

ICT in Professional Training during Covid-19: The Case of Moroccan Employees

Abdelmounim BOUZIANE

LERSEM National School of Commerce and Management
Chouaib Doukkali University El Jadida Morocco
bouzianeabdelmounim@gmail.com

Wadi TAHRI

LERSEM National School of Commerce and Management
Chouaib Doukkali University El Jadida Morocco
waditahri@gmail.com

Karima BOUZIANE

Faculty of Letters and Humanities
Chouaib Doukkali University El Jadida Morocco
bouzianekarima@gmail.com

Abstract: *Our study is based on the analysis of acceptance and satisfaction with the use of ICT in the training of employees during Covid19 in Morocco (2020). We used the variables of Technology Acceptance Model (TAM) to determine and define the factors that affect the reaction of the employees vis-à-vis the use of ICT during their distance training activities. Our sample is made up of employees from several companies (audit firms and international companies based in Casablanca). The choice of audit firms is justified by their legal obligations in relation to the training of their auditors. As for the international companies, they have been chosen because they offer regular annual training plans to their employees. Data was collected through questionnaires and analyzed via SPSS. The results revealed that the level of acceptance is determined by the perceived utility and ease of use that trainees have. Hence, the satisfaction with ICT is mainly impacted by the acceptance of using technology.*

Keywords: *ICT, distance training, e-learning, Moroccan employees, Covid-19*

1. Introduction

Driven by the pandemic of Covid19, several governments have taken many procedures to reduce the risk of contamination, based on recommendations issued by the World Health Organization (WHO). These measures include: Avoidance of groupings, containment, reduction of movement and travel of individuals. The Moroccan government, following the WHO recommendations, has taken multitude decisions to escape the inexorable advance of the new coronavirus (Covid19), described as a pandemic by the WHO.

The Ministry of Industry has encouraged companies to reduce the travel of their employees, to switch to home office mode, and to cancel all activities requiring the regrouping of people. Among these activities: meetings, kick-offs, seminars or trainings. The Covid19 pandemic has not prevented large

multinationals from following the training plans already approved. To note that the only change is that the form of training has changed from face-to-face form to virtual training or e-learning mode.

The Covid19 period was critical in all areas. No assurance or vision of the future was visible. The companies have tried to concretize their projects with the respect of sanitary measures. However, an evaluation of the effectiveness of the actions taken must take place in order to benefit from them. Among the company's projects, we will focus on professional training. Several national professional institutions have tried to evaluate training policies by limiting themselves to their trades; one example of training evaluations can be found in the annual report provided by the observatory of the evolution of insurance professions in France in 2020.

Facing the new conditions of work and training, several questions arise: Have Moroccan companies been able to achieve the training objectives through Information and Communication Technologies (ICT)? Are employees satisfied with distance training?

To answer the above questions, this paper attempts to study the experience and reaction of trainees (professionals) while using ICT in training sessions and other work-related activities. The goal behind this study is to find out the level of their acceptance and satisfaction with the use of ICT.

2. Professional Training

The general objective of training personnel is to acquire or strengthen knowledge and practices in a given technical field. Training employees allows companies to anticipate technological advances and remain competitive with their competitors (Bouddabous, 2007). When employees are constantly trained, companies do not fall behind; on the contrary, they stay ahead of their market (Lê, 2013). For these reasons, several companies frequently plan training programs for their staff.

The ambition of any company is to become a key player in its local environment and in the global market, in general, by offering some innovative products or services with a very high benefit (Kegels, 2009). In this new economic space, the practice of human resources management has become a key element and considered as a strategic activity creating a competitive advantage for the firm (Calvez, et Dolidon, 2014; Garner-Moyer, 2009; Loufrani-Fedida, 2011). To achieve this, the company must ensure the reconfiguration of key skills by placing human resources at the heart of the operational and strategic challenges of the company. This is why, companies call on the training of employees and the use of new techniques in this process. There is also personal development or Soft skills training seminars that allow the company to ensure that personal qualities are adapted to the work climate.

Evou et al (2018) state that continuous training has a positive and significant impact on the probability of increasing employee productivity and the competitiveness of the company. It is because of this importance that companies are constantly striving to provide their employees with new training in order to increase and improve their skills. During the Covid19 crisis, and particularly during the total lockdown, companies that had already developed training programs were unable to cancel them, especially that some of these trainings have had a direct impact on production process. Hence, the importance of distance training via Information technologies got increased.

