results also provided an overview of dynamic competencies and presented how e-learning training can be applied to achieve these competencies.

Instead of focusing on research hypothesis tests, Kimiloglu et al. (2017) focused on exploring perceptions of advantages, disadvantages, and attitudes towards implementing e-learning in workplace training at 106 of the top 500 corporations in Turkey. The

findings showed that most of them were hesitant to adopt e-learning in workplace training. Moreover, the EFA also showed the perceptions of advantages and disadvantages when implementing e-learning.

Wang (2018) tried to provide rigorous assessments and analyses on the application of e-learning in workplace training and proposed a performance-oriented training framework. The researcher argued that the factors that influence learning are a complex system of multiple levels from the individual perspective, the organisational perspective, and the judgments from society, and are motivated by goals to improve individual and organisational performance. As shown in the proposed model, it is crucial to clearly define goals suitable for individuals and organisations to serve as a premise for individuals' self-training, promote organisational interaction, and manage their knowledge assets.

In Vietnam, e-learning is an effective support tool for workplace training. However, there is still a lack of research and scientific publication to provide a comprehensive and multi-dimensional view of enterprises and organisations. A few research topics that are most relevant to the e-learning application in enterprises can be considered as the followings.

In the study of corporate training and performance results, (Nguyen and McLean, 2021) affirmed that training is the most critical tool to provide employees' knowledge and skills, individual performance, and enterprise productivity. Moreover, the authors emphasised that it is the way to maintain the competitiveness and survival of enterprises. Research results presented some trends of corporate training in Vietnamese enterprises, such as: focusing on specific skills related to the current job, increasing the application of active training methods, and e-learning because of its high flexibility in helping employees improve knowledge and skills quickly. Research results have shown that more than 50% of enterprises are currently applying e-learning in internal training in Vietnam. The authors analyse this evidence, implying that Vietnamese enterprises began to perceive the benefits of e-learning. However, the study only provides aggregate data and does not focus on an in-depth assessment of the behaviour of enterprises in Vietnam towards e-learning applications.

As a not yet widely used teaching method in pharmacy training in Vietnam, Le et al. (2018) conducted a study to determine the factors related to the use of e-learning for the lifelong career development of pharmacists and evaluate the conditions for applying e-learning to develop this training model in the pharmaceutical field in Vietnam. The primary purpose of this study is to determine the attitude of Vietnamese pharmacists towards e-learning and the factors affecting the application of e-learning through a survey of 111 pharmacists from November 2016 to March 2017 in Hanoi, Vietnam. The multivariable logistic regression model showed that participating pharmacists had a positive attitude toward using e-learning for lifelong career development. However, the topic only stopped at learners' perspectives, not mentioning factors and perspectives from businesses and managers in the application of e-learning in enterprises.

In summary, most of the studies in Vietnam only focused on personal perspectives and lacked a view from the organisations. In addition, most of the studies just assessed the situation, so there are no practical results to serve as a premise for further studies.

Instead of evaluating the correlations between factors in the TAM model on factors affecting users' perceptions, attitudes, and behaviours towards the technology application, the study provided a more organisational overview of e-learning adoption than an individual one. In other words, this study aimed to assess enterprises' general

awareness and attitude towards the implementation of e-learning in workplace training. Specifically, the study focused on the perceptions of the advantages and the disadvantages of e-learning implementation. Therefore, the researchers reviewed related research papers on the advantages and disadvantages of e-learning for general and corporate training activities. Then, the author categorises and groups emerging issues that have similarities to previous studies.

2.3 Advantages and disadvantages

Previous papers have shown that the most outstanding advantage that e-learning brings is flexibility learning (Kimiloglu et al., 2017; Kumar Basak et al., 2018; Le et al., 2018; Lin et al., 2019; Pham and Da Vo, 2021; Syahid, 2020; Wang, 2018; Wu et al., 2020). Wu et al. (2020) evaluated it as a 'great amount of benefit' compared to the traditional learning model. In other words, through electronic devices and communication technology, learners can learn anywhere and anytime, notwithstanding geographical and time barriers. In addition, e-learning is also effective in terms of time and helps individuals and organisations save costs (Cascio, 2019; Costello and McNaughton, 2018; Eze et al., 2018; Kimiloglu et al., 2017; Kumar Basak et al., 2018; Le et al., 2018; Pham and Da Vo, 2021; Syahid, 2020; Wu et al., 2020). Specifically, Phi et al. (2021) pointed out that this training method is 'comparatively cheaper' in specific aspects such as transportation costs, accommodation, or document printing. Besides, the diversity of learning resources (with different formats such as text, audio, video, and multimedia lectures) and the ability to easily update are also recognised as benefits of online training. So it can create a suitable learning environment or pace for each individual (Aljawarneh, 2020; Kimiloglu et al., 2017; Kumar Basak et al., 2018; Saxena et al., 2021; Wu et al., 2020). Finally, training efficiency and learners' competencies/skills improvement (self-study ability, information technology skills) are also advantages compared to traditional training (Kumar Basak et al., 2018; Pham and Da Vo, 2021; Wu et al., 2020).

