# EXPLORATORY MODEL OF TECHNOLOGY ACCEPTANCE IN THE COVID-19 ERA

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## ABSTRACT

*The intensive use of technologies, devices and electronic networks not only own differences between users and non - users, but also even among those who use one or the other same technology that eventually perfects and involves continuous learning abilities and knowledge processing and dissemination of information. The objective of the present study was to establish the reliability and validity of an instrument that measures the intention to search for information. From a non - experimental, exploratory and cross - sectional study with a non - probabilistic selection of 100 students at a public university, it is planned eight dimensions among navojoa.uson.mx which explain the information selectivity of 21% at full. Regarding the design limits of the study sample and the testing of the dimensions recommended in an investigation of major components in the analysis confirmatory factor.*

**Keywords:** Governance, Internet, Networks, Technologies, Devices, Selectivity.

## INTRODUCTION

As part of the information society, the intensive use of technology and electronic devices or mechanics has exacerbated the differences between digital networks and users who have access including, but not link their work or academic activities using the Internet. The digital divide between generations and even between users makes it necessary to reconcile interests, needs and expectations, as well as skills and knowledge according to the opportunities and capacities, demands and local resources available to the demands of the international market. The system in which these differences are settled is governance and the instrument by which the asymmetries and similarities is known as public agenda are weighted.

Thus, if a town has an agenda focused on networks, technologies and dispositive electronic as the Republic of Estonia, then hopefully there is a small gap between the generations, but in the opposite case of the Republic of Ethiopia Where their digital agenda is almost nonexistent, availability, access and connectivity are almost nil, then it is possible to expect a digital divide between their generations and even among the few Internet users (Ballesteros et al., 2010; Byrne, 2013; Ying-Hsiang et al., 2011; Source et al., 2010).

The Organization for Economic Cooperation and Development (OECD) in its report runs to 2010 spending notices a decrease in the rate of population growth from 1950 and projects a downward trend until 2050. Korea, Brazil and India are the countries with the highest growth trend, Mexico ranks third place and France, Belgium and Sweden is the countries with the lowest growth rate. Regarding the expected population by 2050, India will have about 395 million 19 years, Mexico will occupy the sixth place with approximately 28 million and Iceland will be

positioned on the last place with 85 thousand inhabitants. The OECD notes that these figures reveal the expectations of economic, technological and commercial growth that allow predicting the close relationship between the trend of population growth and electronic consumption. To the extent that the population increases, the expectations of the use of information and communication technologies will be more oriented to the purchase and sale of products and the contracting of services on the Internet. For these countries, growth without preceding the use of related consumer electronic technologies is expected. However, the working age population will use and consume a greater extent Internet both in its form to academic, training, job performance and consumer electronics (Garcia, 2007; Garcia, 2008; Garcia, 2011; Garcia, 2012; Garcia, 2013; Garcia et al., 2013). Regarding the productive age, India will continue with the largest labor force with about 998 million, Mexico will continue in sixth place with 73 million and Iceland will occupy the last place with around 215 thousand workers.

However, a consequence of the dynamics of population growth is the old age that in the case of the mentioned countries will have the same tendency. In India, there will be around 222 million elderly people, in Mexico there will be 29 million elderly people and Iceland will have 108 thousand people over 65 years old (Garcia et al., 2012; Garcia, 2011a; Garcia, 2011b; Garcia, 2011c; Garcia, 2011d; Garcia, 2011e).

The overall population trend can be explained prospectively from the current trend and the local foundation cr. In the case of Mexico, localities with more than 2500 inhabitants a significant increase in relation to the towns with more than 15,000 inhabitants. While small towns increase their growth rate, large towns tend to decrease. These data, combined with the educational trend, explain the use of the internet for commercial rather than educational or labor purposes. In Mexico, the coverage or public decreases and supply increases private institutions, mainly in urban with over one million inhabitants, expanding educational coverage and localities, the highest level recorded a spurious growth. However, access to internet, despite its high cost compared to the rates of other member countries of the OECD, has significantly in medium and small towns.

