

Inclusive labor insertion project: formulation of its organizational management

Methodology

The research paradigm used was interpretative/non-experimental. A computer system allows correlating job competencies with respect to positions and type of applicable disability.

The information emerges from 150 medical-biographical records of individuals with disabilities and is supported by the opinion of experts in both human talent management and disability.

Objective

To consolidate an inclusive organizational management model, based on the 3Cs: Corporation (C1), Clients (C2) and Collaborators (C3).

Each C is a space for integrating the information, where all institutions offer services in favor of people with disabilities.

Introduction

The importance of the research lies in considering the project not from the punitive response to the rules, but on the business conviction that considers people with disabilities by their abilities as suitable for a specific job, which is consistent with their levels of Corporate Social Responsibility (CSR).

Result or conclusion 1

The project is currently in a pilot phase in 4 manufacturing companies in Ecuador, which have led their technical teams responsible for human talent management (HR) to confirm whether the positions in which their employees with disabilities

Results or conclusion 2

Once the information from each component has been integrated, the expert system, based on the rules and restrictions provided, identifies the best candidate, which enables an inclusive recruitment process at the corporate level under the protection of its HR.

Result or conclusion 3

The articulation of the components of the administrative management model is the basis for designing the modules of the computer system, providing it with a horizon of planning, socialization and assurance of the inclusion objectives proposed at the company level from its HR.



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Proyecto de inserción laboral inclusivo: formulación de su gestión organizacional

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Abstract: this article details the formulation of a management model applied to a labor inclusion project for people with disabilities. The aim of this paper is to consolidate an inclusive organizational management model based on the 3Cs: Corporation (C1), Clients (C2) and Colleagues (C3). The methodology triangulates the main information of the company (job profiles, required educational level, necessary behavioral competences), and the people profile (type of disability and educational level) which are the basis of its strategic planning. The main results are the search for evidence and the theoretical contribution that support the project. It also includes a digital platform that manages the three components of the model that allows presenting the strategic elements such as mission, vision, values and quality policy (C1), the management of people profiles with disabilities that correspond to business positions (C2), and the visualization of organizations linked to labor insertion processes in the current working environment (C3). It is concluded that the inclusion project based exclusively on a computer system, even if it is functional would be complete in its intention and scope; thus, by supporting it with organizational management components, it is projected to be in a planning and assurance stage of its objectives.

Keywords: labor inclusion, disability, corporation, clients, competition, inclusive systems, management model, strategic plan.

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Resumen: el artículo detalla la formulación de un modelo de gestión aplicado a un proyecto de inclusión laboral de personas con discapacidad; el objetivo de la investigación es consolidar un modelo de gestión organizacional inclusivo, basado en las 3C: Corporación (C1), Clientes, (C2) y Colaboradores (C3). La metodología triangula información primaria, a nivel de empresa (perfiles de cargo, nivel educativo exigido, competencias conductuales necesarias), y la correspondiente al perfil de las personas (tipo de discapacidad que mantiene, nivel educativo de cada individuo), constituyendo estas en la base de su planificación estratégica. Los resultados incluyen la búsqueda de evidencia y el aporte teórico que sustentan al proyecto, que a su vez incluye una plataforma informática que gestiona los tres componentes del modelo, permitiendo la socialización de elementos estratégicos como misión, visión, valores y política de calidad (C1), la gestión de perfiles de las personas con discapacidad, los correspondientes a los cargos empresariales (C2), y la visualización de las organizaciones vinculadas a procesos de inserción laboral presentes en el medio (C3). La investigación concluye que el proyecto de inclusión basado exclusivamente en un sistema informático, aunque sea funcional, estaría inconcluso en su intención y alcance, y que al nutrirlo de componentes de gestión organizacional se lo proyecta en un horizonte de planificación y de aseguramiento de sus objetivos.

Palabras clave: inclusión laboral, discapacidad, corporación, clientes, competencia, sistemas inclusivos, modelo de gestión, plan estratégico.

