



DOI 10.2478/sbe-2024-0052

SBE no. 19(3) 2024

CONTRIBUTION OF PERSONNEL MANAGEMENT TO THE GENERATION OF INNOVATION CAPABILITIES IN MEDIUM AND LARGE COMPANIES IN COLOMBIA

Gustavo Adolfo RUBIO-RODRÍGUEZ

University Corporation Minute of God - UNIMINUTO, Colombia

Yeison Farid MÉNDEZ ORTIZ

University Corporation Minute of God - UNIMINUTO, Colombia

Elizabeth PALMA CARDOSO

Technical Professional Training Institute of Tolima - ITFIP, Colombia

Efraín Enrique GRANADOS PERDOMO

Pilot University of Colombia, Colombia

Abstract:

The purpose of this research is to determine the contribution of human resources management in the development of innovative capabilities in medium and large companies in the city of Ibagué, Colombia. The study is exploratory and uses a mixture of quantitative techniques for its development, being non-experimental. The study population is made up of 107 medium-sized companies and 23 large companies in the city of Ibagué. Since the population to be studied is finite and known, a stratified random probability sampling with finite population adjustment is carried out, since the possibility of selecting one or another element is equal. In addition, the aim is to ensure that all the units of analysis (medium and large companies) are duly represented. The results showed that businessmen understand the importance of human resources management and innovation for the organization; most managers recognize that, through human resources management, employees are capable of innovating in all areas in which they work. However, their development has been stagnated in some cases due to lack of management within the organization itself.

Key words: human talent, innovation, medium and large enterprises

1. Introduction

This research is based on the theoretical and practical impact that human talent management has on the generation and development of innovation capacity in large and medium-sized companies in the city of Ibagué, Colombia. Based on the above, the organizational vision that different businessmen (managers, administrators) have of human

talent management and business innovation processes is taken into account. At the same time, the research is justified at the organizational level, given the relevance that human management has in an organization, because it allows aligning collaborators with the own and achievable objectives of any company; likewise, it focuses on having a clear vision of the competencies that the company needs to achieve success in the market.

For the present research project, the analytical framework of human talent management and the generation of innovation processes in an organization is based on the theoretical contributions presented by Huselid (1995), who considers that human talent management has an important influence on innovation, which enables a better performance of the company represented in competitive advantages and strengthening of administrative processes, allowing it to face the barriers to generate and/or develop its innovation capacity.

2. Literature review

Human talent management

Gómez (2009), refers to the fact that modern organizations that achieve success are authentic examples of the expansion of teamwork, training and creativity of their people. Therefore, successful companies in the world are those that have based their development strategy on their people, on the potential of their employees, and have stopped seeing them as mere resources or means used to achieve an objective and then discard it. Now, they have become strategic partners of the organization, and a human team that is sensitized, motivated, involved and committed to a mission and vision shared by all.

According to Chiavenato (2014), human talent management is defined as the set of activities related to the labor organization in its interaction with people, through different activities such as: selection, hiring, performance evaluation and training. According to Jaramillo (2005), human talent management "is the set of processes necessary to manage people within the company, starting with recruitment, selection, training, rewards, performance evaluation, among others, that lead to obtaining value" (p.10).

Consequently, knowledge is the main motivator for the workforce. At the same time, organizations stopped seeing the employee as an object and turned him or her into the end itself. This means that the employee is an important asset within the organization, and as this or these people increase their capabilities and satisfy their needs, they are motivated and rewarded, leading to organizational success. Due to the importance that human talent has gained in the achievement of organizational performance, the professional and personal growth of employees must be guaranteed, as well as their permanence in the company.

In summary, organizations must create and support the human resources department to achieve the correct management of human talent, since this is one of the fundamental bases to achieve good business performance. Following the previous guideline, both internal and external factors must be taken into account when carrying out

a strategic management within the organization; these factors must be addressed correctly in order to significantly motivate the employee, leading him to enhance their skills, so that they in turn contribute innovative ideas to the organization in order to increase their productivity in the development of their work.

Today, organizations are facing significant challenges with human talent, as expectations have changed over time. Therefore, investing in people development has become an important source of competitive advantage. Likewise, as Maslow (1943) put it in his theory of the hierarchy of needs, all human beings respond to stimuli that satisfy each level of the pyramid; the first four levels can be grouped as "primordial needs"; the top level is called "self-actualization", growth motivation or the need to be. Therefore, the difference is that the primordial needs can be satisfied but the need to be is a continuous driving force. This means that the strategic management of human talent should focus on meeting the primary needs of its workers, so that they can develop the need to be (Elizalde et al., 2006).