The data put forth show growth trends in population, education and internet. These figures support the hypothesis about the formation of attitudes towards technological Information and Communication, mainly Internet service specifically e-commerce defined as the exchange of goods and services through protocols of electronic money transfer. However, because most Internet users are under the age of 19, electronic consumption seems to explain the acceptance and use of the internet in exclusive websites for social networks. In this sense the psychological studies of Internet use two theoretical models have been used to demonstrate the hypothesis around socio-demographics and attitudinal determinants to the Internet. This is the Technology Acceptance Model (TAM) and the Technology to Work Adjustment Model (TTFM).

If the OECD forecast on the trend of population growth, educational offer and internet access for Mexico is constant until 2050, socio-demographic variables indirectly predict the use of a technology through intentions, attitudes and perceptions. The OECD argues that the educational efficiency of the economically active population between 25 and 65 years of its member countries is greater in the United States and less in Mexico and Turkey. However, considering ranges from 25 to 34 is the leading country Korea, Mexico and Turkey being the latest. In the range of 35 to 44 years Korea remains in first place tied with the Czech Republic. With respect to the range of 45 to 54 years EU recovers the first site. The range of 55 to 64 years to US and Canada recorded the highest values. The Czech Republic which a higher percentage of educated men and Portugal occupies the last place. In the range of 25 to 34 years retrieves the

first site Korea, Mexico and Portugal are located in places. 35 to 44 years, Czech and Slovakia are leaders and Turkey ranks last l u gar. 45 to 54 registers EU and Turkey increased efficiency gets lower efficiency. 55 to 64 EU and Turkey occupy the first and last place in the list.

Around the efficiency of Internet use, sex and age are considered external factors affecting through perceptions, attitudes and intentions indirectly on eating and consumer electronics. Psychological studies of Internet have developed models to predict structural efficiency around the use of the Internet from the variables s or –demographic (Pei-Lee et al., 2010; BinDhim & Trevena, 2015; Calamaro et al., 2009; Tavani, 2003; Metcalfe, 1995; Hu et al., 1999).

The OECD in its report for the year 2010 observed an increasing population trend from 1950 until 2049. In 1950, India had the highest growth with 15.67 and Ireland was the country with lower growth with 4.90 percent. In the year 2050, South Africa will be the country with the highest population growth percentage reaching 6.06 and Japan will occupy the last place with 1.24 percent. In the case of Mexico will have a foundation and 2.53 percent?

If we relate the trend of population growth with spending Des Research and experimental (GIDE) in the period 1998 to 2007 it corresponds to the lower GIDE Mexico in relation to most countries of the OECD. In 2007 the United A two of America (USA) invested the most in GIDE with 368.799 million USD. Even historically, the US has invested the most. However, Japan and Korea are superior in their inventiveness coefficient. The National Council of Science and Technology (CONACYT) of Mexico, in its 2010 report notes a growing trend in the period from 1998 to 2007 in Korea, Japan and the United States, countries with the highest population trend. In global terms, the global coefficient has increased from 6.57 percent in 1998 to 5.82 in 2007, when Japan reached 26.10 and in the case of Mexico, investment in GIDE went from 2.926 in 1998 to 5.580 in 2007. That took the last place with 0.5 for the same thing years when the coefficient is measured in the countries of the OECD.

The National Population Commission (CONAPO) in its report for the 2010 s the Economically Active Population (PEA) represents 58.45 percent (48 919.801) of the total population is around 112 million. The male population represents 76.75 percent (30, 608,123) and women 41.79 percent (18, 311,678) of the PEA. Around 13.79 percent (6, 261,777) work in the primary sector, 24.09 percent (11, 168,690) in the secondary sector and 61.78 percent (28, 639,914) in the tertiary sector. Only 6.05 percent (3,021,434) work less than 15 hours, between 15 and 35 hours work 19.35 percent (8, 910,795), between 35 and 48 hours work 43.12 percent (19,986,547) and more than 48 hours 27.55 percent 12,769,807) of the PEA.

