
Meta-Analysis of Intellectual Capital in the Era of Covid-19 Pandemic

Submitted 15/04/23, 1st revision 20/05/23, 2nd revision 11/06/23, accepted 26/06/23

Celia Yaneth Quiroz Campas¹, Arturo Sanchez Sanchez²,
Cruz Garcia Lirios³, Héctor D. Molina-Ruiz⁴, Jorge E. Chaparro Medina⁵,
Isabel Cristina Rincón Rodríguez⁶

Abstract:

Purpose: Social Work studies on entrepreneurship warn that a deliberate, planned and systematic rational choice process that promotes the formation of intellectual capital are predominant determinants.

Design/Methodology/Approach: Specify a model for the study of the dimensions of trust: experiences, knowledge, skills, emotions and abilities. Non-experimental, documentary and retrospective study with a non-random selection of sources indexed in repositories, considering the keywords and the publication period 2020-2023.

Findings: A model with eight hypotheses of three paths of dependency relationships between nine variables raised in the state of knowledge was specified.

Practical Implications: Future lines of research around the structural models of intellectual capital, human capital and social capital will make it possible to establish a predictive explanation of academic, professional and work training.

Originality/value: The specification of a model would include variables that anticipate the behavior, but not from the beliefs of availability of information, but from the willingness to cooperate of the actors that form a business project to develop their skills, not only of choice, deliberation or planning, but innovation.

Keywords: Heads of Family, Social Work, entrepreneurship, specification, model.

JEL classification: O34.

Paper Type: Research study.

¹Technological Institute of Sonora, Navojoa, Mexico, Department of Social Sciences, <https://orcid.org/0000-0002-6068-1552>, e-mail: cjquiroz@itson.mx;

²Autonomous University of Tlaxcala, Department Economy, <https://orcid.org/0000-0002-4946-1559>, e-mail: arturo.sanchez@uatx.mx;

³School of Public Administration, CDMX, México, <https://orcid.org/0000-0002-9364-6796>, e-mail: cruzlirios@icloud.com;

⁴Autonomous University of Hidalgo, Department Engineering, <https://orcid.org/0000-0003-4657-3237>, e-mail: hmolina@uaeh.mx;

⁵National Open and Distance University UNAD Colombia, orcid.org/0000-0002-0916-8702, Bucaramanga – Colombia, e-mail: jorgee.chaparro@unad.edu.co;

⁶University of Santander UDES Colombia, orcid.org/0000-0002-7348-2341, Bucaramanga – Colombia, e-mail: decanatura.fceac@udes.edu.co;

1. Introduction

The principles that guide the choice rational reside in the tastes and preferences that crystallize the objectives of the actors (Garcia Lirios *et al.*, 2022). Therefore, before taking any decision linking preference strategies, it will be achieved collect information that will determine the choice (Garcia Lirios, 2021). If the individuals prefer have a number indeterminate of tastes, objectives and goals, then its preference stop depending on your capacity for choice and action (Garcia Lirios, 2021b). Therefore, they act non- rationally (Garcia Lirios, 2021c).

Rational choice theory also warns that a decision is the result of an estimation of the costs and benefits of making an effort regardless of its degree of significance (Garcia Lirios, 2021d). This is a utilitarian dimension in which the control of a situation based on the establishment of a favorable balance of benefits versus costs will determine the choice (Garcia Lirios, 2021e).

More specifically, the benefits and costs translate into a relationship of risk, effort and reward (Garcia Lirios, 2021f). This means that a choice will be rational when the risks and efforts are minimal as long as the rewards are greater (Carreon-Guillen *et al.*, 2020).

On the other hand, when the recognition of an effort and risk does not live up to expectations, then the choice has not been entirely rational and rather approaches an irrational dimension if the risks and efforts are increasing and intense with respect to the absence of rewards (Garcia Lirios, 2021g).