Introduction

When addressing issues related to disability, it should be considered that its concepts are dynamic and respond to a historical-cultural context and to current theoretical approaches (Tello, 2022). In this sense, the importance of labor inclusion of people with disabilities according to the Ministry of Labor (2017) in which historically their integration to jobs has been in punitive response to a rule or law, should be modified as a business conviction that considers these audiences for their skills and abilities as suitable for a job position.

On the other hand, organizations, whether they are companies, public bodies, civil society organizations; or according to their classification as public or private; and even by their legal conformation as associations or foundations maintain several issues in common (Paolini and Odriozola, 2019). Among them, being immersed in a social context and relying on their labor forces to privilege their activity. In addition, the cooperative image of the organization and according to Cueva *et al.* (2021) can impact positively or negatively on the opinion of society, which is composed of its potential and actual customers, among others.

Hence, it is important for organizations to strategically manage their internal customers to achieve their objectives (Hernández *et al.*, 2017), and that they maintain a corporate image that offers them orientation and relationship with their external customers, in which case they will have achieved a comparative advantage with their competitors (Novicevic *et al.*, 2011). It is more complex when

both segments, labor personnel and organizational image, need to be nurtured by inclusion processes within the framework of corporate social responsibility (CSR). For authors such as Pizan *et al.* (2022), corporate social responsibility (CSR) is a bioethical paradigm that has not yet been consummated. In this sense, it requires a leadership based on values that contributes to the relationship between leaders and coworkers (Leal and Arial, 2021).

For this reason, and in order to build a more egalitarian and just society, it is necessary for organizations to establish indicators that allow a constant review of what they understand by CSR; one of these is to reduce the inequality gap to full participation of people historically excluded from labor action, in line with the proposals of Cecchini (2005) who proposes the necessary disaggregation of social indicators according to the specific and objective conditions of individuals. In this effort for inclusion, special consideration should be given to people with disabilities.

Corporate Social Responsibility in relation to disability

Among the main criteria set forth by international standards and related to corporate social responsibility is the avoidance of any type of discrimination against employees with disabilities, especially in the workplace, whether in their hiring, payment, training, promotions, dismissals or retirements, or in the exercise of their rights to participate in union or political affiliations (SAI, 2008). However, it is important to establish corporate responsibility

programs that make organizations visible in their social contribution to vulnerable sectors, specifically disability, which is increasingly frequent even

at the organizational strategy level as a formula to show one of their competitive advantages (Zárate and Rodríguez, 2014) (see figure 1).

Figure 1

The social inclusion of people with disabilities from the perspective of SR



Note. Cfr. Zarate and Rodríguez (2014).

Knowing the biographical factors of employees with disabilities, as well as allocating jobs for them, implies maintaining a CSR program internally, where human talent managers develop plans or career plans that benefit their actors and in return the company positions itself as one inclusive (Rodas *et al.*, 2018).

ICT in companies as a support for inclusion

Digital transformation has enabled significant growth for the development of technological solutions focused on different areas of production, improving the quality of products and services in the so-called industry 4.0 (del Val Román, 2016). The social and business spheres also undergo this development, i.e., at the level of inclusion, it has given rise to different prototypes aimed at improving living conditions, and in the case of this study it is known about the progress of the so-called smart solutions applicable to the

employment situation of people with disabilities (González *et al.*, 2021).

ICTs offer innovation in the business management model, especially because of the Internet and mobile applications on people's lifestyles, as well as the effects on corporate reputation. In short, the emergence of digital disruption favors the growth of industry and companies, due to its influence on economic growth, which is highly valued especially in emerging markets (Mihardjo *et al.*, 2019). Technologies at the enterprise level should be seen as integrative tools that create value; thus Aspara *et al.* (2013) in their study on the case of Nokia highlight the possibilities in the interconnection of different business units, in the location of new customers, in the identification of supply channels and in the projection of the desired corporate image.

