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Research Article

Factor Structure of the Determinants of Entrepreneurship in the Era of Biosafety in the Face of Covid-19

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Abstract

The exploration of the dimensions of entrepreneurial knowledge because of the management production and transfer of knowledge, experiences and skills was the objective of this work. An exploratory and cross-sectional study was carried out with an intentional selection of 140 professional professionals and community health servers. The Entrepreneurial Knowledge Scale of Carreon (2016) was used to investigate six dimensions related to norms, values, beliefs, perceptions, attitudes and intentions related to the academic, professional and labor training of specialized talents in health sciences, economic and administrative sciences and behavioral sciences. The six factors that explained 36% of the total variance were established and the adjustment parameters suggest the non-rejection of the null hypothesis, as well as a line of research concerning collaborative learning in the face of risk events, limited resources and limited capacities.

Keywords: radiation; wound healing; inflammation

Introduction

As of February 2021, the SARS CoV-2 coronavirus and Covid-19 disease have killed three million in the world (WHO, 2021). In Mexico, 500 thousand have died if the sub-registers recognized by the authorities and corresponding to deaths from atypical pneumonia are counted (PPAHO, 2021). In this scenario, the policies to mitigate and contain the pandemic have consisted of isolation and social distancing, leading to individual and group entrepreneurship (Molina et al., 20020: 6). These are changes in the main activity due to issues related to the health crisis such as biosecurity.

Biosafety, being related to the use of ozone, carbon dioxide or oxygen measurement devices, as well as masks, alcohol gel or face shield, as well as social distancing and isolation explain a type of enterprise focused on Information and Communication Technologies (TIC), Learning and Knowledge Technologies (TAC's) and Empowerment and Participation Technologies (TEP's) (Garcia, 2020: 1).

In this way, the relationship between biosecurity and entrepreneurship lies in the processing of data in the traditional communication media, as well as in electronic networks such as Facebook, Twitter, YouTube, WhatsApp, Instagram, Periscope or TikTok (Garcia, 2021: p. 7). This is so because not only the use of the Internet has increased substantially, but also the subscription to social networks, as well as the promotion of products and services through these, explains the added value of the networks.

At the university level, the intensive use of technologies, devices and networks explains the promotion of health, as well as the diffusion of self-care and adherence to the treatment of diseases. it is a health culture that is linked to entrepreneurship as a phenomenon of opportunities in the face of economic and health crises (Carreon et al., 2020: p. 1).

Within the framework of strategic alliances between health institutions and organizations, entrepreneurial knowledge, for the purposes of this work, refers to a process of management, production and transference of data from specialized leaders or talents towards professionals as social workers (Acar & Acar, 2014).

It is a process in which knowledge management is related to the prevention of accidents and illnesses in the case of occupational health and the promotion of risk-free lifestyles in the case of reproductive and sexual health (Anicijevic, 2013).

Unlike the general entrepreneurship that is characterized using opportunities, entrepreneurial knowledge generates its own challenges, challenges, crossroads and challenges (Cruz et al., 2016).

Entrepreneurial knowledge is related to fundamental variables for organizational studies such as empathy, commitment, willingness, loyalty, innovation and satisfaction, although being an organizational intelligence process would be linked to more deliberate, planned and systematic processes as is the case of the need for information, the locus of control and self-efficacy (Escobar, 2014).

This is how the dimensions of entrepreneurial knowledge lie in norms, values, perceptions, attitudes, and motives linked to rational choice, decision making, intentions and systematic actions (Garcia et al., 2016).

Entrepreneurial knowledge can be observed from the expectations, dispositions and actions of the individual, but has also been studied from the deliberations, agreements and responsibilities established in the groups governed by post-bureaucratic, flexible and participatory rules (Hernandez & Valencia, 2016).

These are participative cultures that build a discussion agenda centered on axes and debate topics for the continuous improvement of a management system such as public health services (Mendoza et al., 2016).

If one considers a continuum between the bureaucratic public administration, far from the needs, demands, expectations and capacities of the users, the entrepreneurial knowledge represents an opposite extreme since it not only serves a portfolio of clients but also generates them when building profiles of potential users for diseases that, although they are not on the public health agenda, will be the priority in the future (Omotayo & Adenike, 2013).

