Attitudes towards COVID-19 in students at a university in central Mexico

Actitudes frente al COVID-19 en estudiantes de una universidad del centro de México

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Resumen

Hasta febrero de 2022, la pandemia ha provocado la muerte de siete millones de personas. Las políticas anti-COVID-19 en México se distinguen por el distanciamiento individual más que por el confinamiento recomendado, pero no impuesto por el Estado. En este escenario, la pandemia se ha cobrado la vida de 300.000, aunque el Gobierno reconoce otros 300.000 relacionados con neumonías atípicas. El objetivo del presente trabajo fue especificar un modelo para el estudio de las actitudes frente a los efectos de la pandemia en el medio ambiente. Se realizó un trabajo exploratorio, transversal y correlacional con 100 estudiantes, considerando su confinamiento y uso intensivo de tecnologías, dispositivos y redes electrónicas. Se encontró una estructura factorial que explicaba el 35% de la varianza total, aunque el diseño de la investigación limitó los resultados al ámbito del estudio, sugiriendo la extensión del trabajo hacia el contraste del modelo propuesto.

Palabras Clave: Información, teoría, modelo, actitud, comportamiento.

Abstract

Until February 2022, the pandemic has led to the death of seven million. Anti-COVID-19 policies in Mexico are distinguished by individual distancing rather than confinement recommended, but not imposed by the State. In this scenario, the pandemic has claimed the lives of 300,000, although the government recognizes another 300,000 related to atypical pneumonia. The objective of the present work was to specify a model for the study of attitudes towards the effects of the pandemic on the environment. An exploratory, cross-sectional and correlational work was carried out with 100 students, considering their confinement and intensive use of electronic technologies, devices and networks. A factorial structure was found that explained 35% of the total variance, although the research design limited the results to the study setting, suggesting the extension of the work towards the contrast of the proposed model.

Keywords: Information, theory, model, attitude, behavior.

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1. Introduction

As of this writing, the SARS-COV-2 coronavirus pandemic and COVID-19 disease have infected 10 million people, sickened 5 million and killed half a million. In Mexico, 200,000 have been infected, 50,000 have become ill and 25,000 have died. The health crisis has forced confinement and gradually led to a recession and economic crisis shaped by unemployment and inflation.

Faced with this bleak picture, people have developed attitudes or dispositions against and in favor of the situation, the government, their jobs, their families and themselves in the face of the health and economic crisis, highlighting the emotions of anxiety, anger or fear, although also Dispositions emerge to carry out actions that mitigate the effects of the pandemic, as well as strategies for entrepreneurship and solidarity and fraternal collaboration with others.

Precisely, the objective of this work is to specify a model for the study of attitudes towards the pandemic, the rulers and the ruled, considering the effects of the health and economic crisis during a prolonged confinement that has lasted four months and another two are expected if a new outbreak of infections, diseases and deaths.

The contributions of this work to the state of the question are: 1) review of the conceptual theoretical framework, 2) methodological approach to the problem, 3) diagnosis of the phenomenon, 4) discussion of the findings, 5) reflection of contributions and implications.

Thus, in the first section the theoretical and conceptual corpus that explains the appearance of attitudes towards risk events such as pandemics are exposed. Thus, in the following section the most recent and specialized findings are reviewed in order to be able to notice the research agenda. Next, the decisions that led to the study of the problem are presented to offer a diagnosis of the frequencies, validity and reliability of the responses to the instrument that measures the question. In addition, the scope and limits of work are discussed in a penultimate section in order to offer a global reflection in the last section.

2. Theory of attitudes

In modern democracies, the construction of a public agenda implies the influence of the media on citizen opinion and this in the evaluation of mass communication policies. In this sense, attitudes have been studied as indicators of the persuasion or dissuasion of audiences. For this reason, the objective of this work is to discuss the models of attitudes in reference to the processing of information related to the issues on the public agenda. For this purpose,

the theories of attitudes are reviewed, and their postulates are contrasted with the most recent findings regarding the formation, function and composition of attitudes. Such an exercise will allow debating the influence of the media on citizen opinion through attitudes towards information generated by electronic and cybernetic devices in the current technological and democratic context (Hughes and Barnes, 2011).

The emergence, formation, change and reinforcement of attitudes implies an information system that determines the beliefs, decisions and actions of individuals. In this sense, the present work aims to compare attitudinal theories to clarify a socio-psychological system that determines systematic actions. Such an exercise will allow us to discern the spontaneous, deliberate, heuristic, and planned processes considering the degree of information, communication, and technologization of the socio-psychological system. The discussion regarding the socio-psychological system will contribute to the explanation of the impact of Information and Communication Technologies on human behavior (Ozer and Yilmaz, 2011).

The media seem to start and end the informative process of persuasion or deterrence of audiences and groups, mainly people who interact closely with the individual will mediate the issues, content and messages that the media have broadcast. In this sense, the formation of attitudes towards the information generated by the media, the interpretation of close people and the opinion of leaders could explain the construction of a public agenda. Therefore, it is necessary to explain the functions and components of attitudes (Pírez, 2011).

Precisely, the objective of this work will be to expose the models of attitudes to explain the construction of the public agenda through public opinion. Such an exercise will open the discussion about the impact of the media on personal decisions through interindividual relationships. As messages intensify, they determine the social diversification of their content and with it the interrelationship between people that will inhibit or facilitate the adoption and processing of information in situations of uncertainty (Bassols, 2011).

In other words, given the incommensurability and unpredictability of risks, individuals access surrounding information that affects their attitudes and encourages decision-making regarding the interest group rather than the situation itself or the corresponding setting of the media. It is an interpersonal information processing in which the penetration of technology defines the issues and ends the cycle of influence, complementing the information that a principle skewed according to its expectation objectives.

The objects of study are diffuse and we often approach them from our common sense, but the profession of the sociologist, not of social work, is also obliged to: 1) an epistemological vigilance or explicitness of a construction of the object of study, 2) conscious taxonomy or division based on a theory and

3) analogy or comparison to make objects intelligible (Moulaert, Parra and Swyngedouw, 2014).