By tradition, human management has been relegated to fulfill the function of personnel administration, and therefore its practices have been focused on the traditional functional aspects of selecting, recruiting, training, compensating, evaluating and dismissing (Boon et al., 2019). However, the review of specialized literature and the results of multiple empirical research show a different role of human management, much more focused on strategic aspects, including innovation, improving organizational performance, solving critical business problems and the evolution of business productivity. Thus, human management, despite being linked to personnel administration practices, has been undergoing strong modifications and changes, framed in the implementation of policies and practices of people management that stimulate their training, aiming at the development of the human capital that integrates the organization (Calderón et al., 2010).

In addition, human management has been transcending to more comprehensive practices within the company, such as: teamwork, participation, motivation, management training (Chams and García-Blandón, 2019), influencing the construction of competitive advantages through the development of competencies that end up being decisive for the company. Every day people are a benefit for the organization, and that is why investment in selection, training, compensation and evaluation processes has grown substantially in recent years (Garg et al., 2022). In this sense, human management must be oriented and empowering for individual and collective development, in such a way as to boost the capabilities and competencies of people, since this is a crucial factor for business competitiveness (Becerra and Álvarez, 2011).

Thus, Chatterjee et al. (2021), point out that companies are making considerable investments in hiring highly qualified and motivated personnel, with the intention of having competitive and productive organizations. It is thus recognized that it is profitable for companies to invest in training and education of employees (Mejía-Giraldo et al., 2013).

It is considered then, that current human management practices have improved significantly and are more efficient, and that the vision of the collaborator has changed; this transformation implied going from considering the employee as a mere tool to recognizing him/her as a valuable resource to be appreciated and cultivated. However, when talking about innovation, no significant progress is found in organizations and in adapting to the

rapidly changing environment in the midst of increasing and more aggressive competition (Ospina, 2010).

According to Azizi et al. (2021), for small and medium-sized companies, human management practices do not present strategic vision; these are operational. If small companies have not thought about their strategic platform, much less will they take into account that the strategic management of human resources must be aligned with the organizational strategy (Calderón et al., 2004). Therefore, small companies lack a specialized area of human resources management and are more interested in financial, productive and commercial issues (Calderón et al., 2006). Consequently, human resources is the area that is least present in the organizational structures of these types of entities (Fitriasari, 2020). Despite the fact that many managers of small and medium-sized companies claim that their employees are fundamental for success, no investment is made in their development (Azeem et al., 2021).

From the above, it can be inferred that there is little or no commitment or knowledge on the part of small and medium-sized companies about the importance of human talent management or the purpose of finding the right person to carry out this work. In the same way that these types of companies lack a solid organizational structure, they neglect the formulation of strategies to increase personnel productivity, resulting in a stagnant and unproductive process for the organization.

Human management as a factor in generating innovation

Some authors emphasize that human resource management has an important influence on innovation, leading to better company performance (Yuan Li et al., 2006). According to Haseeb et al. (2019), in the long run, efficient human resource management can advance firm innovation, enhance competitive advantage, and increase company performance.

Although, there are many factors that influence the generation of innovation in firms, it is acquired knowledge (knowledge that lies with people) that contributes to the attainment and use of new and existing skills, the development of new products and processes, and in the introduction of new organizational forms in firms (Camelo et al., 2000). According to Pavitt (1990), internal innovation comes mainly from the skilled employee.

Based on the above, where the person is the source of innovation in the company, some aspects of human management that are determinant for the generation of innovation stand out: on the one hand, the need for a well-defined organizational structure for the administration of human resources, in order to improve innovative performance (Parise, 2007). On the other hand, the importance of employee training, since it has direct and positive effects on innovation in companies. This is supported by Custódio et al. (2019), who state that the level of employee training within companies drives the use of new skills for innovation.

In essence, training increases the level of specialization in employees' knowledge; such knowledge acquired inside and outside the company promotes business innovation (Cho et al. 2023). Hence, employees with greater knowledge for innovation are considered

as an important resource for the organization and, therefore, must constantly obtain new knowledge and skills to keep up with the advancement of technologies (Sousa and Rocha, 2019).

Likewise, employees with a solid educational background are the main drivers of know-how, thanks to the levels of knowledge they have acquired. This implies that they will be in a favorable position to recognize and appreciate external knowledge (Vinding, 2006). Thus, those companies that wish to develop and/or increase their innovation processes, should be more willing to invest in the development of employees' skills and the required knowledge, through training programs that are aligned with their strategic objectives.

In other words, the participation of the human resources function at the strategic level (defining areas and providing the appropriate infrastructure) and at the operational level (preparing people and providing them with the required skills through training), can guarantee a specific configuration of the degree of innovation in companies (Campos et al., 2003).

According to AlHamad et al. (2022), within human resources management it is especially important for companies to have specialized areas as well as plans that guide the performance and effectiveness of employees. Reviewing the systemic character of this aspect, this improves the way in which the company develops knowledge, skills and capabilities of human resources; therefore, the pillar to carry out innovation processes. In this sense, human resource management proves once again to have a positive relationship with the innovative performance of companies (Foss and Laursen, 2003).

