

# Theoretical Foundation of a Human-Techno-Structural Model of Managerial Competences for the Public Transport of Dry Cargo

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## Abstract

This paper presents a proposal of the theoretical and contextual foundation of a human techno structural model of managerial competences of dry cargo auto transportation (DPCAT) in Mexico. Firstly, the conceptualization of the state of the art is shown, through the analysis of the theoretical framework in relation to management skills models and, as a second element, an analysis of the contextual framework of applied management skills certification models was shown currently in the DPCAT sector, with the purpose of integrating them into the decision making of managers in the metropolitan area of the state of Hidalgo, in 2016. This also shows the results obtained from the application of a questionnaire that relates to the managerial competencies with the expected performances and the results of this, which base the techno structural approach and its relation to the individual needs of the manager, giving rise to a standardization proposal based on: Leadership, Diagnostics of competences, Installation of competencies, Development of competencies and Enhancement of competences.

## Keywords

Standardization, Diagnosis, Management Competencies, Performance

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## 1. Introduction

The present study arises from the express need of companies in the sector of Dry

Cargo Public Autotransport (DCPAT) in the Metropolitan Zone of the State of Hidalgo (ZMEH), since today they are managed through old habits, emanated empirically from the experience of managers or recommendations generated from parents to children. Therefore, it is necessary to establish a knowledge construct, under a methodological process, that links the contextual, referential and empirical framework of the DCPAT in relation to the theoretical basis of management competencies and their performance in the referred sector.

The sector of DPCAT in Mexico, has shown interest in professionalizing its managerial competences (Jiménez & Jiménez, 2016) [1]; in the World Economic Forum (2016), countries like the United States of America, China, Japan, Germany, the United Kingdom, France, India, Italy, Brazil and Canada have reported that, training of the workforce, training services and personal training, are key elements for the development of the industry. Nevertheless, the Mexican case is below the average of these ten most important economies, which besides, is the ranking proposed as an adequate score (Table 1).

Training must allow to solve a set of specific problems in order to improve the characteristics inherent to the administration of companies of the DPCAT (Cruz, Ortega and Figueroa, 2015, pp. 22-42) [3], comprehending regulations of the physical and mechanical conditions (Mexican NOM-061-SCT-2-2000); as well as transportation standards about weights and dimensions (NOM-012-SCT-2-2008); regulations that standardize safety in the supply chain (ISO 28000: 2009); or risk management (ISO 31000: 2009), to name a few.

The geographic proximity of Mexico with the United States of America, is a key factor to develop competences related to the certification of logistical processes inherent to the risk of cross-border transportation, such as Customs Trade Partnership Against Terrorism (C-TPAT), Free and Secure Trade (FAST) and Business Alliance for Secure Commercial (BASC) among others (CONOCER, 2016 [4]; Cruz, Ortega and Figueroa, 2015; Jiménez and Jiménez, 2016).

While there is a perceived lag in the management of competencies of the DPCAT sector in Mexico, on the other hand, the demand for proper standards of the contracting companies in the supply chain and the recipients of the

**Table 1.** Training of Managers in Mexico with respect to the 10 largest economies in the world.

Training of managers, media and labor force		
Items of Educational Quality	Average the 10 largest economies in the world	Percentage of achievement in Mexico
Workforce training	5.4	4
Training services	5.8	4.4
Personal training	5.4	4.3

Note. Adapted from World Economic Forum (2016) [2], The Global Competitiveness Report 2015-2016. Retrieved from: [http://www3.weforum.org/docs/gcr/2015-2016/Global\\_Competitiveness\\_Report\\_2015-2016.pdf](http://www3.weforum.org/docs/gcr/2015-2016/Global_Competitiveness_Report_2015-2016.pdf).

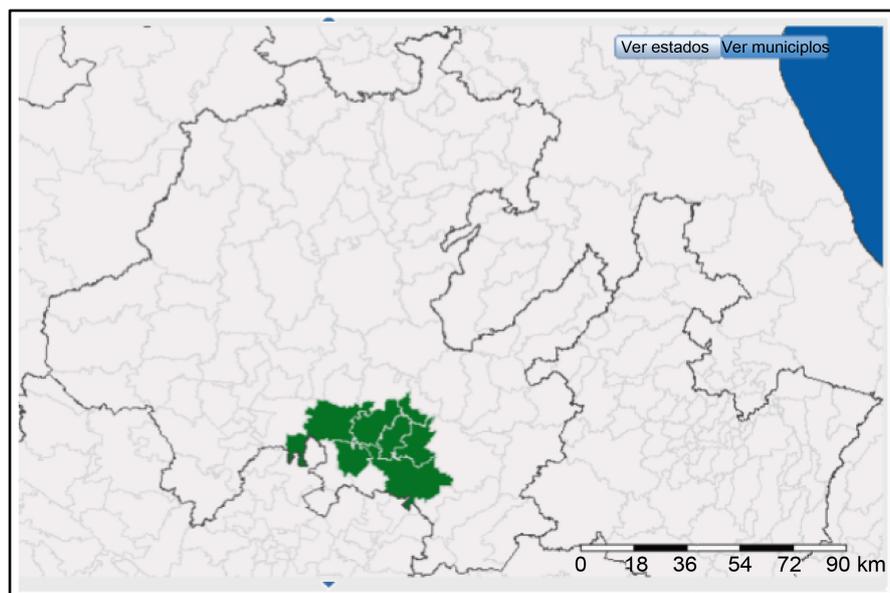
mobilized goods, grow. In this gap, the development and implementation of specific managerial competency models for the DPCAT is required, since there is lack of a managerial skills model that links the development of such competences with the expected performance of the organization (Cruz, Ortega and Figueroa, 2015; Jiménez and Jiménez, 2016; OSCL, 2016 [5]; Ortega, 2012 [6]). This level of performance is more evident in the central zone of Mexico (states of Querétaro, Tlaxcala, Mexico, Hidalgo, Puebla and Mexico City), which is listed as the most economically developed in the country since it contributes with 33.8% of the Gross Domestic Product, which makes a group of companies dedicated to DPCAT converge to move the goods to other regions.