Thus, rather than building an object of study, it is an insufficient construction since vigilance, taxonomy and analogy are not considered by theoretical and conceptual frameworks, much less by the methods used in a so-called positivist sociology (Artaza , Toro, Fuentes, Alarcón and Arteaga, 2013) .

Thus, the drawbacks are:

– Diffusion or construction based on notions or common sense
– Neutrality or establishing relationships between discourses or answers to irrelevant or contextless questions
– Hyperempirism or exaltation of the social as an emergent and spontaneous phenomenon avoiding the construction of the liberation of the individual subjugated by social domination
– Univocity or expectations of convergent answers to equal questions, discussion and conclusion based on consensus reported by the state of knowledge

Therefore, the construction of a study object supposes; a) modeling of structural affinities, establishing relationships between the social with the economic, the political, the environmental and the cultural.

b) Delimitation of a field of power and influence from the generation and unification of a theoretical-conceptual system that c) produces renewable and verifiable problems and questions to deduce and infer the social (Chavarro, 2011).

It is these needs that from Social Work can guide the construction of the object of study, although it will be advisable to warn that from the common sense an object of study is also built, but the difference between building it from a theory, a model or a field lies in in a construct (Espino, 2011).

Building from common sense is adjusting what is perceived to the speeches and words that people use on a daily basis; building from a field implies adjusting what is observed to the internal rules of a group; to build from a theory is to adjust the phenomenon to the assertions of a paradigm; building from a model is inferring the relationships between the objects we study; to build from constructs is to go beyond the appearance, it is to give an account of the essence, of the latent that is not at the naked eye of common sense, nor is it within reach of an inferential reading of a field, theory or model (Iconaru, 2013).

To build from a construct is to establish a breakdown of indicators or symptoms of a phenomenon, process or object. It is to categorize levels of explanation that are compatible not only with an epistemology, but with an ethic. In this sense, an ethics without salvation that differs from the ethics of promise (the researcher is rewarded for his construction of the object) (Iglesias, 2010).

And an ethic of the foundation (the researcher follows a perfectly clear path; divine, cosmic, biological, sociological, psychological). It is an ethic in which the researcher is aware once and for all that "nothing will be rewarded, everything will be forgotten, we are all researchers because we are all lost" (Michelini, 2010). Therefore, rather than building a study object, we rebuild something that had already been built, but was destroyed, forgotten, or lost.

In the case of the governance of sociopolitical attitudes, it is necessary to consider scenarios in which they emerge and develop, although they have this transdisciplinary faculty, attitudes are constructs elaborated from social psychology, but with respect to phenomena that other disciplines such as sociology study and political science (Bassols, 2011).

The most basic scenario in which attitudes grow is psychological. In this sense, there are four elements that make up the psychological attitudinal construct: 1) extraversion, 2) neuroticism, 3) psychologist and 4) emotionality, the latter being the one most associated with cognition and behavior. However, the psychological elements are insufficient when defining responsibilities of exclusion, marginality or vulnerability. It is the psychosocial scenarios that will link opportunities with capacities, opportunities that the State offers with respect to the capacities that society develops and that is assumed as local development (Ballard and Jones, 2011).

In this way, 1) belonging, 2) categorization, 3) representations and 4) identity are central pieces in the conformation of a social subject, a structuring structure of power and influence that spreads in the problems of security and sustainability, as well as public health

In this psychosocial setting, attitudes were developed, although they moved towards socio-political settings, the psychosocial elements highlight the importance of groups and their processes of exclusion and inclusion, marginality and vulnerability. It will be the sense of belonging that will explain the differences between dominated groups and the categorization will define the relationships between individuals with respect to their expectations in the groups to which they belong or want to belong (Brenner, 2011).

Conflicts between individuals as in groups will be settled from their nuclei of central and peripheral representation, objectification and anchoring will determine not only the current differences, but the future asymmetries that are inherited, or are acquired. In this way, attitudes can move as dispositions towards sociological settings. The habitus are explained by provisions that reflect attitudes for or against issues, individuals, groups, processes or symbols (Guarneros, 2011).

Sociological scenarios such as 1) habitus, 2) capitals, 3) fields, and 4) reproduction explain not only the process in which attitudes are power and influence bearers, but also anticipate the transformation of dominated actors into domi-

nant ones, not they only anticipate the reproduction of social domination, but also predict the conversion of attitudes that would generate dispositions and action devices (Davies, 2011).

These are four currencies that make up a system of psychosocial and sociological domination of one group in relation to another, it could well be the relationship between rulers and ruled, although this would suppose that the sociological scenario is symbolic and inexorable to economic production relations (Ostrom, 2014).

Rather, attitudes are symbolic dispositions and devices of social change. In this sense, as provisions and devices favor the establishment of authoritarian and democratic regimes, although due to the degree of deliberation, they are primarily authoritarian propaganda devices.

In authoritarian settings in which there is nothing but hegemonic ideology, the formation of attitudes is anti-propagandistic, as oppression intensifies, participation is accentuated in nonconformity. The illegitimacy of the authoritarian regime is prolonged along with dissent, the competition for power is nullified by virtue of the emotionality of attitudes that support new insurgencies that overthrow the regime.

The formation of socio-political attitudes does not envisage changes, since they are part of the ideology of the regime, but the emergence of dissident attitudes fosters the scenario of conflict and disagreement that democratic ideology will anticipate (Dorantes, 2012).

In any of its forms, authoritarianisms generate dissident attitudes, although there are partisan, or non-partisan, groups to the ruling regime, dissent proliferates in oppressed civil society (Cabanelas, Cabanelas, Somorrostro and Lampón, 2014).

Consequently, the formation of attitudes is constituted as a network of provisions that disseminate the dissatisfaction with the regime and the possible overthrow, although the resources for this purpose exacerbate the unrest and promote change, the provisions are no longer isolated entities and have become transformed into an information conglomerate that not only establishes a liberating agenda, but also promotes a political identity that legitimizes collective action and social mobilization against the regime (Guerrero, 2008) .

The power of attitudinal networks consists of action rather than deliberation, however, the consensus to overthrow the regime or delegitimize it before the adherents and sympathizers is a company that derives from provisions in favor of the media and the participatory agenda

In this way, the formation of dissident attitudes becomes established and even conformist before the advent and establishment of a system of partisan competition, alternation of power, diversity of ideologies, election of majorities and respect for minorities. These are the democratic forms of state and gov-

ernment regimes, as well as the media and propaganda legitimation systems against which organized civil spheres will generate a ubiquitous agenda (Chavarría, 2013).

