Psychological Importance of ICT Factors in the Use of Mobile Learning in Postgraduate Students

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Abstract

The ICT dimensions in mobile learning are analyzed with two objectives, first to capture the level of satisfaction with the use of ICT in pandemic, second to identify the dimensions: Internet connection, content and digital tools for training and training to use ICT as a fundamental element for m-learning. The sample consisted of 70 postgraduate students to whom a questionnaire with 40 items was applied. The SPSS results were: internet connection X² (102.696 and p < 0.05), Phi (1.211 and p < 0.05), V (0.606) and C coefficient (0.771); mobile devices, X² (100. 272 and p < 0.05), Phi (1,197 and p < 0.05), V (0.598) and coefficient C (0.767); Digital Tools, X² (139,475 and p < 0.05), Phi (1,412 and p < 0.05), V (0.706) and Coefficient C (0.943). It was concluded that there is a strong positive relationship between the dimensions of ICT resources and mobile use.

Keywords: ICT; mobile learning; mobile device; internet connectivity; digital tools; training in the use of ICT resources; digital content

1. Introduction

As a consequence of the Covid-19 pandemic, most educational institutions had to implement new online learning solutions (Alshurideh, et al., 2021, p. 1), so mobile learning emerged as a new way to cope with the old face-toface educational model that the pandemic had managed to leave aside, that is why, according to (Tovares et al..., 2021, p. 118), it increased the importance of getting a better understanding of students' perception of mobile learning as a resource for virtual learning worldwide. But, we know that mobile learning largely needs technological support that despite today's advances, there are still barriers in terms of the capabilities of the resources that support it, as described by, (Criollo-C et al., 2021, p. 10) where they state that the low adoption of mobile learning is closely related to the technological part, such as: information security, privacy, storage, memory limits, battery life, screen size and bandwidth, affecting the adoption of this technology also due to the high cost of devices with the necessary capabilities to enable learning from them. These capabilities of the technological resources that are basic for operation are represented in Internet Connectivity, Mobile Devices, Digital Tools, Digital Contents and Training in these resources. Internet Connectivity, is a key component, without which it would be impossible to access content for distance learning, as stated by (Zhampeissova et al., 2020, p. 5), that the chances of success of mobile learning are greatly influenced by the degree of infrastructure development and reliability of communication channels (stability of internet connections), likewise, (Muljo Harjono et al., 2018, p. 41), state that one of the biggest challenges, is the access and speed of the internet. In turn, Mobile Devices, also play an important role in distance learning, as stated by (Criollo-C et al., 2021, pp. 7,9), because the use of these can intensify, refine and enrich learning due to the intrinsic characteristics of these associated with learning; however, the physical characteristics of these and their technological limitations are one of the main problems that