In addition to the general advantages mentioned above, Costello and McNaughton (2018), Kimiloglu et al. (2017) and Lin et al. (2019) also pointed to other benefits that e-learning brings to organisations, such as creating rapid responses to changes or providing opportunities to improve employees' information access skills and create opportunities for knowledge sharing. Wang (2018) also emphasised that e-learning in workplace training has apparent advantages in facilitating self-study and maintaining lifelong learning ability, and helping organisations manage and store intellectual property in the best way.

However, there are still many barriers and challenges to achieving the above benefits. When conducting this method, technical issues such as connectivity, bandwidth, and lack of investment costs for infrastructure must be carefully considered (Eze et al., 2018; Kimiloglu et al., 2017; Kumar Basak et al., 2018; Le et al., 2018; Tina Cheng and Chen, 2015; Yoo et al., 2015). Besides, the lack of social interactions in the learning process makes learners feel isolated and reduces motivation during training (Kumar Basak et al., 2018; Wu et al., 2020). Moreover, the lack of relevant knowledge and skills makes learners feel stressed and have adverse reactions, even resistance to switching to a new training method (Aljawarneh, 2020; Pham and Da Vo, 2021; Wu et al., 2020). Wang (2018) pointed out one of the most significant barriers to building corporate e-learning training courses in instructional design. Available training packages often have general content unrelated to the job or even inappropriate for the organisation's environment. Eze

et al. (2018), Kimiloglu et al. (2017), and Wang (2018) also presented that the transformation sometimes lacks support from the Board of Directors or does not fit with the organisational culture, making it impossible to achieve the expected results.

The advantages and disadvantages of the e-learning training method are summarised and presented in Tables 1 and 2.

3 Research methodology

3.1 Research measures

The first part of the questionnaire covers enterprises' perceptions (namely, perception of advantages and disadvantages). The second part covers attitudes towards e-learning application in workplace training. Questions related to the perception of the pros and cons of online training (24 items) and the attitudes were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). In order to find out about enterprises' profiles, general information questions included items on gender, age, position, enterprise size, enterprise field, and current and e-learning status of the enterprise

Table 1 Advantages of-learning

Advantages	*References*
Flexible learning	Choudhury and Pattnaik (2020), Kapo et al. (2020), Kimiloglu et al., (2017), Kumar Basak et al. (2018), Le et al. (2018), Lin et al. (2019), Pham and Da Vo (2021), Wang (2018)
Personalised learning	Aljawarneh (2020), Beinicke and Bipp (2018), Beinicke and Kyndt (2020), Eze et al. (2018), Kimiloglu et al. (2017), Kumar Bascost-effectivenessWu et al. (2020)
Time and cost-effectiveness	Callan et al. (2015), Cascio (2019), Costello and McNaughton (2018), Eze et al. (2018), Kumar Basak et al. (2018), Le et al. (2018), Lee et al., (2013), Pham and Da Vo (2021), Yoo et al. (2015)
Accessible and easy to update materials	Al-Fraihat et al. (2020), Beinicke and Bipp (2018), Choudhury and Pattnaik (2020), Kimiloglu et al. (2017), Syahid (2020)
Increase employee motivation/satisfaction/interest	Beinicke and Kyndt (2020), Callan et al. (2015), Choudhury and Pattnaik (2020), Kimiloglu et al. (2017), Te-learninghen (2015)

3.2 Research sample and procedure

Before conducting the official survey, the author used qualitative and quantitative methods to conduct the pilot test and adjust and complete the questionnaire. First, the author conducted semi-structured interviews with two heads of human resources, two directors, and one head of HSE to adjust the definitions and terms used in the questionnaire. After consultation, the following results were obtained:

1 some terms were defined from the beginning so that it is easy for the respondents to have general knowledge

2 some words were adjusted/replaced so that the opinions are presented more clearly and closer to the interviewees.