The formation of sociopolitical attitudes is created in any political system, established in democratic regimes and consolidated in dissent as in the emergence of a consensual identity, no longer imposed or mediated by television, radio, press, cinema or the Internet, but established by the reduction of society to groups and these to individuals who are instantly apolitical , but activists and promoters of an agenda in which issues must be accessible to the majority (Ferrari, Bazán and Logiúdice, 2014).

In the framework of attitudinal theories, attitudinal change refers to emotions and affections resulting from individual acts and for which people feel responsible. It is also about the social influence that membership or reference groups exert on individuals. Or, the reception of persuasive messages oriented to the central reasoning, or persuasive messages directed to the peripheral emotion. In general, the attitudinal system is sensitive to the instability of the object and to the cognitive variations that affect the consistency, stability, prediction, competence or morality of the individual (Rius, 2014).

The review and state of knowledge of attitudinal systems can be carried out considering the approaches of the Theory of Cognitive Dissonance (TCD) of León Festinger, the Theory of Reasoned Action (TRA) of Icek Ajzen and Martín Fishbein, the Theory Planned Behavior (TPB) by Icek Ajzen, the Theory of Probability of Elaboration (TPE) by Richard Petty and John Cacioppo and the Theory of Spontaneous Processing (TSP) by Russell Fazio.

Attitudinal theories hold that in individuals, groups, and societies, the dispositions that determine their intentions and behaviors are deliberately formed and spontaneously activated. Even these provisions indicate changes in consumption (Rottenbacher and De la Cruz, 2012).

Theory of Cognitive Dissonance explains the dilemmas of decision, choice and action allusive information does not necessarily convergent with our opinions. The TDC is inherited three paradigms; free change, induced process and forced justification. The TDC has focused its development on change and reduction of attitude from free change. The TDC raises discrepancies between cognitive schemas and the information generated by said discrepancy. A message that is consistent with expectations will generate consistent responses (Rosas, Calderón and Campos, 2012).

If the scientific information is in accordance with the attitudes of the recipient, then a deliberate and convergent response will be generated with the information that deals with water availability.

The Theory of Reasoned Action (TRA) states that attitudes are the result of beliefs about information from various sources such as the media or the people

with whom the individual relates. In allusion to the construction of a public agenda, the media broadcast issues that individuals process through their attitudes. As messages regarding a topic penetrate the media, people evaluate the information and associate it with experiences (Albacerrín, Wallace and Hart, 2012).

In this way, attitudes, according to TRA, are formed following a selective information process in which beliefs delimit issues and transform information into risks or benefits that individuals will associate with behaviors. In this sense, the agenda is built following the assumption around which the notes, editorials, columns, reports, newscasts, programs or spots activate evaluations that will transform them into objects of certainty or risk (Vargas, 2008).

At this stage, attitudes will disseminate information and categorize it into a continuum of dispositions ranging from strongly disagree to strongly agree. This is a general evaluation that serves to decide regarding said surrounding information (Gupta and Pahl, 2013).

The TRA unlike the TDC raises that the dilemmas can be reduced if the behavior is considered as a product of beliefs, evaluations, perceptions or norms. Deliberate behavior is fostered by beliefs around the availability of resources (Zamudio, 2012).

Both theories, TRA and TDC consider that attitudes are essential for the explanation of deliberate behavior, both consider that all reasoned action implies an action-execution program in which each person adjusts to the designs of collective reason in around the optimization of resources (Torres, 2013).

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The TRA maintains that attitudes are mediators of the effect of beliefs on intentions and behaviors. An increase in beliefs increases dispositions toward specific and deliberate decisions and actions. It is a process that goes from the general in terms of beliefs to the particular in terms of intentions and actions. However, the predictive power of general beliefs is limited by the specificity and one - dimensionality of attitudes. Since attitudes transmit the effect of beliefs, they delimit their indicators in probable dispositions to be carried out.

TRA also explains the diffusion process since the subjective norm, another component of the deliberate model, is related to attitude and intention. Following the same example, the issues broadcast by the media are again processed by the group and through the rules infiltrate the decisions. The TRA also considers that attitudes and norms, being linked to intentions, contribute to the deliberate processing of information, although beliefs are the main filter, attitudes define the situation and, based on this, the decisions to carry out a behavior (Ajzen, Joyce, Sheikh and Cote, 2011).

However, the transition from general information to favorable or unfavorable provisions merited a series of criticisms that led to the rethinking of the deliberate model into a planned one.

The Theory of Planned Behavior (TPB), proposes that the information is selected by the individual to such an extent that only that relative to contingent responses would determine the associations between evaluations and dispositions in reference to decision making (Albacerrín and Wyer, 2011). In this sense, the construction of the public agenda would be the result of delimited and planned information. In the case of participatory and deliberative democracy, the TPB would explain the hypothesis of elective decision as information rather than discussion of the same fosters an intention and voting behavior.

The TPB considers specific and delimited beliefs in a space and time as the indirect determinants of planned behavior. Beliefs regarding norms, perceptions and attitudes are directly and indirectly related to behavior. Such a relationship is mediated by attitudes towards planning such behavior.

The specificity between beliefs, perceptions, attitudes, decisions and behaviors lies not only in the psychological content but also in the deliberate and planned context. That is, it supposes a scenario in which random events coexist with events controlled by personal planning and would insist on a specific scenario that would affect rational evaluation (Ruiz, Sanz and Tavera, 2010).

TPB notes that the effect of beliefs on behavior is mediated by attitudes and perceptions of control. In a contingent situation or event, the perception of control increases its predictive power of intentions and behaviors if and only if it interacts with specific dispositions (Hughes and Barnes, 2011). As the perception of control decreases, its relationship with attitudes makes a spurious effect on decisions predictable. Necessarily, the deliberate and planned process of decision making, and implementation of strategies requires a perception of control consisting of the disposition towards the object.