Jiménez and Jiménez (2017), point out that the state of Hidalgo has the highest growth rate of the DPCAT fleet since 2014, due to the increase in the movement of goods generated in the municipalities of Pachuca, Tulancingo and Tula de Allende. This increase is the result of the socioeconomic conformation of the industrial parks of the zone and, also due to the interaction with the borders of other states (Tovar, 2011 [7]; Cruz, Ortega and Figueroa, 2015). The metropolitan areas of Pachuca, Tulancingo and Tula de Allende, are located in the borders of the state, which turns them into industrial points, modifying regulations and activities related to the transportation as shown in **Figure 1**.

This situation led this project to establish the universe of research by the companies of the DPCAT located in the municipalities of the ZMEH, as can be seen in **Table 2**.

## 2. Theoretical Framework

The concept of managerial competences by itself, establishes a behavioral



**Figure 1.** Metropolitan zone of the state of Hidalgo. Note: Figure of the three metropolitan zones of the state of Hidalgo; Source: Adapted from metropolitan areas in the state of Hidalgo and inter-municipal cooperation; Tovar E., 2011.

**Table 2.** Table of municipalities in the metropolitan area of the state of Hidalgo.

Metropolitanarea of Pachuca	Metropolitanarea of Tulancingo	Metropolitanarea of Tula
Pachuca de Soto	Tulancingo de Bravo,	Tula de Allende
Mineral de la Reforma	Cuautepec de Hinojosa	Atitalaquia
Epazoyucan	Santiago Tulantepec de Lugo Guerrero	Atotonilco de Tula
Mineral del Monte		Tlahuelilpan y
San Agustín Tlaxiaca		Tlaxcoapan
Zapotlán de Juárez		Tepeji del Rio
Zempoala		

Note. Adapted from "Diagnosis of air cargo transportation in Mexico", Herrera A, Bustos A., Martner C, Rico A., Acha J., Aguerrebere R, (2005). Recovered from: <http://imt.mx/archivos/Publicaciones/PublicacionTecnica/pt273.pdf>.

perspective and links knowledge and skills, as well as their orientation to the results obtained in each organization (Petrick, Scherer, Brodzinski and Quinn, 1999, Parsons, 1949 [8]; Locke, 1982 [9]).

McClelland (1973) [10] establishes the need to integrate, in addition to knowledge and skills, two relevant principles in the conception of competence; the first of them, oriented to identify individual needs and, the second, determines the measurement of the results obtained in the organization. Thus, the conceptualization of individual needs creates the relationship of the manager with psychological and sociological aspects; proposes ordering the individual, group and organizational competences, which contemplate giving solution to specific problems and to the fulfillment of the expectations of each organization (Prahalad, Bettis (1995) [11]; Porter, (1999) [12]).

In this way, competencies are put into practice contributing to the results, achieving as well organizational objectives and improving the effective management of personnel (Boyatzis, 2002 [13]; Quinn, 1990 [14]; Arnold and Mckecznie, 1992 [15]; and Olabarrieta, 1998 [16]; Cruz, Ortega and Figueroa, 2015; Vargas, 2009 [17]; Valencia; 2012 [18]).

With respect to the measurement of results, it is necessary to align the performance to the strategic planning of the organization, so that each effort made is channeled to the achievement of objectives within the existent techno structure that links different perspectives: financial, client orientation, internal processes, human resources and leadership (Mercado, del Moral and Jiménez, 2011 [19], Kaplan and Norton 2001 [20], Cruz, Ortega and Figueroa, 2015; Bal-lou, 2004 [21]; Bartunek, Balogun, Haga, 2011 [22]).

A conceptualization that links individual aspects to group results in managerial competences of the DPCAT is proposed in the following phases:

Phase 1: Diagnosis of managerial competences; the training needs of each manager are determined, establishing a set of actions oriented to organizational alignment.

Phase 2: Implementation of managerial competences; Characterized by carrying a chronological sequence of the establishment of managerial competences, linking the techno-organizational structure with the individual needs of the manager.

Phase 3: Development of management skills; defines the link between the expected result and the chronological sequence of the establishment of managerial competences, through a review of the performance of the expected executive.

Phase 4: Enhancement of managerial competences; It relates the performance review of the expected manager, with the training needs, in search of the identification of improvement areas in relation to performance and managerial competences (Mertens, 1997) [23].