These demographic data show an X-ray of the EAP without considering its relationship with technology in general and the Internet in particular. In each of the sectors technology increases the productivity of the organization they work for employees and thereby increases job performance. However, Information and Communication Technologies (ICT), mainly internet, are related to the tertiary sector. In this sense, psychological studies of ICT acceptance have established itself as determinants of Internet use socio-demographic variables and intentions of use. Around the explanation of the acceptance and use of internet psychological theories of Reasoned Action (TAR), the Planned Behavior (TCP) and the acceptance of Technology (TAT) they have been cited by the state of the art (Kwak & McDaniel, 2011; Lopez & Lopez, 2011; Nunez et al., 2013; Orantes, 2011; Sandoval & Saucedo, 2010; Shroff et al., 2011; Simsek, 2011).

The objective of this research was to establish the reliability and validity of a instrument to measure the intention of finding information considering the selection processing and

exchange of academic content available online. For this purpose, the literature was reviewed and based on the state of knowledge scale intention information search for academic purposes were built.

## METHODS

A cross - sectional study conducted quantitative court. A non - random selection of 253 students held a public university of Mexico, criteria ion-exclusion was to have been in scribed in the computer lab, belonging to a social network and search information for the preparation of tasks, jobs, internships, exhibitions, dynamic, theses or research reports. 120 women (M=19.5 years and SD=3.15 years) and 133 men (M=22.5 years and SD=4.26 years).

A scale network intentional, which included 21 reagents around selectivity, compatibility, computability, accessibility, extensionality, accumulatively, anxiety and addiction

The instrument from judges according to Delphi analysis technique constructed do and establishment of consensus in each of the categories weighted the difference between time average time and self -reported use internet was requested corresponding to the application of the instrument in the classroom. Once explained to students that the study would not affect either positively or negatively their partial or final, we proceeded to deliver the survey warning having a maximum of 20 minutes to answer. Whenever there was a lack of reason, or, the same response is repeated for each assertion, it was eliminated the case of statistical analysis. The data were captured in the package and statistic for Social Sciences (SPSS) and software called analysis of moments and s structures (AMOS) in versions 10 and 6.0, respectively.

Analyzes multivariable were performed prior distribution requirements reliability and validity for which parameters were used kurtosis, alpha and weight factorial. Once established psychometric properties, we proceeded to estimate the correlation between each of the eight factors regarding them themselves by stats. Dependency ratios were calculated with the parameter bet on between the factor and indicators, as well as the use of statistical epsilon, for relations between the manifest errors of estimation variables. Finally, the contrast of the structural model was performed with the parameter's chi square and goodness of fit residual.

## RESULTS

The values of kurtosis close to unity show a trend of normal distribution, although the averages of the answers to the items indicate that so shows considers it very likely the relationship between information seeking and life s every day and activities academic (Table 1).