However, the surrounding information, being emotional rather than argumentative, generates an asymmetric public opinion with the platforms that consider education as the system of redistribution of wealth. That is why that the TPB was supplemented by the Theory of Spontaneous Processing (TSP).

The TSP assumes according to which the attitudes, rather than being formed or delimited, are activated by stimuli in the individual's memory. In other words, the decision of each person is directly connected to the past, without cognitive intermediates (Sommer, 2011) the TSP assumes that the generality of the information facilitates the recall of experiences and the consistent association of these with behaviors.

The diversification of information activates meaningful memories, even if it implies their accessibility. Automatic processing is more likely in those who have accumulated do information (Albacerrín, Wallace and Hart, 2012). In contrast, those who cannot decode the surrounding information have limited access to it and their attitudes, when not activated, will inhibit systematic behavior (Brenner, 2010).

Another critical aspect of the TSP is that both experiences and information are significant because they have an affective rather than a cognitive component. People tend to remember molar rather than molecular events. Those experiences that were significant are stored in memory and are activated every time a stimulus links them to spontaneous actions (Fazio, 2011). In a way, TSP explains the effectivization of information and exalts it about rationality, although it does not explain what happens to the messages that incite discussion. In this sense, a deliberative democracy would have no place in the spontaneous processing model, the messages regarding the benefits and costs of political decisions would be stored and used as heuristics. Public deliberation would be reduced to images or schemes from which actions would be determined.

Unlike TDC, TRA, TPB and TAT, TSP maintains that the main cause of a poorly defined and rather improvised action in the meaning of previous experience with the attitudinal object. The prediction of behavior should not be sought in the reception of information, but in its symbolization, meaning and sense (Zúñiga, 2011).

The TSP raises attitudes because of the activation of experiences with the attitudinal object. Attitudes are associations between evaluations of objects. A negative evaluation increases the disposition and with it the spontaneity of the behavior.

The TSP explains the peripheral process proposed by the Theory of Probability of processing (TPP). If the information includes more schematics and images than reasoning, then it is a peripheral processing that will guide behavior, even in a systematic way, but by not questioning the information, the possibility of change will be minimal (Ajzen, Joyce, Sheikh and Cote, 2011). In contrast, the deliberation of the information, resulting from the need to process said content, will force the discussion of topics, messages or opinions. Such dynamics allow new approaches as a result of the dialectic between persuasive systems.

The TPP assumes that attitudes are only intermediaries between the information issued by the media and the exchange actions. In this model, deliberate, planned, and spontaneous prosecutions are complementary and depend on the message rather than on groups or technologies.

However, in the current context, Information and Communication Technologies have diversified, fragmented, specialized, synthesized and stored all kinds of information in such a way that it was essential to build a new model to explain the incidence and not of the information itself, but of the technology that emits or processes it so that individuals aspire to manage it.

The cognitive processing of information is explained by the TPP in which the images are related to emotions and the data with reasoning. The TPP explains the processes of attitude towards objects that, due to their discrepant nature, promote an elaboration that can be emotional or rational, but that each

individual assumes as a symbol that they would locate on the periphery of their cognition and, after a systematic deliberative process, will adopt as a central argument of their decisions and actions (Ajzen, Joyce, Sheikh and Cote, 2011). The TPP analyzes controversial attitudinal objects in which the position of the recipient will be oriented based on their elaborate acceptance or rejection of information from a source that, due to its degree of specialization and reliability, will foster the need for cognition. The TPP maintains that the images will be subject to scrutiny when their source of emission is unknown and unreliable.

Since emotions only activate a peripheral process in which representation is anchored to a core of meaning. Being a peripheral imaging process, emotions constantly change. Their intermittency is caused by scattered symbols and meanings which vary depending on the situations.

The TPP maintains that human behavior is the result of an emotional activation stored in memory and linked to the future actions of people.

From an informative stimulus, individuals adopt symbols that, when protected, will activate future behaviors in unstructured situations, but with duly significant objectives (Hughes and Barnes, 2011). This is how the improvised attitude would have dimensions indicated by associations between consumption and evaluations. Since the TPP proposes the evaluation-action convergence, it is pertinent to include items that include beliefs and evaluations towards the attitudinal object. The attitudinal approach of their improvisation is based on beliefs since they determine them.

The TPP, by proposing the study of peripheral and central processes, opened a field that the Theory of Acceptance of Technology (TAT) links technology and the consumer through the processing of information perceived as useful and accessible. Attitudes, from the TAT approach, are intermediaries between expectations of utility and decisions to use a technology or electronic device.

In reference to the construction of the public agenda, attitudes towards the acceptance of technology, mainly its accessibility and utility, are relevant in a cyber-participatory democracy since public opinion in social networks is the means in which evaluation of public policies determines social judgment. The TAT assuming that attitudes are filters of information related to the usefulness of a technology, assumes that democracy depends on the technological and cybernetic processing of information. Faced with such a panorama, attitudes and decisions are only filters (Fazio, 2011). The information circulates on the Internet and is available regardless of the attitude or the decision of the users, it appears unexpectedly in the same way that the now cybernetic public agenda no longer depends on the mass media, but on cybernetic technological devices. As such technology is perceived as accessible and useful, it no longer generates expectation, but rather acceptance, adoption and addiction. Such a process

further reduces the deliberative political or civil sphere by replacing them with a sphere of peripheral opinions and expressions.

Attitudes towards technology, its usefulness and ease of use have been highlighted as an essential component in the model that explains the incidence of external organizational factors in the use of technology.

It is a theory around which the process of technology adoption of two types of users is explained according to their degree of association between the evaluations they make of their technological devices, their impact on personal performance and their complexity of use. In the first instance, utilitarian users are identified by their opinions regarding technology as an end since they consider it the key link in human evolution. In contrast, the self-taught user who considers technology to achieve a certain goal.

Criticisms of theories lie in the technical process of technology adoption. If the TAT argues that training and training are elements key in a technology adoption, then the self - learning seems to boil down to the use of advanced strategies seeking information that would foster competitive advantages in users referring to those who have been excluded from Technologies of Information and Communication and are immersed in the digital divide between generations (Monsivais, 2014).

