

Exploratory factor structural model of the intangible assets in knowledge creating organization

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Abstract— *The psychological studies of organizations, about human capital, have shown that this factor increases to the extent that the environmental demands are intensified, but it is the intellectual trait that acquires the greatest value when considered as the main intangible asset. of an organization. In this way, the objective of this paper was to expose the theoretical, conceptual and empirical frameworks related to human capital in order to establish discussion scenarios related to the value chain of an organization based on its intangible assets. A documentary study was carried out with a non-probabilistic selection of sources indexed to repositories such as Dialnet, Latindex, Publindex, Redalyc and Scielo, considering the year of publication and relationship between the concepts of organization and human capital. There are lines of research around empathy, trust, commitment, satisfaction and happiness as inherent factors of human capital as an intellectual asset of an organization.*

Keywords— *Leader's managerial team, Leadership, Photovoltaic sector.*

I. Introduction

During first XXI century decade, leadership have been emerged as a tool to manage and optimize managerial and productive processes. Leadership function inside of the organizations can be a positive breakthrough, from basic hierarchical levels to those of higher directive and higher-level decision making. Some reflections on the leadership are present in this document, specifically the need of a leader's managerial team in a Mexican industry of photovoltaic sector, and it is also evaluated the leadership of managerial team, based in the interaction had inside the enterprise under study between December 2015 and January 2018.

Managerial team, in any industry have the main roll to leader the decision-making process. One of the main aspects to ensure that leader team or managerial team have a good decision-making process, is that leader team covers some characteristics as higher culture level, at least a bachelor's degree, global business point of view, experience on similar working positions, among others. It has been pointed out that a manager not necessary have the leader's characteristics, and, it

has been proposed that a leader, not every time have a hierarchical authority inside the organization, however it can have certain level of moral authority (Aguilar, Pérez, Pérez, Morales & García, 2018).

Leadership, as an inherent human kind ability, have been presented along human history, since the early origin of our specie, the hunter and collector tribes hold a leader who make the important decisions over the groups (tribes) behavior (Bustos, Ganga, Llamas & Juárez, 2018).

Leadership is considered for some authors as an art, due to leader's ability to manipulate people's decisions and manner of thinking, and it must to be present in the organizations, mainly in the figures of managerial team. As mentioned before, managerial team have the very important labor to keep the organization on going thorough organizational objectives reaching (Carreón, Hernández & García, 2018).

That context makes necessary to have a managerial team which exposes a higher level of leadership, in order to keep the organization on going to a growing and developing dynamic (García, 2018a).

In the case of the enterprise under study, it was integrated a framework or scale based in a one-year interaction with higher decision-making levels, subordinates and operators. That framework is about the characteristics which a manager (leader) would have to perform an acceptable leadership in the organization. Those characteristics are grouped in two main areas: direct scale or positive characteristics and indirect scale or negative characteristics (García, 2018b).

Because of the interaction and observation of the activities, actions, attitudes, behaviors, habits, made decisions, schedules, and so on, enterprise's CEO and each manager were evaluated based on the framework proposed.

Between the CEO's activities they can be listed: make the most important decision over the enterprise, open new markets, direct talking with very important clients (bigger capitals), executive managing of EPC (Engineering Procurement Construction's projects), direct attention of important client's complains, negotiation with second floor banks or international bank when capital needed, authorization of special production or deliveries, authorization of short, medium and long term agreements with clients and suppliers, among others (Hernández, Anguiano, Valdés, Limón & García, 2018).

Sales manager activities are integrated, among others, by: prices negotiation with clients, sales forecast, clients visiting, attention to clients, negotiation of agreements with clients, trouble solving with clients.

Administrative manager holds activities like, human resources management, accountancy administration, national suppliers' payment, merchandise lending, rental contracting and payment, services contracting and payment, among other. In the case of the enterprise under study, administrative manager had a legal empowerment, so some legal cases were also followed by him (Hernández, Carreón, Bustos & García, 2018).

Finance manager activities cover: importation of raw material, importation of SKU's, importation of machinery, importation of tool, importation of production process clothes, payment to abroad suppliers, managing relationships with treasury minister, among others.

Main activities of production manager were: management of materials, information and human resources; production process control and planning; human resources management; raw material, stackable keeping units and final product management; final product's logistics management and delivery management; clients' service; claims' management; claims' report integration; inventory management; ergonomic, safety and health analysis; local logistic supplier payment management; spends evidence and report management, among other (Sánchez, Carreón, Molina & García, 2018).

Technology manager have some specific activities related with maintenance of machinery and production process, but most important activities turns around the activities made by CEO, due to technology manager is the right hand of CEO.

Despite the global managerial team holds more than 50% of leadership, it would be needed that all of the members on the managerial team have a solid leadership, in order to develop and improve decision making process (Carreón, 2016).

It is necessary to improve leadership in specific areas of the organization, mainly in sales and administrative managements. It is also necessary to improve leadership in finances management. To improve leadership in the organization, first step could be to ensure that each member of the managerial team hold a bachelor's degree (or at least the flaunted experience). It is also necessary, to promote a policy of training to the member of the organization, not just for managerial team, but also to operators and decision makers of medium level.

Precisely, the objective of this paper is to establish the axes of the agenda of organizations in the field of value chain in which the essential intangible asset is human capital, mainly intellectual capital.

Within the framework of regionalist policies, which tend towards protectionism and the stagnation of competitiveness, as well as the multilateralism policies that promote the guidelines of international financial organizations to which the central bank is dependent, the need to study capital human as an intangible asset of entrepreneurial and innovative organizations, therefore, competitive, but without a recipe from the World Bank, the World Trade Organization or the International Monetary Fund.