Studies on the culture of success, climate of innovations and work commitment highlight the relationship between leaders and talents as a prospective collaborative work in which it will be possible to observe complex systems such as self-regulation of demands, resources and capabilities (Quintero et al., 2016).

Other works highlight the corporate governance systems and their post-bureaucratic structures as a background of labor intelligence, a distinctive feature of entrepreneurial organizations and knowledge managers (Robles et al., 2016).

In both scenarios, innovative organizations and corporate governance, agreements and responsibilities prevail that suggest a knowledge of the environment and the capacities of leaders and talents (Saansongu & Ngutor, 2012).

The instruments that literature has used to observe the dimensions of entrepreneurial knowledge allude to the codification of knowledge and professional training and collaborative habitus, although in local contexts the norms and values, as well as the dispositions seem to be elements that condense the factorial composition of the variables in question (Sales et al., 2016).

The reliability reported by the literature in terms of the instruments that measure entrepreneurial knowledge ranges between 0.750 and 0.795 factorial validity being explained from 40% to 55% for its total variance, although six to eight dimensions are noted, State of the art shows that six factors prevail regarding values, norms, beliefs, perceptions, attitudes and intentions as determinants of entrepreneurial knowledge (Vazquez et al., 2016).

Therefore, providing reliability and validity to the instrument that measures entrepreneurial knowledge is the objective of this work, considering the strategic alliances between Higher Education Institutions and knowledge management organizations, their systems of professional practices and community social service for the case of academic, professional and labor education in the area of health sciences, economic management and behavior

Method

An exploratory and cross-sectional study was carried out with an intentional selection of 140 students from a public university of the State of Mexico, considering their interaction with institutions and organizations of public health services, as well as the establishment of cooperation agreements in the training of talents through the system of professional practices and community service (see Table 1).

	Age	*Income*	*Civil Status*
Female (55%)	M = 24,3 SD = 2,4	M = 6’823,2 SD = 456,5	Singleness (56%), Married (32%), Other (12%)
Male (45%)	M = 25,4 SD = 3,2	M = 6’789,2 SD = 567,4	Singleness (58%), Married (30%), Other (12%)

Source: Elaborated with data study

Table 1: Descriptive sample

The Entrepreneurial Knowledge Scale of Carreón (2016) was used, which includes 24 referents allusive to six dimensions related to norms, values, beliefs, perceptions, attitudes, and intentions.

Subscale of norms. It refers to the adjustment of academic, professional, and work training, considering the anticipation of risk scenarios and the prevention of accidents and illnesses in the workplace. Each item is answered with one of the options ranging from 0 = "it does not look like my situation" to 5 = "it is quite like my situation".

Subscale of values. It refers to the formative principles that guide educational, professional, and work learning in situations of imminent risk and the coping of them from collaborative work. Each reagent is answered with one of the options ranging from 0 = "no agreement" to 5 = "quite agree".

Subscale of beliefs. It refers to generalized information about risk events and local response capacities in the face of pandemic or epidemic scenarios. Each item is answered considering any of the options ranging from 0 = "not likely" to 5 = "quite likely"

Subscale of perceptions. It alludes to expectations before risk events. Each reagent is answered with one of the options ranging from 0 = "not likely" to 5 = "quite likely".

Subscale of attitudes. Refers to provisions towards events that threaten the integrity of people in the future. Each item is answered with any of the options ranging from 0 = "no agreement" to 5 = "quite agree"

Subscale of intentionality. It refers to the probability of carrying out actions in the face of risk events and threats to personal or collective integrity. Each reagent is answered with one of the options ranging from 0 = "not likely" to 5 = "quite likely".

The surveys were carried out at the public university facilities, always with the warning that the results would not affect their academic status, as well as the guarantee of confidentiality and anonymity to the answers of the instrument.

The information was processed in the statistical analysis software for social sciences (SPSS version 20.0). The coefficients of normality, reliability, adequacy, sphericity, validity, fit and residual were estimated in order to refine the instrument used.