An example at the local level, which leverages ICTs in line with CSR and inclusion, is the research project "for the educational and labor inclusion of people with disabilities (GTIL) funded by the

Ecuadorian Corporation for the Development of Research and Academia (CEDIA) in 2018. The objective of the project is to develop a labor recommendation system for people with disabilities, based on information technologies that integrate educational simulators that enhance the labor competencies of people in correspondence with existing job positions at the level of vacancies in the Ecuadorian manufacturing industry, according to the sample of participating companies.

This research contributes to the GTIL project, identifying issues that were not considered at the time, including offering a corporate management model and theoretically supporting the architectural structure of the IT platform that manages it. It should be noted that there are similar studies such as those presented by Figueroa *et al.* (2017) who detail the relevance of developing strategic models for IT platforms of various kinds. What is sought is that such systems go from being functional to being sustainable and become tools for the socialization of the corporate image of the corresponding organization.

Inclusion of people with disabilities in the labor market in Ecuador

Globally, although it is considered that any type of disability is a purely social issue and not a

determining factor that harms people in their inclusion in the social, cultural or labor aspect, in reality this sector is the most affected by unemployment and underemployment; in short, they make up the largest segment of labor marginalization (García *et al.*, 2017).

There are several programs in Ecuador focused on mitigating and promoting the inclusion of people with disabilities in the social sphere, including those developed by the Government under the protection of the Constitution (2018), its annexed regulations and the various development plans. However, this is still incipient with respect to labor inclusion, postulating that it has not gone beyond public policies that define the right to work under conditions of equal opportunities and the promotion of the capabilities and potential of the subjects.

Table 1 details the inclusion of people with disabilities in the labor market in Ecuador, taking as a reference the records of 2019, since the use of updated information to 2022 for this sector would be biased by the restrictions that still remain for the labor occupation of people with vulnerability since the protocols implemented by the Covid-19 pandemic.

Table 1
People with disabilities in the labor market

Year	People with disabilities (A)	% Increase/ Decrease B(A+1/A)	Labor substitutes C	% Increase/ Decrease D(C/A)
2017	63456		2348	3.70 %
2018	67487	6.35 %	4660	6.91 %
2019	68260	1.15 %	3907	5.72 %

Note. Information extracted from the document: "Statistical summary of disability", issued (CONADIS R. E., 2019).

As can be seen in Table 1, there is an increase of 6.35 % of people with disabilities between 2017 and 2018 and a minimal increase of 1.15 % between 2018 and 2019, mainly due to two factors, the first is the change in the regulation that typifies the

classification of people with disabilities, and the second to the lack of monitoring and identification of new people with disabilities. The number of labor substitutes does not intervene in this analysis because they do not enter as subjects of inclusion.

Table 2*People with disabilities in the labor market by sector*

Sector	Inclusion	%
Private	50 626	74.16 %
Public	17 634	25.84 %
TOTAL	68 260	100 %

Note. Information extracted from the document: "Statistical summary of disability" (CONADIS, 2019).

As can be seen in Table 2, there is a great variation between the public and private sectors; the main reason does not depend on the size of the State with respect to the number of workers in the private sector, but rather that the mandatory compliance with the Organic Law on Disabilities governs in the first sector, and in the private sector it could be explained from what is stated by Pico and Torres (2017) due to the lack of application of affirmative action measures and irregularities in compliance with the Reformatory Law to the Labor Code (Quota Law that establishes 4 %).

It is worth mentioning that the most prevalent types of disability in order are: Physical, Intellectual, Auditory, Visual and Psychosocial; and the percentage with the highest concentration belongs to men (CONADIS, 2019).