Table 2 Disadvantages of e-learning

Disadvantages	*References*
Technical issues	Eze et al. (2018), Kimiloglu et al. (2017), Kumar Basak et al. (2018), Le et al. (2018)
Lack of interaction or feeling of isolation	Kumar Basak et al. (2018), Wu et al. (2020)
	Choudhury and Pattnaik (2020), Tina Cheng and Chen (2015)
Lack of technical skills	Aljawarneh (2020), Pham and Da Vo (2021), Wu et al. (2020)
High investment cost	Eze et al. (2018), Kimiloglu et al. (2017), Kumar Basak et al. (2018), Le et al. (2018)
Organisational matters	Eze et al. (2018), Kimiloglu et al. (2017), and Wang (2018)

Then, the pilot test was conducted to check the reliability of the research questionnaire before conducting a formal survey with large sample size.

According to Hair et al. (2010), the minimum sample size for EFA analysis is 50 and preferably 100 or more, and the minimum observation ratio on one analyte is five or ten observations per one variable. The official survey includes 28 questions using the Likert five scale (corresponding to 28 observed variables of different factors). So, the sample size would be from 140 to 280 samples to perform EFA.

The survey subjects of this study focus on three representative groups of enterprises, specifically as follows:

1 Board of Directors/board of directors

2 Director/Head of human resources department, training department

3 Director/Head of functional departments.

The snowball sampling technique is appropriate for the subject's context, scope, and resources for this study. Due to the lack of a list and accurate information on all businesses in Ho Chi Minh City and difficulties accessing the survey subjects, the 'snowball' sampling method is the best choice to collect the minimum number of samples required for research. According to the sequence of this sampling technique described in the study of Heckathorn (1997), the author started with five survey subjects belonging to 3 groups, as mentioned earlier, to conduct the survey. These five objects act as 'seeds' from which 5-10 other businesses will be introduced, and these 5–10 businesses will continue to introduce other businesses so that the sample can develop like the snowball will grow in size as it rolls down. The research was carried out mainly through the online form. The authors sent the survey link to Google form via email or via Zalo of the survey subjects from the information introduced and obtained 136 questionnaires. In addition, thanks to information from the Department of Science and Technology of Ho Chi Minh City, the author distributed survey forms directly to businesses and obtained 58 questionnaires in training classes. Thus, the researchers collected a total of 194 samples, of which one vote was rejected because the respondent chose the same answer for the

entire survey and left the general information blank, so only 193 votes remained valid for analysis.

The findings showed that the male and female ratio was relatively equal, with 51% male and 49% female. In addition, most respondents held manager positions with 56.5%, and the leader group accounted for 29.5%, and 14% were the board of director group. The results also showed that the functional departments accounted for the highest proportion with 64.2%, human resources and training departments accounted for 20.2% and 3.6%, and the board of directors accounted for 11.9%. Moreover, most enterprises belonged to the SMEs with 51.8%, 23.3% of enterprises had 100 to 500 employees, enterprises with a number of employees more than 2000, 500–1,000, and 1,000–2,000 accounted for 10.9%, 8.3%, and 5.7% respectively.

4 Result and discussion

4.1 Attitudes towards e-learning implementation in workplace training

A critical issue investigated in this study is the overall attitude of companies towards the use of e-learning for corporate training. Representatives of enterprises have clearly stated their views on methods in general, the impacts and effectiveness of e-learning on internal training, and plans on applying e-learning in the next three years. As the results are shown in Table 3, enterprises' attitudes about using e-learning are pretty positive, with the average values from 3.4 to 3.96. To the results in Table 3 about the priority in teaching enterprises for internal training, up to 78.8% of enterprises choose the combined training plan (integrated online training activities in internal training). In addition, 27 enterprises (14%) give special priority to e-learning training options, and only a small group of 14 enterprises continue to stick with the traditional method.