This is because the individual attempting it is committed to risks that will be triggered by expectations of gains (Sandoval-Vazquez *et al.*, 2021).

The integration of each of the variables represents a series of paths in which the correlations explain each choice (Garcia Lirios, 2021h).

In short, rational choice explains in general terms the process by which preferences are the determining factor for other factors that generate information or intuit an environment of certainty when deciding and acting accordingly (Garcia Lirios, 2021i). To the extent that such information is available, accessible and actionable, then rational choice will emerge as an option, but rather ambiguity will proliferate, then a non-rational decision with irrational consequences will be generated (Garcia Lirios, 2021j).

However, when information is unavailable or highly abstract, rational choice is replaced by a stricter choice to culture; people's values and norms regarding a contingency for which no precedent is known, but people always react in the same way.

If the rational choice is generated from preferences based on the information available to determine tastes and objectives, the prospective attitude suggests that the absence of information creates uncertainty that determines risk aversion or the renunciation of certain gains and appetite for risk when losses are imminent (Garcia Lirios, 2021k). Thus, utility, benefit or happiness crystallize into losses or gains, eluding the process of rational choice and legitimizing an irrational choice (Santiago-Torner and Rojas-Espinosa, 2021; Khan *et al.*, 2020).

Therefore, a prospective is more than a decision, it lies in the attitude and expectation of risk or certainty in the face of profits and losses in the immediate future. In that sense, a retrospective is an attitude that is the same relations but compared with the last ones (Garcia Lirios, 2021l).

In short, the prospective attitude is a hinge between rational choice and reasoned action. Each of these theoretical and conceptual frameworks bases its scope and limits on the availability of information, if the individual is capable of assuming an attitude, making a decision or carrying out an action that corresponds to the available information and the representation that they have (Bustos-Aguayo, 2021).

Unlike rational choice theory, which focuses on the usefulness of available information, and prospective attitude theory, which focuses on the certainty of information, reasoned action theory assumes that information, whatever In other words, it is a general environment that will influence behavior to the extent that information is transformed into rules. This is because the theory of reasoned action considers that all information is cognitively processed (Garcia Lirios, 2021m).

Therefore, a general vision of the environment, its demands and opportunities favors categories of accessible and abundant availability of information that will influence wasteful behavior such as believing that jobs, salaries and financial credits increase significantly (Garcia Lirios, 2018; Grima *et al.*, 2020).

On the contrary, if the context is considered to be one of recession and economic crisis, austere, cooperative and innovative lifestyles will be adopted (Garcia Lirios, 2021n).

However, the theory of action reasoned, much like choice theory rational and attitude theory prospective, pose a general incident scenario about a behavior without considering the current and specific situation of the decision maker (Garcia Lirios *et al.*, 2019; Thalassinos *et al.*, 2022).

The objective of this study is to specify a model for the study of social entrepreneurship in household heads (Garcia Lirios, 2020). From a review of the literature, the variables that allowed systematizing the determinants of entrepreneurship trajectories (Garcia Lirios *et al.*, 2020) are extracted.

The study is framed in the Division of Humanities and Sciences social, discipline Social Work, area of health promotion and sub -area of promotion of reproductive rights, parental upbringing styles and management of household heads (Garcia Lirios, 2021).

However, the Project also have interference in the sciences economic and administrative will recover in the second phase the entrepreneurship effect cooperative in Human Development with emphasis in health reproductive health, family upbringing and the training of entrepreneurs (Carreon-Guillen, 2017).

2. Methodology

2.1 Sample

A documentary work was carried out with a font selection indexed to repositories international such as Scopus and WoS, considering the keywords of “specification” and “intellectual capital” in the period from 2020 to 2023 (Table 1).