These stages do not differ in models that allow certification of directive competencies in the DPCAT, such as the American Production and Inventory Control Society (APICS, 2016) [24] or the Human Resources Professionals Association (Blunt, Bennett, Clark, Taylor-Green & Singh, 2014) [25]; the proposal of the National Labor Certification Certification System (Chilevalora) [26]; Inside Careers (2016) [27]; the Brazilian Classification of Occupations (BCO) or the National Competency System (SNC) (Cruz, Ortega and Figueroa, 2015). The comparison of models allows to appreciate that, the models of managerial competences are coincident in the application of the phases of diagnosis, implementation and development as well as a general absence of the phase of Enhancement (Table 3).

The absence of the application at the level of Enhancement, led this work to relate the expected performance of the manager with the training needs related

**Table 3.** Methodological analysis of DPCAT competency models.

Certification model.	Phase 1 Diagnostic	Phase 2 Implementation	Phase 3 Development	Phase 4 Enhancement
American Production and Inventory Control Society (APICS).	Yes	Yes	Yes	No
Human Resources Professionals Association (HRPA).	Yes	Yes	Yes	No
Comisión Sistema Nacional de Certificación de Competencias Laborales (Chilevalora).	Yes	Yes	Yes	No
Inside Careers	Yes	Yes	Yes	No
Clasificación Brasileña de Ocupaciones CBO	Yes	Yes	Yes	No
Sistema Nacional de Competencias SNC, Conocimiento Competitividad y Crecimiento CONOCER	Yes	Yes	Yes	No

Note. Adapted from: CONOCER, 2016; Chile Valora, 2016; SENAI, 2016 [28]; Inside Careers, 2016; Blunt, Bennett, Clark, Taylor-Green & Singh, 2014; Katz R.L., 1974.

to managerial competencies that impact on organizational results (Levy-Leboyer, 1997 [29]; Locke, 1982; Jensen, 2000 [30]; Spencer, L.M. and Spencer, 1993) [31].

### 3. Methodology

In order to analyzing the factors that allow to model the DPCAT directive competences, an empirical work of quantitative order was developed. It integrated a descriptive investigation and a correlational analysis of the interaction of the variables under study (Hernández, et al., 2005 [32]; Torres and Navarro, 2007 [33]; Naghi, 2010) [34], Hamel, G. & Prahalad, 1995 [35]; Torres & Navarro, 2007), aimed to establishing the incidence between managerial competences, performance and their formal processes of standardization as shown in **Table 4**.

For this, three types of variables were identified, and it was defined that the interaction of management competencies through standardization has an impact on the performance of organizations in the DPCAT sector.

Therefore, the hypothesis of this research established that *“there is interaction between managerial competencies and performance through standardization processes, in the Dry Cargo Public Autotransport sector of the metropolitan area of the state of Hidalgo”*.

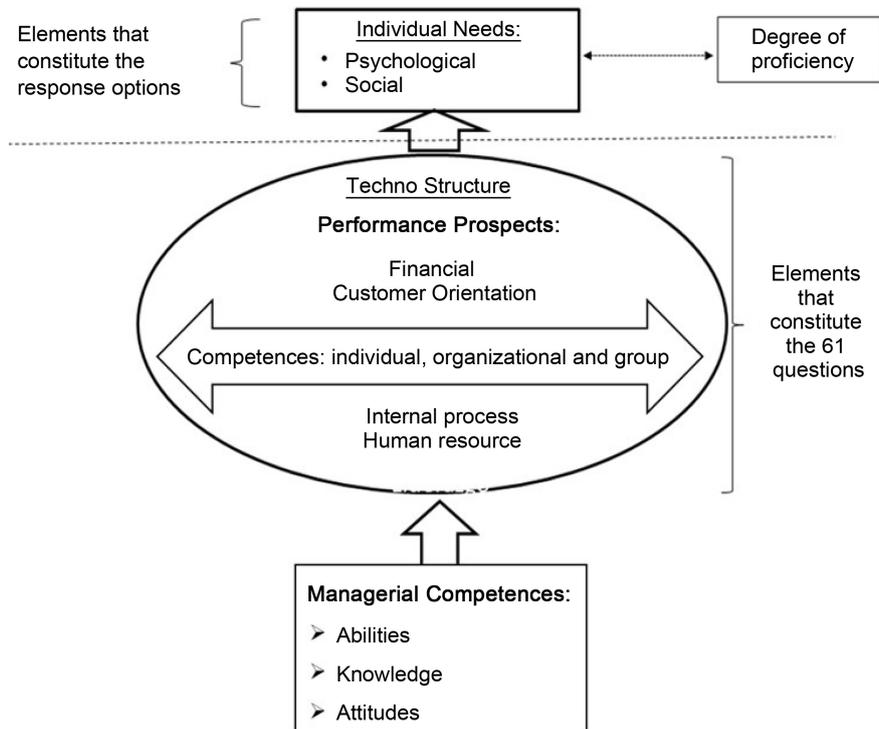
In this way, each performance perspective related to the construction of competencies (Schein, 1978 [36]; Mercado, del Moral and Jiménez, 2011; Kaplan and Norton 2001,; Cruz, Ortega and Figueroa, 2015; Valencia (2012) [37]; Barrow, 1977 [38]; McClelland, 1993) [39]; Whetten & Cameron (2005) [40], were defined as shown in **Figure 2**.