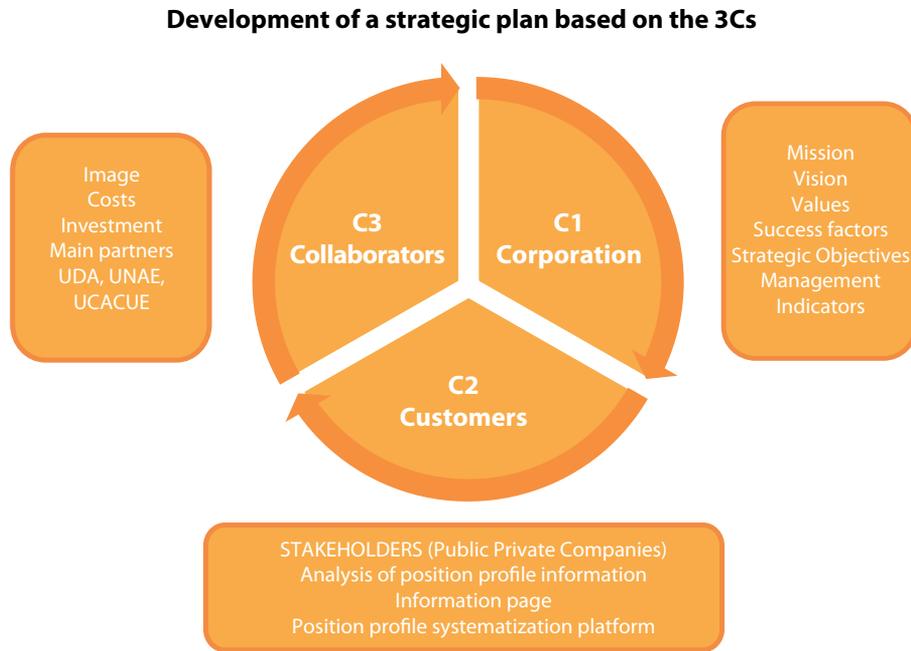
3Cs model applied to an inclusive labor integration system

It is considered strategic for achieving the purposes of the project of labor inclusion of people with disabilities to take the bases of the 3Cs management model, which allows distinguishing aspects related to C1 (referred to Corporation, which deploys components such as mission, vision, values, key success factors, strategic objectives, management indicators);

C2 (referred to Clients, aimed at identifying both companies that offer job vacancies, and the people with disabilities who enter the IT system with their different competence profiles); and C3, which according to Ohmae (1990) refers to Business Competence. However, for this research, C3 is renamed as Collaborators (which is understood as a space to identify organizations, academic institutions, as well as public or private companies that deploy actions in favor of the inclusion of the disability sector). It is important to note that C3 is increasingly strengthened by what is understood as corporate social responsibility (Figure 2).

The importance of offering a management model to the various labor inclusion programs and projects lies in recognizing different strategic components to make them sustainable over time. One of the main failure causes of inclusion processes is persistence; therefore, strategic planning for the management of the labor inclusion project, in this specific case for the GTIL project, consists not in creating strategies but in programming the strategy already conceived (Mintzberg, 1988). In this case, a strategy based on the articulation between the potentialities and competencies of people with disabilities with respect to the possible positions at various organizations and companies to relate the future with the current conditions (Steiner, 1988).

Figure 2
3C Strategic Plan



Note. Own elaboration based on Ohmae (1990).

Materials and method

Regarding the GTIL project, the research paradigm used was interpretative / non-experimental, which allowed locating the main inclusion elements of each company through the focus group technique (job profiles and functions to which people with disabilities could aspire), based on the experience in the development of position manuals that the four heads of human talent of the participating companies have.

On the other hand, based on the information on physical, medical and educational aspects and the general competency assessments of each individual, collected through medical records of 150 people with disabilities, the initial state was configured to project the elements of strategic planning (C1); these same data are housed in the computer platform in the C2 Clients component, thus having a pool of potential candidates for the positions identified above.