Similarly, one of the challenges faced by human resource management professionals is the transfer of explicit and tacit knowledge between employees, teams, departments and divisions (Aboramadan et al., 2020). By implementing a specialized area and a strategic human resources plan, this knowledge transfer can be more effectively directed to the benefit of the company's interests. In this regard, within human resources management, specialized areas and human resources plans should take into account the forms of knowledge that derive from collaborations with other companies, suppliers, customers and research laboratories. This shared knowledge allows companies to strengthen and expand their resources and capabilities (Hewitt, 2006).

It is important to highlight what was raised by Macke and Genari (2019), who consider the hypothesis that an appropriate management of the innovation process needs other management systems, especially those that contribute to the efficient use of knowledge (improving human management), to the continuous improvement of business processes and, above all, to a permanent link with the environment. Therefore, innovation management requires the use of instruments that make it possible to manage the project portfolio, and for its execution it is essential to have organized or established areas or departments that support innovation processes (Calderon, 2003).

Ultimately, Nicholson et al. (1990) argue that human management must play a crucial role as a facilitator of innovation. This can be achieved by decentralizing management, allowing employees to discover and use knowledge, fostering teamwork to increase learning from multidisciplinary perspectives and ensuring proper utilization of that knowledge. This is based on Cherif (2020), who states that the organizational transformation processes developed by companies are a fundamental part of human

resources practices, and even more, when these processes are considered an innovative practice of human management.

3. Methodology

The research design is non-experimental, since the variables are not deliberately manipulated; cross-sectional, since the data collection with each of the units of analysis was carried out at a single moment during the research process, describing the variables treated and the possible interrelation and/or incidence.

The target population of this research is made up of 107 medium-sized companies and 23 large companies in the city of Ibagué, Colombia, reported by the Chamber of Commerce of this city. The sample of this population was selected by stratified random probability sampling with finite population adjustment, ensuring that the probability of choosing any element is the same. Likewise, it was sought that all the units of analysis (medium and large companies) were adequately represented, with the objective of obtaining guaranteed, coherent and reliable results in the research study. The sample size was calculated at 130 companies, assuming a margin of error of 5% and a confidence level of 95%.

To determine the techniques to be used in the data collection, a literature review was carried out, inquiring about the instruments used in previous studies related to the research. Based on this review, the survey was chosen. These surveys were structured and administered in medium and large companies in a personal manner; that is, there was a person in charge of carrying out the survey, without this implying intermediation or bias in the process of collecting information in the units analyzed.

The data collection instrument applied to officials of medium and large companies was composed of two sections; a first section, where general information was collected about the companies, the name of the respondent and the position of the respondent; and a second section, where the questions were used to collect information on the two variables studied (human management and innovation). This second part was composed of 30 items; 28 of them with Likert-type scaling of frequency and valuation and the remaining items as dichotomous questions.

In order to collect data through the two instruments designed, tests had to be carried out beforehand to determine the requirements of validity, reliability and objectivity of the instrument.

Regarding the validity of the instrument, this was done by reviewing similar studies to determine the sub-variables that would define the main variables. Likewise, the validation was based on previous research carried out in similar companies, where the methodology and instruments used were examined, allowing to observe the phenomena studied and their similarity with the present study.

In relation to the validation of the construct, it was established that the instrument adequately reflects the theoretical concept. This is because there is a theoretical framework that supports the design of each item, so that each question of the questionnaire contributes to theoretically address the defined components.

With respect to the reliability of the instrument, once it had been pre-designed and subjected to the above criteria, a pilot test was carried out to determine its reliability. The pilot test was carried out by applying the questionnaire to a small random sample of the target population in order to identify and solve possible problems with the data collection instrument. This was done taking into account the diversity of the population and its heterogeneity.

In order to collect data, the first approach was made to the organizations to schedule an appointment with the manager or the persons responsible for the human resources and innovation departments; the questionnaire was applied to 130 organizations, of which 107 were medium-sized companies and 23 were large companies. This task was carried out by a competent professional, with the objective of guaranteeing an adequate development of the questionnaire and thus obtaining the required information.

Likewise, using the Excel program, the conventions for the respective explanatory variables to be worked on were defined, discarding questions one and two because they were dichotomous variables. Following this, we proceeded to generate dynamic graphs to perform the descriptive analysis through which the behavior and characteristics of each of the responses to each item are detailed.

Finally, with the purpose of establishing the influence that some variables of the construct "human management" have on the innovation and development processes in medium and large companies in the city of Ibagué, the partial least squares (PLS) technique (Esposito et al., 2010) was used as a modeling tool for this behavior. PLS combines aspects of Principal Component Analysis and Multiple Linear Regression Analysis and allows exploring the relationships between several response variables simultaneously; in addition, it makes it possible to obtain models with a large number of explanatory variables starting, however, from a small number of experimental data (Madrigal et al., 2012).