The psychology of organizational complexity focuses its object of study and unit of analysis in the isomorphic processes -models that explain the complex relationships between the variables of a system-

The theory of structural isomorphism states that the guidelines of public policies, in this case labor policies, are disseminated in the organizational culture in such a way as to determine labor climates. It deals with information concerning productivity and the evaluation of leadership and performance according to pre-established objectives and goals (Carreón, Hernández, Castillo & García, 2015).

From the theory of isomorphism, it is possible to explain the asymmetries between those who make decisions and those who execute such decisions. Leadership theory warns that differences between leaders and followers is due to intellectual capital, mainly the intrinsic motivation among the persuader and who is persuaded to perform a task and achieve the goals set by leaders through of objectives (García, 2012).

The theory of leadership divides the motivational process into two aspects, a traditional one where coercion prevails as an indicator of a power relationship between the boss and subordinates, as well as the motivational or transactional leadership in which the influence relation prevails among those who take the decisions based on consultation, participation and above all the skills and knowledge of subordinates (Carreón, 2016).

The theory of transactional leadership proposes a *continuum* that goes from the dependence indicated by a lesser dialogue to an increase in instructions to autonomy that involves greater dialogue before a minimum of instructions (Carreón, 2013).

In this way, transactional leadership would be inferred from the self - concept of both the leader and the subalterns through the analysis of their narratives and stories that would allow them to interpret their identity with respect to the management and management style. Consequently, it is inferred not only who the actors are or who they have been, but who they will be in certain environmental contingencies, organizational cultures and work climates (García, Carreón & Hernández, 2017).

However, both types of leadership are distinguished by focusing responsibility on the figure and attributes of a single person to which a group depends, it will be the theory of social capital that questions the limits and scope of the theory of human capital, mainly his subaltern theory of leadership to highlight the importance of social co-operativism (Carreón, Hernández, Quintero, García & Mejía, 2016).

The approximation of social capital assumes that 1) people who share resources and goods are an end in themselves; 2) the instruments to share goods and resources suppose affections such as trust and cooperation; 3) therefore, the asset is in the same relationship more than in resources, goods or people (García, Carreón, Hernández & Salinas, 2016).

The theory of social capital considers that the relationships between people are networks of production and reproduction of information and knowledge. It is a system of reciprocities in which a sender is a receiver in the process of information dissemination, decision making and execution of incentives (Carreón, 2016).

The theory of social capital enhances continuous relationships but considers discrete relationships as the basis of continuous relationships, since organizations produce knowledge from latent processes such as psychological ones (García, 2014).

However, the theory of network analysis studied the structure of social capital that it identifies as a graph. It is a conglomerate of implicit or tacit relationships that organizations establish as objectives and goals are adjusted to the demands of the environment and corresponding

innovations (García, Carreón, Hernández, Méndez & Bautista, 2013).

The theories of rational choice, human capital, leadership, social capital and networks of knowledge or graphs highlight the importance of an intangible asset focused on the knowledge and skills of talented people who work for companies that are distinguished by their openness to change, bidirectional communication, horizontal structure and intrinsic motivation. It is a process of formation of intangible capital from which *habitus* relations of power and influence not only reflect a high degree of violence, but also symbolize a redistribution of roles and relationships to change the rules of the establishment of target sets, tasks and goals (García, Carreón, Hernández, Aguilar, Rosas & Bustos, 2015).

The psychological studies of organizations when analyzing isomorphic processes, complex relationships between the variables of a system, such as demands and resources, have established trajectories of dependency relationships between culture, climate, commitment, performance and Organizational Violence

The isomorphism, among other phenomena, evidences the neguentropic and the entropic. The first is the balance between demands and resources. On the other hand, entropy is inferred from the imbalance between environmental contingencies and the capacities of organizations (García, Carreón, Hernández, Montero & Bustos, 2012).

That is, an organization is complex because it generates isomorphism from the guidelines of the State or the market. Isomorphism is inferred when the climate of relationships is in equilibrium with respect to the task climate, that means that demands and resources are also in balance. Therefore, isomorphism reveals the interrelation between negun tropia and entropy (García, Carreón & Hernández, 2017).

If organizations are complex in their climate of relationships, then their differences are due not only to the degree of empathy and trust between leaders and followers, but also commitment and motivation are factors that define the processes of decision making and execution (Carreón, 2014).

The term comes from the English *to lead* relative to driving, direction and command. It is a persuasive rather than coercive style of influence oriented towards the achievement of objectives and goals, but it is the type of communication that establishes the relationship of dependence between the leader and the other members of the organization (García, Carreón, Hernández & Salinas, 2016).

Leadership can be defined as the set of processes that guide people and teams in a certain direction towards the achievement of excellence and organizational learning, primarily through non-corrective means. From the author's perspective, management and leadership are two aspects of management practices that complement each other (García, Carreón, Hernández, Carbajal, Quintero, Sandoval & Valdés, 2016).

It is linked to the ability to generate processes of awareness and call to work in collaboration with others, in achieving the goals and values usually buried in the farrago of everyday routines. From the role of the leader, the manager calls for promoting communication and the sense of the objectives that are to be achieved in the immediate future, in the medium and long term. Thus, leadership is related to motivate and inspire this transformation and to interact with personal actions and those of teams (Carreón, 2013).

The manager, as a leader, communicates the shared vision of the future of what is attempted by articulating a joint search of the members of the organization that do not necessarily share the same institutional space and time, although they do have the same challenges (Carreón, 2016).

In that sense, the leadership assumes the complex challenge of calling for participation in extensive networks aimed at ensuring quality education for all students. Leadership is not simply related to the quality of individual leaders, although this is, of course, important. It is also essential the role played by the leaders, their management style, their relationship with the vision, values and goals of the school and its way of approaching change (Carreón, De la Cruz & De los Santos, 2015).

In the administrative process, leadership becomes supervision and strategy. In the first case, a control system is implemented, but it is the strategy that gives meaning to a management style. The first feature is rather a mechanism of power and the second feature consists rather in the monitoring of a system (Carreón, De la Cruz & Of the Saints, 2015).