Results

Table 2 shows the descriptive values of the instrument that measured entrepreneurial knowledge, suggesting the multivariate analysis from a normal distribution, moderate reliability, and explanatory factorial validity of 36% of the total variance

R	*M*	*SD*	*A*	*F1*	*F2*	*F3*	*F4*	*F5*	*F6*
r1	4,3	1,5	,72	,61					
r2	4,5	1,1	,73	,54					
r3	4,8	1,8	,70	,59					
r4	4,0	1,0	,76	,53					
r5	4,1	1,3	,79		,51				
r6	4,3	1,4	,74		,60				
r7	4,5	1,5	,76		,62				
r8	4,7	1,2	,77		,49				
r9	4,8	1,1	,78			,54			
r10	4,2	1,4	,75			,51			
r11	4,5	1,8	,72			,63			
r12	4,4	1,7	,71			,69			
r13	4,0	1,5	,74				,54		
r14	4,3	1,0	,75				,51		
r15	4,6	1,4	,70				,50		
r16	4,9	1,3	,72				,62		
r17	4,6	1,5	,75					,54	
r18	4,5	1,6	,77					,67	
r19	4,0	1,5	,79					,50	
r20	4,4	1,9	,75					,47	
r21	4,1	1,3	,72						,52
r22	4,2	1,2	,71						,55
r23	4,3	1,4	,73						,63
r24	4,6	1,6	,75						,67

Source: Elaborated with data study; R = Reactive, M = Median, SD = Standard Deviation, A = Alpha removed value item. $\lceil \chi 2 = 16{,}2\ (11gl)\ p < ,01$; KMO = ,753⌋ Method: Principals; Rotation: Promax. F1 = Values (11% total explained variance), F2 = Norms (9% total explained variance), F3 = Beliefs (7% total explained variance), F4 = Perceptions (5% total explained variance), F5 = Attitude (3% total explained variance), F6 = intentions (1% total explained variance).

Table 2: Descriptive instrument

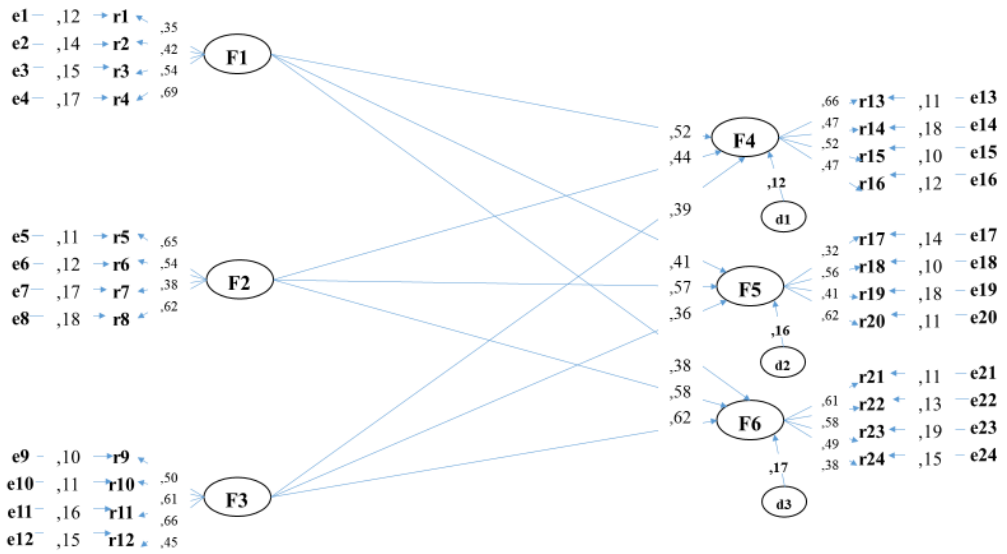
Once the factors that explained 36% of the total variance had been established, we proceeded to observe their relationship structure to be able to anticipate the determining trajectories of the intentions (see Table 3).