However, criticism, TAT seems to be closer to the core processes and rational rather than peripheral and processing emotional information. The inclusion of variables that explain the affects towards technology would explain the barriers that inhibit the adoption of the Internet as an instrument of expressiveness and critical thinking (Guerrero, Gerritsen, Martínez, Salcido, Meza and Bustos, 2010).

The TAT assumes that attitudes are considered as mediators of perceptions about behavior. That is, the expectations that are generated around surrounding information are processed as categories to spread in decision-making and consequent actions. TAT states that the adoption of technology is the result of a deliberate, planned and systematic process. In this sense, attitudes activate information related to the use of computers which varies according to their capabilities, or they affect consumption decisions that have been generated from expected benefits or accessibility to the use of technologies.

3. Attitude studies

Attitudes were found to be part of psychological, psychosocial, socio-political and political processes around which they reflect the existing relationships between authorities and citizens. In the framework of establishing an agenda, this work describes the informational context and anticipates exclusion scenarios

that would define the asymmetries between the actors regarding public peace, civil security, collective health and sustainable local development. In this way, governance seems to emerge from a sociopolitical identity, although not determined by a reflexivity of the consensus, but by a regulation of the media.

In theory and models, attitudes have been considered as mediating factors of the influence of perceptions on behavior (Hernández, 2020). However, as psychological studies of attitudes have been developed, they include emotional factors that determine more efficient behaviors. In this sense, the revision of the state of knowledge is necessary since information processing predicts decision-making and consequent action based on the interrelation of perceptual and emotional factors. This is how the revision of theories, models and studies of attitudes towards information to highlight the axes of discussion and anticipate future scenarios of debate; theoretical, conceptual, methodological and statistical. Such an exercise will establish the scope and limits of attitudes as mediating variables, as well as their probable development as evaluative categorizations of information.

In the case of the attitudinal models it has erected four preponderant models.

The hypodermic model has raised the impact of messages and content on the perception of the audiences that it considers to be manipulee, controllable and predictable. The audiences, from this model, are an extension of the individuals since, if they are passive and helpless before the onslaught of the messages, the audiences are prone to persuasive discourses as deterrents of public opinion leaders, however the hypodermic model does not contemplated the incidence of the groups with which the individual interacts or wants to interact (Hernández, Robles and Mella, 2010).

The model of social influence remedied the lack of the hypodermic by pointing out that the mere presence of a person who is strange or close to the individual affected their perceptions, beliefs, attitudes, decisions and behaviors. The emphasis on the other opened the debate around the mediation of the influence of the media on the dynamics of the groups and of these on the lifestyle of the individual. Such a process was formulated in dichotomous terms by postulating that messages against the group norm would have a greater rejection than those content adjusted to the uses and customs of group opinion leaders. However, the leaderships are influenced by the bases. This caught the attention of the studies in the selection of the information since the exhaustive exposure to messages is a function of the beliefs and perceptions derived from the group norms. Furthermore, the model of social influence supposes the direct and horizontal transfer of information in which public opinion leaders would mediate messages addressed to audiences. By reversing this scheme, the double flow model was formulated to explain the drawbacks of using leaders as mediators of information. Based on this model, the hypothesis around which

the media influence audiences and social influence was restated since they seem to follow vertical information processes rather than horizontal and emotional rather than deliberate ones (Wee, Hoc, Keat, Yee and Hin, 2010).

The selective disclosure model demonstrated the assumption that audiences make their decisions in risky situations. Or, when decisions require substantiation, messages justify decisions made in situations of uncertainty. From the point of view of the selective model, the media and audiences are central elements of communication processes, but such a relationship is not necessarily causal, although certain messages manage to penetrate the preferences and especially the decisions of the audiences. The selection of information, according to the expository-selective model, indicates an interpersonal process in which information is gradually disseminated to regulate the decisions and behaviors of individuals through group norms (Shroff, Deneen and NG, 2011).

Finally, the model of diffusion of innovations maintains that, as information is disseminated through various channels, the information is available for reinterpretation and redistribution among individuals rather than in groups. Despite the norms, individuals are more exposed to the influence of information since they are immersed in a vertical dissemination system in which anyone will transmute the content if it overcomes the communication barriers between their peers (Uvalle, 2011).

The innovative diffusion model involves four moments; access, conviction, acceptance and reevaluation. At each stage, the individual seems to detach himself from the group norms when processing the information in a way that allows him to compete for the dissemination of information that other individuals with other media have already implemented (Ruiz, Sanz and Tavera, 2010).

The attitudinal models consider the audiences as receivers of information that can be disseminated if: 1) asymmetries are established between the actors, 2) informative counterweights are established and 3) informative ventures are generated. Each of the phases involves the deliberate, planned, and systematic construction of information as provisions for insecurities, risks, and uncertainties (Rivera, 2020).

Attitudinal psychological studies have focused on its conceptualization, training, activation, accessibility, structure, function, prediction, change, inoculation, identity and ambivalence. Attitudes have been defined from affective and rational dimensions. Both dimensions are the result of experiences and expectations. This implies its structure: one-dimensional or multidimensional that is configured in exogenous and endogenous factors. That is, when attitudes activate decisions and behaviors, they cause a peripheral, emotional, spontaneous, heuristic and ambivalent process. In contrast, when attitudes transmit the effects of values and beliefs on intentions and actions, they are endogenous

mediators of a central, rational, deliberate, planned and systematic process (Mendoza, 2011).

Psychological studies have shown significant differences between attitudes towards people and attitudes towards objects. The former refers to stereotypes or attributes and the latter refer to evaluations or dispositions. In both, ambivalence is an indicator of change when beliefs and evaluations interact, forming negative and positive dispositions towards the object. Conflicts are formed within the components formed by beliefs towards the object. Resistance to persuasion is a consequence of attitudinal ambivalence. If the environment threatens the formation and function of attitudes, these adapt the individual to contingencies. In this way, attitudes have two essential functions: selfish and utilitarian (Espinal and Gutiérrez, 2014).

Attitudinal studies regarding the impact of the media on the construction of public agendas have established five models around which the construction of public opinion is explained in reference to local and global issues that public policies include in their processes of governance. In this sense, the relationship between the political sphere and the civil sphere can be explained from the formation of attitudes as indicators of public opinion on the issues that the media broadcast in a locality (Brenner and De la Vega, 2014).