Therefore, from a theoretical review, an instrument was constructed to evaluate performance in each perspective; batteries were formed with four response

**Table 4.** Variables of the research model.

Types of Variables.	Characteristics of the variable.	Description
Dependent variable: Management skills	➤ Knowledge. ➤ Skills and abilities.	It is considered that managerial competences have a positive inference regarding performance.
Independent variable: Performance	➤ Financial processes. ➤ Orientation towards the client. ➤ Internal processes. ➤ Human Resources. ➤ Leadership.	It is considered that the performance generates causes and conditions to the managerial competences.
Intervening variable: Standardization	➤ Identification of competencies. ➤ Standardization of competences. ➤ Competency-based training. ➤ Certification of competences.	It is considered that standardization influences the relationship: managerial competences and performance, being an intervening variable between them.

Source: Authors' elaboration.



**Figure 2.** Design of the field survey for the DPCAT. Author's own elaboration.

options, which allowed identifying the managers' opinions (**Table 5**).

The items were reviewed through the technique of consult with experts, by a group of three faculty in the area of Industrial Engineering at the Autonomous University of the State of Hidalgo; six of the Logistics and Transportation Engineering area at the Metropolitan University of Pachuca; four DPCAT entrepreneurs in the metropolitan area of the state of Hidalgo, as well as ten specialists from the Scientific Committee of the International Congress in Logistics and Supply Chain (Congreso Internacional de Logística y Cadena de Suministro (CiLOG), (2015) [41]). After that, a pre-piloting was carried out in order to validate the instrument in twelve companies in the zone of influence (Metropolitan Area of Hidalgo). After that, the reliability of the instrument was analyzed throughout the coefficient Alpha of Cronbrach, obtaining 0.873.

The limits of the study were set as the Metropolitan Zone of the State of Hidalgo (ZMEH), which is organized by the municipalities and zones surrounding Pachuca, Tulancingo and Tula de Allende (Tovar, 2011, Cruz, Ortega and Figueroa, 2015).

Sixty DPCAT organizations registered in the database of the National Institute of Statistics, Geography and Information Technology (INEGI, 2016) [42] were analyzed (**Table 6**).

## 4. Results

The analysis of the variance (ANOVA) was performed through the software MINITAB 15, to determine the decision making tendency in relation to the

**Table 5.** Characterization of the field survey for the DPCAT.

Item	Perspective
<ul style="list-style-type: none"> <li>➤ Control of investment in assets.</li> <li>➤ Decision-making in financial projects.</li> <li>➤ Decision making in financing alternatives.</li> <li>➤ Follow-up of financial and accounting plans.</li> <li>➤ Analysis of the operating costs of your organization.</li> <li>➤ When analyzing the income statement of your organization.</li> <li>➤ Measuring the profitability of your organization.</li> <li>➤ perform accounting control.</li> <li>➤ When analyzing the expiration of customer payments.</li> </ul>	Economic decisions
<ul style="list-style-type: none"> <li>➤ Decision-making oriented to monitoring and market growth.</li> <li>➤ Proposal of alternatives for conflict resolution in the internal and external scope of the organization with the clients.</li> <li>➤ Responsibility for making decisions focused on achieving sales objectives.</li> <li>➤ Follow-up on customer complaints.</li> <li>➤ Planning in the sales area.</li> <li>➤ Analysis of the service provided.</li> <li>➤ Measurement of the quality of the service provided.</li> <li>➤ Retention of clients.</li> <li>➤ Actions in the face of poor service attention.</li> <li>➤ Flexibility that your organization has to deliver unexpected orders.</li> </ul>	Client orientation
<ul style="list-style-type: none"> <li>➤ Verbal communication (includes listening).</li> <li>➤ Time and stress management.</li> <li>➤ Management of individual decisions.</li> <li>➤ Recognition, definition and resolution of problems.</li> <li>➤ Motivation and influence on others.</li> <li>➤ Delegation.</li> <li>➤ Goal setting and vision creation.</li> <li>➤ Management of work teams.</li> <li>➤ Conflict management.</li> <li>➤ Stress management.</li> <li>➤ Self-knowledge.</li> <li>➤ Motivation and influence in others.</li> </ul>	Leadership
<ul style="list-style-type: none"> <li>➤ Analysis of the performance of your internal processes.</li> <li>➤ Assignment of tasks for the execution and fulfillment of the service itineraries.</li> <li>➤ Programming of transport units assignment.</li> <li>➤ Planning and estimation of routes and destinations.</li> <li>➤ Assignment of alternative solutions for technical and organizational problems.</li> <li>➤ Analysis of transport infrastructure.</li> <li>➤ Use of Information and Communication Technologies (ICT).</li> <li>➤ Promotion of systems and projects of internal processes.</li> <li>➤ Comply with current safety rules and regulations regarding transportation.</li> <li>➤ Planning and estimating routes and destinations.</li> </ul>	Internal process
<ul style="list-style-type: none"> <li>➤ Training, delegation and coordination of personnel.</li> <li>➤ Development of programs aimed at increasing productivity in support staff.</li> <li>➤ Supervision of the personnel in charge.</li> <li>➤ Staff evaluation.</li> <li>➤ Responsibility in making technical and organizational decisions.</li> <li>➤ Assertive communication in the transmission of instructions.</li> <li>➤ Promotion of work organization.</li> <li>➤ Organizational culture.</li> <li>➤ Promote the organization of work.</li> <li>➤ Development of worker productivity.</li> </ul>	Human Resource

Source: Author's own elaboration.