this technology has for its use in the educational area, on the other hand, the proliferation of these devices is increasing, there are people who even have more than one, as stated by (Tovares et al., 2021, p. 119), according to the last report made by the International Telecommunication Union estimated that there are 105 cell phones per 100 inhabitants worldwide, however, not all these cell phones have the capabilities for learning, as stated by (Zhampeissova et al., 2020, p. 13), since there are many students who have smartphones with the minimum characteristics. About Digital Tools, made up of websites and apps that interact with users, have the role of being the carriers of content, whose usability and ease of use can be key in the adoption of this technology, as stated by (Al-Ghuwairi et al., 2019, pp. 3-4), many mobile applications do not have the expected success due to efficiency, design and usability problems, in turn they are restricted by many technological limitations (batteries, memories, etc.) and development costs, due to this and according to (Abu-Al-Aish & Love, 2013, p. 100), designers have to design mobile learning applications that are easy to use in order to improve the performance of students. For many the Digital Contents are one of the key pieces in this environment, due to the fact that if there are no contents to be consumed in this type of learning, all this would be meaningless, the contents are going to be closely related according to (Granić & Marangunić, 2019, p. 15), to content quality, content design quality, interactivity, functionality, user interface design, accessibility, as confirmed by (Criollo-C et al., 2021, p. 11), where they tell us that the problems inherent in the use of previous obtained by some modality of Training in the use of ICT resources with which you can get the maximum benefit in favor of the success of mobile learning; however, students who are immersed is this new way of learning need this technology are aligned with the content of applications and effective design of activities for Mobile Learning. Much of this, would not make sense without some knowledge content, interactivity, functionality, user interface design, accessibility, personalization, and responsiveness that are within the background of training acceptance, as stated by (Che Kob et al., 2020, p. 204), that the lack of technical skills in students largely prevents the use of Mobile Learning in learning; on the other hand, (Criollo-C et al., 2021, p. 10), also affirm that a large number of teachers do not have adequate knowledge of how to use mobile technology to improve the learning process so training is an important factor. For all of the above, it is very important to understand the relationship between technology (represented by the dimensions of ICT Resources) and learning, as stated by (Veiga Miranda & Valente de Andrade, 2021, p. 19). Technology was the basis by which education could continue in the midst of the pandemic, with pros and cons, it was largely the solution to the problem, so it is also important to know the picture in terms of students' satisfaction levels during this period, as well as this article addresses the technological problematic part of learning, other researchers such as (Criollo-C et al., 2021, p. 11), could find 19 articles, which state that the most common problem associated with Mobile Learning is the development of technology.

The first objective of the research is to obtain a baseline reference on the satisfaction levels of these technological factors at such a critical point as was the pandemic, as if it were a kind of snapshot of the moment on the satisfaction levels of students in each of the dimensions of both ICT Resources and the Use of Mobile Learning, second objective is to demonstrate and prove that these technological factors are important components that influence the use of Mobile Learning through statistical testing of the relationships and dependence between each of the dimensions of ICT Resources with respect to the Use of Mobile Learning.

2. Theoretical bases

Online resources for collaborative teaching and learning.

Virtual platforms today are the main support for the development of collaborative skills and a

3. Materials and methods

The research is of a non-experimental descriptive relational type, whose study population is made up of postgraduate students of the Faculty of Systems and Computer Engineering (FISI-UNMSM) with regular enrollment in the academic semester 2021-II, of which 70 surveys were used for the analysis. The survey consists of two parts, one for demographic data and the other for a questionnaire with 40 Likert-type questions with scales from 1 to 5, where 1 is Totally Dissatisfied, 2 is Dissatisfied, 3 is Regularly Satisfied, 4 is Satisfied and 5 is Totally Satisfied. The survey was conducted virtually using a Google form. MS Excel was used for the descriptive analysis

and SPSS statistical software was used for the respective hypothesis testing. The statistics used for the hypothesis tests are Chi-Square (X²), (Hernández Sampieri et al., 2014, p. 384) and the Phi (Φ), Cramer's V (V) and Contingency (C) Coefficients, (Hernández Sampieri et al., 2014, p. 320). ICT Resources was defined as the independent variable and the Use of Mobile Learning as the dependent variable, where each has 5 dimensions and each dimension constituted by 4 indicators with one question. The defined dimensions are Internet Connectivity, Mobile Device, Digital Tools, Digital Contents and Training in the use of ICT resources, the difference lies in the fact that ICT Resources are of general use, regardless of the activities that are performed and technologies that are executed on them, compared to the variable Use of Mobile Learning, which is when specifically tasks or activities related to learning are performed from a mobile device. Both are going to allow us to know the levels of satisfaction, which in turn is very important for the study and for the use of Mobile Learning, because according to (Granić & Marangunić, 2019, p. 15), the usefulness and ease of use that is perceived by students helps to increase satisfaction in learning, while usefulness and satisfaction in learning create a positive intention for their use.