According to the e-learning journal, corporate e-Learning/training during the Covid19 pandemic have had several benefits:

- Guaranteeing social and physical distancing, without canceling the corporate objectives in terms of trainings.
- Supporting the corporate plans and programs despite the pandemic.
- Companies that are not yet familiar with e-Learning, this would be the right time for them to successfully make use of online training approaches and make it familiar among the workforce.

- Companies, that have already operated e-Learning and training, have a better chance of developing and experimenting various methods and seminars, preferably creative approaches to prompt new online strategies.
- With a well-planned e-Learning platform, learning and development can be accessed efficiently, and maintain productivity while supporting social and physical distancing.

3. Distance training using ICT

Distance learning during Covid19 has progressed dramatically. We can notice an acceleration of changes linked to Covid19 in the continuing vocational training sector. According to the Barometer 2020 report published by Cegos concerning the European countries, "several companies have made a big effort to adapt their training during and since the confinement. According to the Training Supply and Expertise Director of the same company, around 88% of companies continued to train their employees online. In France, one in two employees have been trained remotely during the pandemic, and even 64% for the European average, with a satisfaction index of 97% for these virtual classes, webinars, e-learning , and other e-tutorials. Two-thirds of these trainings were planned before the crisis and switched remotely if necessary, while the remaining third corresponds to modules added to help employees cope with the situation, notably under the encouragement of government aid. More companies will have to train massively in a short period. The transformation is accelerating, leading to the challenge of building learning ecosystems, platforms offering multiple solutions that can be adapted over time.

4. Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM; Davis, 1989) is one of the most influential models of technology acceptance, with two primary factors influencing an individual's intention to use new technology: perceived ease of use and perceived usefulness. An older adult who perceives digital games as too difficult to play or a waste of time will be unlikely to want to adopt this technology, while an older adult who perceives digital games as providing needed mental stimulation and as easy to learn will be more likely to want to learn how to use digital games. While TAM has been criticized on a number of grounds, it serves as a useful general framework and is consistent with a number of investigations into the factors that influence older adults' intention to use new technology. Still, TAM theory is the most used theory to explain the link between the human being and technology (Brangier et al, 2009). It is used mainly to understand and evaluate the acceptance of the technology by users (Venkatesh and Davis, 2000; Venkatesh, et al, 2003) in different domains (Roberts and Henderson, 2000; Colvin and Goh, 2005).

5. Methodology

Data collection and data analysis of this study are based on a quantitative approach and its data collection was through questionnaire (primary data). The questionnaire was sent to over than 376 employees from many companies. We have selected all companies that offered online seminars for their employees during the lockdown. We have found that audit firms (Big four) and international companies (especially in digital field) are the only entities that offered real distance training to their companies. We selected about 680 employees and we have chosen randomly 500 employees to whom we sent the questionnaires. We received 376 responses.

The level of employees' acceptance of ICT use will be analyzed based on TAM theory. Therefore, a large part of our questionnaire will concern perceived ease of use and perceived usefulness. The employees' satisfaction with ICT use will be analyzed based on the level of achievement of training objectives and the nature of the relation and interactions between employees and trainers.

The questionnaire contains three parts: A first one for general questions; a second one to investigate the acceptance in relation to ICT in learning/training; and a third part to investigate the satisfaction in relation to ICT in learning/training. Data analysis will be done via SPSS software by a linear regression.

6. Results

Our questionnaire includes several questions that revolve around personal information (gender and status in firm), the perception of the level of utility of ICT and their performance during distance training, the number of distance training sessions provided during the Covid 19 health crisis, etc.

We have analyzed the satisfaction and acceptance of ICT separately with respect to the following variables:

- Gender
- The position in firm
- The perceived ease of use
- The level of familiarity with ICT
- Possession of computer equipment
- The distance training experience acquired before the health crisis
- The distance training provided during the health crisis
- The effectiveness of training

For each analysis, we will present the summary of the models in order to visualize that the model is reliable and so the table of correlations between different variables.

This part will be interpreted through an interview with a responsible of training activities in a Human Resource consulting firm.

6.1. Satisfaction with ICTs in employee training during the Covid19 crisis:

Table1: Model extracted from SPSS (Linear Regression)

Récapitulatif des modèles^b

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation	Changement dans les statistiques					Durbn-Watson
					Variation de R-deux	Variation de F	ddl1	ddl2	Sig. Variation de F	
1	,947 ^a	,897	,884	,15773	,897	69,677	4	32	,000	1,090

The DW test is superior than 1, we can say that the model is relatively significant. The correlation index R = 0.9 close to 1. So we can conclude that there is a correlation between the level of employee satisfaction and the explanatory variables that we have included. The R² = 0.897, and therefore we can say that the explanatory variables indicate that 97% of our variable should be explained.