Table 3 Training form in the next three years

Training form	*Quantity*	*Ratio (%)*
Traditional learning	14	7.3
Blended learning	152	78.8
E-learning	27	14.0
Total	193	100.0

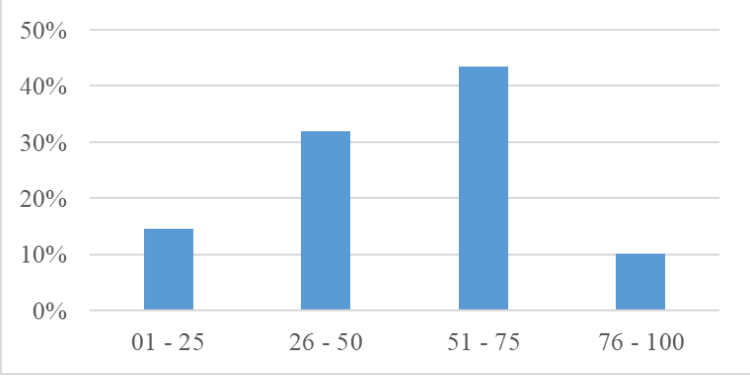
Table 4 Evaluation of e-learning implementation

Evaluation criteria	*Strongly disagree and disagree (%)*	*Neutral (%)*	*Strongly agree and agree (%)*
Using corporate e-learning training has many effective	18	34	49
Using corporate e-learning training is a priority soon at enterprises	13	26	61
Using corporate e-learning training will create positive impacts on enterprises	12	35	53
Using corporate e-learning training is and will be the trend in the future	10	18	72

Regarding the general attitude towards online training, about 49% and 53% of surveyed enterprises rated this training method as effective and creating positive impacts on their operations, while 34% and 35% of enterprises did not express their opinion, and there was a small group that disagreed about the effectiveness and positivity that e-learning brings. Besides, up to 61% and 72% of the survey respondents agreed about the trend of using e-learning soon, and only 13% and 10% have the opposite opinion.

Besides the rate of applying e-learning in the next three years in enterprises Figure 1, there are similar results that 85% of enterprises participating in the survey are ready to apply e-learning in workplace training, except for a small group of businesses that still stick with traditional training, most have potential, prospects, and trends in the application of e-learning in corporate training. Similarly, 62.7% of enterprises are researching and testing this method before fully applying this method in enterprises.

Figure 3 Ratio of e-learning implementation in the next three years (see online version for colours)



In the view of Rogers (1983), the process of adoption of technological innovation takes place in five steps: knowledge, persuasion, decision, implementation, and validation, and the researcher showed that organisations must face more complex applicability because organisations are both aggregates of individuals and their systems with a set of processes and rules. Thus, when individuals can refuse to innovate during or after the adoption process, it will quickly lead to failure to transition to the new training method. However, not all individuals have the same influence over others. In this sense, leaders are influential in spreading positive or negative information about an innovation. Another approach is (Beyer and Trice, 1978) stage theory of organisational change, in which seven different stages are identified in a change process, starting with perceived opinions of dissatisfaction that leads to adoption and ultimately the institutionalisation of change.

These findings suggest that these businesses are now in the early stages of adopting this innovation. In other words, the application of corporate online training at enterprises in Ho Chi Minh City is in the phase between understanding and accepting application. Therefore, it is necessary to have orientation and support in many aspects to transform and integrate into training activities and culture at enterprises. Besides, improving the attitudes of managers and leaders in the business is very important because, according to Rogers's opinion (Rogers, 1983), leaders have the most significant influence in the evaluation phase of the decision-making process. In addition, opinion leaders are often

more exposed to the mass media, more international, more exposed to change agents, more exposed to social experiences, and socioeconomically higher and more innovative than others.

4.2 Perceptions about e-learning implementation in workplace training

One of the study's main objectives is to explore the perception and evaluation of the advantages and disadvantages of e-learning in corporate training. Through reviewing previous studies and consultation with business representatives, 14 advantages and ten disadvantages were synthesised and included in the official survey. Through EFA, the results are summarised and shown in Table 5.

Table 5 Perception of advantages of e-learning implementation

Factor	*Items*	*Factor loadings*	*Mean*	*Standard deviation*
Factor 1: convenience and cost-effectiveness Variance explained: 58.13% Eigenvalue: 8.138	Save travel time	0.858	4.2176	0.99703
	Flexibility training time	0.801	4.1917	0.90112
	Easy to update materials when having changes	0.797	4.0259	0.93783
	Save facilities	0.712	4.1710	0.97723
	Training many employees at the same time	0.705	4.0933	1.01633
	Convenient for employees to attend the training course	0.653	3.8964	0.96805
	Low training cost	0.637	3.9534	1.00670
	Offer the opportunity to join high-quality training courses	0.630	4.0052	1.07770
Factor 2: Employee motivation Variance explained: 7.917 % Eigenvalue: 8.138	The training environment is personalised	0.801	3.7202	1.08227
	Learners feel more engaging as traditional training	0.795	3.4456	1.04003
	Training progress is personalised	0.787	3.7254	1.09079
	Learners feel not stressful as traditional training	0.742	3.7047	1.09963