**Table 6.** Number of companies per municipality in the metropolitan area of the state of Hidalgo.

Municipality	Number of companies
Tulancingo De Bravo	19
Pachuca De Soto	15
Tizayuca	6
Atotonilco De Tula	6
Tepeji Del Río De Ocampo	5
Tula De Allende	4
Mineral De La Reforma	3
Tlahuelilpan	3
Atitalaquia	1

Note. Adapted from: INEGI (2016) Entidad Federativa, anual, Producto Interno Bruto por Entidad Federativa Variación porcentual anual, 2016. Retrieved from: <http://www.beta.inegi.org.mx/app/mapa/denue/default.aspx>.

variables of the hypothesis. Then, according to the ANOVA technique, DPCAT organizations showed a tendency in making decisions of 0.06 in the interaction with managerial competencies and organizational performance, which allowed the acceptance of the hypothesis with a 95% confidence level as shown in **Table 7**.

The analysis of the variables consents to observe a greater development of the dimensions of leadership ( $\bar{X} = 1.94$ ) and performance towards the client ( $\bar{X} = 1.92$ ) in the managerial performance variable; while of the variable managerial competences, the leadership competencies ( $\bar{X} = 1.96$ ) and the competence of the client orientation ( $\bar{X} = 1.96$ ) were higher. The existence of the interaction between managerial competencies and performance was corroborated (**Figure 3**).

Among the competences and the performance, a Pearson's moderate correlation of 0.423 was observed, this due to each organization establishes a set of priorities and, this highlights that the techno organizational structure is not planned and is only built according to the needs of the priorities of the moment, according to the intentions and will of the manager.

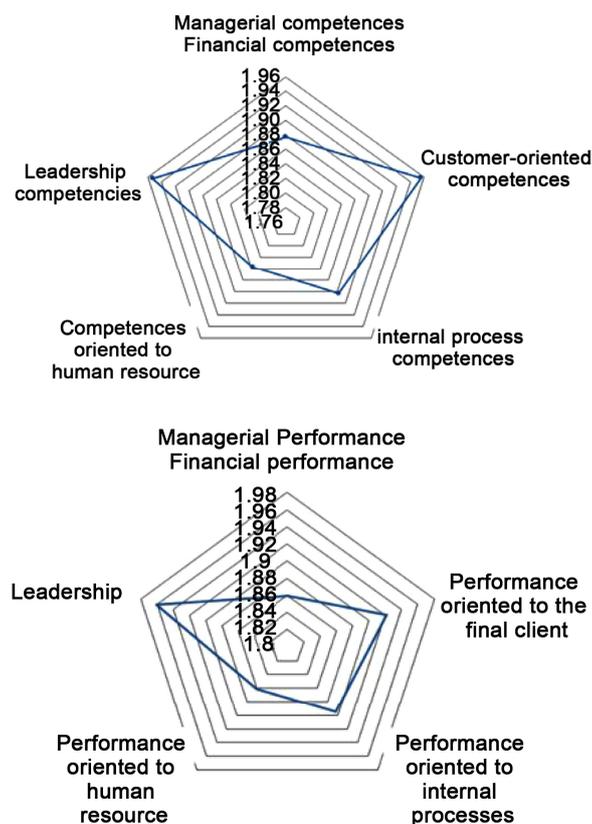
Thus, the link between competencies and performance is related to the context of each organization, because the needs of customers (capacity requirements, rates, quotations, market management, cargo mobilization, guarantees, termination of contracts and order of service) modify the objectives, ends and organizational goals and, provoke structural redesigns from the content of positions to the communication, retro evaluation and evaluation of their results (performance).

In relation to the expected performance, it was observed that this is not established on the basis of the "Psychological" and "Sociological" approaches, and does not allow identifying the individual needs of the managers and their interference in the techno-structural scheme of the organization.

**Table 7.** Comparative table between managerial competences, performance and their interaction.

Source	Degrees of Freedom	Sum square	Mean Value	Value	Table
Managerial competences	1	0.00008	0.0000830	0.00	0.966
Performance	4	0.16741	0.0418536	0.94	0.447
Interaction of both variables	4	0.01104	0.0027599	0.06	0.993
Error	90	4.02711	0.0447456		
Total	99	4.20564			

Source: Author's own elaboration.



**Figure 3.** Comparative analysis between managerial skills and performance. Source: Author's own elaboration.

Thus, despite the manager, has a compendium of competences and is the bearer of cognitive thinking, does not design or develop the strategies that allow his team to achieve the delegated goals and objectives.

So, the results shown above, allow to reorient the need to build an organizational redesigning based on the human aspects (individual needs) and the existent organizational techno structure, which must be based on the organization's own context and guide the installation of managerial competencies compliance

with organizational goals and objectives.

For this, the need to develop the theoretical foundation of a Human Techno Structural Model (HTSM) of managerial competencies is established, which has as purpose, to make changes from techno-structural modifications with a human approach and, whose purpose is the achievement of the objectives, through the linking of managerial competencies and performance.

### 5. Proposal

The theoretical foundation of the Human-Techno-Structural Model (HTSM) is based on the need to standardize the adjustments and readjustments of the managerial competencies, in each DPCAT organization based on the performance needs (Figure 4).

