



Descriptives of Intellectual Capital in the COVID-19 Era

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Abstract

The objective of this study is to discuss the relationship between the features of the millennial generation and their intellectual formation based on consensus between the parties. A documentary study was carried out with a non-probabilistic selection of sources indexed to international repositories, considering the period from 2019 to 2021 and the keywords. There is a line of research concerning the intensive use of cellular telephony, but no longer from its usefulness or risk, but from the emotions that imply the emergence of Stalking, Trolling, Stashing and Bullying, main features of the millennial generation in terms of mobile adoption category not for information or communication but for distinctive expression with respect to other generations of telephone users.

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Introduction

Therefore, the objective of this document is to establish a model for the study of mobile telephony consumption in the millennial generation.

The use of the mobile in millennial, for the purposes of this work, refers to an expression system based on emojis or emoticons, in a sense different from other generations, millennial use the mobile considering the skills and knowledge of their contacts and possible or future contacts [1]. In this sense, the foundations of a theory are exposed to explain the consequences of mobile commerce from the economic, technological, marketing and psychological determinants that lead a person to acquire products through mobile protocols [2].

The effects of technology such as the mobile phone on the quality of life and the subjective bias can be observed in over-specialization [3]. The concentration of data in the mobile phone generates greater stress in users who are victims of the theft of their data [4].

During the nineties, in Mexico only 36% have telephone access, 9% have a personal computer at home and only 7% have Internet access [5]. This implies 10 million dollars in profits each year and 65% of high income in mobile telephone when compared with international rates [6].

In contrast, countries with more successful emerging economies (Taiwan and Hong Kong) have shortened both gaps: economic and digital. In the world, the telecommunications sector (Television, Internet and telephony) grows 25% annually. It is a



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privatized market, 98% of the companies that offer the service are controlled by AOL, AT & T, T-mobile through subsidiaries or strategic alliances. During the eighties and nineties, the Internet was the subsector that grew the most with 20% per year [7]. When this service is added to mobile telephony, the number of users and potential customers grow by 15% per year [8].

Countries with emerging economies tend to consume informally (black market) both products and services. In Mexico City, informal commerce accounts for 40% of sales and services in peripheral and marginalized areas [9]. Consequently, people tend to perceive the product before buying it in tianguis, bazaars or self-service stores [10]. This would be the main reason why those who have access to the Internet do not buy mobile phone products [11]. However, consumers perceive the utility of a product or service more from the suspect costs (unreal since the merchant sells the product at a lower price than in the market) than the benefits offered [12].

Consequently, 50 million tons of industrial and technological waste are generated by the production and consumption of telephone innovations, with Motorola being the company with the lowest quality standards when manufacturing products with 19% copper and 8% steel (main toxic agents) [13]. In this regard, mobile consumption could aim at the acquisition of goods and services whereas scientific information sources on the Internet have grown gradually [14].

However, the generation of millennials is distinguished by the issuance of short, ephemeral, bilateral messages about their consumption and originality that distinguishes them and distances them from other generations of cell phone users such as Generation X. that is, the understanding between members. Of generations is limited to information and not to understanding [13].

Figure 1 the theoretical frameworks that explain the use of the mobile are: 1) theory of values, 2) theory of motivation, 3) theory of reasoned action, 4) theory of planned behavior, 5) theory of acceptance of technology, 6) theory of electronic commerce and 7) socio-cognitive theory [15].

Theory of universal values explains the universal values of personal needs, establishes a hierarchy of principles and priorities derived from a group or reference. In this sense, the use of the mobile is considered because of the compatibility between the principles that guide the behavior of the user with respect to the accessibility to information that matches those values [16].

However, the values to be associated with the needs establish a system of motivation that the theory assumes as hierarchy, it bases them on the reasons for carrying out an action [17]. That is, they activate deliberate processes that lead people to systematize their objectives [18].

The theory of human motivation needs to establish needs by placing them as priorities in a hierarchy. Therefore, the use of the mobile would be in each of the priorities according to human values and needs, but because the use of the mobile corresponds to actions not always deliberate but unforeseen, the theory of reasoned action highlights the beliefs as background of behavior [19]. That is, if people believe that the sending of messages is part of their communication strategy, then they will carry out such action until they find another form of effective expression [20].

This effect is transmitted by attitudes, perceptions, norms and intentions. These trajectories, being deliberate and systematic, imply a change within the individual rather than in the group [13]. This is so because the use of the mobile phone not only corresponds to principles related to utility but to conventions of use where communication is an essential part of a negotiation, agreement or responsibility that would distinguish the user of cellular telephony with respect to Internet users [21].