The behavioral approach assumes democratic and autocratic leadership styles; climate of relationships and tasks. It is an approach to actions rather than decisions, but with an emphasis on the reactions of the other members of the organization.

In the case of democracy brought to organizations, it not only opposes the autocracy circumscribed to a person, but also involves negotiation and learning through example rather than through intentions. The emphasis on democracy entails the climate of relationships around which leadership is a motivator of the actions of a group, but not in the discourse, but in practice. Precisely, it is in the dimension of the acts that determine the decisions or strategies to carry out a professional activity oriented to an objective and organizational goal. In this sense, the dialectic between mission and vision would determine the tasks to be established in the work groups (García, Carreón, Hernández, Aguilar, Rosas, Morales & Garcia, 2015a).

However, the participatory approach implies a displacement of the leader by the initiatives of the participatory groups. Based on a model or decision-making tree, the establishment of actions is oriented from the direct relationship between the alternatives of action and the expected results.

In a specific sense, the delimitation of the actions supposes a leadership that not only specifies the objectives according to the capacities of the other members of the organization, but the motivating potential that the leader can implement in his

abilities (García, Carreón, Hernández, Mendoza, Mejía & Quintana, 2014).

The styles that emphasize the actions are in the transformational leadership. It is a style in which motivation is established from admiration, trust, charisma; but they are transformational because they go beyond their possibilities and interests. However, the collateral processes of productivity depend on the managerial capacities of leaders whose traits and functions support the system and lead it to productivity (García, Carreón & Hernández, 2017).

In this way, organizational leadership is made up of two dimensions that allude to its features to tributes such as level of intelligence, extroversion, influence and number of followers. While the functions of the leader are linked to observable actions that not only affect their adherents, but also generate synergies and management networks as well as knowledge.

It is necessary that the leader knows the hardware and software required to perform their activities, a leader administrator should know for example the word processor, the spreadsheet, as well as the database manager that correspond to the company, as well as the global management program of the company (Carreón, 2016).

The leader must follow the procedures that are established in advance, the administrative process must be followed to the letter to have better results, it is convenient that the leader is trained continuously and to set the example to his collaborators (García, Valdés, Sánchez, Elizarraráz, Méndez & Hernandez, 2015).

It must have a deep knowledge in the area of work that falls to the leader, one of the characteristics of the natural leaders is that they strongly dominate the department where they are located, for example, a regional administrator, knows the staff of the different areas, as well as the results that are expected from that particular person, knows the pros and cons of certain administrative processes as well as technological ones. The leader teaches his followers to carry out the activities, that is why knowledge is one of the tools the leader uses to be followed.

It is said in common terms that common sense is the least common sense, since there are no guidelines for decision making, however, it is expected that the person who exercises leadership can perform certain tasks effectively, the leader always rely on the rules, and the guidelines within the company, thus making decisions without affecting the interest that has in common the company (García, Carreón, Hernández, Mendoza, Mejía & Quintana, 2014).

The leader establishes the direction, sense, speed in the actions that their followers must undertake, without the perfectly established vision, the followers do not know where to go and they can give different results than expected. Continuous learning is essential for the person who leads the team, it is convenient to be trained frequently, since he is in charge of training in turn the other members, as well as advising them on the possible problems they have to the time to do your work.

Good judgment must be maintained, the leader must be calm on most tense occasions, he must be able to reassure subordinates, he must inspire the confidence that followers may need. One of the most important characteristics, since the group of followers expects their leader to support them in difficult times, regardless of whether it is day or night, it is convenient to be alert to the needs of their group in command, and be extremely collaborative (García, Carreón, Hernández, Montero & Bustos, 2012).

One must trust the members of the work team, in the administration the facts of delegating functions lead to think that the members of the group will actually perform the tasks entrusted to them, the leader reflects this confidence to each of the members, is It is necessary to establish guidelines to control the actions he performs, independently of believing that if they perform the tasks.

The boss is the figure of power within the organization, is the person who officially has the right to command. The boss must be the one who makes decisions regarding his subordinates. The one that decides on new hires, on promotions and transfers, on performance evaluation, on merits, training, separation, discipline, methods and work processes.

The concept of role is based on an "expectation" of the individual's behavior. It is a series of expected behavior patterns that are attributed to someone who occupies a certain position in a social unit. The person identifies with the social group where he works. It is the idea that the individual has, the treatment within the workplace. They are the individual goals of the employee. They are the unwritten agreements, what they do and what they are expected to do are not compatible (Carreón, Hernández, Quintero, García & Mejía, 2016).

There are six leadership styles:

In autocratic leadership he has absolute power over team members, employees have limited acceptance to issue opinions to the leader, so several of the members may feel underestimated by being treated in this way, characterized by having high levels of lack of work and a high turnover of personnel, this type of leadership is effective, for the lower levels, such as workers or technicians, since it allows this type of leader an almost absolute control of the activities of the group (García, 2013).

The bureaucratic leadership follows the rules established by the organization to the letter, and control their collaborators follow them, this type of leadership is effective in places where there are certain types of risks, such as security companies, companies that transport toxic materials, or where absolute control of tasks is required, it may not work in some areas such as creativity, since strict control can cause stress.

The charismatic leadership inspires enthusiasm, and the collaborators participate in such enthusiasm with which they achieve the objectives set out in advance, this type of leader believes in himself and in the group he controls, a problem that can present this type of leadership is that productivity is centered on the actions of the leader, so that, if it goes away, the productivity of the group of workers may be reduced, and

they may even resign massively (Carreón, Hernández, Castillo & García, 2015).

Participatory or democratic leadership tends to ask the group of collaborators the actions that must be taken to achieve the organizational goals, this can motivate group members to be more participatory, and encourages the creation of ideas, as well as belonging to the group. group, a problem that generates is the time to address the issues that must be solved, however in the event that quality is important instead of speed this is very effective (Carreón, Hernández, Quintero, García & Mejía, 2016).