Table 1. Descriptive data

Code	Year	Author	Sample	Criterion	Relationship
a1	2020	Carreon et al.,	100	Formative	Capital Attitude ç
a2	2020	Carreon et al.,	140	Formative	Capital commitment
a3	2020	Baptist et al.,	120	Formative	Capital accession
a4	2020	Juarez et al.,	160	Formative	Capital ç normative
a5	2021	Llamas et al.,	100	Formative	Capital accession
a6	2021	Martinez et al.,	160	Formative	Capital welfare
a7	2021	Garcia et al.,	130	Formative	Capital attitude
a8	2021	Bust et al.,	130	Reflective	Liability Capital
a9	2022	Ferr et al.,	150	Formative	Capital commitment
a10	2022	Morales et al.,	130	Formative	Capital self-care
a11	2022	Quintero et al.,	140	Formative	Capital prevention
a12	2023	Carreon et al.,	110	Reflective	Capital Innovation
a13	2023	Garcia et al.,	140	Reflective	Capital Commitment

Source: Elaboration with data study: a = Summary.

2.2 Process

It was done a search for summaries to subtract the intellectual capital indicators. Then one time selected the indicators of empathy, trust, commitment, entrepreneurship, productivity, competitiveness, innovation, satisfaction and happiness, experts in the theme qualified these indicators in order of importance, with 10 being most important and 0 being zero or none . importance (Garcia Lirios, 2017) . Data were processed in the analysis package statistician for science social version 20.0

2.3 Analysis

Percentages, contingencies and proportions were estimated to establish risk thresholds in decision-making on intellectual capital indicators.

3. Results

The confidence indicator obtained the highest percentage (25%) followed by commitment (22%), empathy (17%), entrepreneurship (13%), satisfaction (9%), innovation (6%), productivity (4%), competitiveness (3%), happiness (1%). This means that decision-making is based on the level of trust, although the instrument does not specify the type of trust that can be organizational, interpersonal, intrapersonal or technological (Table 2).

Table 2. Posterior estimates by model

		M	SD	95% credible interval		BF ₁₀ _
				Lower	Higher	
Fixed effects	m	0.477	0.052	0.375	0.577	4,533e +17
Ordered effects	m	0.479	0.056	0.370	0.588	1,212e ^a +17
	τ	0.076	0.035	0.027	0.161	0.267 ^b
Random effects	m	0.478	0.056	0.369	0.588	7,447e +16
	τ	0.076	0.036	0.027	0.163	0.164 ^b

Note. μ and τ are the effect size at the group level and the standard deviation, respectively.

^a Bayes factor of the fixed effects H₁ over the ordered effects H₁. The Bayes factor for the unrestricted (random) effects H₁ model versus the ordered effects H₁ model is 1.627.

^b Bayes factor of the (unrestricted/restricted) random effects H₁ over the fixed effects H₁.

Source: Prepared with data study.

It is possible to see that the values of the random effects are within the threshold that explains 95% of the credibility. In other words, the decision to consider established relationships involves a five percent risk given the homogeneity of the meta-analytic review on intellectual capital formation (Table 3).

The contingency parameters suggest significant differences between decisions made based on intrapersonal trust versus interpersonal trust [$\chi^2 = 16.27$ (16 df) $p < .05$]. In other words, as an educational process, intellectual capital focuses on internal capabilities, experiences, skills, knowledge and emotions rather than their externalization by socializing knowledge (Table 4).

Table 3. Model probabilities

	Previous	Later
Fixed H₀	0.250	1,541e -18
Fixed H₁	0.250	0.699
H ordered 1	0.250	0.187
Random H₁	0.250	0.115

Source: Prepared with data study.