The proposed base model from which the present research starts is defined taking as reference research by (Moreno Uriol, 2020), (Carrasco Huamán, 2019), (Cabanillas Campos, 2018, p. 65), (Roque Navarro, 2017, p. 66), (Zegarra Hidalgo, 2017) and (Rojas Espinoza, 2019), in whose result we propose to group into three main groups the activities that are commonly performed remotely making use of ICT Resources, these three main groups are: activities related to work, entertainment and learning; in turn we also take as a reference the research proposed by (Eger et al., 2020, pp. 35, 46), where he defines 4 subgroups (educational subgroup, social subgroup, work subgroup and entertainment subgroup) to determine the use of ICT Resources according to each of the subgroups, but in our case, we have only focused on the learning group, i.e., those who do Mobile Learning.





Starting from the base model proposed in Figure 1 and in order to perform a detailed analysis, our new proposed model is based on two references, the first one, references of similar research based on technological approaches regarding the use of Mobile Learning, where new constructs are proposed to existing models, such as those proposed by (Naveed et al..., 2021) and (Alrasheedi et al., 2015), and others on constructs that are added to the TAM model, such as those by (Alshurideh et al., 2021) and (Dewi et al., 2018), as well as to the UTAUT model proposed by (Alghazi et al., 2021). As a second reference we have taken and grouped many of the technical issues that influence and are seen as barriers to the use of Mobile Learning mentioned previously in many investigations, giving rise to the dimensions that have been defined for the research variables. In Table 1, the dimensions that have been taken for the proposed model are specifically defined.

Dimension	Definition
Internet connectivity	It is the starting point of this ecosystem, essential for the successful use of mobile learning by providing capabilities related to remote access to digital tools and content, as noted by (Ramirez Montoya, 2008), where Internet access and connectivity infrastructure are a very important factor, in turn (Che Kob et al., 2020, p. 203), point out that the advances that occur in terms of wireless networks and high bandwidth infrastructure allow extending e-Learning to Mobile Learning. The quality factors considered are: Coverage, Availability, Bandwidth and Performance.
Mobile Device	These are electronic terminals that allow interaction between students and access to digital tools and content from anywhere and at any time. Today, the use of these devices in learning allows expanding the acquisition of knowledge according to (Criollo-C et al., 2021, p. 1), so much of the success of the use of Mobile Learning depends on the capabilities and potential of these devices that are currently more used than books, as pointed out by (Celis Domínguez et al., 2014, p. 3). As mobile devices are considered tablets, laptops, personal digital assistants, and smartphones, as stated by (Gupta et al., 2021, p. 141).
Digital Tools	These are web-based solutions (MOOC, LMS, etc.), web apps and mobile apps. Many of them are developed under a responsive design to be used from mobile devices. Apps are software applications developed specifically for mobile devices as stated by (Okuboyejo & Koyejo, 2021, p. 47). Both fulfill the transcendent role of interacting between learners and Digital Content, they are the containers of content and must be intuitive and easy to use. Nowadays, it is said that there are apps for almost everything, but will this also be true for learning; as a starting point, first, it is necessary to have the necessary apps aligned to learning, as stated by (Pacheco González et al., 2013, p. 6).
Digital Content	Composed of texts, images, audios and videos that are contained in web systems and apps, they are the raison d'être of mobile learning and have, in part, much to do with why students would use Mobile Learning, in other words, the generation of content for Mobile Learning is a major problem, as emphasized by (Pacheco González et al., 2013, p. 6), because it must be of quality. Therefore, teachers, designers and curriculum developers of any discipline must interact to design content aligned to the course content and its pedagogical objectives and thus improve the attraction of Mobile Learning as a tool for students, as suggested by (Nami, 2020, p. 93).
Training in the use of ICT resources	Any technology and software that wants to be successful must as a principle be intuitive, easy to use and if it is better, not need manuals or guides, being the no exception Mobile Learning; however, we know that there are two types of technological consumers: the so-called Millennials and Generation Z, some with greater predisposition to technology and others who necessarily need to be trained, such as teachers who play an important role in the adoption of Mobile Learning, as assured by (Estrada Villa, 2014, p. 120), where the lack of teacher training is a barrier to the use of this technology in higher education because they do not know how to integrate it into the classroom. Despite the skills for self-training and the abundance of resources on the Internet, some authors such as (Granić & Marangunić, 2019, p. 17), recommend training on how to "effectively" use these emerging resources.