Laissez-faire leadership means "let it be", it can be used in groups where creativity must flow, where group participants must deliver research results or some kind of art, group participants must be very specialized, motivated, although in this case the leader must establish sufficient control, because if the results are not monitored, it may happen periodically that after the end of the term the objectives are not achieved or the result is not as expected, On the other hand, the quality may be different from what the company expects from said product, for example if a poster is needed and the client thinks that oil can be used and the worker is told that the result is a poster, the artist can use a different technique as watercolor, and give a magnificent result, but for the client it will not be, since its specification was different (Carreón, 2016).

Leadership oriented to people or leadership oriented to relationships is oriented to the accomplishment of tasks, the leader is oriented to the development of their teams, the participation of the members is a priority, since the leader is responsible for training and teaching almost individual to its members, this type of leadership is effective when the activities that have to be developed are not too complex, for example it can be the painting of crafts, the control of a machine where the product does not require a very demanding quality as the production of granulated chocolate (García, Carreón, Hernández, Carbajal, Quintero, Sandoval & Valdés, 2016).

Natural leadership seeks to satisfy the needs of a group, it is also called servile leadership, it is a form of democratic leadership, since it must ask for opinion from the team members to develop their activities, one of the problems that this type of leader has is that the members of the group may or may not take it into account as their power is not formalized within the organization, on the other hand it is difficult to delegate activities, since the members of the group may or may not do them, another problem that can be to present is that if this type of leader takes force and follows him more than the formal leader, the latter can lose control of the work team, for which he would have to remove the informal leader from the group (García, Carreón, Hernández & Salinas, 2016).

Task-oriented leadership is focused precisely on the task, focuses on meeting the objectives that the position or positions under their charge fully meet the activities for which they were created, this type of leadership define very well the tasks and know the results that must obtain, determine the roles of each of the collaborators, one of the conflicts is that they do not think about the welfare of the collaborators, do not handle

high standards of motivation, so it is difficult for them to retain workers through this means, the turnover rate can tend to be high, causing high costs in the training of new employees (Carreón, Hernández, Castillo & García, 2015).

Transactional leadership is oriented to short-term tasks, the employee to be hired accepts and is obliged to follow the leader, the degree of obedience is always subordinated to the payment of their services, so it is very likely that he does not stop to think in the quality of the work or in the development of new possibilities for the improvement of it, if this type of leadership cannot be considered as such, since the leader is not followed by the will of the collaborator and the leader can punish if not. It seems that the work that was developed by the collaborator is of the quality that was demanded (García, Carreón, Hernández, Mendoza, Mejía, Quintana, 2014).

In the transformational leadership most of the theorists, these leaders are responsible for motivating their collaborators permanently, guide and support them, these leaders also seek the support of some of their employees, this type of leadership is also characterized by being innovative in the actions it performs, and the permanence of the collaborators is continuous, so that the training costs in the rotation of the personnel are induced (García, Carreón, Hernández, Aguilar, Rosas, Morales & García, 2015 b).

As you can see the leader exercises a type of authority whether formal or informal, the leader must distribute or delegate the authority, the obligations to each member of the group according to the specialty to which they are oriented, this allows that there is a Some degree of autonomy of each member.

Develop and adapt clear strategies towards the organizational objective and oriented to the group with which you are working. The leader fosters commitment in the work team, to be successful in achieving the objectives of the organization. Follow the achievement of the plans and guide the work team. The leader establishes alliances with internal and external to ensure that the goals are met and thus achieve success. The leader implements new technologies or processes. The leader prepares himself and in turn trains the personnel in his charge and continuously promotes the preparation of the members of his work group (García, Carreón, Hernández, Carbajal, Quintero, Sandoval & Valdés, 2016).

The leader determines which employees are the most capable and which ones are the best ones to delegate authority and responsibilities, in case of dismissals, he knows better than anyone what elements are apt to remain within the work area. The leader guides the staff how to do things better, therefore, reduces the risks due to misuse of procedures. The leader evaluates his employees continuously, and presents them to the immediate boss (Carreón, Hernández, Castillo & García, 2015).

However, very soon the theory of leadership was challenged by developing climates of trust and empathy focused on systematic violence of reducing complex processes into simple power relations of obedience and conformity. The antecedent of organizational violence was soon observed in depersonalization, stress and frustration.

By virtue of the degree of exhaustion, depersonalization and frustration it is also possible to infer a style of transactional leadership considering its effects on the climate of relationships and the climate of tasks in managers and employees. That is, as the syndrome increases, it will be possible to establish the influence of leadership on the climates of relationships and tasks in the employees (García, Carreón, Hernández, Aguilar, Rosas, Morales & García, 2015c).

In the case of personal quality, the integration of the leader with his subordinates would also be indicated by the levels of attachment, interests, cooperation, satisfaction, integration, empathy, commitment and identity. In this sense, the transactional style not only determines the assimilation of affectivity and emotion towards the leader, but also explains the achievement of objectives and goals.

In the quality process, perception is an explanatory factor of the expectations generated around transactional leadership. As the leader is more valued, the quality increases and with it the beliefs about the performance of the leader. Therefore, perception opens the possibility of studying in depth the relationship between leader and subordinates as it is mediated by expectations (Carreón, Hernández, Quintero, García & Mejía, 2016).

It is possible to notice that the indicators of leadership are processes limited to social learning that consist of the emergence and / or construction of representations before which the individual selects and categorizes the surrounding information to make decisions before the imbalance of demands and available resources.

In this way, transactional leadership is a learning process in which the information issued or attributed to the leader is disseminated by inhibiting stress or promoting the transformation of relationships and tasks, as well as balancing the asymmetry between demands and resources. (Carreón, 2013).