Correlations:

Table 2: Correlations between variables

	ICT_satisfac tion	Ease ICT_tec hology	Position_in_fi rm	Gender	Equipment	Exp_distance _training	Familiarity_IC T	Knowledge_a fter_training	ICT_training_ objectives
Corrélation de Pearson	1,000	,939	-,012	-,448	,939	,939	,939	,884	,884
Ease ICT_technology	,939	1,000	,019	-,372	1,000	1,000	1,000	,941	,941
Position_in_firm	-,012	,019	1,000	-,277	,019	,019	,019	-,037	-,037
Gender	-,448	-,372	-,277	1,000	-,372	-,372	-,372	-,300	-,300
Equipment	,939	1,000	,019	-,372	1,000	1,000	1,000	,941	,941
Exp_distance_training	,939	1,000	,019	-,372	1,000	1,000	1,000	,941	,941
Familiarity ICT	,939	1,000	,019	-,372	1,000	1,000	1,000	,941	,941
Knowledge_after_training	,884	,941	-,037	-,300	,941	,941	,941	1,000	1,000
ICT_training_objectives	,884	,941	-,037	-,300	,941	,941	,941	1,000	1,000

Employee satisfaction with ICT in the training process depends on several elements, we find:

- Perceived ease of use: This variable has a high correlation coefficient with the level of satisfaction of auditors in regard to ICT. The easier the technology is to handle and use, the more satisfied the users will be.
- The level of familiarity with ICT: This variable has a high correlation coefficient with the level of satisfaction of auditors in regard to ICT. The more familiar the use of technology is, the more satisfied the users will be.
- Possession of computer equipment: Having technology equipment (PC, tablet, etc.) is a crucial element that contributes to the experience of ICT use in distance learning. Therefore, it is closely related to the level of satisfaction of trainees with regard to distance training.
- Distance learning experience acquired before the health crisis: The more the employees are used to participate in distance training outside a crisis context, the better they will be adapted to this new rhythm during the crisis. The experience gained before the crisis period will help the firm and the trainers to be well adapted to the needs of the employees, and therefore to achieve their satisfaction.
- Distance training provided during the health crisis: It is logical to find that the existence of training provided during the health crisis is correlated with the satisfaction of auditors in regard to distance training techniques. If employees did not participate in distance training during the health crisis, they would not be able to know/say if they were satisfied or not.
- The effectiveness of training: Satisfaction also depends on the level of achievement of objectives perceived by beneficiaries. If, after professional training, employees feel that they have had additional information and techniques, they would directly show their satisfaction.

However, the gender of the employees and their status in the firm have a little or no impact on the level of auditor satisfaction with ICT in the training process:

Gender and position within audit firms have no effect on the training process. For each position, there is training to be carried out. There is no specification by gender; thus, these two variables do not correlate with participants' satisfaction.

6.2. Acceptance of the use of ICT in employee training during Covid19

Table 3: Model extracted from SPSS (Linear Regression)

Récapitulatif des modèles^b

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation	Changement dans les statistiques					Durbin-Watson
					Variation de R-deux	Variation de F	ddl1	ddl2	Sig. Variation de F	
1	,740 ^a	,548	,491	,33054	,548	9,687	4	32	,000	1,296

The DW test is superior than 1, we can say that the model is relatively significant. The correlation index $R = 0.7$ close to 1. So we can conclude that there is a correlation between the level of employee satisfaction and the explanatory variables that we have included. The $R^2 = 0.54$, and therefore we can say that the explanatory variables explain more than 50% of our variable to be explained.

Correlations:

Table 4: Correlations between variables

	Accept_use_ICT	Ease_ICT_technology	Position_in_firm	Gender	Equipment	Exp_distance_training	Familiarity_ICT	Knowledge_after_training	ICT_training_objectives
Corrélation de Pearson	1,000	,686	-,101	-,448	,686	,686	,686	,636	,636
Accept_use_ICT									
Ease_ICT_technology	,686	1,000	,019	-,372	1,000	1,000	1,000	,941	,941
Position_in_firm	-,101	,019	1,000	-,277	,019	,019	,019	-,037	-,037
Gender	-,448	-,372	-,277	1,000	-,372	-,372	-,372	-,300	-,300
Equipment	,686	1,000	,019	-,372	1,000	1,000	1,000	,941	,941
Exp_distance_training	,686	1,000	,019	-,372	1,000	1,000	1,000	,941	,941
Familiarity_ICT	,686	1,000	,019	-,372	1,000	1,000	1,000	,941	,941
Knowledge_after_training	,636	,941	-,037	-,300	,941	,941	,941	1,000	1,000
ICT_training_objectives	,636	,941	-,037	-,300	,941	,941	,941	1,000	1,000

The acceptance of ICT employees in the training process depends on several elements. We find:

- Gender
- The position in firm
- The perceived ease of use
- The level of familiarity with ICT.
- Possession of computer equipment
- The distance training experience acquired before the health crisis
- The distance training provided during the health crisis
- The effectiveness of training.