4. Results and discussions

As mentioned above, the partial least squares (PLS) technique was used as a modeling tool to achieve the research objective. In this sense, the following variable was selected as the dependent attribute: "within the company's strategic direction, policies, plans and programs have been designed to promote the need to carry out innovation and development processes" (DE). This variable is selected because it is fundamental for the practical implications of any organization in terms of strategic direction, since the human talent strategy cannot continue to be limited to a simple hiring process, where people are dedicated to comply with orders, adjusting to policies, rules and processes. In addition, this variable is considered within the findings of this research as a barrier faced by companies to generate and/or develop their innovation capacity. And as explanatory variables, the other 27 items related to innovation activities and human talent management that were part of the different dimensions of the questionnaire are presented.

Next, the outputs corresponding to the modeling of the variables under study with the PLS procedure are shown, with the purpose of fulfilling the objective related to

determining the contribution of personnel management in the generation of innovation capabilities in medium and large companies in the city of Ibagué, Colombia.

He first result presented in Table 1 for the dependent variable (DE) shows the optimal model with two components and a coefficient of determination (R²) of prediction of 0.3429, which is considered acceptable considering only two categories of 27 attributes considered in the research.

Table 1. Model selection and validation for DE

Componentes	Varianza de X	Error	R-cuad.	PRESS	R-cuad. (pred.)
1	0,250341	48,7937	0,365428	54,3712	0,292892
2	0,435572	40,8572	0,468644	50,524	0,342925
3		34,3492	0,553282	51,2383	0,333636
4		31,8947	0,585203	52,9043	0,311969
5		31,4197	0,591381	53,7353	0,301161
6		31,1822	0,594469	55,3211	0,280538
7		31,0504	0,596183	56,9082	0,259898
8		31,0231	0,596539	57,5161	0,251992
9		31,0186	0,596597	57,4138	0,253322
10		31,0176	0,59661	57,3182	0,254565
11		31,0174	0,596613	57,3282	0,254435
12		31,0173	0,596614	57,3157	0,254598
13		31,0173	0,596614	57,317	0,25458
14		31,0173	0,596614	57,3197	0,254545
15		31,0173	0,596614	57,3215	0,254523
16		31,0173	0,596614	57,3215	0,254522
17		31,0173	0,596614	57,3215	0,254522
18		31,0173	0,596614	57,3214	0,254524
19		31,0173	0,596614	57,3214	0,254524
20		31,0173	0,596614	57,3214	0,254524

Table 2 also shows that this model is significant at an alpha of 0.05, since its significance level (p) is equal to 0.000.

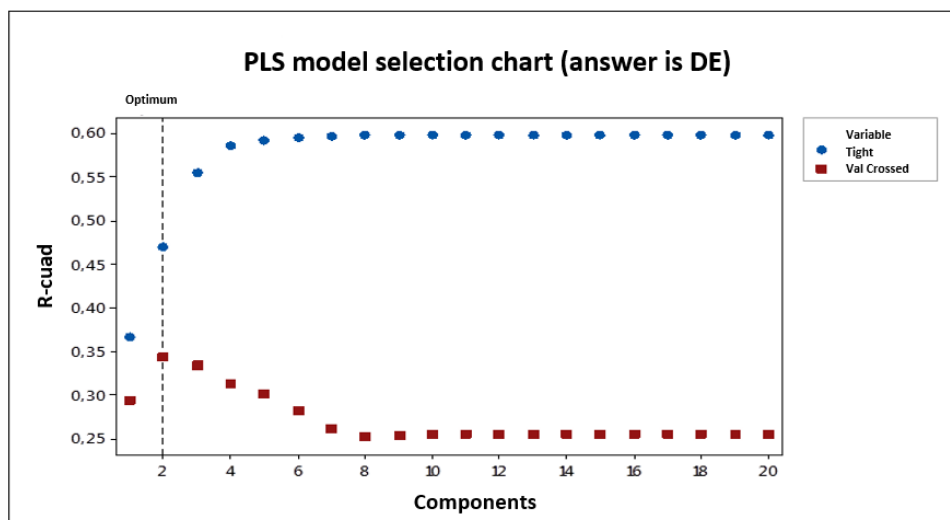
Table 2. Analysis of variance of DE

Source	GL	SC	MC	F	P
Regression	2	36,0351	18,0176	56,01	0,000
Residual error	127	40,8572	0,3217		
Total	129	76,8923			

In graph 1, the vertical line shows that the optimal model has two components, which coincides with the findings in table 1. Likewise, it can be observed that the predictive capacity of this model decreases rapidly with more than two factors. On the other hand,