Table 1. Definition of the Dimensions of the Proposed Model

The proposed research model is shown in Figure 2 and includes the dimensions of ICT Resources and Mobile Learning Use with their respective hypotheses.

H1: Are Internet Connectivity and Mobile Learning Use statistically related?

H2: Are Mobile Device and Mobile Learning Use statistically related?

- H3: Are Digital Tools and Mobile Learning Use statistically related?
- H4: Are Digital Content and Mobile Use statistically related?
- H5: Are Training in the use of ICT resources and the Use of Mobile Learning statistically related?

Figure 2. Proposed Research Model



Table 2. ICT Resources Dimension Indicators

Dimension	Indicator	
Internet connectivity	Signal Coverage	
	Bandwidth	
	Internet Connection Availability	
	Internet Connection Performance	
mobile device	Processor performance	
	Storage memory capacity	
	Display size	
	Ease of use	
digital tools	Availability of digital tools	
	Functionalities of digital tools	
	Interoperability between digital tools	
	Ease of use of digital tools	
digital contents	Content availability	
	Content presentation	
	Content management	
	Content quality	
Training in the use of ICT resources	In the use of connectivity	
	In the use of mobile devices	
	In the use of digital tools	
	In the use of digital content	

The indicators specified in Table 2, have an origin in terms of quality, either on capabilities and functionalities, since the quality of service in all these ICT Resources positively influences the adoption of Mobile Learning by students, as stated by (Abu-Al-Aish & Love, 2013, pp. 91,98), by stating that students would be willing to adopt mobile learning systems when the quality of service is perceived as good and beneficial to their studies, in turn, this quality of service is perceived in terms of response time, reliability, security and quality of content; so in our research as well as (Belarbi et al., 2018, pp. 142,145) we take as reference some Frameworks that are used to

evaluate Quality in E-Learning, such as Rubric for Online Instruction (Online Organization & Design, Instructional Design & Delivery and Innovate Teaching with Technology), ECBCheck (Media Design and Technology: Equipment & Infrastucture) and Quality Matters (Accessibilitity and Usability); as well as, some of the characteristics and sub characteristics of Software Quality Standards, such as ISO/IEC 9126, such as: Functionality (Suitability and Interoperability), Compatibility, Usability (Operability and Attractiveness), Reliability, Efficiency (Resource Usage) and Quality of Use, as well as as (Benitez Llanque & Flores Arnao, 2013, pp. 63,68), the ISO/IEC 25010:2010 (SQuaRE), such as: Functionality (Suitability), Reliability (Availability), Usability (Operability, Accessibility), Portability (Adaptability), Efficiency (Behavior over time and Resource Utilization) and Quality of Use (Effectiveness, Productivity, Satisfaction and Context of Use).

4. Results

Descriptive Analysis

According to Figure 3, at the gender level, women have been the most participative, surpassing men by 48%; at the academic level, master's degree students represent the great majority with 80%, while doctoral students have the lowest participation with 7% of the total. At the age level, students between the ages of 31 and 40 years old have the highest participation with 37%, being the oldest the least representative with 7%; however, the youngest of the group with ages between 20 and 30 years old have an important participation with 27% of the total.

Figure 3. Analysis of participation by gender



According to Figure 4, all dimensions have the two highest levels of satisfaction (Satisfied and Totally Satisfied), in a range of 27.14% and 45.71%, while the lowest percentages correspond to the levels of dissatisfaction (dissatisfied, totally dissatisfied) between 1.43% and 15.71%. At the same time, the majority is Totally Satisfied with the Mobile Device (45.71%), as well as with the Digital Tools (44.29%) and Digital Contents (41.43%). We can see that Internet Connectivity with 4.29% is the one with the highest percentage of dissatisfaction (totally dissatisfied) with respect to the others, while it can also be seen that Digital Tools and Digital Content have the lowest percentages of dissatisfaction with 1.43% and 2.86%.