We can notice that despite of the difference in the correlation coefficients, the factors impacting the acceptance of ICT in training during Covid19 are the same as satisfaction with these technologies. The interpretation of these elements will be made through an interview with a Human Resource senior at an audit firm in Morocco.

6.3 Validation of responses through an interview

Can you tell us about your policy of employee training?

The profession and the practices depend strongly on laws and texts frequently published by the governments, organizations and professional institutes. This is why audit firm, like all the Big Four around the world and international companies, does not cease providing training seminars to its employees in order to adapt them to new regulations and to increase their technical and personal skills.

Is e-learning important in training plan outside of Covid19?

We have always encouraged companies to set up different training seminars. We elaborate based on the need of companies, we have provided many e-learning sessions before the Covid19 crisis, and employees were satisfied.

During the lockdown, did you set up a training activity? and how?

Each year we plan in-person training period for all employees of our clients. Due to the health crisis and the lockdown, we replaced it with an online training period during which all employees benefited from technical training and remote personal development.

Have trainings achieved the objectives assigned to them?

After each action, we send satisfaction questionnaires to employees. The majority of them considered the training to be rewarding and in-depth. Definitely, this fits within our objective, which is providing training seminars to enhance participants' skills and knowledge.

What do you think about the interpretation of the following results?

Satisfaction and acceptance of the use of ICT depend on the same variables, namely:

- The perceived ease of use.
- The level of familiarity with ICT.
- Possession of computer equipment
- The distance training experience acquired before the health crisis.
- Distance training provided during the health crisis.
- The effectiveness of training.

I find the results logical. When a new employee is recruited, he/she receives a laptop, other technology equipment, technical assistance, and training to master IT tools. All the production lines of our clients are mainly digitalized. This is the reason why almost all the respondents are familiar with technological tool. And as I said before, the majority of international companies used to set up remote training. Thus, their employees have experience in distance training, excel in using the IT tools and value its importance. Therefore, they demonstrate acceptance of the use of these ICTs. As for satisfaction, I can say that the elements already assessed by the employees are sufficient to say whether these trainings are satisfactory or not.

7. Recommendations

The study we have carried out aims at determining and defining the factors that affect the acceptance and satisfaction of trainees (employees) with the use of ICT in the distance learning process during the health crisis and the lockdown. The study, therefore, has a major goal which is defining the factors influencing distance training, and to suggest recommendations in order to ameliorate distance training experiences within Moroccan companies. Our recommendations will therefore be oriented towards the practices to be set to improve the concept of distance training based on ICT. Distance learning should not be seen as less important than face-to-face training, or as ineffective. On the contrary, efforts must be made to allow a hybrid modality during and post crisis.

- ICT training.

Companies must provide their employees with training to improve the use of new Information and Communication Technologies. These trainings would help them perceive the advantages that these ICTs provide, as well as excel in using them. These technologies can help the employee on a personal and professional level. If all employees master the IT tool, especially in the area of ICT, the company would have the possibility of programming training and e-learning sessions throughout the year, targeting its basic professions and with less expenses (travel, catering, etc., would be deducted).

- The implementation of e-learning.

Companies and Human Resource managers must make online training available to employees on an ongoing basis to ensure the continuity and sustainability of the concept of distance learning. These e-learning/training seminars will support the employees in their skills development process, since they are accessible anytime and anywhere.

- The choice of subjects and forms of training.

Training employees in ICT and ensuring continuity of digital training are crucial elements for a successful remote training experience, but they are not enough. The choice of the subject of the training has also a great importance. If we choose a subject deemed less interesting or unnecessary by employees, it will not motivate them even if they have mastered the technological tools and even if it is a face-to-face training. Another element to add is the form of learning installed. For some trainings (especially in technical topics) such as the use of a new production tool, it would be much better to adopt a less interactive form (non-interactive forms should be avoided as much as possible). For other

trainings, such as personal development, learning a new software, or new method of work organization, interactive seminars would be preferable. Interactive forms can be the key to success for the company, the employee and the trainer. Through the three main recommendations presented above, we have tried to point out the elements that can improve a distance training experience using ICT in Moroccan companies.