Within the framework of neoliberal globalization, organizational development has been explained from theories that highlight the importance of human relationships and motivations.

From the humanist approach of organizations, globalization is a guiding axis of emotions, feelings and affections. In this sense, the logic of globalization understood as the maximization of the relations of production and consumption with respect to the reduction of costs, is disseminated as a foundation. Therefore, individuals are considered instruments of persuasion and dissuasion to arrive at the ends of profit. It is a rational choice process in which two principles prevail; 1) win-win consisting of an intensive negotiation in which those involved result in a greater benefit to the costs invested and; 2) zero sum where they are involved in the dilemma of winning or losing (Carreón, 2014).

In this way, the logic of rational choice has been questioned by excluding from the benefits those who are involved in the dilemma of winning or losing. That is to say that organizational violence and its underlying processes of rationality as an instrument of domination between leaders and subordinates were the prelude to develop studies of

organizational complexity where it was possible to observe the systemic violence of a leader towards his subordinates, but no longer as issuer but as mediator of this campaign of violence.

The information and knowledge network include dissuasion and persuasion processes based on the degree of internal expectations as external to the network. If the climate of trust prevails in the network, then it will be possible to observe cooperation in entrepreneurship and task innovation.

Precisely, the continuous relationships -organizations with a control, vigilance and permanent motivation- and discrete relationships -organizations with sporadic and unidirectional climates- determine the complexity of the social capital, since the levels and degrees of interrelation affect the structures and phases of organizations -auto-regulation, dissipation, adaptation and dynamism-.

Complex organizations systems are limited to two relationships: tacit and implicit. From their structures and phases, complex organizations generate alternative processes of discretion and continuity. External demands and internal resources are limited to latent or visible opportunities, as well as to real or symbolic capacities (García, Carreón & Hernández, 2017).

It is about rational and affective dimensions in which organizations cultures produce and reproduce information that defines them as autocratic or complex. In this duality, complex organizations determine the quality of their processes and products.

Although complex organizations seek to differentiate and integrate with other organizations, the continuity of their processes and the emergence of their resources confines them towards complexity (Carreón, Hernández, Quintero, García & Mejía, 2016).

The process that starts with rational choice as antecedent of human capital centered on leadership and its attributes of power, continues with the study of dependency relationships between decision makers and decision-makers, as well as the violence inherent in their interaction, culminates with the study of organizations as knowledge networks that forge strategic alliances between micro and transnational companies until consolidating the system of domination in clusters.

Therefore, the graph includes nodes and arcs or instances and relations of production of knowledge in the case of departments or task teams. Unlike the theory of social capital that focuses on relationships or arcs, the theory of network analysis considers that they are the nodes more relevant than the arcs, since it is these instances that establish the innovations and anticipate the changes without having to take in account of the arcs (García, Carreón, Hernández & Salinas, 2016).

In this way, the nodes that are associated can be identified as dyads or triads, but if they share an organizational culture such as quality or success, then they are unimodal, configuring an order or number of total nodes included in the graph (García, Carreón, Hernández, Carbajal, Quintero, Sandoval & Valdés, 2016).

Once the order or number of nodes is established, the estimation of the density is established by dividing the existing relationships between the possible relationships. Such

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Once the order or number of nodes is established, the estimation of the density is established by dividing the existing relationships between the possible relationships. Such relationships can be unidirectional -twitter- or bidirectional - Facebook- In both cases it is possible to calculate the directional weight (García, Carreón, Hernández, Mendoza, Mejía, Quintana, 2014).

The organizations that require other organizations, their directional weight can be significant and close to one, but if other organizations are the ones that need to establish relations with it and such question does not imply a benefit for it, the directional weight is determined by the connection demands more than for linking needs.

The bidirectional or multidirectional nodes, the estimate is divided into the inputs and outputs of information, the sum of both connections establishes its directional weight. If such estimation is greater with respect to other nodes, then it is considered that such organization is preponderant in the graph.

Implicit processes can also be established by calculating the directional weight that is required for an organization to link up with another distant or selective organization. In this way, the organizations configure a graph of estimated relationships and another graph of latent relationships (Carreón, 2016).

The graphs of estimated relationships provisionally define the conjunctural power of a node, but the graph of latent relationships determines the historical influence of the node. The difference is substantial because conjunctural power alludes to the probability that an organization has to respond to external demands based on its intermediation, but historical influence determines the potential that an organization would have if its resources would establish a unimodal culture.

This is how organizational complexity refers to the power and influence represented in knowledge graphs, information networks, production nodes and relationship arcs. The theory of social capital and the theory of network analysis explain the complexity of organizations such as graphs, nodes or arcs, while describing cultures and exploring meanings among actors (Carreón, Hernández, Castillo & García, 2015).

If an organization is the result of the relationships between its talents, then its culture reflects the type of graph they build in response to the demands of the environment and internal resources. Organizational cultures allude to their uses and their customs, values and norms inferred by the meanings of their symbols, their symbolic structure materialized in rituals, their autonomous or semi-autonomous sectors, their internal and external dialectics, their representations concerning surrounding information and their identity Social. Based on these characteristics, the analysis of complex organizations is limited to their culture, leaderships and climates.

In this way, autocratic organizational cultures depend on leadership and task climates over their talents and motivations. In contrast, complex organizational cultures are encouraged by the production of knowledge of their talents and the motivation of their leaders.

Autocratic cultures form graphs in which the continuity of discourses, conformities and isomorphism prevails, while complex organizations develop cultures and relations and sporadic in their processes that not only guide them in their adaptation or self-regulation, but also defines them as emerging and dynamic (García, Carreón, Hernández, Mendoza, Mejía, Quintana, 2014).

The leaderships of the autocratic cultures are preponderant nodes of decision but confined to values and norms of obedience and conformity. In complex organizational cultures, their nodes are latent leaderships that emerge when external demands surpass internal resources, or else, when relations between nodes require innovative processes and generate opportunities as well as capacities (García, Carreón, Hernández, Mendoza, Mejía, Quintana, 2014).