| Table1 INSTRUMENT DESCRIPTIVE | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **R** | **M** | **S** | **K** | $F_1$ | $F_2$ | $F_3$ | $F_4$ | $F_5$ | $F_6$ | $F_7$ | $F_8$ |
| $r_1$ | 1.03 | 0.49 | 2.03 | 0.381 | | | | | | | |
| $r_2$ | 1.06 | 0.39 | 2.06 | 0.382 | | | | | | | |
| $r_3$ | 1.07 | 0.29 | 2.15 | 0.392 | | | | | | | |
| $r_4$ | 1.19 | 0.31 | 2.16 | 0.391 | | | | | | | |
| $r_5$ | 3.1 | 0.52 | 2.46 | | 0.390 | | | | | | |
| $r_6$ | 3.04 | 0.39 | 2.37 | | 0.491 | | | | | | |
| $r_7$ | 3.17 | 0.69 | 2.33 | | 0.330 | | | | | | |
| $r_8$ | 3.47 | 0.25 | 2.01 | | 0.41 | | | | | | |
| $r_9$ | 1.06 | 0.51 | 2.83 | | | 0.482 | | | | | |
| $r_{10}$ | 1.01 | 0.83 | 2.04 | | | 0.482 | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $r_{11}$ | 1.83 | 0.93 | 2.81 | 0.41 | | | | | |
| $r_{12}$ | 1.27 | 0.62 | 2.93 | 0.441 | | | | | |
| $r_{13}$ | 1.2 | 0.63 | 2.32 | | 0.518 | | | | |
| $r_{14}$ | 1.17 | 0.84 | 2.04 | | 0.529 | | | | |
| $r_{15}$ | 1.28 | 0.85 | 2.83 | | 0.502 | | | | |
| $r_{16}$ | 1.62 | 0.19 | 2.01 | | 0.481 | | | | |
| $r_{17}$ | 1.69 | 0.29 | 2.46 | | | 0.518 | | | |
| $r_{18}$ | 1.3 | 0.38 | 2.32 | | | 0.382 | | | |
| $r_{19}$ | 1.64 | 0.41 | 2.37 | | | 0.493 | | | |
| $r_{20}$ | 1.02 | 0.62 | 2.83 | | | 0.513 | | | |
| $r_{21}$ | 1.29 | 0.47 | 2.06 | | | | 0.391 | | |
| $r_{22}$ | 1.63 | 0.35 | 2.83 | | | | 0.495 | | |
| $r_{23}$ | 1.03 | 0.25 | 2.49 | | | | 0.405 | | |
| $r_{24}$ | 1.83 | 0.38 | 2.04 | | | | 0.506 | | |
| $r_{25}$ | 0.38 | 0.05 | 2.17 | | | | | 0.381 | |
| $r_{26}$ | 0.49 | 0.07 | 2.16 | | | | | 0.406 | |
| $r_{27}$ | 0.16 | 0.08 | 2.71 | | | | | 0.591 | |
| $r_{28}$ | 0.39 | 0.04 | 2.1 | | | | | 0.471 | |
| $r_{29}$ | 0.82 | 0.04 | 2.03 | | | | | | 0.595 |
| $r_{30}$ | 0.95 | 0.05 | 2.07 | | | | | | 0.405 |
| $r_{31}$ | 0.71 | 0.08 | 2.05 | | | | | | 0.591 |
| $r_{32}$ | 0.39 | 0.05 | 2.06 | | | | | | 0.606 |

Source: Elaborated with data study; Kurtosis generally=2.47; Bootstrap=0.000; KMO=0.601; X2=12.35 (24gl) p=0, 000; $F_1$=Selectivity (21%variance explanatory text each); $F_2$=Compatibility (18%of the total explained variance); $F_3$=Computability (15%of total explained variance); $F_4$=Accessibility (13%total explained variance); $F_5$=Extensionality (11%of the total explained variance); $F_6$=Accumulatively (9% total explained variance); $F_7$= Anxiety (7%total explained variance) and $F_8$=Addiction (6% total explained variance). Items have as response options: 0=not at all likely, 1=very unlikely, 2=unlikely, 3=probable, 4=very likely.

Regarding the validity of constructs, the factor weights of the items in each of the eight specified factors indicate that there are sufficient correlations to support the eight cases of intentional multidimensional information search network (Table 2).