Figure 4. Satisfaction Levels by Dimensions of the ICT Resources

In Figure 5, we see that the majority are between Fully Satisfied (41.43%) and Satisfied (34.29%) with the use of Mobile Learning. Mobile Device has the highest percentage between Satisfied (37.14%) and Fully Satisfied (41.43%) when using Mobile Learning. The levels of Dissatisfaction in the Training in the use of ICT Resources when using Mobile Learning are the highest (4.29% and 11.43%), which still shows that there is a deficiency that limits the success and its use. Also, one of the highest levels of dissatisfaction is in Internet Connectivity (4.29%) when using Mobile Learning; on the contrary, Digital Tools (1.43% and 2.86%) and Digital Contents (1.43% and 5.71%) have the lowest percentages of dissatisfaction.





Instrument Reliability Analysis

Cronbach's alpha was obtained with SPSS 25 software, the analysis was performed for the entire instrument and for each of the variables. For the entire instrument (40 items) Cronbach's alpha is 0.988. Table 3 shows the results for each of the dimensions of each variable.

Variable	Dimension	Alpha
ICT Resources	Internet Connectivity	0.974
	Mobile Device	0.942
	Digital Tools	0.943
	Digital Contents	0.961
	Training in the use of ICT resources	0.955
Use of Mobile Learning	Internet Connectivity when using Mobile Learning	0.966
	Mobile Device when using Mobile Learning	0.977
	Digital Tools when using Mobile Learning	0.964
	Digital Content when using Mobile Learning	0.969
	Training in the use of ICT resources when using Mobile Learning	0.979

Table 3. Cronbach's Alpha by Dimension of each Variable

Given the results of the reliability analysis we can affirm that the instrument used is reliable for the research as can be corroborated according to the research of (Carrasco Huamán, 2019, p. 52), (Carrión Ramos, 2021, p. 92) and (Gálvez Díaz, 2020, p. 22)

Statistical Results of the Dimensions of ICT Resources in Relation to the Use of Mobile Learning

According to Table 4 and the results of Chi-Square and Phi Coefficient where all p-values are less than 0.05, all null hypotheses H0 (hypothesis of independence) should be rejected and all alternative hypotheses H1, with respect to each of the dimensions, should be accepted.

Dimension	Chi-Square	Contingency Coefficient	Phi Coefficient	Coefficient Cramer's V
Internet connectivity	102.696 P (0.000) < 0.05	0.771 Close to one	1.211 P (0.000) < 0.05	0.606
Mobile device	100 272	0.767	1 197	0 598
	P (0.000) < 0.05	Close to one	P (0.000) < 0.05	< 0.6
Digital tools	139.475	0.943	1.412	0.706
	P (0.000) < 0.05	Very close to one	P (0.000) < 0.05	> 0.6
Digital contents	138.759	0.815	1.408	0.704
	P (0.000) < 0.05	Very close to one	P (0.000) < 0.05	> 0.6
Training in the use of ICT resources	102.527	0.771	1.210	0.605
	P (0.000) < 0.05	Close to one	P (0.000) < 0.05	> 0.6

Table 4. Results by Dimension and Statistics

Analysis of the Results of the Dimensions of ICT Resources in relation to the Use of Mobile Learning

The results of the statistical analysis are shown in Table 5.