In terms of information and knowledge, autocratic cultures reproduce arcs while complex organizations generate latent and observable relationships, while structuring their objectives and goals according to the contingencies of the market or state institutionalism (Carreón, Hernández, Quintero, García & Mejía, 2016).

In other words, autocratic organizations make up structures of power and cultures of domination, while complex organizations structure cultures of innovation aimed at influencing their talents and leadership.

However, complex organizations differ from each other based on the relationships between their nodes and their contact intentions. Organizational avoidance is assumed as a factor of complexity, since it supposes the establishment of latent relationships (García, Carreón, Herná

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In autocratic organizations, the avoidance of contact refers to a climate of tasks and negative relationships, but in complex organizations it implies a culture of entrepreneurship and latent innovation in parallel with the relationships established with the other nodes.

Autocratic organizations assume that contact can be superficial or intimate to the extent that arcs are intensified, but complex organizations consider contact avoidance as a preliminary evaluation of the node towards leadership and talents. Therefore, the avoidance of contact implies a latent relationship that will materialize in influence and innovation rather than in relation to power, obedience and conformity (García, Carreón, Hernández, Aguilar, Rosas, Morales & García, 2015 b).

Avoidance of contact is subject to a series of internal processes in the organization such as categorization and identity. Because the nodes establish membership categories in order to exclude other nodes and avoid correspondence,

organizations become more complex depending on the differentiation of their talents and leadership.

In contrast, an organization that includes its talents and leadership in the same category, not only generalizes its opportunities and capabilities, but also promotes superficial or autocratic relationships (Carreón, Hernández, Quintero, García & Mejía, 2016).

Complex organizational cultures generate information from arcs, nodes and graphs, but circumscribed to the categorization and identity of their leaderships and talents rather than external demands and internal resources, market opportunities or institutional guidelines. In such a process, complex organizations produce information to influence other similar organizations, although the organizational cultures around power - obedience and conformity - coexist with complex organizations (García, Carreón, Hernández, Mendoza, Mejía, Quintana, 2014).

Assets model and intangible capital

In a simple orientation, the specification of a model consists of a selection of factors, categories or variables often representing their trajectories of dependency relationships, or else, symbolizing their reflective relationships where a construct prevails.

In a complex sense, the specification refers to the network of trajectories of dependency relationships among the factors, categories or variables used in a review of the literature. That is, not only is the integration in a model or the reflection of a process but, moreover, a complex system is studied by its relationships and above all, by the unobservable or intangible relationships such as the case of the assets of human capital. no and intellectual (Carreón, 2016).

II. Method

In this way, a non-experimental, cross-sectional, exploratory and documentary study was carried out with a sample selection of sources indexed to Dialnet, Latindex, Redalyc and Scielo repositories, considering the publication period from 2010 to 2018, as well as the link between organization, capital and assets (see Table 1).

Table 1. Descriptive information

	Organization	Capital	Knowledge
Dialnet	47	33	21
Latindex	32	22	17
Publindex	25	18	10
Redalyc	16	8	7
Scielo	9	2	2

Source: Elaborated with data study

Next, the information was processed in a matrix of content analysis and was specified in a model and hypothesis for its contrast. The Delphi technique was used to specify the complex model and differentiate them from a simple model around the study, observation and analysis of assets and intangible capital in organizations.

The Delphi technique, often implemented to homogenize the answers to questionnaires and establish percentages of

semantic coincidence between the people questioned, was used to process the information of the documentary sources, their contents, the reported findings and the discussions involved.

The information was emptied in a matrix according to the type of information, a comprehensive response was elaborated based on the proposals and suggestions of the co-authors, as well as in the seminars, colloquiums, forums or congresses in

which they participated, explaining the progress of the research. From a general synthesis, the categories of analysis were derived and linked to variables reported in the state of knowledge. Finally, trajectories of dependency relationships were modeled following the principles of complexity in organizations, namely: fractality, fuzziness, chaos and emergency (see Table 2).

Table 2. Construction of the data matrix

	Definition	Indication	Codification	Interpretation
Organization	Refers to a conglomerate of leaders and talents oriented to common value-added goals, tasks and goals	Data related to demands and resources	-1 for information unfavorable to organizations, 0 for information linked and +1 for favorable information	High scores refer to a prevailing organizational structure
Capital	It refers to a series of capacities, experiences and visions of added value to organizations through the creation and implementation of knowledge	Data alluding to the capacities, experiences and knowledge before external requirements	-1 for information unfavorable to capitals 0 for information linked and +1 for favorable information	High scores refer to a prevailing organizational capital
Knowledge	Refers to a process of knowledge and experiences around the balance of demands and resources, as well as data optimization and proposal innovation	Data alluding to errors and successes in the optimization of resources and process innovation	-1 for information unfavorable to knowledge, 0 for information linked and +1 for favorable information	High scores refer to a prevailing organizational knowledge

Source: Self-made

III. Results

Table 3 shows the statistical properties of the study, considering the information processed and the evaluations of expert judges in the topics.

It is possible to appreciate the normal distributions of the data and the contingent relationships between the three categories with respect to the insulators established in the literature review.

Table 3. Descriptives content

	M	D	S	K	Organization	Capital	Knowledge
Demands	,983	,192	,129	,124	[X ² = 12,2 (14gl) p = ,01]		
Resources	,902	,180	,135	,136	[X ² = 14,3 (15 gl) p = ,01]		
Intellectual	,978	,134	,136	,134		[X ² = 15,2 (13 gl) p = ,01]	
Experiences	,952	,146	,131	,123		[X ² = 12,1 (19 gl) p = ,01]	
Visions	,970	,128	,108	,143		[X ² = 14,3 (15 gl) p = ,01]	
Optimization	,932	,104	,197	,146			[X ² = 15,6 (17 gl) p = ,01]
Innovation	,975	,193	,137	,127			[X ² = 12,1 (15 gl) p = ,01]

Source: Elaborated with data study

In this way, the model includes an axis, a trajectory and a hypothesis. It is a process of relationships centered on the intangible assets of political, social, human and intellectual capital, but which in turn are interconnected with other capital and intangible assets.