Table 4. Effect sizes by study

	Dear			
	Observed	means	Lower	Superior ^a
Carreon et al.,	0.432	0.476	0.290	0.663
Carreon et al.,	0.356	0.467	0.279	0.644
Baptist et al.,	0.431	0.467	0.306	0.617
Juarez et al.,	0.365	0.463	0.280	0.632
Llamas et al.,	0.476	0.478	0.295	0.662
Martinez et al.,	0.423	0.471	0.293	0.642
Garcia et al.,	0.546	0.492	0.332	0.664
Bust et al.,	0.324	0.456	0.269	0.621
Ferr et al.,	0.567	0.484	0.296	0.678
Morales et al.,	0.657	0.495	0.320	0.688
Quintero et al.,	0.547	0.487	0.314	0.669
Carreon et al.,	0.643	0.494	0.322	0.684
Garcia et al.,	0.543	0.485	0.309	0.670
Hernandez	0.356	0.462	0.279	0.632
Juarez	0.436	0.474	0.288	0.655
Spinoza	0.654	0.495	0.320	0.690
Quintero	0.672	0.497	0.323	0.694

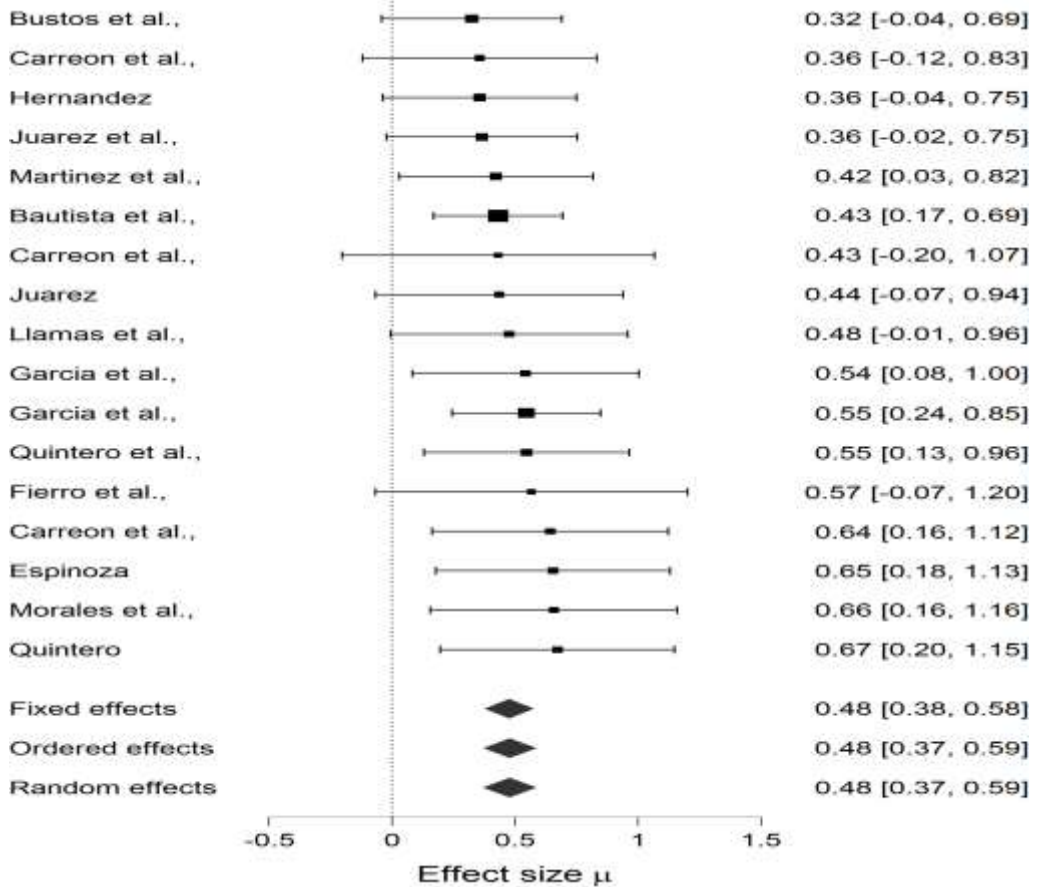
^a **Posterior mean and 95% credible interval estimates from the random effects model.**

Source: Prepared with data study.