14 observed variables used to measure with a 5-point Likert scale were grouped into two factors after conducting the 3rd EFA analysis. KMO coefficient is 0.918, and the Ballet test value has a significance value of $0.000 < 0.05$, so these two factors satisfy the analysis conditions. In addition, the total value of variance extracted is $66.047\% > 50\%$, satisfying the condition, and it can be understood that these two factors explain 66.047% of the variation of the data. Thus, according to five, the research results have shown two main groups of factors in the perception of enterprises about the benefits of using corporate e-learning training.

The first factor is called 'convenience and cost-effectiveness', including 'facility savings', 'low cost of training organisation,' and 'training many people at the same time.' The second factor is related to the 'employee's motivation' to participate in the training

course, such as a 'personalised training environment', 'students feel more excited', and 'reduced stress'.

The results of the descriptive study also showed that enterprises almost positively evaluate the advantages of implementing e-learning in workplace training, whether for individuals or organisations. This research result is significant because although e-learning is currently being used at an introductory level in most organisations, managers and leaders have positive perceptions and evaluations of the advantages, so it is anticipated that e-learning can be fully used and developed and accumulated soon.

Table 6 Perception of disadvantages of e-learning implementation

Factor	*Item*	*Factor loadings*	*Mean*	*Standard deviation*
Factor 1: Organisational disadvantages Variance explained: 53.98% Eigenvalue: 5.398	Difficulty in choosing the appropriate e-learning package	0.798	3.4197	1.07772
	Lack of support from a board of directors	0.761	3.2798	1.05300
	Lack of operational and management resource	0.751	3.4145	1.05287
	Lack of infrastructure investment	0.715	3.4041	1.06183
	Difficulty in security	0.707	3.4352	1.12138
	Lack of e-learning knowledge	0.677	3.3679	.93786
Factor 2: Individual disadvantages Variance explained: 11.18 % Eigenvalue: 1.118	Lack of social interaction	0.883	3.6943	1.07762
	Lack of motivation and concentration	0.817	3.5544	1.01468
	Difficult to establish discipline for training	0.744	3.6373	1.01707
	Negative attitude towards e-learning application	0.583	3.2850	1.02907

From an organisational perspective, terms of flexibility, time, facilities, opportunities to train many employees, and participation in quality training courses were highly valued by enterprises compared to other factors. This result has strong similarities with previous studies, which show that flexibility is a critical factor for learners to be able to study anywhere, anytime, and 'to pursue personal interests, notwithstanding the presence of temporal, geographical, or institutional barriers' (Adel, 2017; Eze et al., 2018, p.533)

In addition, representatives of businesses also shared their views on creating motivation of employees, who will participate directly in the course with outstanding benefits such as personalisation in terms of environment, thereby reducing stress for employees when participating in training courses. It confirms the importance of intrinsic motivational factors in previous studies that have applied theories of motivation. McGregor (1957) mentioned that under the right conditions and when feeling satisfied, people can be attached to the organisation's goals and enjoy activities related to the organisation, such as workplace learning.

Besides, the factor of cost-effectiveness is also significant and highly appreciated. So, the evaluation of the benefits that e-learning brings between the aspect of cost savings and the direct benefits for learners is equally. The research results are similar to the research results of Kimiloglu et al. (2017) when the researchers pointed out the most

essential and practical advantages of e-learning when internal training includes 'flexible time for employee' and 'training many employees at the same time' and 'save travel time.' In addition, the research results also once again confirm the necessity of studying the favourable factors that need to be approached from the point of view of both organisations and individuals if they want to deploy e-learning successfully (Kimiloglu et al., 2017).

Besides the perception of advantage, ten observed variables measuring the perception of disadvantages after conducting EFA were grouped into two factors. All of them satisfied the analytical conditions such as the KMO coefficient is 0.88, the Ballet test value is significant at 0.000 < 0.0the 5, total variance extracted is 65.15%, > 50%, and Eigenvalues of two factors are more than one. Table 6 shows two main factors related to disadvantages when implementing e-learning in workplace learning.