**Table 2**
**CORRELATIONS AND COVARIATIONS**

| | $F_1$ | $F_2$ | $F_3$ | $F_4$ | $F_5$ | $F_6$ | $F_7$ | $F_8$ | $F_1$ | $F_2$ | $F_3$ | $F_4$ | $F_5$ | $F_6$ | $F_7$ | $F_8$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $F_1$ | 1.0 | 0.35 | 0.42 | 0.36 | 0.48 | 0.36 | 0.32 | 0.52 | 1.5 | 0.36 | 0.43 | 0.48 | 0.32 | 0.54 | 0.42 | 0.53 |
| $F_2$ | | 1.0 | 0.43 | 0.31 | 0.30 | 0.38 | 0.31 | 0.45 | | 1.8 | 0.47 | 0.40 | 0.31 | 0.47 | 0.47 | 0.58 |
| $F_3$ | | | 1.0 | 0.33 | 0.32 | 0.36 | 0.37 | 0.58 | | | 1.9 | 0.45 | 0.36 | 0.46 | 0.40 | 0.50 |
| $F_4$ | | | | 1.0 | 0.31 | 0.46 | 0.40 | 0.47 | | | | 1.6 | 0.38 | 0.40 | 0.44 | 0.55 |
| $F_5$ | | | | | 1.0 | 0.50 | 0.43 | 0.36 | | | | | 1.5 | 0.36 | 0.37 | 0.57 |
| $F_6$ | | | | | | 1.0 | 0.46 | 0.31 | | | | | | 1.9 | 0.41 | 0.58 |
| $F_7$ | | | | | | | 1.0 | 0.37 | | | | | | | 1.8 | 0.52 |
| $F_8$ | | | | | | | | 1.0 | | | | | | | | 1.7 |

Source: Elaborated with data study; $F_1$=Selectivity; $F_2$=Compatibility; $F_3$=Computability; $F_4$=Accessibility; $F_5$=Extensionality; $F_6$=Accumulatively; $F_7$=Anxiety, $F_8$= Addiction: *p<0.01; **p< 0.001; ***p<0.0001

Thus, the anxiety about the speed of information search, the backup file or the completeness of these was the Shimmer factor to the intended use of internet for academic purposes (Figure 1).

Setting parameters and residual [$X_2$=24.36 (16gl) p=0.000; GFI=0.990; RMR=0.000] suggested the acceptation of the null hypothesis, even when the chi square was significate and would rejection of the hypothesis in question.

However, the values of adjustment and residual are preponderant in these case s and therefore are discussed below implications of accepting the assumption that information seekers are characterized by a psychological process, we have called intentional network.

Such psychological process explains the rational, deliberate, planned and decisions around the development of jobs, tasks, exhibitions or thesis from the selection, compatibility, computation, access, accumulation, and addiction information they have available from your electronic devices.

## DISCUSSION

The contribution of this study to the literature reviewed is the establishment of co n reliability and validity of an instrument that measures intentions search for information networks, technologies and electronic devices connected to the Internet.

But exploratory non - probabilistic design and selection of sample limit results. In that sense, the contrast of the structural model of relations between the reflective dependence is recommended construct the intention of seeking information and dimensions or factors found.

Regarding governance networks, technologies and electronic devices it is necessary to further study the differences or digital gaps between contexts with high inclusion, accessing and processing digital information regarding entities with no connectivity and portability.

Regarding the instruments used in the literature scale intentional network pond and dimensions that literature reports as priority, although it's internal consistency and validity can be improved if a study context is explored in order of the meanings of concepts in reagents instrument.

Regarding confirmatory factor analysis of the dimensions found is necessary to consider including the dimensions explained more than 20% of the total variance and that this implies internal consistency and construct validity necessary to perform the contrasting of hypothetical factors study in other contexts.

## CONCLUSION

The objective of this work was to establish the dimensions of the technology acceptance model. The findings show the prevalence of eight components, among which anxiety and addiction stand out as main factors. The sample surveyed seems to reflect more anxiety and addiction to technology in times of pandemic. The implications for risk communication suggest a trust-centered model of technology acceptance, since as COVID-19 intensifies and forces people to confine and distance them, anxiety and addiction increase.

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