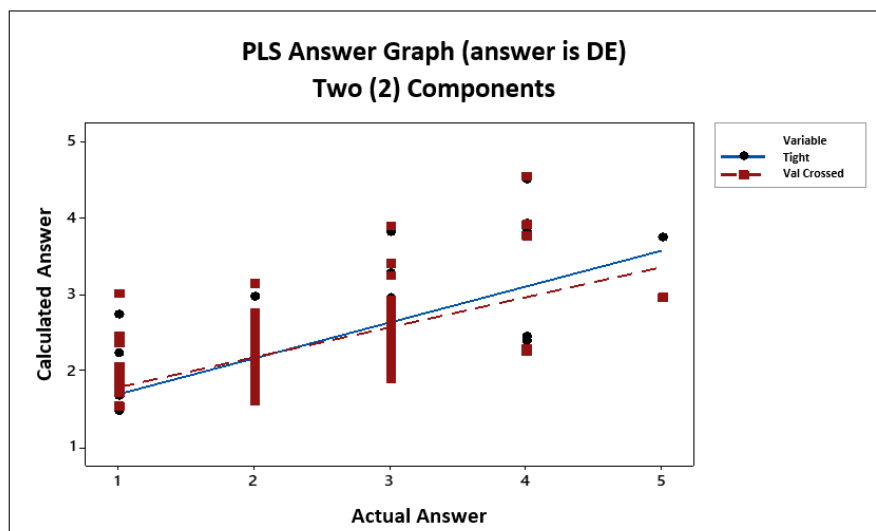
this graph also shows that the R^2 for two components is 46.86% and a predictive R^2 of 34.29%. A twenty-component model has an R^2 of 59.66%, but a prediction R^2 of only 25.45%. In this same perspective, it is evident that the variance explained is 43.55%, considered adequate for the number of factors extracted (Table 1); and indicates the amount of variability of the predictors that is explained by the model.

Graph 1. Selection of PLS models for DE



Graph 2 shows that the observations are in a linear pattern, indicating that the model fits the data relatively well; that is, no significant differences are observed between the response and cross-validation points. This, is corroborated by the ANOVA analysis recorded in Table 2.

Graph 2. PLS response to DE



Graph 3 of standard coefficients for the predictors is used to determine the impact that the independent items have on the dependent variable(s). In this case, it is evident that the attributes: innovation and development processes are affected by the absence of public and/or private financing (AF); the company has a shortage or lack of personnel with the required qualifications to undertake innovative processes (CP); training, development and employee welfare programs include incentives for the employee to develop and propose innovative processes to the company (PI); and the company offers career plans, promotions and professional development for employees (PC), have the most significant standardized coefficients and therefore the greatest influence on the item (DE). From this finding, it is inferred that the variables: (PI), (AF); "in the organization the percentage of personnel employed with fixed-term contracts has been higher than the percentage of personnel with temporary contracts" (PP) and (PC), have an important impact on the behavior of the dependent variable: "within the strategic direction of the company, policies, plans and programs have been designed to promote the need to carry out innovation and development processes" (DE).

As can be seen in this result, aspects related to the management of human talent are fundamental in the development of the innovation capacity of medium and large companies. This is consistent with Chatterjee (2016), who states that human and organizational resources can help companies achieve high levels of competitiveness and generate well-developed innovation processes. Consequently, human resource management will fundamentally boost the organization's competitive position through the formation of skills, experience and knowledge that can contribute to the organization's economic performance (Del Río-Cortina et al., 2022).

It is also important to mention that, when markets are highly dynamic, organizational capabilities necessarily rely little on existing knowledge and emphasize the creation of new knowledge to generate new innovation processes that lead the company to obtain a sustainable competitive advantage. Within these capabilities are contemplated the attitudes of human resources towards entrepreneurship, risk taking, decision making, experience, level of education and in general the processes of learning and transformation of tacit and explicit knowledge, which together with the understanding of the environment manage to transform knowledge into innovation processes (Avila et al., 2022).

Definitely, all the characteristics previously exposed contribute to the organizations to maintain a clear vision at the moment of generating innovation for the development of new processes, products, services and significant improvements. However, it is necessary to highlight the importance of managing a human resource committed to delivering new ideas that represent significant benefits for the organization (Da Silva et al., 2019). Ultimately, human resource management is presented as a system that globally enhances the skills and motivation of the work team (Boon et al., 2018; Boon et al., 2019; Tambe et al., 2019), emerging as the primary advantage when seeking to foster innovation.