The HTSM displays a core formed by five fundamental pillars that constitute the central infrastructure of the model (standardization), which are: 1). Leadership, 2). Diagnosis of competences, 3). Installation of competences, 4) Development

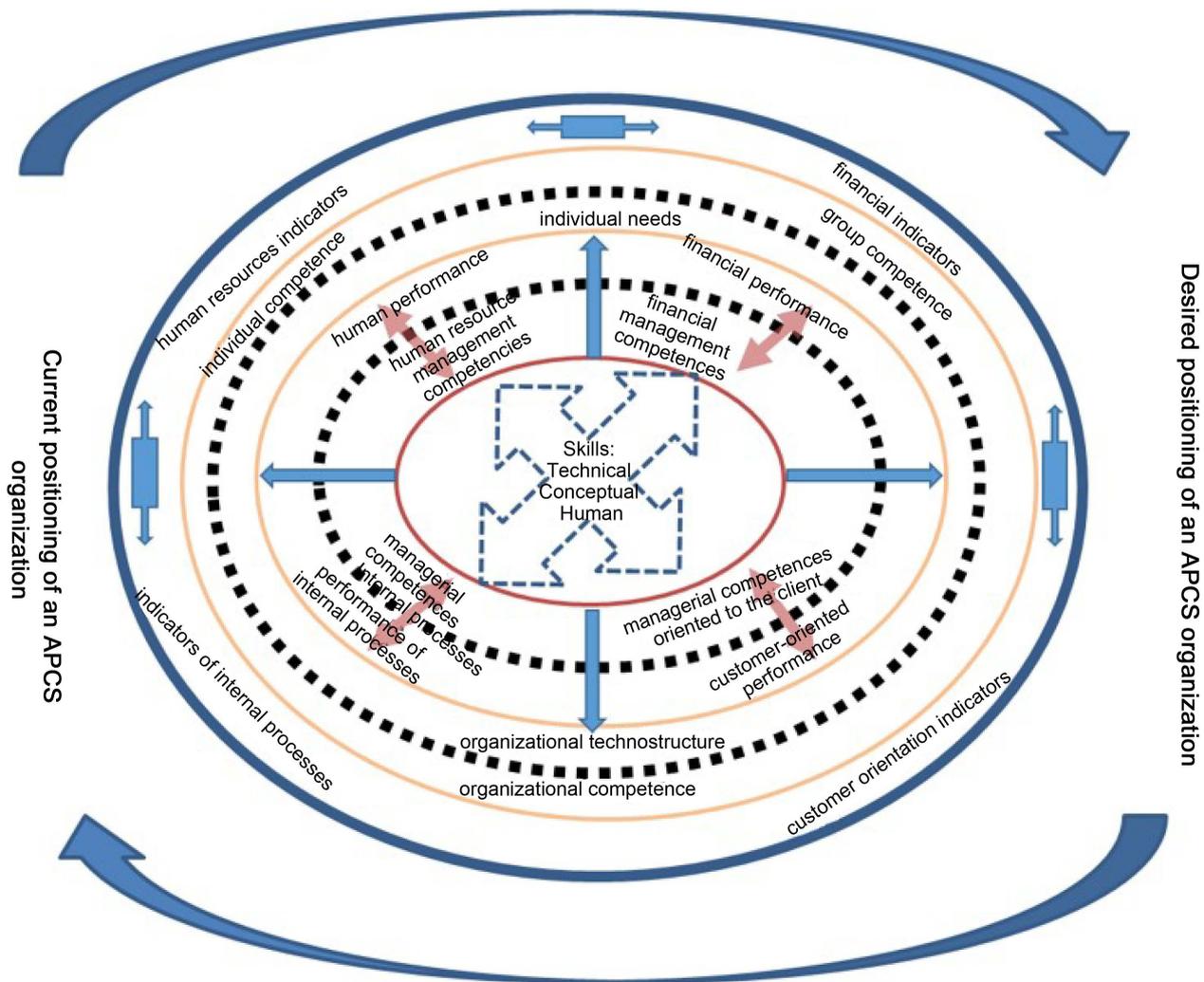


Figure 4. Human techno-structural model of managerial competencies. Source: Author’s own elaboration.

of competencies and, 5) Enhancement of competences.

Phase 1. Leadership.

The reason of change of each organization requires exercising a leadership based on the contextualization of the environment, due to the direct interference it has with the types of managerial skills in relation to the actions of the manager through the performance arranged in the target group and goals to be made. The development of three skill groups is proposed:

- Conceptual skill: Once the need of the DPCAT organization has been defined, it must identify the group of skills that will allow the vision to be accomplished; for this purpose, it must determine the type of techno organizational structure that favors the integration and capacity of the organization, integrating a vision group and organizational through cognitive vision.
- Human Skill: Links individual needs, which encourage the own motivations of the manager; oriented as well to psychological and sociological factors, through interpersonal and self-management styles.
- Technical Skill: It is oriented to cover the expectations and needs related to the regulations of the client, through the technical knowledge of transportation, types of cargo, units, local, state and national regulations, among others.

Phase 2. Diagnostic for the development of competences.

The development and analysis of the diagnosis is located in a contextual, technical and human framework, coming out from, first of all, the skills that respond to the needs of managerial competences; they are adhered by reason of the strategic planning of each organization, giving rise as a second element to the expected performance, thus establishing that the type of expected performance will be the one that guides the characterization of managerial competences. The following points are suggested as the minimums to work in its preparation:

1) Develop a strategic planning oriented to the competences of the DPCAT sector and aligned with the mission, vision and organizational values.