Factor 1 is called 'organisation disadvantages,' including difficulties and obstacles in the process of e-learning implementation that may be encountered from the organisation's perspective, such as lack of necessary infrastructure and operational management. In addition, choosing a suitable e-learning package and securing training materials for corporate e-learning courses are also tricky issues.

In addition to organisational problems, challenges and difficulties from 'individual factors' are also problems that enterprises have to face, including interactivity, motivation, and the ability to focus. Especially the negative attitude of employees because of barriers and prejudice toward e-learning can cause resistance in the process of e-learning implementation.

The results of the descriptive analysis showed that the average score of the cons was lower than that of the advantages. This confirms the positive outlook of companies towards the adoption of e-learning. Besides, most of the difficulties in implementing e-learning belong to individual factors with a higher average score than other factors, such as 'lack of social interaction,' 'discipline,' and 'lack of motivation and focus' 3.69, 3.63 and 3.55. This finding is similar to previous studies, such as the study of (Mayes et al., 2001) on learners' social interaction, concentration, and motivation when taking an online course. E-learning participants share that they have 'feelings of isolation and detachment', which leads to decreased motivation in the learning process (Wu et al., 2020).

On the other hand, organisational-related barrier factors were not assessed as a serious problem. This result is similar to Kimiloglu et al. (2017) study. These results showed that the potential in e-learning applications and the problems that businesses are facing do not stem from the lack of personnel to operate, manage, support, and invest, but mainly the challenges of performing effectively for employees.

The research results on the perception of advantages and disadvantages in e-learning implementation are significant. Although 62.7% of surveyed enterprises are in the research and testing stage, there are already perceptions of the benefits higher than the disadvantages and difficulties. These problems are similar to the two-factor theory of Herzberg et al. (1959) that there are two groups of factors: maintenance factors and motivators, in which the motivating factor includes perceptions of favourable conditions for organisations and individuals, the maintenance factor is related to the adverse factors identified in the study. This means that when the factors of maintaining or solving difficulties are satisfied and the motivational factors are enhanced, technology in general and e-learning, in particular, can be applied and developed and become a culture in the operations of enterprises (Kimiloglu et al., 2017).

4.3 *The differences between perceptions and attitudes towards e-learning implementation the based on the current e-learning status at the enterprises*

Tables 7, 8, and 9 showed the results of ANOVA about perceptions and attitudes toward using e-learning based on current e-learning status with three groups, including 'not using e-learning in workplace training,' 'researching and testing,' and 'frequently using e-learning in workplace training', The test of homogeneity of variances Table 7 shows all Sig. results greater than 0.05, so the variance between groups was not different and eligible for ANOVA analysis.

Table 7 Test of homogeneity of variances

	Levene statistic	*df1*	*df2*	*Sig.*
Convenience and cost-effectiveness	0.045	2	190	0.956
Employees' motivation	0.065	2	190	0.937
Organisational disadvantages	0.347	2	190	0.707
Individual disadvantages	0.272	2	190	0.762
Attitudes	0.696	2	190	0.500

The Sig. values in Table 8 showed differences in 'convenience and cost-effectiveness' and 'attitude' between the three groups with 0.046 and 0.000, respectively. The differences between the groups are clearly shown in Table 9. First, the Sig. values of the difference in 'attitudes' showed that there were differences in 'attitudes' between the three groups. The mean difference (I-J) results were –0.83264 and –0.85364, respectively, proving that the attitude of the 'not using' group is more negative than the others. Next, the sig value for the 'frequently using' group was 0.039, which means that there was a difference between the 'not using' and 'frequently using' groups. Besides, the 'mean difference' (I-J) was –0.49432 so the 'convenience and cost-effectiveness' of the 'frequently using' group is more favourable than the 'not using' group.

Table 8 ANOVA

		Sum of squares	*df*	*Mean square*	*F*	*Sig.*
Convenience and cost-effectiveness	*Between groups*	*3.857*	*2*	*1.929*	*3.138*	*0.046*
	Within groups	116.763	190	0.615		
	Total	120.620	192			
Attitude	*Between groups*	*13.729*	*2*	*6.865*	*10.537*	*0.000*
	Within groups	123.782	190	0.651		
	Total	137.512	192			

Thus, the results showed statistically significant differences between the three groups regarding perception and attitude. Similar to the study of Kimiloglu et al. (2017) in Turkey, enterprises with experience in e-learning highly appreciate the advantages of 'convenience and cost-effectiveness' over those who have never experienced it before.

