

Entrepreneurship in the COVID-19 era

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Abstract

Entrepreneurship in the Covid-19 era is considered an effect of the intensive use of information and communication technologies. The objective of the present work was to contrast a model to explain this phenomenon. A cross-sectional, psychometric and confirmatory study was carried out with a selection of 100 students assigned to a public university in central Mexico and with a distance learning system. A structure was found that explained 57% of the variance, suggesting the extension of the model to other scenarios and samples.

Keywords: Nomenclature; S Apparent power; V_o Output controlled voltage; v_i Integral action

Introduction

Up to the moment this work is written, the SARS CoV-2 pandemic and the Covid-19 disease have killed three million in the world, as well as 170 thousand in Mexico, although under-records are recognized due to the percentage of asymptomatic patients [1]. Faced with this scenario, the containment policies that lie in the massive use of detection tests and confinement of people, as well as the mitigation that only lies in social isolation, waiting for the immunity of a high percentage, avoiding those affected by the epidemic [2].

The Internet connection from root servers, the United States, Japan, Holland and Sweden are the main nodes [3]. Japan is the nation with the highest connection speed (61.0 mbps), Sweden ranks fourth (18.2 mbps), Holland is sixth (8.8 mbps) and the United States occupies tenth place (4 .8 mbps) [4]. The economic, technological, and social consequences of globalization are described to propose the Theory of Mobile Consumption that explains the consumption of products and services through mobile telephony [5].

A model is presented in which it is included and demonstrates that the perception of utility is the determinant of the use of mobile Internet [6]. Based on the above scenario, it is proposed that individuals, being immersed in information communication flows and networks, become potential consumers when acquiring a mobile phone [7].

Precisely, in the following section, the Mobile Consumption Theory (TCM) is explained, which explains the determinants of consumption through a mobile phone [8]. The Theory of Mobile Consumption states that individuals carry out their purchases through a mobile phone based on their utilitarian perceptions and purchase decisions [9].

The TCM maintains that people consume basic products and services through the consumption of secondary products [10]. Individuals when buying a mobile phone or any product and technological information communication service, are exposed to the consumption of basic products and services that are advertised and sold through the technologies [11].

Therefore, the TCM argues that it is the perceptions of utility, innovation and efficiency that determine the consumption of products and services that are advertised and sold through the mobile phone [12]. TCM provides the indirect effect of perception of a technological innovation on the consumption of products and services via said mobile technology [13].

It explains the relationship between ICTs with individuals saturated with multiple activities, people who buy and people who work as supervisors or vendors [14]. The TCM predicts the use of the mobile Internet from a cognitive process that begins perceptually and ends behaviorally. From the TCM, the study detailed below was carried out [15].

The perception of utility is the central axis of the knowledge management agenda because it translates statistical data into meanings of commitment, entrepreneurship and innovation, as well as generates new protocols for information processing whenever the objectives and goals are subject to the climate of tasks, supports and relationships between stakeholders [16]. The TCM raises three explanations of the consumption of products and services through the mobile phone [17].

This is how the objective of the present work was to contrast a model for the study of the entrepreneurship, considering the dimensions that literature contributes with respect to the acceptance of technology, the propensity to information and the

motivation for achievement.

Do perceptions of the level of utility and the degree of innovation have an indirect, positive, and significant effect on the level of use?

The premise that guides this work alludes to the fact that containment and mitigation policies, as well as social isolation and confinement strategies, have a direct impact on entrepreneurship both unfavorably and favorably [18]. On the one hand, commercial activity is going into recession and crisis, but on the other hand, ideas are proliferating around new forms of commerce, such as e-business [19]. In this process, the acceptance of the technology converges both for its usefulness and ease of use, influencing the execution of entrepreneurial projects through Internet protocols [20].

Method

Sample

There were 100 students selected from the Metropolitan Autonomous University.

Instrument

Scale of perceived ease of use. 8 items with response options from “strongly disagree” to “strongly agree” [21]. The table shows the convergence (indicated by the factor weight) of the reagents with respect to the factor.

Scale of the perceived usefulness. 8 items with response options from “never” to “always” [22]. Considering the factor weights of the perceptual variable of self-efficiency, the convergence of four reagents is demonstrated.

Scale of intention use. 8 items with response options from “less than ten minutes” to “more than twenty minutes” [23].

Process

Through email, students were contacted to invite them to visit the survey page, attaching an informed consent form where they were warned that they would not receive any payment, bonus or benefit for answering the survey, although it was offered to send them the general results without identifying the respondents [24].