	F1	*F2*	*F3*	*F4*	*F5*	*F6*	*F1*	*F2*	*F3*	*F4*	*F5*	*F6*
F1	1,000						1,890	,456	,378	,568	,478	,548
F2	,325*	1,000						1,976	,456	,679	,368	,568
F3	,435**	,567*	1,000						1,673	,651	,379	,547
F4	,541*	,457**	,438***	1,000						1,894	,523	,412
F5	,672**	,532*	,568*	,432*	1,000						1,657	,479
F6	,621*	,579*	,678*	,357*	,312*	1,000						1,802

Source: Elaborated with data study; F1 = Values, F2 = Norms, F3 = Beliefs, F4 = Perceptions, F5 = Attitude, F6 = intentions; * p < ,01; ** p < ,001; *** p < ,0001

Table 3: Relations between factors

The relationship structure suggests the estimation of the structural equation model (see Figure 1).



Source: Elaborated with data study; F1 = Values, F2 = Norms, F3 = Beliefs, F4 = Perceptions, F5 = Attitude, F6 = intentions; d = Disturbance measurement factor, e = Error measurement indicator

Figure 1: structural equation modelling

The structure of axes and trajectories of relationships between factors and indicators shows that beliefs are determinants of intentions. In other words, the intention to carry out the undertaking is established from the generalized processing of surrounding data in communication media regarding the opportunities to open a business in the face of the crisis in the environment.

The adjustment and residual parameters $\lceil \chi 2 = 12.56$ (17gl) $p < 0,01$; GFI = 0.978; AGFI = 0.970; RMSEA = 0,000$\rfloor$ suggest the null hypothesis regarding the significant differences between the dimensions established by the literature and the observations of the present work.

Discussion

The contribution of this work to the state of the question lies in the establishment of the reliability and validity of an instrument that measures entrepreneurial knowledge in the framework of strategic alliances between institutions and organizations that train intellectual capital, but the design of research limits the scope of the work to the research scenario, suggesting the comparison of samples in order to establish criteria of vulnerability to risk events and depending on the availability of resources and local response capabilities.

In relation to the literature consulted where two types of alliances between institutions and organizations of public health services stand out, the first as a symbol of governance and the second as a result of the management, production and transfer of responsible knowledge, the present work has established six factors from which it is possible to notice the distinctive features of universities and institutes that train intellectual capital.

Such contribution is fundamental since the training of talents and their orientation as intangible assets of universities and health organizations supposes a process of motivation, innovation and permanent communication between leaders and operative talents.

The translation of knowledge and skills implies organizational intelligence systems that lead the motivation of talents towards objectives, tasks and goals close to the current and future needs of users of public health services.

In such a scenario is that the learning of organizations and institutions becomes more complex in such a way that activating agents and knowledge enhancers emerge, as is the case of those who process the data and from a mining technique, they can notice the tendency of diseases in function of risky lifestyles and scarcity of resources.

This means that in the formative process; academic, professional, and labor intellectual capital will become an intangible asset of public health services organizations whenever they develop a system of management, production, and transfer of knowledge according to local, current and future needs.

Research lines concerning the training of information processing talents and their collaborative styles will open the discussion around intangible assets in public health organizations and institutions, not only as specialized talents in the treatment of illnesses or rehabitation due to accidents, but in the prevention of risks associated with the most prevalent cases such as those derived from type 2 diabetes mellitus

Conclusion

The objective of this work was to contribute to the reliability and validity of an instrument that measures entrepreneurial knowledge in health sector talents and in academic, professional and professional training, although the findings are applicable to the context of the study, it is suggested to extend the same to other health care scenarios in order to compare samples and anticipate the differences of vulnerable sectors to the risks and threats to their physical, emotional and patrimonial integrity.

With respect to the formation of intellectual capital in the area of health, it is necessary to consider that risk events, the availability of resources and the capacities of organizations and institutes condition the emergence of systems for the diagnosis, treatment and prevention of diseases and diseases. accidents, but such elements can be optimized from the internal organizational dynamics in which the motivation, innovation and communication of processes is the competitive advantage of strategic institutional and academic alliances.

Regarding the instrument that measures the indicators, factors and constructs of entrepreneurial knowledge, the main currency of organizations and training institutions of intellectual capital, it is necessary to incorporate dimensions related to data processing, anticipation of risks and the forecast of academic, professional competences and labor, focused on collaboration.

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