Table 5. Analysis	of Results	by Dimension	and Statistic

Dimension	Chi-Square	Contingency Coefficient	Phi Coefficient	Coefficient Cramer's V
Internet connectivity	there is a relationship	high degree of dependence	strong relationship	strong relationship
Mobile device	there is a relationship	high degree of dependence	strong relationship	moderate association
Digital tools	there is a relationship	Very high degree of dependence	strong relationship	Very strong relationship
Digital Contends	there is a relationship	Very high degree of dependence	strong relationship	Very strong relationship

Training in the use of	there is a relationship	high degree of	strong	strong
ICT resources		dependence	relationship	relationship

According to the results of the analysis of Table 5 and the Chi-Square column, all the dimensions of the ICT Resources have a statistically significant relationship with the Use of Mobile Learning, where the Use of Mobile Learning depends on each one of the dimensions of the ICT Resources, likewise, according to the Phi Coefficient all the dimensions of the ICT Resources have a perfectly strong and directly proportional relationship with the Use of Mobile Learning. Furthermore, according to the results of Cramer's V Coefficient, two dimensions of ICT Resources (Internet Connectivity and Training in the use of ICT resources), have a strong association with the Use of Mobile Learning, in turn, two are very strongly associated (Digital Tools and Digital Content), being the Mobile Device Dimension the one with a moderate association. Finally, in relation to the Contingency Coefficient, the Use of Mobile Learning has a high degree of dependence with three dimensions of ICT Resources (Internet Connectivity, Mobile Device and Training in the use of ICT resources) and a very high degree of dependence with the dimensions Digital Tools and Digital Contents.

5. Discussions

If satisfaction levels had been measured 2 decades ago, would the statistical results on the relationships, degrees of dependence and level of association of ICT Resources with Mobile Learning usage have been the same? or perhaps if tomorrow we tried to run Artificial Intelligence (AI) models with millions of records on those same ICT Resources or what is more common today, if we do not have the economic means to have ICT Resources with the capabilities to perform Mobile Learning, would the results of the relationships still be the same? or on the other hand, if we looked for the relationships between those same ICT Resources with work or entertainment related activities, would we also have the same results, perhaps they could be related when performing Mobile Learning, but not when running AI models or when performing work-related activities, so is it possible to assume so lightly that this is obvious or will there be some scientist who can obviously say that there is a relationship with X statistical result, with X degree of dependence and with X level of association without having done a previous research to prove or confirm it. As our results show, we can see that the levels of satisfaction between the ICT Resources and the use of Mobile Learning are not the same, although in the ICT Resources of the 5 dimensions, in 4 with the highest incidence they are in totally satisfied and 1 in Satisfied, in the case of the Use of Mobile Learning it is completely the opposite, which means that the satisfaction on the ICT Resources for general use has a better perception than when specifically using those same resources, but for Mobile Learning. How to know if the ICT Resources have the capabilities to effectively perform remote activities, even worse in times of pandemic, where many institutions worldwide had to make changes in their online instructional models generating a strong difference between face-to-face and online teaching and learning emerging an important nuance between the two, as pointed out by (Tovares et al., 2021, pp. 118-119). With respect to Internet Connectivity, students have a better perception of the quality and capacity when specifically making use of Mobile Learning, since comparing the dimensions between the variables Fully Satisfied goes from 28.57% to 35.71%. Regarding the Mobile Device, students have a lower perception of the quality and capabilities of the Mobile Devices they have when they make use of Mobile Learning than when they use them in any other activity, since when making the comparison we see that there is a decrease from 45.71% to 41.43% in the Fully Satisfied level, increasing the Regularly Satisfied level from 10% to 15.71%, although we know and as stated by (Criollo-C et al., 2021, p. 14), the use of mobile devices will become a necessity within a modern educational system, so it is necessary to improve in terms of access or availability to mobile devices that have the necessary capabilities for a better use of this technology; as well as to improve some technical problems such as the size of the screen according to (Seyed Ebrahim et al., 2015, p. 73), but still, students use them given the satisfaction levels obtained and as confirmed by (Gupta et al., 2021, p. 145), where they mention that students perceive that using mobiles will help them improve their academic performance. The perception of students regarding the specific use of Digital Tools when they make use of Mobile Learning is lower than when they use them in other activities, as there is a decrease from 44.29% to 35.71% in Fully Satisfied and increasing the Regularly Satisfied level from 15.71% to 22. 86%, which shows that there is