Analysis

The information was processed in the statistical analysis package for social sciences (SPSS by its acronym in English, version 24.0). The parameters for the validity and contrast of the model were estimated, considering that the instrument had had a sufficient reliability and superior to 0.70, which is the minimum value to demonstrate internal consistency [25].

Interpretation

Values close to unity were assumed as evidence of collinearity and multi-collinearity. Values close to zero as evidence of a spurious relationship [26]. Values between the threshold 0.70 and 0.90 for reliability were considered as evidence of internal consistency. values between 0.300 and 0.600 were assumed as indicators for the demonstration of construct validity [27]. Values between 0.90 and 0.99 for the goodness of fit indices were assumed as evidence of non-rejection of the null hypothesis relative to the significant differences between the theoretical structure and the model of structural equations [28]. Values less than 0.008 for the adjustment parameter were assumed as evidence of empirical contrast [29].

Results

Table 1 shows the values that show the reliability and validity of the instrument, considering the threshold established as the minimum essential to accept the null hypothesis of significant

differences between the theoretical structure with respect to the observed model.

Table 1. Instrument descriptions.

R	M	SD	A	F1	F2	F3
r1	4,23	1,23	,762	,345		
r2	4,15	1,43	,783	,435		
r3	4,39	1,56	,704	,456		
r4	4,65	1,89	,762	,546		
r5	4,53	1,56	,783	,512		
r6	4,12	1,74	,761	,632		
r7	4,37	1,43	,754	,435		
r8	4,92	1,56	,765	,546		
r9	4,01	1,89	,789		,542	
r10	4,67	1,54	,768		,657	
r11	4,65	1,65	,743		,563	
r12	4,82	1,32	,723		,546	
r13	4,39	1,45	,761		,435	
r14	4,12	1,35	,763		,346	
r15	4,53	1,23	,789		,324	
r16	4,12	1,43	,798		,431	
r17	4,36	1,57	,762			,436
r18	4,81	1,67	,741			,430
r19	4,39	1,65	,703			,546
r20	4,36	1,89	,762			,532
r21	4,76	1,65	,742			,435
r22	4,12	1,90	,761			,431
r23	4,31	1,54	,783			,345
r24	4,31	1,65	,761			,456

Source: Elaborated with data study; R = Reactive, M = Mean, SD = Standard Deviation. Adequation and Sphericity [$\chi^2 = 13,25$ (23 df) $p < ,05$; KMO = 0,780] Method: Principal axes, Rotation: Promax. F1 = Perceived Ease of Use (25% total variance explained and alpha with ,780), F2 = Perceived Usefulness (19% total variance explained and alpha with ,775), F3 = Intention Use (13% total variance explained and alpha with ,769).

Once the validity structure that explained 57% of the total variance was established, its structure of relationships was estimated to detect regression relationships between the factors (**Table 2**).

Table 2. Relations between factors.

	M	SD	F1	F2	F3	F1	F2	F3
F1	21,23	14,23	1,000			1,624	,435	,654
F2	23,22	15,43	,435*	1,000			1,879	,542
F3	24,35	13,56	,546**	,647***	1,000			1,783

Source: Elaborated with data study; M = Mean, SD = Standard Deviation, F1 = Perceived Ease of Use, F2 = Perceived Usefulness, F3 = Intention Use; * $p < ,01$; ** $p < ,001$; *** $p < ,0001$ The structure of relationships reveals the emergence of a common factor that the literature identifies as Internet entrepreneurship to explain how this activity underlies this activity from the fact that users have access to the Internet, develop a skill and ability to use, as well as a compatibility disposition between their daily activities and the technologies, devices and networks they use. To appreciate the axes and trajectories of

this phenomenon of Internet entrepreneurship, we proceeded to contrast the null hypothesis of differences between the theoretical structure with respect to the empirical model (Figure 1).

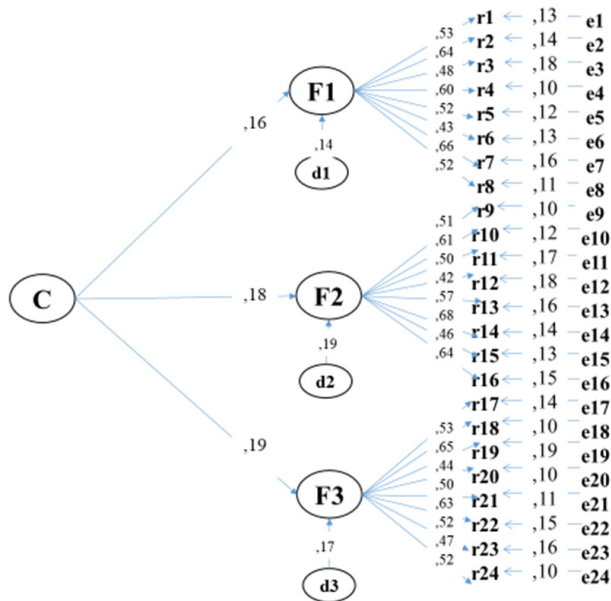


Figure 1: Structural equation modelling.