The probability proportions suggest that the training process of intellectual capital, focused on intrapersonal confidence in skills [OR = 17.21 (13.24 to 19.20)], skills [OR = 18.21 (14.35 to 20.21)], knowledge [OR = 15.43 (13.24 to 21.23)], experiences [OR = 18.20 (14.32 to 23.45)], and emotions [15.46 (10.21 to 22.31)], is at a permissible risk threshold.

It then means that the intervention of social work can be based on the formation of intellectual capital and its indicators of intrapersonal trust (Figure 1).

Figure 1. Observed study effects



Source: Prepared with data study.

4. Discussion

The contribution of this work to the state of the question lies in the specification of a model for the study of intellectual capital, considering the dimensions of intrapersonal trust in which skills, emotions, experiences, skills and knowledge are framed, in the expert rating, were located at tolerable risk thresholds.

In relation to the literature where the intellectual captain is approached from non-formative organizational dimensions such as cooperation, tasks, goals, objectives or innovations, this work suggests complementing these dimensions with intrapersonal ones to establish differences between professional training and professional training. job training.

Future lines of research around the structural models of intellectual capital, human capital and social capital will make it possible to establish a predictive explanation of academic, professional and work training.

5. Conclusion

Given that the information is not available or is actionable by the actors that require immediate planning of their actions, the determinants of planned behavior are those in which the information can be delimited and specified based on a particular situation or situation. an event that is subjective decision control. -make information available and actionable.

Planned behavior theory finds that perceived control is a significant determinant of behavior in both direct and indirect ways. Interacting with subjective norms and attitudes generates an intention that is also assumed to determine behavior.

However, perceived control, as a norm and attitude, depends on a set of beliefs about the availability of information. In this sense, the specification of a model would include variables that anticipate the behavior, but not from the beliefs of availability of information, but from the willingness to cooperate of the actors that form a business project to develop their skills, not only of choice, deliberation or planning, but innovation.

References:

- Carreón Guillén. 2017. Local Development Governance: Towards a Social Work device for water sustainability. *Realidades*, vol. 6, no. 2, 39-51.
- Carreón-Guillén, J., Bustos Aguayo, J.M., Juárez Nájera, M., Hernández-Valdés, J., Sánchez-Sánchez, A., García-Lirios, C. 2020. Coffee entrepreneurship during COVID-19. *Publ. investigating*, vol. 14, no. 1.
- Bustos-Aguayo, J.M. 2021. Modeling Sustainable Entrepreneurship in the Covid-19 Era. *Jstard*, vol. 3, no. 2, pp. 23-34.
- García Lirios, C. 2020. Dimensional meta-analysis of trust: implications for social communication of covid-19, *CITAS*, vol. 6, #1.
- García Lirios, C., Bustos Aguayo, J., Juárez Nájera, M. 2020. Risk perception and intent to COVID-19: Risk perception and intent to COVID-19. *Sinfrontera*, no. 34, pp. 1-26.
- García-Lirios, C. 2021. Meta-analysis of perceived safety in public transport in the Covid-19 era. *Ecomatematico*, vol. 12, #1.
- García Lirios, C., Juárez Nájera, J.M., Bustos Aguayo, M., Juárez Nájera, F.R. 2022. Perceptions on entrepreneurship in the COVID-19 era. *Razón Crit.*, no. 12.
- García Lirios, C. 2021a. Perception of public insecurity in the post-COVID-19 era: Perception of public insecurity in the post-Covid-19 era. *Social Projection*, vol. 4, no. 1, 45-53.
- García Lirios, C. 2021b. Human, social and intellectual capital in the COVID-19 era: agenda setting, framing, plausibility and verifiability in repositories. *Conexion*, no. 16, 133-150.
- García Lirios, C. 2021c. Modeling work commitment in the face of COVID-19 in a public hospital in central Mexico: Modeling work commitment. *Gac Med Bol*, vol. 44, no. 1, pp. 34-39.
- García Lirios, C. 2021d. Perceived biosecurity and cybersecurity in the face of COVID-19 in Mexico. *Estud.Segur.Def*, vol. 16, no. 31, pp. 137-160.