much room for improvement regarding apps and learning applications with capabilities and functionalities for mobile devices, despite the fact that today there are apps for almost everything, and based on the results of the satisfaction levels obtained, there is a potential to integrate applications that enhance the learning experience as stated by (Abdul Talib et al., 2019, p. 102); since it is very important innovation in mobile applications because it can increase the interest of teachers and provide many facilities for learning and teaching as stated by (Muljo Harjono et al., 2018, p. 40). The perception of quality based on satisfaction levels regarding Digital Content when making use of Mobile Learning is lower with respect to the use or consumption in other activities, as there is a decrease from 41.43% to 37.14% in Fully Satisfied, but at the same time the Satisfied level increases from 34.29% to 38.57%, which shows that there is also room for improvement in terms of content. The tools that allow content management exist, they must be identified and used, as stated by (Criollo-C et al., 2021, p.8), today students and teachers can access various platforms, forms and resources through cell phones using free tools that allow the rapid management of content for their courses. With respect to Training in the use of ICT resources, while it is true that the levels of dissatisfaction are the highest in both variables and also with respect to the other dimensions; on the other hand, being specific there is a decrease from 35.71% to 25.71% in Fully Satisfied moving to Satisfied levels (from 27. 14% to 34.29%) and Regularly Satisfied (from 18.57% to 24.29%), which shows that trainings should be improved by making them more effective so that students get the maximum benefit from these ICT Resources and be a factor that positively influences the use of Mobile Learning. Training and coaching generate experience and this, in turn, generates confidence and predisposition to make use of new technologies or systems such as Mobile Learning could be, as stated by (Kanwal & Rehman, 2017, p. 10975). Having the knowledge of the existence of the relationships between the dimensions of ICT Resources and the Use of Mobile Learning is a very important reference because it gives us to know which components or elements are an important part for the use of Mobile Learning.

6. Conclusions

Given the high levels of satisfaction obtained in each of the dimensions of ICT Resources: Internet Connectivity (Satisfied=41.7%, Fully Satisfied=28.6%), Mobile Device (Satisfied=38.6%, Fully Satisfied=45.7%), Digital Tools (Satisfied=35.7%, Fully Satisfied=44.3%), Digital Contents (Satisfied=34.3%, Fully Satisfied=41.4%) and Training in the use of ICT resources (Satisfied=27.1%, Fully Satisfied=35.7%), we affirm that most students are satisfied with the levels of ICT Resources capabilities available to them, but this perception is in a general way, not in a specific way.

Likewise, the high levels of satisfaction in the dimensions of the Use of Mobile Learning: Internet Connectivity (Satisfied 38.6%, Fully Satisfied=35.7%), Mobile Device (Satisfied=37.1%, Fully Satisfied=41.4%), Digital Tools (Satisfied=37.1%, Fully Satisfied=35.7%), Digital Contents (Satisfied=38.6%, Fully Satisfied=37.1%) and Training in the use of ICT resources (Satisfied=34. 3%, Fully Satisfied=25.7%), we conclude that the vast majority of students have acceptable levels in terms of ICT Resources capabilities that allow them to perform tasks and activities related to their learning from a mobile device, i.e.

Mobile Learning, therefore, it can be stated that there is an alignment between ICT Resources and the Use of Mobile Learning.

According to the statistical results we conclude that there is a statistically significant, perfectly strong and directly proportional relationship with a moderate to strong association between each of the dimensions of the ICT Resources variable: Internet Connectivity (X^2 =102.696, Phi=1.211, V=0.606, C=0.771), Mobile Device (X^2 =100.272, Phi=1.197, V=0.598, C=0.767), Digital Tools (X^2 =139. 475, Phi=1.412, V=0.706, C=0.943), Digital Content (X^2 =138.759, Phi=1.408, V=0.704, C=0.815), and Training in the use of ICT resources (X^2 =102.527, Phi=1.210, V=0.605, C=0. 771) with the Use of Mobile Learning, and in turn, with a high degree of dependence, demonstrating that they are key components associated with the use of Mobile Learning and that any change in them can positively or negatively impact its use.

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