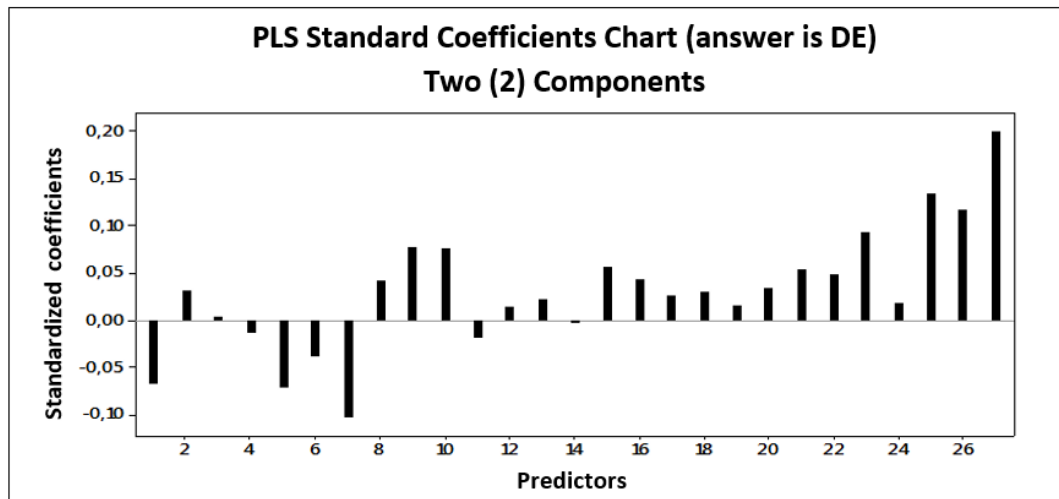
On the other hand, it is highlighted that the variable "human management is the bridge between employees and management; that is, it is the conciliatory sector of an organization (GC), has the greatest negative impact on (DE), which indicates that the attribute (GC) has a negative influence on the item "within the strategic direction of the company, policies, plans and programs have been designed to promote the need to carry

out innovation and development processes" (DE). The above contrasts with Al Hammadi and Hussain (2019), who consider that the correct application of good practices in human talent management has a significant impact on the performance, viability and sustainability of organizations.

From the above, it follows that human and organizational capital, compared to other resources of a physical, financial or technical nature, possesses the ability to provide organizations with a sustainable competitive advantage, as they are particularly difficult to replicate (Rubio et al., 2015). Considering the above, human capital management is positioned as one of the most precious assets of organizations (Tafti et al., 2017), since this group of individuals develops and implements the strategies, processes, products and services of the organization, significantly influencing its performance level.

Taking into account the above, studies such as those of Zaid et al. (2018), state that organizations should consider the compendium of activities and decisions that directly influence the collaborator and with this perform an analysis of the behavior of the same, thus identifying which decisions have influenced positively to encourage their productivity and which have influenced negatively. Meanwhile, the study by Crocker and Eckardt (2014) emphasizes how companies use their human capital to impact the production of performance-oriented products and results.

Graph 3. Standard PLS coefficients for DE



5. Conclusions

It is important to highlight that the current strategies, processes and/or practices of human management in terms of innovation carried out by businessmen in the city of Ibagué, Colombia, are oriented to the professional promotion of employees; the training and qualification of personnel according to the needs of the position; the implementation of codes of conduct for employees; the establishment of career plans, promotions and professional development for employees; investments in training, development and welfare of human talent; and the provision of spaces for university education of employees.

The aspects related to human talent management, such as (AF), (CP), (PI) and (PC) have the most significant standardized coefficients and therefore the greatest influence on the dependent variable (DE), being fundamental in the development of innovation capacity in medium and large companies in the city of Ibagué. Given this, it is considered that innovation should not only obey some established parameters to be considered as such, but should be accompanied by the capacity of people for its introduction in the market.

It is evident that human talent management does not act as a communication node between the organization and the people, since it does not allow the integration of all administrative actions with the organizational strategy; on the contrary, a negative relationship is created between the attribute: "human management is the bridge between employees and management; that is, it is the conciliatory sector of an organization" (GC), and the item: "within the strategic direction of the company, policies, plans and programs have been designed to promote the need to carry out innovation and development processes" (DE).

6. References

- Aboramadan, M., Albashiti, B., Alharazin, H., Dahleez, K. A., (2020), *Human resources management practices and organizational commitment in higher education: The mediating role of work engagement*, International Journal of Educational Management, Vol. 34, nº 1, pp. 154-174.
- AlHamad, A., Alshurideh, M., Alomari, K., Kurdi, B., Alzoubi, H., Hamouche, S., Al-Hawary, S., (2022), *The effect of electronic human resources management on organizational health of telecommunications companies in Jordan*, International Journal of Data and Network Science, Vol. 6, nº 2, pp. 429-438.
- Almaaitah, M., Alsafadi, Y., Altahat, S., Yousfi, A. (2020). *The effect of talent management on organizational performance improvement: The mediating role of organizational commitment*, Management Science Letters, Vol. 10, nº 1, pp. 2937-2944.
- Avila, H., Olmos, D., Quispe, G. C., Diaz Tito, L. P. (2022). *Human talent in the fourth industrial revolution*, Venezuelan Management Journal, Vol. 27, nº 97, pp. 161-169.
- Azeem, M., Ahmed, M., Haider, S., Sajjad, M., (2021), *Expanding competitive advantage through organizational culture, knowledge sharing and organizational innovation*, Technology in Society, Vol. 66, 101635.
- Azizi, M. R., Atlasi, R., Ziapour, A., Abbas, J., Naemi, R., (2021), *Innovative human resource management strategies during the COVID-19 pandemic: A systematic narrative review approach*, Heliyon, Vol. 7, nº 6, e07233.
- Becerra, F., Álvarez, C., (2011), *Human talent and business innovation in the context of business networks: The apparel cluster in Caldas-Colombia*, Management Studies, Vol. 27, nº. 119, pp. 209-232.
- Boon, C., Den Hartog, D. N., Lepak, D. P., (2019), *A systematic review of human resource management systems and their measurement*, Journal of management, Vol. 45, nº. 6, pp. 2498-2537.
- Boon, C., Eckardt, R., Lepak, D. P., Boselie, P. (2018). *Integrating strategic human capital and strategic human resource management*, The International Journal of Human Resource Management, Vol. 29, nº 1, pp. 34-67.
- Calderon, H. G., (2003), *Human resources management and competitiveness*, INNOVAR, Journal of Administrative and Social Sciences, nº. 22, pp. 157-172.