8. Conclusion

The use of Information and Communication Technologies is not new in companies. However, this current experience offers a new appropriation that could have a profound effect on both the way work is organized and the management of skills within companies; this can take place through changing the current vision of training and by redefining the roles of the different actors involved in the training process, requiring a prior analysis of training needs, explaining the objectives, supporting and investing in infrastructure and adapting the training method to different specialties and fields of expertise.

Through evaluating the experience of integrating information and communication technologies into the training process of employees in the Moroccan context, we could determine the factors that impact the satisfaction and the acceptance of ICTs by trainees in the process of vocational training. Our research can serve as a support for the various changes experienced by Moroccan companies and the major changes undergone by professional actors whose experiences are increasingly publicized.

This contribution conceives the integration of ICT in training not only as a cyclical means to respond to a crisis situation, but much more as a structural element aiming to bring profound changes to the conception of ICT as a real means of training in Morocco.

The study we conducted was able to determine the factors with higher correlation with satisfaction and acceptance of ICT in training in order to draft recommendations aiming to improve the experience of distance training in Morocco. We have proposed a set of suggestions that might serve managers. These recommendations revolve around the design of training seminars, the choice of interactive or non-interactive training seminars, investment in technology and perpetuating the concept of distance training as an effective means of sharing of information.

References

- Brangier, E., Dufresne, A., & Hammes-Adelé, S. (2009). Approche symbiotique de la relation humain-technologie : perspectives pour l'ergonomie informatique. *Le travail humain*, 72(4), 333-353.
- Boudabbous, S. (2007). L'entreprise à l'heure de la formation, approches théoriques et pratiques réelles. *La revue des sciences de gestion*, 226-227, 115-124.
- Calvez, V., & Dolidon, O. (2014). Le management stratégique des ressources humaines face au défi des compétences clés collectives. *Humanisme et entreprise*, 317, 45-67.
- Colvin, C. A., & Goh, A. (2005). Validation of the technology acceptance model for police. *Journal of Criminal Justice*, 33, 89-95.
- Doise, W., & Mugny, G. (1981). *Le développement social de l'intelligence* (Vol. 1). Paris: InterEditions.
- Evou, J. P., & Tiadsop, L. (2018). Formation continue et performance des entreprises : effets sur la productivité des salaires et la compétitivité des établissements de microfinance au Cameroun. *Revue Economie, Gestion et Société*, 17.
- Fred, D., Bagozzi, R., & Warshaw, R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 982-1003.
- Garner-Moyer, H. (2009). Le management des ressources humaines dans un contexte incertain : entre

- subjectivité et risque pour les salariés. *Connexions*, 91, 55-64.
- Hill, W. F. (1977). *Learning: A survey of psychological interpretations* (3rd ed.). Thomas Y. Crowell.
- Kegels, C. (2009). La politique d'innovation dans une économie de la connaissance. *Reflets et perspectives de la vie économique*, Tome XLVIII, 151-159.
- Lê, J. (2013). A qui profite la formation en entreprise? *Revue d'économie politique*, 123(4), 519-548.
- Loufrani-Fedida, S. (2011). La gestion des ressources humaines au service de l'articulation entre management des compétences et organisation par projets. *Revue de gestion des ressources humaines*, 79, 24-38.
- Lai, P. C. (2017). The Literature review of technology adoption models and theories for the novelty technology. *Journal of Information Systems and Technology Management*, 14(1), 21-38.
- Peraya, D. (2005). La formation à distance : un dispositif de formation et de communication médiatisées. Une approche des processus de médiatisation et de médiation technologies développement Recherche, no. 0a.
- Perriault, J. (1996). Formation à distance et culture scientifique et technique. *Alliage*, 29-30.
- Roberts, P., & Henderson, R. (2000). Information technology acceptance in a sample of government employees, a test of the technology acceptance model. *Interacting with Computer*, 12, 427-443.
- Venkatesh, V., & Davis, F. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186-204.
- Venkatesh, V., Morris, M., Davis, G., & Davis, D. (2003). User acceptance of information technology: Toward a unified view. *Management Information Systems Research Center, University of Minnesota*, 27(3), 425-478.
- Vygotsky, L. S. (1980). *Mind in society: The development of higher psychological processes*. Harvard University Press.