2) Develop a diagnostic process of environmental analysis, which allows identifying the reality of the organization of the DPCAT through an internal and external analysis, emphasizing economic, social, political and technological issues as well as competition, customers, market niche, value chain, among others.

3) Preparation of the management skills needs to be installed; through a ranking matrix that identifies the types and times planned to install the group of managerial competences and the way to measure and feedback the expected performance.

4) Prepare a strategic map that describes the type of managerial competence to be installed; installation time, mediation of results, feedback, enhancement and corrective actions.

Thus, a minimum of processes oriented to the development of managerial competences in the diagnostic phase, that respond to the type of expected performance must also be established as follows:

1) Develop strategic objectives related to strategic organizational planning

with the needs of management skills to be installed under the financial items, internal processes, client orientation and human resources.

2) Establish the scope of the objectives, the resources allocated and the performance planned in the HTSM, as well as the assignment of a responsible person and the scheduling of the activities, considering the position profile of the manager, in relation to the expected performance.

3) Implement actions to identify, install, develop and evaluate the performance of the manager to increase the probability of achieving the objectives.

4) Design the training processes sequenced, measurable and coherent to the objectives described above; thereby allowing the compliance of the services offered.

Phase 3. Installation for the development of competences.

The installation of managerial competences establishes a process in which the individual needs of the manager and the techno-structural context are integrated, through the reconditioning of the psychological and sociological aspects in relation to individual, group and organizational competences.

For this, the installation phase groups and guides the managerial competences related to the technical knowledge of the DPCAT, with the individual needs and the organizational behavior; under a process of techno-structural reconditioning, by installing the grouping of managerial competences foreseen in the diagnostic phase and, which is oriented towards the “human behavior system”, in relation to both levels: sociological (groups and relationships among them), and psychological, (individuals and relationships between individuals), which are established as individual, group and organizational competences.

This provision establishes the way to install the set of managerial competences, as well as the necessary arrangements and, the possible readjustments to the HTSM after the diagnostic plan.

The essential requirements for the installation process of managerial competences, which must be considered:

1) Establish a position profile that allows to approve the attitudes and aptitudes of the manager towards the fulfillment of the performance of his work team and that of his organization.

2) Install an evaluable induction process based on the attitude and aptitude shown in that period of time.

3) Develop the internal rules applicable to the evaluation process of the set of managerial competences through their performance.

4) Install the managerial competences to be developed through a diagnosis of needs, observing “the human behavior system”, under the technical, sociological and psychological approaches.

5) Install a program for the development of individual, group and organizational competences, in order to sensitize the manager based on his individual needs and the techno-structural plan.

6) Install an incentive system in relation to compliance with performance in

the financial perspective, internal process, client orientation and human resources.

The reliability and validity of the work indicators should be determined and provided when the performance of the managerial competences is monitored to verify the conformity of the services.

The organization must have an instrument that develops managerial competences, which must:

- 1) Install feedback circles to reference the expected performance in relation to installed competencies.
- 2) Develop the rules that allow follow-up of corrective actions.
- 3) Install a process of information, communication, evaluation and feedback of the manager's performance.
- 4) Install a process for redesigning organizational structures and content of workloads.

Regarding the protection of information for the development of competences, it is suggested that the organization safeguards the applicable documented information as:

- 1) The accreditation and certification of installed management skills.
- 2) The update and/or modification of the performance indicators.
- 3) Diagnosis of training needs programmed for each manager.
- 4) The records of the results obtained from the performance and the relation of the competences installed and that are about to be installed through a chronogram.
- 5) The reliability and validity of the work indicators when the performance of the managerial competences is monitored to verify the conformity of the products and/or services.

As well, the training entities for the development of management skills should be based on:

- 1) Internal providers (knowledge acquired through experience, lessons learned from failures and success stories), endorsed by the organization.
- 2) External providers (international and national certifiers, official standards).

#### Phase 4. Development for managerial competences.

The development phase allows linking the idealist vision of "where the organization wants to be" in relation to the "realistic vision" of the perception and understanding of current conditions and limitations in order to minimize the risk of developing actions aimed at not established performance. This strategy allows to follow up on the efforts and actions for the completion of the established performances through the implementation of sequential and results-oriented tactics.

This development establishes that personal changes (directive) and interference in group changes (organization) are accompanied by a cognitive and experiential process that ensures the self-sustaining of the HTSM in the organization.

Therefore, the organization must use tools that control the design and devel-

opment of the HTSM, to ensure:

- 1) Analyze the planned results.
- 2) Evaluate the design and development of the HTSM.
- 3) Implement activities that develop the performance of managers, and that these are consistent with the evaluation processes and, with the fulfillment of the position profile of the manager.
- 4) Evaluate the planned operations oriented to solve the problems detected, of non-compliance with HTSM.

Phase 5. Enhancement for the development of managerial competences.

This phase allows to generate systemic reconditioning through planned changes, identifying the external and internal changes originated by the environment that surrounds the organization, thus consolidating the competency standardization process.