- Calderón, G., Montes, A., Tobón, M., (2004), *Human resource practices and strategic style in the medium-sized enterprise: the experience of companies*, EAFIT University Journal, Vol. 40, nº. 136, pp. 9-25.
- Calderón, G., & Álvarez, C., Naranjo, J., (2006), *Human management in organizations a complex phenomenon: evolution, challenges, trends and research perspectives*, Management Notebooks, Vol. 19, nº. 32, pp. 225-254.
- Calderón, G. Naranjo, J. Álvarez, C., (2010), *Human resources management in the Colombian company: its characteristics and contributions. An integral approach*, Management Notebooks, Vol. 23, nº. 41, pp. 13-36.
- Camelo, C., Martín, F., Romero, P. Valle, R., (2000), *Relación entre el tipo y el grado de innovación y el rendimiento de la empresa*. Facultad de CC.EE.EE. Universidad de Pablo de olavide. Sevilla.
- Camelo, C., Martín, F., Romero, P. M., Valle , R., (2000), *Relationship between the type and degree of innovation and firm performance. An empirical analysis*, Industrial economics, nº. 333, pp. 149-160.
- Campos, R. Pina, M. Morgado, A. Brewster, C., (2003), *Market forces, strategic management, HRM practices and organizational performance: A model based in a European sample*, Management Research: The Journal of the Iberoamerican Academy of Management., pp. 79-91.
- Chams, N., García-Blandón, J., (2019), *On the importance of sustainable human resource management for the adoption of sustainable development goals*, Resources, Conservation and Recycling, Vol. 141, pp. 109-122.
- Chatterjee, S., Rana, N. P., Tamilmani, K., Sharma, A., (2021), *The effect of AI-based CRM on organization performance and competitive advantage: An empirical analysis in the B2B context*, Industrial Marketing Management, Vol. 97, pp. 205-219.
- Chatterjee, J. (2017). *Strategy, Human Capital Investments, Business-domain Capabilities, and Performance: a study in the global Software Services Industry*, Strategic Management Journal, Vol. 38, nº 3, pp. 588-608.
- Cherif, F., (2020), *The role of human resource management practices and employee job satisfaction in predicting organizational commitment in Saudi Arabian banking sector*, International Journal of Sociology and Social Policy, Vol. 40, nº. 7/8, pp. 529-541.
- Chiavenato, I., (2014): *Human resources management*, Mc Graw Hill, México.
- Cho, W., Choi, S., Choi, H., (2023), *Human Resources Analytics for Public Personnel Management: Concepts, Cases, and Caveats*, Administrative Sciences, Vol. 13, nº. 2, 41.
- Crocker, A., Eckardt, R. (2014). *A multilevel investigation of individual-and unit-level human capital complementarities*, Journal of management, Vol. 40, nº 2, pp. 509-530.
- Custódio, C., Ferreira, M. A., Matos, P., (2019), *Do general managerial skills spur innovation?*, Management Science, Vol. 65, nº. 2, pp. 459-476.
- Da Silva, S. R., Chaves Anunciação, L. F., Rubio-Rodríguez, G. A., Guberovic, S. R. (2019). *General Enterprising Tendency (CET) in Brazilian Taxi Drivers: Alternative to Unemployment or Form of Action?*, innovar, Vol. 29, nº 73, pp. 85-97.
- Del Río-Cortina, J., Acosta-Mesa, R., Santis-Puche, M., Machado-Licona, J. (2022). *The mediating effect of innovation between human talent management and organizational performance*, Technological information, Vol. 33, nº 2, pp. 13-20.
- Elizalde, A., Martí, M., Martínez, F., (2006), *A critical review of the debate on human needs from a person-centered approach*, Polis. Latin American Journal, nº. 15, pp. 1-23.
- Esposito Vinzi, V., Chin, W.W., Henseler, J., (2010), *Handbook of partial least squares. Concepts, Methods and Applications*, Springer, Berlin.