However, information regarding costs and benefits for buying and using a mobile phone is not always available or ambiguous. Therefore, the user will develop a decision-making strategy based on specific and verifiable information. From such deliberate and planned information processing strategies, users will buy and use a cellular technology.

Theory of planned behavior warns that beliefs indirectly determine a behavior delimited, deliberate, planned, and consequently, systematic through attitudes, perceptions, norms and intentions is in the individual. This means that to the extent that the information concerning cellular telephony is available and accessible, it will encourage the acquisition and intensive use of a cellular device.

In a way, planning is the result of a systematic evaluation of the utility and risks of a technology. In that sense, the theory of acceptance of technology will define the specific perceptions about the utility and ease of use of some technology, which directly predict the intentions of carrying out behaviors aided by said technology.

In effect, if cell phone users identify the degree of utility of the technology and the electronic device, they will accept and adopt mobile telephone services, but the risks posed by digital protocols of usurpation or loss of identity. or theft of privacy will generate a division among the possible users of mobile telephone.

When the technology of connectivity, portability, coverage or scalability was developed, the mobile phone was involved in a risk zone due to the probability of theft or indiscriminate mismanagement of its data that limited the hiring of the service. Or, it generated a euphoria for the acquisition of smart cellular devices without considering their effects in the intensive use and the subsequent opportunity constellation [22].

The theory of electronic commerce warns that these perceptions of utility are the determinants of risk and the purchase of products on the Internet. That is, the utility or perceived risks are part of the decision making that will determine an intention to purchase, which anticipates an intensive and satisfactory use of the technology [23].

This is where social cognitive theory suggests interaction between individual skills and challenges that marks the environment whose results are adapting behavior or environmental transformation. In other words, cellular telephone will be used whenever capabilities and opportunities match.

Theories of values and motivational explained the needs that lead consumers to acquire certain products. Consecutively, the theory of reasoned action explained the consumption in shopping centers. Subsequently, the theory of planned behavior explained the consumption in self-service. Successive love, the theory of technology acceptance explained consumption of personal computers and mobile phones. Consequently, the theory of the adoption of commerce explained the risks that

impede a digital transaction. Finally, cognitive social theory explained the interaction between the user and the network [24].

In each approach, models have been developed in which latent variables are included. Precisely, the theory of mobile consumption explains: The degree of technological innovation that will indirectly influence (through utilitarian perceptions, promotional identification and mobile self-efficiency) the acquisition of products and services on the mobile Internet [25]. So far, the theoretical foundations of the theory of mobile consumption. Next, its methodological foundations are exposed.

In an economy regulated by market competition, the prospective client is expected to develop beliefs, skills and knowledge. That is, to the extent that the technologies are diversified, their effects on consumer psychology can be observed to differentiate consumers and anticipate their preferences. In this way, the studies show that the determinant of a purchase is in the perception of utility and the ease of use, which when added to the skills and intentions increase its predictive power with respect to the adoption and intensive use of technologies.

That is, people using a cell phone will buy and sell products and services looking for the best offer and its corresponding benefits [26].

Consequently, the explanation of such an improvised and non-systematic process alludes to variables of an affective nature instead of cognitive ones as the perception of risk increases. This is how the identity towards a product, service or brand will be a relevant variable in the research on mobile commerce [12].

Based on a spot analysis, the aggregated values of the mobile products and services will be established. In effect, the mobile is more an added value of a product in which it seeks to activate emotions rather than the reflection on environmental deterioration. In this way, a product that prevents sustained development in its production and consumption process is promoted as an alternative solution to this problem [13].

In this sense, the aggregated values of products and services are decisive in decision making. Based on the establishment of preferences, needs and expectations, making such a decision will be oriented towards the purchase of a product. This involves activating messages (offers) in users with excessive visual and personalized information.

Method

For this, a documentary study was carried out with a selection of sources indexed to national repositories such as Dialnet, Latindex, Publindex, Redalyc and Scielo, considering the year of publication in the period from 2019 to 2021, as well as the inclusion of the keyword's "governance", "intellectual capital" and "millennials", for the search, selection and processing of information (see Table 1).

Table 1: Descriptive sample information.

	Governance	Millennials	Intellectual Capital
Dialnet	46	32	28
Latindex	37	27	17
Publindex	21	13	10
Redalyc	15	9	7
Scielo	8	2	3

Source: Self-made

The information was processed following the Delphi technique, which consists of comparing the information according to specific categories, integrating the similarities in a hybrid with assumptions of each of the axes and the trajectories of variables used in the literature review. The information was processed in the qualitative data analysis package version 4.0, considering the evaluation of the data related to the governance, millennial and intellectual capital categories carried out by expert judges in the subject areas (see Table 2).