One of its functions is to develop a process that allows modifying and feed-back the future projections of organizational planning, in a new diagnostic phase, through corrections, replacement of indicators, as well as the alignment of executive position profiles. So, there is a need of documentation of the managerial competences in order to generate evidence of:

- 1) Deviations, nonconformities and indicators not reached, presented during the evaluation process of the immediate HTSM to the new strategic planning.
- 2) Structure a set of corrective actions to restructure the new HTSM.

In case of deviations, nonconformities and indicators not reached in the empowerment phase, the organization must make decisions and actions, such as:

- 1) Analyze and determine the possible causes to eliminate the deviation, non-conformity and indicator not reached that may affect the organization.
- 2) Take the necessary actions to resolve the deviation, disagreement and indicator not reached.
- 3) Evaluate these decisions to corroborate their effectiveness.
- 4) Assess the risks and opportunities to keep management skills up to date
- 5) Implement the necessary changes for the improvement of management skills, the organization and its managers.

The organization must establish and select opportunities for improvement and, in order to carry out the tasks necessary to achieve the objectives of the new HTSM, it must:

- 1) Identify through a systemic reconditioning compliance and performance satisfaction projected by the immediate previous HTSM and, as well as consider future needs and perspectives.
- 2) Implement actions that help to prevent, correct and reduce negative impacts.

So, the organization may generate the following changes, if the result shown in the previous HTSM by the manager is not as expected:

- 1) Reformulate the performance measurement criteria (indicators).
- 2) Exclusion or suspension of work of the manager.

The company must carry out a measurement and analysis of its executives based on the development of their competences, which should include:

- 1) The degree of satisfaction of the final customer.
- 2) The conformity of the products and/or services.
- 3) The effectiveness of competencies in the process.
- 4) The degree of satisfaction of the goal.
- 5) The effectiveness of the actions to face the risks and opportunities of the organization.
- 6) The degree of satisfaction of the individual needs of the manager.

Also, the organization must carry out internal audits in periods agreed by the organization itself, in order to obtain information on the executive's performance in accordance with:

- 1) The indicators of strategic planning.
- 2) The requirements of the certifications to which the organization has been submitted.
- 3) Degree of satisfaction of the performance indicators.
- 4) Degree of installation of managerial competences based on job profile.
- 5) Degree of job satisfaction of the manager.

## **6. Limits of the Proposed Model**

The limits to the proposed model are structured from the identification of the purpose of strategic planning in each organization, because the organization itself establishes the relevance of environmental topics of an endogenous and exogenous nature that are relevant to its organizational purpose, which are aligned through the phases of leadership, diagnosis, installation, development and enhancement. All of them are at the level of competences and managerial performances.

The points that denote the limits to the proposed model are the following:

- 1) The skills and managerial competences are delimited by reason of the orientation to the expected result.
- 2) The "how" and "must" of the HTSM establish limits because they are set up by a set of minimums to be established, respecting the orientation of each organization based on its organizational purpose.
- 3) The requirements of managerial skills to be installed within the HTSM of a manager (in functions and/or new income), are oriented to the characterization of the competences to work, by reason of the classification of its area of influence.
- 4) The readjustments and reinstallations of competencies and managerial performances are guided by the organization itself, in order to achieve the strategic planning.
- 5) Expected performances should be established on the basis of the "Psychological" and "Sociological" approaches, in order to sensitize the installation process (human nature in the model) and facilitate the establishment of mana-

gerial competencies aimed at the expected performance.

6) These how and must can establish features desirable or specific to each organization, which are defined by the characteristics of the performances identified by each organization.

Another element that detonates limits to the proposed model is established by developing the processes that allow modifying and feedback on future projections in organizational strategic planning, through the HTSM cycles, in the enhancement phase.

Likewise, the HTSM is limited by the understanding of the external and internal context when identifying the contextual skills of the leadership phase, due to the ambiguity that may exist for each organization, delimiting the desirable characteristics, which are linked to the limitations each organization could have, at the time of carrying out the proposed HTSM.

## 7. Conclusions

The diagnosis made to the managerial competences of the DPCAT sector, allowed to identify that managerial competences impact positively in performance.

However, the degree of inference is in accordance with the degree of standardization, under a methodological process that reorients managerial competencies according to the desired performance in an organization.

It was also identified that each organization grouped a set of competencies for the needs of the organizations and individual managers.

However, although managerial skills are part of management skills, these opinions are oriented to organizational needs, based on a vision of the organization.

The integration of the theoretical foundation of a human-techno-structural model is based on systemic modifications oriented to the integration of managerial competences and their performance. This implies structuring the changes through a planning and reconditioning of the HTSM, through adjustments and readjustments made to the managerial competences, turning the manager into the carrier of cognitive thinking orienting to the achievement of the delegated goals and objectives.

However, the requirements of management competencies within the HTSM of a manager (in functions and/or a new one), are oriented to the characteristic of the competences to work, a reason for the classification of the zone of influence of the same organization.

In this way, the approach of standardization allows to monitor the results obtained, readjustments and reinstallations of managerial competencies and their performance, in order to achieve the strategic planning of an organization.

This development establishes that personal changes (directive) and interference in group changes are accompanied by a cognitive and experiential process that ensures the self-sustaining of HTSM in the organization.

Thus, the systemic reconditioning is based on planned changes, consolidating the process of standardization of competences, allowing modifications and

feedback in future reconditioning from a new phase of diagnosis and/or through corrections, substitution of indicators, as well as an alignment of executive position profiles, giving it a dynamic characterization.

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