Unlike organizational studies with a simple orientation, the specification of the model refers to the relationships between the factors cited in the literature, but with the consideration that there are and will be other factors that may be included in the proposal.

It should be noted that while in simple models an antecedent and a consequent is identifiable in terms of

dependence relations or correlations, in the specification of a complex model it is necessary to demonstrate the systematic repetition of relations between the elements.

In this way, the specification proposal with a complex sense is read as the relationship between intangible assets, including capital, that give value to an organizational process, as well as the dynamics of these assets and capital at the time they are observed.

In that sense, another methodological distinction would be that it is possible to "photograph" the dynamism of the factors of a complex model or network, but if the intention is to anticipate their trajectories and conformation of structures,

then a systematic observation of the relations between capitals will be necessary. and intangible assets.

Thus, the specification of a simple model requires conceptual and theoretical encapsulation of the variables to establish a hypothetical trajectory of correlations, but in a complex model, the replacement of the variable by another one is observed, the camouflage of one by another, or, the absorption of some in others.

It is because of this fuzzy logic that in organizations intangible assets and capital are not susceptible to being controlled or manipulated, much less directed or conditioned by power and influence structures, demands and resources, or by means of motivation instruments.

Assets and intangible capital can only be observed when a process is so striking that it requires a review and reconstruction of the facts. This is the case of innovation that emerges in the face of crises, but which does not guarantee overcoming it because they can intensify their effects on the organization.

In the case of assets and intangible capital, creativity has been observed as a precedent for innovation, but creativity can arise after the diffusion of innovation within the organization.

Experience is another intangible element that has been observed as a determinant of innovative strategies, but such proposals usually emerge in decision makers or executors without previous experience, often arising from a hunch or intuition.

It is by this logic that the specification of a complex model is more than provisional, transitory and preliminary. It is only possible to notice that the origin of the innovation process is in the intangible assets and capitals, but the order of these does not matter if they re-observe the facts or check their records.

It is only possible to record so many observations and infer some repetition pattern that indicates in a period of observation a network, trajectory or constant relationship between the elements that make up the specified model.

The key to carry out this registry is that unlike simple models that seek a direct and causal path, complex models are distinguished by developing indirect routes, little observed, almost never recorded, much less expected relationships between variables if is that they have not mutated or merged during the observation period.

In the case of an organization, economic crises, regionalist and multilateralist policies are ideal scenarios for observing the behavior of organizations, understanding their logic and complex dynamism from the records of their assets and intangible capital.

Although in a complex organization their assets and intangible capitals are not as important as the possible relationships between these elements, it is necessary to study from a simple model to the organization. In this simple way, organizations would have as intangible assets their political capital that refers to the relations of power and influence between those who decide and execute those decisions.

In the case of relationships where coercive instruments prevail, such as hierarchy of command, unidirectional communication, resistance to change or limiting paradigms. Precisely, if the climate of relations prevails over the climate

of support, the climate of tasks or the climate of goals, then it is possible to observe the social capital that coexists with political capital in organizations.

In this sense, social capital is not only cooperation, solidarity and support, but also involves a process of empathy, trust, commitment, satisfaction and happiness that articulates negative and positive emotions towards leaders, colleagues or organizational processes.

As the individual is able to articulate political capital and social capital, it will reflect their capabilities, or in other words, their human capital, which refers to their academic and professional training, their work and relational experience, as well as their intelligent management. of their emotions in the dynamics of the organization, decision-making focused on objectives, tasks and goals, or simply their level of commitment to any challenge or opportunity.

If this individual goes beyond the demonstration of their capabilities and systematizes them so that future generations or colleagues can build a proposal based on their contributions, then we speak of an intellectual capital that, because it is specialized knowledge, only it is achievable through scrutiny and contrast of objectives with goals, climates of relationships with task climates, or, when establishing initiatives based on the demands of the environment. Intellectual capital refers to proven solutions that can be carried out with high efficiency, effectiveness and effectiveness.

IV. Final considerations

The contribution of this work to the state of theoretical, conceptual and empirical knowledge lies in the specification of a complex model for the observation and analysis of assets and intangible capital in organizations.

However, the intentional selection of the literature consulted and the processing of the information through the Delphi technique limit the findings. It is a study that is complemented with the exploration and contrast of factorial structures, the dependency relationships between constructs and indicators, as well as the incidence of these factors with others in a theoretical and conceptual logic, supported by the findings reported in the literature consulted.

Therefore, a non-experimental, cross-sectional and exploratory study of the factors underlying the complexity indicators is required; fractalidad, autorganización, recursion or fuzziness, but not with methods and techniques with which simple models are tested, but with complex parameters such as meta-analysis or data mining.

As assets and intangible capital are complex phenomena; dynamic, recursive, autorganizative, chaotic or fractal, a review of the findings in a given period is required, as well as the observation of the largest possible number of events with the intention of establishing constants that can be encapsulated by the parameters of complexity.