- García-Lirios, C. 2021e. Tutorial networks in the elaboration of the research protocol. CCP, vol. 1.
- García-Lirios, C. 2021f. Construct validity of a scale to measure the job satisfaction of professors at a public university in Mexico during COVID-19. *Cienc trilogy. Tecnol. Soc.*, vol. 13, no. 25, e1826.
- García Lirios, C. 2021g. Knowledge management, intangible assets and intellectual capital in the covid-1 era, RIMCI, vol. 16, no. 8, pp. 13-26.
- García Lirios, C. 2021h. Modeling the perception of security in the COVID-19 era. *Asia Pr soc sci.*, vol. 8, no. 2, pp. 160-163.
- García Lirios, C. 2021i. Perceptions of occupational risk in the Post Covid-19 era. *KASP*, vol. 2, #1.
- García Lirios, C. 2021j. Deliberative association around the request for abortion in students by COVID-19. *SWSW*, vol. 3, no. 1, pp. 102-110.
- García Lirios, C. 2021k. Modeling Labor Commitment in the Covid-19 Era. *IJIAS*, vol. 1, no. 3, pp. 187-199.
- García Lirios, C. 2021l. Vocational training network: knowledge management, innovation and entrepreneurship. *PAPERS*, vol. 13, no. 26.
- García Lirios, C., Hernández Gracia, T., Martínez Muñoz, E., Espinoza Morales, F. 2021m. Perception of labor flexibility in an organization in central Mexico. *Rev. Sul-Am. Psicol.*, vol. 9, no. 1, 185-202.
- García Lirios, C. 2018. Specifying a model of representations of human capital in old age, youth and childhood. *CIFE*, vol. 20, no. 32, 167-175.
- García-Lirios, C. 2021n. Tutorial networks in the elaboration of the research protocol. CCP, vol. 1.
- García Lirios, C., Carreón Guillén, J., Rincón Ornelas, R.M., Bolivar Mojica, E., Sanchez Sánchez, A., Bermudez Ruiz, G. 2019. Contrast of a knowledge management model in a public university in central Mexico, *360GESTION*, n.º 4, 105-127.
- García Lirios, C., J. Carreón Guillén, J., and J. Hernández Valdés, J. 2017. Governance of Human Development: Contrasting a model of the perceptual determinants of the intention to use the Internet in users of a public library in Mexico City. *IS*, no. 3, pp. 39-56.
- Grima, S., Dalli Gonzi, R., Thalassinis, I.E. 2020. The Impact of COVID-19 on Malta and its Economy and Sustainable Strategies. Available at SSRN: <https://ssrn.com/abstract=3644833> or <http://dx.doi.org/10.2139/ssrn.3644833>.
- Khan, S., Rabbani, R.M., Thalassinis, I.E., Atif, M. 2020. Pandemic Paving Ways to Next Generation of Learning and Teaching: Futuristic Cloud Based Educational Model. Available at SSRN: <https://ssrn.com/abstract=3669832>.
- Sandoval-Vázquez, F.R., Bustos Aguayo, J.M., García-Lirios, C. 2021. Local Development in the Post Covid-19 Era. *ESH*, vol. 9, no. 18, pp. 17-22.
- Santiago-Torner, C., Rojas-Espinosa, S.R. 2021. COVID-19 pandemic and labor commitment: relationship within an organization of the Colombian electricity sector. *rev. researching develop innov.*, vol. 11, no. 3, pp. 437-450.
- Thalassinis, I.E., Trung Duc, N., Hoang Le, A., Kim Trieu, L. 2022. The Impact of the COVID-19 Pandemic on Economic Growth and Monetary Policy: An Analysis from the DSGE Model in Vietnam. *Economies*, 10, 159. <https://doi.org/10.3390/economies10070159>.