Studies related to the construction of a public agenda have focused their analysis on the relationship established by audiences as media. Thus, audiences have been categorized according to their socioeconomic level, degree of expectation, or local proselytizing (Taguenca, 2012).

However, the information that the attitudes transfer and categorize for decision-making can be generated by direct economic benefits such as contests or raffles, although the principles that guide the behavior of the individual before the group of belonging or reference when interacting with the attitudes They also generate decisions on the use of information that will affect specific actions for the use of technology (Ozer and Yilmas, 2011).

Unlike the study carried out by Wee, Hoc, Keat , Yee and Hin (2010) in which they established direct effects of the perceptions of utility and ease on attitudes, Iconaru (2013) found that the expectations of use had an impact on the benefits expected and these about attitudes regarding the intention to use technology. That is, the deliberate, planned and systematic process of information processing through a technology did not start, like the other research cited, from the interrelation between perceptions, but from the influence of capabilities on benefits.

Tavera Sánchez and Ballesteros (2013) corroborated Iconaru's (2013) finding but added the confidence factor as a mediator between perceptions and attitudes. This suggests that attitudes transfer not only expectations of accessibil-

ity or benefit, but also spread a positive organizational climate that significantly increased the categorization of information through a technology.

In summary, the state of knowledge has advanced towards the inclusion of positive psychological factors that explain the exponential increase in the acceptance of technology and its adoption in order to process the surrounding information in categories that facilitate the deliberate, planned and systematic use of electronic devices (Amemiya, 2020).

In the framework of attitudinal theories, attitudinal change refers to emotions and affections resulting from individual acts and for which people feel responsible. It is also about the social influence that membership or reference groups exert on individuals. Or, the reception of persuasive messages oriented to the central reasoning, or persuasive messages directed to the peripheral emotion. In general, the attitudinal system is sensitive to the instability of the object and to the cognitive variations that affect the consistency, stability, prediction, competence or morality of the individual (Ozer and Yilmaz, 2011).

Attitudinal change is related to the deterrent principle of inoculation. Before the persuasive message attack, the perception of threats, risk and uncertainty is induced. In general, overexposure to persuasive messages induces high elaboration and with-it persuasion. The massive issuance of persuasive messages, motivation, and consistent driving skills can lead to helplessness. That is, in the face of the wave of information, people reduce their perception of control and tend to believe that events are incommensurable, unpredictable and uncontrollable. Or, individuals form an identity that consists of identifying with a group in reference to an out-group. In the process of helplessness, the individual builds the change of attitude and its reinforcement of hopelessness. In the identity process, it is the group that influences the person's attitudinal change. Helplessness is a process of self-validation or self- fulfilling prophecy. In contrast, identity is a convergent validation of group norms (Sommer, 2011).

The consistent change in attitudes is related to its multidimensional structure resulting from the majority pressure. The diversity of dimensions implies a consistent construction of attitudinal change. In other words, attitudes assume a function of internalized responses to constant situations framed by the mass media (Gasca and Olvera, 2011).

The social influence of the group of belonging or reference alludes to the majority norms and the minority principles oriented to attitudinal change. The influence of the majorities fosters individual conformity and minority principles, conflict and attitudinal change. Recently, minority style has turned out to be the most permanent factor of social influence and attitude change. In other words, the construction of majority consensus seems to have an ephemeral effect and the construction of dissent seems to offer a constant change (Nagendra and Ostrom, 2012).

Attitudinal theories hold that in individuals, groups, and societies, the dispositions that determine their intentions and behaviors are deliberately formed and spontaneously activated. Even these provisions indicate changes in consumption (Porras, 2011).

The models exposed in reference to the construction of the public agenda through citizen opinion have conceptualized attitudes as intermediaries of deliberate or automatic, central or peripheral, diversified or selective processing. In this regard, the incidence of group norms has been reduced to a minimum while discussing the issues has been multitude to by heuristics or emotions. The substitution of deliberate processing for spontaneous processing has influenced the emission of messages whose content has been more schematic than discursive (Tucker, 2010).

The predominance of images over logical reasoning explains the acceptance of technologies and electronic devices. In this sense, the construction of the public agenda is imbricated by the perception of accessibility and utility. Evaluations regarding the benefits of a technology, including the diversification of information, explain the substitution of the public square or agora by digital social networks (Hoekstra, 2011).

If in deliberative democracy the attitudes that processed information were a conglomerate of affects, intentions and reasons, now cyber democracy emphasizes the emergence of useful expectations (Pérez, 2020). The difference is substantial: the first involves an expansive categorization where explicit as implicit attitudes are part of an information network. In contrast, the second involves an internal automatic process that is not deliberate and therefore not very selective. Even semi-automatic processing would involve analogical arbitrariness. That is, information is evaluated from images without an analysis of its content. Democracies in the future, according exposed attitudinal processes are involved with future actions in that attitudes processed automatically give or semi-automatically are influenced by information that in the past was linked with improvised behaviors.

In the present review of theories of attitudes, it was established that 1) they deliberate, planned and systematic processes of technology adoption from information processing are explained. In such processes, attitudes contribute significantly to the predictive power of perceptions of behavior; 2) and explain incidence perceptual factors on behaviors through attitudes (Anguiano, 2020). That is, the surrounding information generates expectations that will influence specific actions through the categorization of said information and 3) they explain the inclusion of emotional factors that, when interacting with perceptions and attitudes, determine unforeseen behaviors. This is so because individuals are immersed in group dynamics and organizational climates in which human relationships influence decisions on the use of information.

Regarding the models of attitudes reported by the state of knowledge 1) they explain intentions of using technology from perceptions of utility and ease of use. This is so because information is processed through technology, but being categorized underlies the relevance of the activities as mediating variables; 2) they explain the inclusion of positive psychological factors such as the confidence that, when preceding attitudes, generate an organizational climate favorable to innovation or performance efficiency, and 3) they explain the convergence of a deliberated, planned and systematic acceptance of technology with a virtuous circle of factors oriented to organizational satisfaction or happiness (Limón, 2020).