References

- [1] Aguilar, J. A., Pérez, M. I., Pérez, G., Morales, M. L. & García, C. (2018). Gobernanza de las redes de conocimiento: Contrastación de un modelo para el estudio de la formación consensuada. *Alternativas*, 40, 24-50
- [2] Bustos, J. M., Ganga, F. A., Llamas, B. & Juárez, M. (2018). Contrastación de un modelo de decisión prospectiva e implicaciones para una gobernanza universitaria. *Margen*, 89, 1-16
- [3] Carreón J. (2016). Human development: Governance and social entrepreneurship. Mexico: UNAM-ENTS
- [4] Carreón, J. (2013). Discourses on labor migration, return and social reinsertion based on group identity in Xilitla, micro-region of Huasteca Potosina (Mexico). In L. Cano (coord.). Poverty and social inequality. Challenges for the reconfiguration of social policy. (pp. 153-174). Mexico: UNAM-ENTS
- [5] Carreón, J., De la Cruz, PI & De los Santos, M. (2015). The administration of social fears. Contrasts of a model of perception of insecurity in Mexico. *Ehquity*, 4, 31-60
- [6] Carreón, J., Hernández, J. & García, C. (2018). Governance of Intangible Capitals. *International Journal of English Literature & Social Science*, 3 (4), 1-16
- [7] Carreón, J., Hernández, J., Castillo, B. & García, C. (2015). Contrast of an intentional network model. *Alternatives in Psychology*, 8 (33), 50-65
- [8] Carreón, J., Hernández, J., Quintero, ML, García, C. & Mejía, S. (2016). Knowledge networks around organizational complexity: learning self-regulation, dissipation, adaptability and dynamism in the face of changes. *Prospective*, 2 (2), 57-70
- [9] García, C. (2018a). Confiabilidad y validez de un instrumento que mide la gestión del conocimiento en una universidad pública del centro de México. *Tlatemoani*, 27, 1-20
- [10] García, C. (2018b). Contrastación de un modelo de cultura organizacional en universidades públicas del centro de México. *Nómadas*, 54 (4), 1-17
- [11] García, C., Carreón, J. & Hernández, J. (2017). Limits of occupational health models. Study of adherence to the treatment of asthma in elderly migrant workers of the State of Mexico. *Management Vision*, 16, 103-118
- [12] García, C., Carreón, J., Hernández, J. & Salinas. (2016). Governance of the actors and networks of technological innovation. In ML Quintero, Sales, J. & Velázquez, E. B: (coord.). Innovation and technology Challenges for its practical application in companies. (pp. 79-94). Mexico: Porrúa-UAEMEX UAP Nezahualcóyotl
- [13] García, C., Carreón, J., Hernández, J., Aguilar, JA, Rosas, FJ & Bustos, JM (2015). Differences in reliability against risk, uncertainty and conflict between coffee farmers in Xilitla, Mexico. *Eureka*, 12 (1), 73-93
- [14] García, C., Carreón, J., Hernández, J., Aguilar, JA, Rosas, FJ, Morales, ML & García, E. (2015a). Governance of sociopolitical creativity. *Revista Mexicana de Ciencias Agrícolas*, 1, 37-44
- [15] García, C., Carreón, J., Hernández, J., Aguilar, JA, Rosas, FJ, Morales, ML & García, E. (2015b). Governance of sociopolitical emotions. *Mexican Journal of Agricultural Sciences*, 1, 45-52
- [16] García, C., Carreón, J., Hernández, J., Aguilar, JA, Rosas, FJ, Morales, ML & García, E. (2015c). Governance of sociopolitical activism. *Revista Mexicana de Ciencias Agrícolas*, 1, 53-66
- [17] García, C., Carreón, J., Hernández, J., Carbajal, C., Quintero, ML, Sandoval, FR & Valdés, O. (2016). Incidence of micro-financing policies on the perception of coffee entrepreneurship and implications for Social Work. *Equity*, 6, 11-36
- [18] García, C., Carreón, J., Hernández, J., Méndez, A. & Bautista, M. (2013). Model of the sociodemographic determinants of intent to use the Internet. In RM Romero, and Pastrana, A. (coord.). Applied research on technology management. (pp. 209-240). Mexico: UAQ
- [19] García, C., Carreón, J., Hernández, J., Mendoza, D., Mejía, S. & Quintana, LD (2014). Digital Entrepreneurship: Case study with communication university students of the Autonomous University of the State of Mexico. *Management Vision*, 14 (2), 287-300
- [20] García, C., Carreón, J., Hernández, J., Montero, M. & Bustos, JM (2012). Systems of political complexity. *Social Work Today*, 65, 39-48
- [21] García, C., Carreón, J., Mecalco, J., Hernández, J., Bautista, M. & Méndez, A. (2014). Complex political systems: Implications for sustainable public security. *Actions and Social Investigations*, 34, 186-216
- [22] García, C., Carreón, J., Sandoval, FR, Bustos, JM & Aguilar, JA (2016). Structure of the work culture in a public health promotion institution. *Arequipa*, 6 (1), 291-304
- [23] García, C., Hernández, J., Aguilar, JA, Morales, ML & Peralta, MV (2016). Reliability and validity of an instrument that measures the intention of cyber selectivity. *Poiesis*, 31, 6-18
- [24] García, C., Valdés, O., Sánchez, R., Elizarraráz, G., Méndez, A. & Hernández, J. (2015). Differences between Internet entrepreneurs with respect to empathy, risk perceptions and use of technological applications. *Prospective*, 12 (1), 68-75.
- [25] Hernández, J., Anguiano, F., Valdés, O., Limón, G. A. & García, C. (2018). Confiabilidad y validez de una escala que mide las expectativas de formación profesional. *Margen*, 89, 1-13
- [26] Hernández, J., Carreón, J., Bustos, J. M. & García, C. (2018). Modelo de cibercultura organizacional en la

innovación del conocimiento. *Visión Gerencial*, 18 (2), 235-253

[27] Sánchez, A., Carreón, J., Molina, H. D. & García, CV. (2018). Contrastación de un modelo de formación laboral. *Interconectando Saberes*, 3 (5), 37-73

[28] Sánchez, A., Hernández, T. J., Martínez, E., Villegas, E. & García, C. (2018). Cultura organizacional en microempresas activadoras del desarrollo local. *Margen*, 89, 1-10