Table 2: Construction of the content analysis matrix.

	Concept	Indicator	Codification	Interpretation
Governance	System of shared responsibilities between social and political actors, Public and private sectors [24].	Data related to conflicts and agreements between governed and governed	-1 for data unfavorable to training from technologies, devices and electronic networks, 0 for unlinked data and +1 for favorable data	High scores suggest possible governance
Millennials	Generation born from 1980 to 2000, Optimizing and innovating information through a technology, disposition or electronic network [22].	Data alluding to the use of technologies, devices and digital information networks	-1 for data unfavorable to training from technologies, devices and electronic networks, 0 for unlinked data and +1 for favorable data	High scores allude to an opening to information processed by millennials
Intellectual capital	Academic, professional and labor education arising from strategic alliances between higher education institutions and organizations whose main intentional value is the creation of knowledge; management, production and transfer of knowledge, skills and experiences Hernández, Anguiano, Valdés, Limón y García, 2018)	Data about the alliances between universities and companies regarding professional training, social service and labor insertion	-1 for data unfavorable to training from technologies, devices and electronic networks, 0 for unlinked data and +1 for favorable data	High scores mean an academic, professional and labor education guided by electronic technologies, devices and networks

Results

Table 3 shows the descriptive values of the informative sample, considering the frequencies of the governance categories, millennials and intellectual capital in the international repositories.

Once the descriptive values were established, we proceeded to estimate the contingency relations between the indicators with respect to the three categories: governance, Millennials and intellectual capital.

Table 3: Descriptive values of the informative sample.

S		M	S	K	Governance (C1)	Millennials (C2)	Capital (C3)
S1	Negotiation	.81	.15	.25	[$X^2 = 10.4$ (11 df) $p < .01$]		
S2	Consensus	.82	.10	.21	[$X^2 = 12.3$ (16 df) $p < .01$]		
S3	Participation	.81	.16	.20	[$X^2 = 15.3$ (16 df) $p < .01$]		
S4	Responsibility	.83	.13	.24	[$X^2 = 16.2$ (18 df) $p < .01$]		
S5	Network	.79	.16	.22		[$X^2 = 23.4$ (15 df) $p < .01$]	
S6	Dispositive	.79	.15	.21		[$X^2 = 26.5$ (16 df) $p < .01$]	
S7	Internet	.73	.10	.23		[$X^2 = 29.1$ (14 df) $p < .01$]	
S8	Academic	.84	.12	.25		[$X^2 = 28.3$ (17 df) $p < .01$]	
S9	Technology	.75	.13	.25			[$X^2 = 22.1$ (19 df) $p < .01$]
S10	Profession	.81	.13	.25			[$X^2 = 23.6$ (16 df) $p < .01$]
S11	Formation	.83	.16	.26			[$X^2 = 25.3$ (12 df) $p < .01$]

Source: Elaborated with the study data, S: Subcategory; M: Media; SD: Standard Deviation; K: Kurtosis; X2: Chi Square, df: Degree Freedom; p: Significance Level, C: Category.

It is possible to appreciate that the central categories were contingent and significantly related to some indicators. In the case of governance, it was related to consensus, negotiation, participation and responsibility, the category of Millennials with academia, device, Internet and network. The category of intellectual capital with academia, training, profession and technology. Relations prevailing between central and peripheral categories suggest an incipient construction of the governance of the formation of intellectual capital millennials.

Therefore, the specification of a model for the study of the phenomenon could be carried out from a discussion of the relationships between four variables prevailing in the literature consulted: perception of risk, perceived utility, perceived ease of use and use of technology. That is, given that the governance of intellectual capital is not properly observed in the literature, it is necessary to investigate the relationships between the variables that would explain an academic, professional and labor formation for the millennial's generation, rather than their shared responsibilities with the other actors involved in it. His training.

Final considerations

The specification of a model is made from a nomenclature of statistical parameters in which the relationships between sociocognitive variables (perceptions, attitudes, motives and intentions) are observed as predictors of behavioral variables (search, selection and purchase of products).

The structure of a model is established from the formula: Total parameters of a model = variances and covariance parameters of exogenous constructs + variances and covariance parameters of trajectory perturbations + parameters of direct and indirect effects on the variables with endogenous structures [27].

A model is a systematic plan that establishes the likelihood of causal relationships between the variables that explain a problem. This model includes two types of variables: manifest

and from them, latent variables are inferred through a factorial analysis.