However, theories, models, and studies of attitudes towards information 1) only explain the dependency relationships between "rational" or "emotional" variables in the face of available and actionable information in some technology that invariably involves the individual in a group dynamics of productivity, efficiency or happiness; 2) they explain the incidence of individuals in groups, but not the influence of groups in internal processes; rational or emotional. This means that theories and models advance towards the explanation of the inverse process in which group dynamics promote productive, efficient or happy individual behaviors. Perhaps this is why so recent studies have included a positive psychological factor that opens discussion torn or acceptance of technology and 3) and explain virtuous circle of productivity, efficiency and happiness, although processes alternate are not discussed in which the information is not necessarily processed through a technology.

4. Method

Design. An exploratory, cross-sectional and correlational work was carried out with a sample of 100 students (M = 24.31 SD = 3.21; M = 9'975.32 SD = 743.23 monthly income) from a public university in central Mexico, considering prolonged confinement, as well as the intensive use of electronic technologies, devices and networks.

Instrument. The Attitudes Scale towards the Pandemic EAP-21) was built, which includes 21 assertions around three preponderant dimensions; emotional-affective-sentimental ("The coronavirus affects consumers"), cognitive ("The pandemic is an effect of climate change") and intentional-behavioral ("Ecologists work more in this confinement"). All items are answered with one of five options ranging from 0 = "not at all likely" to 5 = "quite likely".

Procedure. The invitations were sent to the institutional emails of the respondents. Once the acknowledgments were received, the informed consent was sent, highlighting the non-payment for responding to the questionnaire, as well

as the guarantee of confidentiality and anonymity both in the coding and in the interpretation of the responses. The variables were operationalized considering their definition, indicators and Likert-type scale (see Table 1).

Table 1. Operationalization of variables

Variable	Dimension	Definition	Scale
Attitudes toward COVID-19	Formative	Refers to associations between dispositions towards objects, processes, or people	0 = "not at all likely" to 5 = "quite likely"
Emotional, affective, sentimental towards COVID-19	Reflective	Refers to associations between dispositions of emotions, feelings or affections towards people, processes or objects	0 = "not at all likely" to 5 = "quite likely"
Cognitive toward COVID-19	Reflective	Refers to associations between dispositions of reasons or motives towards people, processes or objects	0 = "not at all likely" to 5 = "quite likely"
Intentional toward COVID-19	Reflective	Refers to associations between dispositions of intentions or probable behaviors to be carried out with respect to people, processes or objects.	0 = "not at all likely" to 5 = "quite likely"

Source: Elaborated with literature review

Analysis. The data were processed in the statistical analysis package for social sciences version 23.0 considering the requirements of normal distribution, reliability, adequacy, sphericity, validity, linearity, normality and independence for the structures of trajectories and relationships between the variables in order to to test the null hypothesis of significant differences between the structures reported in the literature with respect to the observations made in this work.

5. Results

Table 2 shows the values of normality, reliability and validity among the variables that reflect the responses to the items that measure attitudes towards the

pandemic, confinement and government action as a civilian in the face of health and economic crises. The normal distribution values suggest that the responses of the respondents to the scale reach sufficient values to be considered in more robust analyses. This is the case of the reliability of the scale, which reached a minimum value essential to establish the internal consistency of the instrument. The normal distribution and the internal consistency of the scale guided the validity of the instrument. The correlation values between the subscales and the items suggest a convergence of the indicators on the three factors: emotional, cognitive and intentional. In other words, attitudes towards COVID-19 make up a three-dimensional structure that segments respondents into three factors in the face of the pandemic.

Establishing the exploratory factor structure of the three preponderant factors in relation to the 21 indicators, we proceeded to estimate the relationships between these three dimensions related to emotional, cognitive and intentional attitudes which explained 35% of the total variance. All three established factors suggest that the pandemic impacted respondents emotionally, cognitively, and intentionally. It then means that attitudes towards COVID-19 make up a structure of affective, motivational and decisional responses that the respondents activated in the face of the health and economic crisis. The impact of the pandemic on the sample surveyed can be seen in the associations between the factors: the cognitive factor was slightly related to emotions, but they guided the intentions to carry out a specific action; the emotional response to the pandemic was also linked to decisions to take action in the face of the health crisis (see Table 3).

The relationship structure weighs the inclusion of another factor that the literature identifies as dispositional ambivalence to account for those attitudes against and in favor of an object which may be the case of the pandemic. In other words, on the one hand, negative provisions are built in the face of the health and economic crisis, but also unusual work opportunities such as messaging are opened. In this way, the possible emergence of this fourth factor was observed, although adjusting the three factors would also be an option to increase the percentage of explained variance. The relationships between emotional, cognitive and intentional factors suggest a robust structure of attitudes towards the pandemic. The responses to the instrument suggest an attitude consistent with three factors that explain the impact of the pandemic on the sample surveyed. Contrasting the scale in other samples or scenarios will allow a higher percentage of variance to be achieved. The relationship between the instrument and others proposed to measure the impact of the pandemic on individuals will make it possible to achieve a map of representations that would explain the responses of academic sectors to the health crisis.

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Table 2. Descriptive of the instrument

Code	Subscale	Mean	Deviation	Alpha	Emotional	Cognitive	Intentional
	Emotional			, 781			
r1	Coronavirus affects consumerists	4.32	1.34	, 762	, 365		
r2	The pandemic subtracts people's environmentalism	4.15	1.81	, 703	, 397		
r3	Confinement is a solution to contamination	4.67	1.09	, 771	, 380		
r4	The use of masks is for environmentalists	4.83	1.78	, 751	, 365		
r5	Asymptomatic also pollute	4.05	1.56	, 743	, 387		
r6	Infected also contaminate	4.32	1.34	, 702	, 370		
r7	Quarantine is resigned to mobility	4.34	1.21	, 713	, 365		
	Cognitive			, 798			
r8	The pandemic is an effect of climate change	4.76	1.01	, 743		, 317	
r9	Animals and plants live with coronaviruses	4.93	1.54	, 715		, 396	
r10	The coronavirus made it possible to reduce emissions	4.36	1.34	, 703		, 380	
r11	Confinement is coexisting with species	4.16	1.55	, 762		, 385	
r12	Quarantine also affects species	4.30	1.76	, 781		, 394	
r13	The vaccine is in nature	4.19	1.80	, 764		, 372	
r14	Masks saturate the environment	4.03	1.25	, 768		, 367	
	Intentional			, 783			
r15	Ecologists would be relevant in this confinement	4.17	1.54	, 767			, 360
r16	Environmentalists would contribute in this quarantine	4.15	1.61	, 770			, 386
r17	Recyclers would help in this closure	4.15	1.17	, 762			, 369
r18	Savers would emerge in this health crisis	4.10	1.82	, 751			, 375
r19	Pedicabs would be essential in this pandemic	4.03	1.51	, 751			, 395
r20	Travidrive would be indispensable in this contingency	4.07	1.63	, 703			, 394
r21	Masks would contaminate in this epidemic	4.11	1.50	, 732			, 393