The research results also showed the difference in attitude between the groups. Even in the early stage, enterprises still have a positive attitude towards implementing e-learning in workplace training. It can be understood that because e-learning is still a new method in Vietnam, so without practical experience, enterprises will have more negative reactions than the others.

Table 9 Post Hoc tests multiple comparisons

Dependent variable	*(I) E-learning current status*	*(J) E-learning current status*	*Mean difference (I-J)*
Attitude	Not using	Research and testing	–0.83264*
		Frequently using	–0.85364*
Convenience and cost-effectiveness	Not using	Research and testing	–0.39566
		Frequently using	–0.49432*

Std. error	*Sig.*	*95% confidence interval*	*95% confidence interval*
		Lower bound	*Upper bound*
0.18708	0.000*	–1.2746	–0.3907*
0.20650	0.000*	–1.3414	–0.3658*
0.18169	0.078	–0.8249	0.0335
0.20056	0.039*	–0.9681	–0.0205*

On the other hand, the more experience enterprises have the more positive perceptions and attitudes they get. The results were similar to Lee et al. (2013) in that the factors such as 'organisational support, computer effectiveness, experience in using computer technology' were identified as the premise of perceived ease and usefulness when applying e-learning. Kimiloglu et al. (2017) identified this as a sign that the long-term benefits of implementing e-learning outweigh the challenges they will face. In other words, when overcoming initial difficulties in terms of resources or technology, e-learning will bring benefits in many aspects for both organisations and employees.

5 Conclusions

5.1 Managerial implications

In general, the research results solved all the research questions and found the current and expected prospects of e-learning in Ho Chi Minh City to shed light on the current state of this industry and its significant themes surrounding its application to corporate training. The research presented an overview of enterprises' e-learning implementation in workplace training. Through investigating 193 enterprises in Ho Chi Minh City, the study presented positive results that opened many new directions for related fields as followings. The findings showed that most enterprises were ready for e-learning and had a positive attitude when approaching e-learning in workplace training. In addition, the priority method and level of e-learning application in the next three years are remarkable results, with the rate of 78.8% of enterprises choosing blended learning. These results offer opportunities and potential for businesses to provide related activities such as technology infrastructure, technology transfer, digital course building, and development.

Moreover, the research results showed the differences in perception and attitude towards groups that have not had experience in applying e-learning. Specific results showed that practical experiences in applying technology in general and e-learning, in particular, were the premises for raising the perception of advantages. Of course, it could help enterprises have a more positive attitude towards applying technology in their activities. Therefore, it is necessary to research to design appropriate test packages so that enterprises have the opportunity to experience so they can increase their perception of the benefits and change their attitude towards this application.

Secondly, the research result provides businesses, researchers, and organisations with an overview of organisational and individual perspectives in implementing e-learning in workplace training. While many previous pieces of research only focused on individual perspectives, this study gave a broader view of organisational behaviour in deciding to apply technology in their activities. Specifically, the findings pointed out that enterprises are concerned and appreciate more the issues of time, resources, and flexibility than saving cost problems. In addition, the advantages and disadvantages of employees who directly participate in workplace training courses need to pay attention to because there was a close correlation between 'motivation' and 'persistence' through media action of 'social interaction' during the course.

Finally, the study provides materials for businesses to access this market based on the research findings. Firstly, providers need to pay attention to time, resources, and flexibility to satisfy the enterprises' requirements. Next, the solution packages not only focus on technology but also need to pay attention to the issues of interaction so that learners do not feel 'lonely' and 'lost motivation' during the training process. New technologies such as virtual reality technology (virtual learning), augmented reality technology (augmented learning), or artificial intelligence can research and develop for online training. In addition, the support team monitors support learners, evaluates the learning process, notes the advantages and disadvantages of improving, and enhances the application of e-learning in workplace training.

To sum up, the research results showed a positive view and potential signs of implementing e-learning in workplace training of Ho Chi Minh city enterprises. However, enterprises need to long-term view to reach sustainable effectiveness rather than approach e-learning as a cost-cutting solution. Hence, it can offer the opportunity to apply and exploit all the benefits that e-learning can bring to enterprises' activities. The research also opens the potential market in Ho Chi Minh City and opportunities for e-learning solutions providers.