- Fitriasari, F., (2020), *How do Small and Medium Enterprise (SME) survive the COVID-19 outbreak?*, Jurnal Inovasi Ekonomi, Vol. 5, nº. 2, pp. 53-62.
- Foss, N., Laursen, K., (2003), *New Human Resource Management Practices, Complementarities and the Impact on Innovation Performance*, Cambridge Journal of Economics, Vol. 27, pp. 243-263.
- Garg, S., Sinha, S., Kar, A. K., Mani, M., (2022), *A review of machine learning applications in human resource management*, International Journal of Productivity and Performance Management, Vol. 71, nº. 5, pp. 1590-1610.
- Gómez, G., (2009), *Innovation as a business strategy and solution to drive competitiveness and long-term growth*, Science and sea, Vol. 13, nº. 38, pp. 51-60.
- Haseeb, M., Hussain, H. I., Kot, S., Androniceanu, A., Jermisittiparsert, K., (2019), *Role of social and technological challenges in achieving a sustainable competitive advantage and sustainable business performance*, Sustainability, Vol. 11, nº. 14, 3811.
- Hewitt, N., (2006), *Resource and capability constraints to innovation in small and large plants*, Small Business Economics, Vol. 26, pp. 257-277.
- Huselid, M., (1995), *The Impact of human resource management practices on turnover, productivity, and corporate financial performance*, Academy of Management Journal, Vol. 38, nº. 3, pp. 635-872.
- Jaramillo, O. L., (2005), *Management of human talent in micro, small and medium-sized enterprises linked to the Expopyme program of the Universidad del Norte in the apparel and food sectors*, Thinking and Management, nº. 18, pp. 103-137.
- Madrigal, J., Marino, E., Gijarro, M., Hernando, C., (2012), *Applications of partial least squares (PLS) regression to the description of fire behavior phenomena studied in combustion tunnels*, Notebooks of the Spanish Society of Forestry Sciences, nº. 34, pp. 147-151.
- Macke, J., Genari, D., (2019), *Systematic literature review on sustainable human resource management*, Journal of cleaner production, Vol. 208, pp. 806-815.
- Marín, A. L., García Ruiz, (2002), *Sociology of Organizations*, McGrawHill Interamericana, Madrid.
- Maslow, A., (1943), *A theory of motivation*, Psychology Review, Vol. 50, nº.4, pp. 370 - 396.
- Mejía-Giraldo, A., Bravo-Castillo, M., Montoya-Serrano, A., (2013), *The human talent factor in organizations*, Industrial Engineering, Vol. 34, nº. 1, 2-11.
- Ortiz, E., Nagles, N., (2012), *Technology and innovation management*, Universidad EAN, Bogotá.
- Ospina, J. H., (2010), *New paradigms in human resources management*, Strategic Sciences, Vol. 18, nº. 23, pp. 79-97.
- Parise, S., (2007), *Knowledge management and human resource development: an application in social network analysis methods*, Advances in Developing Human Resources, Vol. 9, pp. 359-383.
- Rubio, A. M., Gutiérrez, B. S., Montoya, M. J. N. (2015). *Could Innovative Teams provide the Necessary Flexibility to Compete in the Current Context?*, Management Notebooks, Vol. 15, nº 1, pp. 145-164.
- Shrestha, Y. R., Ben-Menahem, S. M., Von Krogh, G., (2019), *Organizational decision-making structures in the age of artificial intelligence*, California management review, Vol. 61, nº. 4, pp. 66-83.
- Sousa, M. J., Rocha, Á., (2019), *Skills for disruptive digital business*, Journal of Business Research, Vol. 94, pp. 257-263.
- Tafti, M.M., Mahmoudsalehi, M., Amiri, M. (2017). *Critical Success Factors, Challenges and Obstacles in Talent Management*, Industrial and Commercial Training, Vol. 49, nº 1, pp. 15-21.
- Tambe, P., Cappelli, P. Yakubovich, V. (2019). *Artificial intelligence in human resource management: challenges and way forward*, California Management Review, Vol. 61, nº 4, pp. 15-42.

- Vinding, A., (2006), *Absorptive capacity and innovative performance: a human capital approach*, Economics of Innovation and New Technology, Vol. 15, pp. 507-517.
- Yuan Li., Yongbin Zhao., Yi Liu., (2006), *The relationship between HRM, technology innovation and performance in China*, International Journal of Manpower, Vol. 27, n°. 7, pp. 679-697.
- Zaid, A. A., Jaaron, A. A., Bon, A. T. (2018). *The impact of green human resource management and green supply chain management practices on sustainable performance: An empirical study*, Journal of cleaner production, n° 204, pp. 965-979.