In both types of analysis, the factor load (the relationship between the latent variable and the manifest variables) determines the inclusion of a manifest variable in a latent variable. However, only in the confirmatory analysis are hypotheses about the relationships between the manifest variables and the variable late synthesized.

Both types of factor analysis establish the convergent validity of the latent variable.

Now, both manifest and latent variables can be modeled as exogenous and endogenous, moderating and mediating. They will be exogenous when they determine another variable, endogenous when they are predicted by another variable, moderator when they interact with another variable and mediator when transmitting the effects of an exogenous variable on an endogenous [12].

A moderation process is defined as the fragmentation of the direct effects of a group of two or more independent entities into a dependent focal entity. That is, the effect of an independent entity on a dependent focal entity decreases or increases depending on the relationship of a third independent entity with the first independent entity. This process of moderation allows to establish when or what effects will be exposed.

Three conditioning factors are included in the moderator process:

- Variable X must be directly and significantly related to variable Z
- Variable X should not be high and significantly related to variable Y.
- Variable Y must be directly and significantly related to variable Z.

For example, the literature warns that the perception of ease of use of technology (variable X) indirectly affects the purchase of products (variable Y) through the intention (variable Z) itself that predicts the purchase of products [8].

Meanwhile, a mediating process is defined as the transmission of the effects of a group of independent entities on a dependent focal entity. This mediating process reveals how and why the exposed effects occur.

In the mediating process, three conditioning factors are included:

- Variables X and Y should not be directly and significantly related to variable Z.
- Variable W must be directly and significantly related to variable Z
- Variables X and Y must be highly and significantly related to variable W.

For example, it is the case of the perception of ease of use of technology (variable X) and information search (variable Y) that are not related to intention (variable Z) but are related to attitude (variable W).

It should be noted that moderating processes are more frequent than mediating processes. Therefore, both moderating and mediating processes are included in a structural notation.

Considering these recommendations, a model was outlined around the mobile consumption once the pertinence of variables was proposed based on the advances and limitations (validity of verbal reports, relevance of constructs and instruments, capture of homogeneity and differentiation in the levels of analysis) in the studies of perceptions, beliefs, attitudes, motives, abilities, intentions and behaviors derived from the use of information and communication technologies [14].

The modeling of the variables proposed in consecutive phases ranging from the situational to the behavioral explain what leads people to perform certain practices and systematize them, is represented by the direct causal relationships of exogenous constructs on endogenous and indirect mediating constructs.

The consumption of mobile telephony, indicated by intention, utility, risk and attitude, supposes a rational, deliberate, planned and systematic process of adoption and intensive use of information and communication technologies and devices. It is in this sense that digital networks would be the main reason for mobile use.

The perception of utility is a latent variable that explains a process of acquiring a product or service on the Internet. This implies three aspects: a) to be a latent variable, the perception of utility includes manifest variables that have configured explanatory models of deliberate, planned and systematic consumption. These explanatory models were constructed from theories that were modified according to the findings and their predictive power.

Consequently, the theory of mobile consumption is the evolution of valuation approaches, motivational, reasoned, planned, technological acceptance and social cognitive. Likewise, the model of mobile consumption represents the optimization of background models such as; reasoned action, planned behavior, acceptance of technology and adoption of electronic commerce.

In this way, the latent variable of the perceived utility is the advanced continuation of manifest variables such as; the perception of risk, consumption values, attitudes towards products or services and the reasons for purchase. Therefore, the perception of utility can be included as an exogenous variable and can be causally related to other variables as suggested by the mobile consumption model.

The contribution of this work to the state of the matter lies in the establishment of a model for the study of mobile telephony, its adoption and intensive use, but user satisfaction is not only reduced to utility, risk or fitness but, in addition it supposes more variables related to the identity of the user. These are mediating variables such as attitudes and intentions and moderating variables such as motives, emotions and skills that would enrich the proposed model.

Therefore, a search for information and adoption of mobile technology for information and communication is recommended, as well as a more sophisticated processing technique, according to the progress of mobile devices. Data mining would be the technique to be developed to establish user profiles in relation to the diversity of content and variety of personal data.

As for the theory of mobile use, which highlights the importance of the association between utility, attitude, intention and service hiring, this work has proposed a model that integrates the factors provided they derive from Opportunities for access to services and the capabilities of using technologies.

Therefore, future lines concerning Stalking, Trolling, Stashing or Bullying will allow to anticipate scenarios of differentiation between users and with respect to the factors used. In this way, the proposal of a model could include findings related to developed economies that only international repositories such as Ebsco, Scopus or Copernicus can include.

Therefore, the inclusion of mediating variables such as attitudes and intentions, as well as that of moderating variables such as; motives and skills will enrich the proposed model.

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