5.2 Limitations and future directions

The study mainly focused on exploring and evaluating the awareness and attitudes towards the implementation of e-learning in workplace training, so the correlation was not evaluated comprehensively. Although the 'snowball' sampling method is suitable for this study, it is the research sample's representativeness drawback. Therefore, future studies may have more comprehensive research directions on organisational decision-making behaviour toward applying e-learning in specific activities. In addition, after applying e-learning in workplace training, further research can study the quality and satisfaction of stakeholders to explore its impact and effectiveness. The sample can be divided based on enterprise type for more in-depth approaches. In addition, qualitative

studies can be carried out to learn deeply about the perception and attitude of enterprises towards the use of e-learning.

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Appendix

Survey on using corporate e-learning training in enterprises

Hello Sir/Madam,

Currently, we are conducting a research project on using e-learning in corporate training. We hope you will take a few minutes to help us answer the questions below. All information will be kept confidential and used solely for research purposes. Your opinions are a valuable source of information for the research.

Terminology Explanation:

Electronic learning (e-learning) is a form of learning through which learners can self-study anytime, anywhere through electronic multimedia materials (lectures, voiceovers, audio, images, videos, graphics).

Blended learning: is the combination of electronic learning (e-Learning) with traditional teaching and learning methods (in which teachers and learners are present) to improve work efficiency training and education quality.

1 Perceptions of the benefits when using e-learning in corporate training: Please rate your importance to the following statements (1 = completely disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = completely agree idea)					
Knowledge is updated regularly	1	2	3	4	5
Learners feel more engaging as traditional training	1	2	3	4	5
Learners feel not stressful as traditional training	1	2	3	4	5
The training environment is personalised	1	2	3	4	5
Training progress is personalised	1	2	3	4	5
Training many employees at the same time	1	2	3	4	5
Learners have the opportunity to join high-quality training courses	1	2	3	4	5
Low training cost	1	2	3	4	5
Save travel time	1	2	3	4	5
Save facilities	1	2	3	4	5
Easy to apply e-learning in workplace training	1	2	3	4	5

Convenient for employees to attend the training course	1	2	3	4	5
Easy to update materials when having changes	1	2	3	4	5
Flexibility training time	1	2	3	4	5
2 Perceptions of the drawbacks when using e-learning in corporate training: Please rate your importance to the following statements (1 = completely disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = completely agree idea)					
Lack of social interaction	1	2	3	4	5
Lack of motivation and concentration	1	2	3	4	5
Difficult to establish discipline for training	1	2	3	4	5
Negative attitude towards e-learning application	1	2	3	4	5
Difficulty in choosing the appropriate e-learning package	1	2	3	4	5
Lack of support from a board of directors	1	2	3	4	5
Lack of operational and management resource	1	2	3	4	5
Lack of infrastructure investment	1	2	3	4	5
Difficulty in security	1	2	3	4	5
Lack of e-learning knowledge	1	2	3	4	5
3 *Attitudes toward using e-learning in corporate training: Please rate your importance to the following statements (1 = completely disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = completely agree idea)*					
Using corporate e-learning training has many effective	1	2	3	4	5
Using corporate e-learning training is a priority soon at enterprises	1	2	3	4	5
Using corporate e-learning training will create positive impacts on enterprises	1	2	3	4	5
Using corporate e-learning training is and will be the trend in the future	1	2	3	4	5

Current training method (check the box with an X)

□ Traditional training □ Blended training □ E-learning training

Percentage (%) of internal training courses using e-learning within the next three years (check the box with an X)

□ 1–25 □ 26–50 □ 51–75 □ 76–100

Background information

Gender □ Male □ Female □ Others

Age □ 25–30 □ 30–35 □ 35–40 □ 40–45 □ >45

Position (*Please fill in the blanks*)

Department (*Please fill in the blanks*)

Enterprise size: □<= 100 □ 100–500 □ 500–1000 □ > = 1000

Enterprise field:

□ Construction □ Media □ Finance service

□ FMCG □ Hospitality and Tourist □ Production

□ Medical □ Service □Transportation □ Others

Enterprise type: □Public firms □Private firms □ FDI firms

Corporate training department:
□ The enterprise has a department/team in charge of training
□ Department/department in charge of training integrated with Human Resources Department or others
□ There is no department in charge of training
Level of use of e-learning in corporate training
□ Do not use e-learning
□ Researching and testing
□ Regularly use e-learning

THANK YOU VERY MUCH.