Note: Made with the study data. Method: Main axes, Rotation: Promax. Emotions (16% of the total explained variance and alpha of, 780), Cognitive (12% of the total explained variance and alpha of, 765), Intentions (7% of the total explained variance and alpha of, 753). All items are answered with one of five options, ranging from 0 = "not at all agree" to 5 = "quite agree".

Table 3. Relationships between variables.

	Half	Deviation	Emotional	Cognitive	Intentional	Emotional	Cognitive	Intentional
Emotional	23.12	13.24	1,000			1,986	, 645	, 532
Cognitive	22.35	15.46	, 325 *	1,000			1,768	, 418
Intentional	25.46	14.37	, 478 ***	, 541 **	1,000			1,689

*Note: Made with the data from the study; * p <, 01; ** p <<, 001; *** p <, 0001*

The adjustment and residual parameters $\lceil \chi 2 = 234.13$ (24 gl) p>, 05; CFI =, 990; GFI =, 999; RMSEA =, 008$\rfloor$ suggest the non-rejection of the null hypothesis regarding the significant differences between the reflective trajectory structure subtracted from the literature with respect to the observed relationship structure. The parameters of normal distribution, reliability, validity and adjustment suggest the contrasting of the null hypothesis relative to the significant differences between the theoretical structures reported in the literature with respect to the empirical structure observed in the present work. The non-rejection of the null hypothesis suggests the use of the instrument in other scenarios and samples in order to contribute to the reliability and validity of the scale.

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6. Discussion

The contribution of the present work to the state of the question lies in the establishment of the reliability and validity of an instrument that measures attitudes towards the effects of the pandemic on the environment, suggesting the extension of the work towards contrasting the model in others scenarios. Lines of research related to the stigma towards infected, sick and immunized patients will allow explaining the attitude of those who refrain from vaccination, as well as anticipating their emotional, cognitive and intentional responses regarding detection tests, treatment and immunization. Studies related to risk prevention and self-care can increase their predictive power if they incorporate the explanation of attitudes towards the pandemic.

In relation to the theory of attitudes, which highlight the three emotional, cognitive and intentional components, this work has shown the prevalence of this structure of reflective trajectories in a model, but the percentage of total variance suggests the inclusion of an ambivalent factor which would increase

the predictive power of the model. In the virtual classroom the application of this finding in the didactic sequences will allow to establish dynamics oriented towards ambivalence, emotionality and reasoning about its effects on public resources and services. The theoretical frameworks that explain self-care and the prevention of COVID-19 can be fed back with the findings of this study. The association between emotional and intentional factors can reorient research on self-care as part of family support in the face of infection, illness or death from COVID-19. Studies on the stigma of those infected can achieve greater clarification of the relationship between the emotions of the victims of the pandemic with respect to the probability of immunizing those who oppose uncertified vaccines.

As for the studies of attitudes which highlight the hegemony of the emotional component in the event of risk events, this work has shown that it is a multiple dimension in which indicators adjusted to anger, fear or anxiety converge in the face of the effects of pandemic in nature. These results will allow the design of pedagogical sequences related to education for sustainability, mainly regarding risk events. The findings of this work regarding the affective and intentional structure contribute to studies on stress due to confinement of people in closed spaces. Studies of attitudes suggest that they emerge in settings of isolation, but responses to confinement can be associated with stress syndromes such as overwork for fear of losing one's job.

Theoretical, conceptual and empirical frameworks seem to highlight the hegemony of cognitive dispositions to explain the emergence of attitudes to risk events such as a pandemic. In this sense, the present investigation has highlighted the factorial structure that explains the relationships between the affective, cognitive and intentional dimensions as a formative process of dispositions against or in favor of the effects of the coronavirus in nature. The model of attitudes as a structure of three factors that would explain the emergence of a disposition derived from the health crisis can be contrasted with other samples. The empirical test of the three-dimensional model of attitudes will contribute to the discussion about the importance of the prevalence of emotions before the motives with respect to intentions to carry out a specific action to prevent COVID-19.

7. Conclusion

The contribution of the present work to the state of knowledge lies in the specification of a model for the study of attitudes towards pandemic effects in nature, although the research design limited the results to the work setting, suggesting the extension of this to a context of risk events. The instrument used to mea-

sure the structure of attitudes towards the pandemic reached significant values of reliability and validity, considering that it included factors such as emotions, motives, and intentions. The empirical test of the model that includes the three dimensions oriented towards self-care and the prevention of COVID-19 will allow the evaluation of health policies that consist of distancing people and the use of devices such as masks, alcohol gel, face shield and gloves.

In consultative terms, research provides the central elements for the construction of an environmental policy focused on the cognition of dispositions. It is about the design of pedagogical sequences oriented towards local sustainability in the management of municipal resources and services. In other words, from the construction of a public agenda it will be possible to discern between the deliberate, planned and systematic reasoning emerging from the pandemic, confinement and the health and economic crises. The health crisis impacted the cognition, affectivity and intentions of the surveyed sample. The structure of attitudes that was revealed in the face of the pandemic will make it possible to anticipate scenarios of risky behavior or prevention of COVID-19 related to the social distancing policy. The evaluation of the scale in other samples and scenarios will allow progress in the design of a model that explains self-care and the prevention of infections, illnesses and deaths from COVID-19, as well as the rejection of vaccines or the acceptance of immunization. Health policies can be evaluated from the structure of attitudes established in this study.

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