Source: Elaborated with data study; F1 = Perceived Ease of Use, F2 = Perceived Usefulness, F3 = Intention Use; r = Indicator, e = Error measurement indicator, d = Disturbance measurement factor.

The model shows a structure of three factors that converge in the digital entrepreneurship construct and reflect the deliberate, planned and systematic decision-making process in the face of a risk event such as the pandemic.

The adjustment and residual parameters [$\chi^2 = 23,21$ 826df) $p > .05$; GFI = .995; CFI = .997; RMSEA = .0008] suggest the norm of the null hypothesis allusive to the differences between the structure reported in the literature with respect to the established model.

Discussion

Studies on the acceptance of technology have consistently shown a structure of adoption and compatibility of information and communication technology in the daily activities of users. In the present work a part of the process is observed, which the literature reports as digital entrepreneurship to explain the learning and use of technology in the face of the pandemic.

Performance expectations determine usage intent. In the present work, the intention to use technology reflects a broader structure in which entrepreneurship on the Internet is explained by its relationship with utility and ease of use.

The perception of utility determines the use of distance education technology, but in the present study it was established that it is rather a dimension of entrepreneurship, since if students find a useful technology, it is very likely. carry out actions that involve remuneration in exchange for the development of their skills and knowledge.

The perceived utility anticipates the intention to use the technology. In the present work, both factors reflected a deliberate, planned and systematic process of digital entrepreneurship that the literature identifies as a decision-making structure after access to an electronic device and a network.

Lines related to the prediction of internet use based on utility and intention will show that entrepreneurship is the result of the acceptance and adoption of electronic technology, devices and networks in the Covid-19 era. In this way, anticipating the emergence of entrepreneurial projects based on Internet access will allow the redesign of economic reactivation policies.

Conclusions

The objective of the present work was to specify a model for the study of the perception of utility, considering the dimensions reported in the literature, as well as those established in the present work, but its design limited the contributions to the analyzed sample, suggesting the extension of work towards other scenarios and other study samples.

In relation to the perception of utility that literature identifies as concomitant to the perceived ease of use. The present work has shown that it affects, together with the perception of efficiency, the intensive use of electronic technologies, devices, and networks. Regarding the perception of effectiveness that literature links to the perception of control. The present study has shown that when interrelated with the perception of utility generates a predictive structure of Internet use.

In relation to the use of the Internet, literature stands out as a result of the interrelationship between perceptions of utility, ease, efficiency and control. The present work has shown that the perception of utility associated with the perception of effectiveness generates a structure that determines the use of the Internet. Research lines concerning the associative structure of the perception of utility with the perception of efficiency and these as determinants of the use of the Internet will explain the rational, deliberate, planned, and systematic process of acceptance of technology.

From the Mobile Consumption Theory, a new model was designed with the variables that met the criteria of reliability. Multiple linear regression was calculated to establish the determinants of the dependent variable and the non-linear relationship between independent variables. The scheme shows that the perception factor of academic utility is the main determinant of the level factor of Internet use for academic purposes.

This finding indicates a modification of the TCM measurement model by proposing a direct, positive, and significant effect of the utility factor on the use for academic purposes. That is, a person looking to buy for example a book, could get it if there was a virtual library connected to the mobile phone. Similar reasoning would imply the perception factor of self-efficiency as a determinant of academic mobile use. An individual looking for academic information could find it through his mobile phone. However, the causal relationship lacking the required significance suggests the exclusion of the variable.

The strength of association between independent variables indicates its spurious implication. From the original measurement model only two variables maintain a causal relationship that selects them for inclusion in another measurement model. These consequences and implications are discussed below.

The objective of this paper was to specify a model based on the theory of mobile consumption, which highlights the relationship between perceptions as determinants of the use of technologies, devices, and networks.

However, the present work proposed a modification of the per-

ceptual structure to increase the predictive power of the theory of mobile consumption, highlighting the association between the perception of utility and the perception of efficacy as predictors of behavior. Research lines concerning the predictive structure of electronic consumption will explain the associative relationship between utility and perceived effectiveness, as well as its impact on the use of the Internet.

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