Correlations are established between probable positions, people's competencies and the type of disability through the in-depth interview with disability experts. These correlations are translated into rules and restrictions that are managed by the system to locate the best candidate, by means of artificial intelligence techniques called expert systems (Lapresta and Panero, 2003; Martínez, 2004). The system offers a job recommendation, which is subsequently reviewed and validated from a non-experimental logic by the human talent management (GTH) analysts of each company (Guba, 1965).

The interpretative paradigm is based on the vision of contemporary authors who study social and educational phenomena such as González (2001) and other classics considered ethnomethodological references such as Blumer, Goffman, Sacks (as cited in Azpurúa, 2005). It is also valued by other researchers of the interpretative in Social Sciences of the stature of Weber (1958)

and Burgardt (2004) for its capacity to order and understand phenomena related to the sociological field.

Project sample. For the primary information, useful for correlating labor competencies with respect to jobs and the type of disability applicable, four experts in disability are selected (one per auditory, visual, intellectual and physical area); 150 medical and biographical records of people with disabilities willing to enter the labor market and four experts in Human Talent Management of companies that offer jobs for this sector.

There are 4 companies participating in the study that belong to the wood, ceramics, rubber and household appliances sectors; these companies were selected because they have the largest number of people with disabilities in their workforce and because their organizational management systems are properly planned and structured; due to confidentiality they are not named.

For the development of the strategic planning elements, which complement the initial project as a proposal, providing it with a horizon for plan-

ning, socialization and assurance of its objectives, participatory action research was used as a work paradigm, which includes four phases: knowledge of the study phenomenon, project planning, execution of the plan and permanent reflection of the phenomenon (Colmenares, 2012). The first two phases are presented in this research, the knowledge of the phenomenon given by previous information, and the strategic components at the level of the 3Cs.

Results

Two large blocks are presented, the first on the previous information gathered from the GTIL project and the second on the deployment of each strategic component of the 3C model.

Deployment of previous information, inputs for environmental analysis and development of the strategic phase

Based on the competence dictionary of Alles (2007), Table 3 presents the 24 job competencies most known by the group of experts:

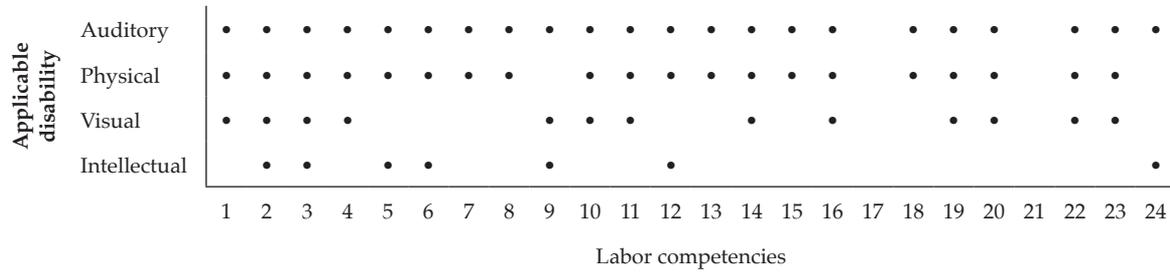
Table 3
Job competencies known by experts

1. Reading Comprehension	7. Idea generation	13. Analytical thinking	19. Information gathering
2. Adaptability / Flexibility	8. Relationship building	14. Spoken	20. Negotiation
3. Fault detection	9. Installation	15. Equipment maintenance	21. Repair
4. Writing	10. Organization of information	16. Planning	22. Decision making
5. Assertiveness/Strength	11. Active listening	17. Leadership	23. Persuasion
6. Product inspection	12. Management of material resources	18. Operation and Control	24. Equipment selection

Considering the labor competencies mostly noticed for an effective labor action related to the types of disability, it is evident that there is a lower probability of developing labor competencies when there is intellectual disability. There

is more possibility of developing competencies in people with hearing disabilities, followed by physical disabilities and, to a lesser extent, visual disabilities (Figure 3).

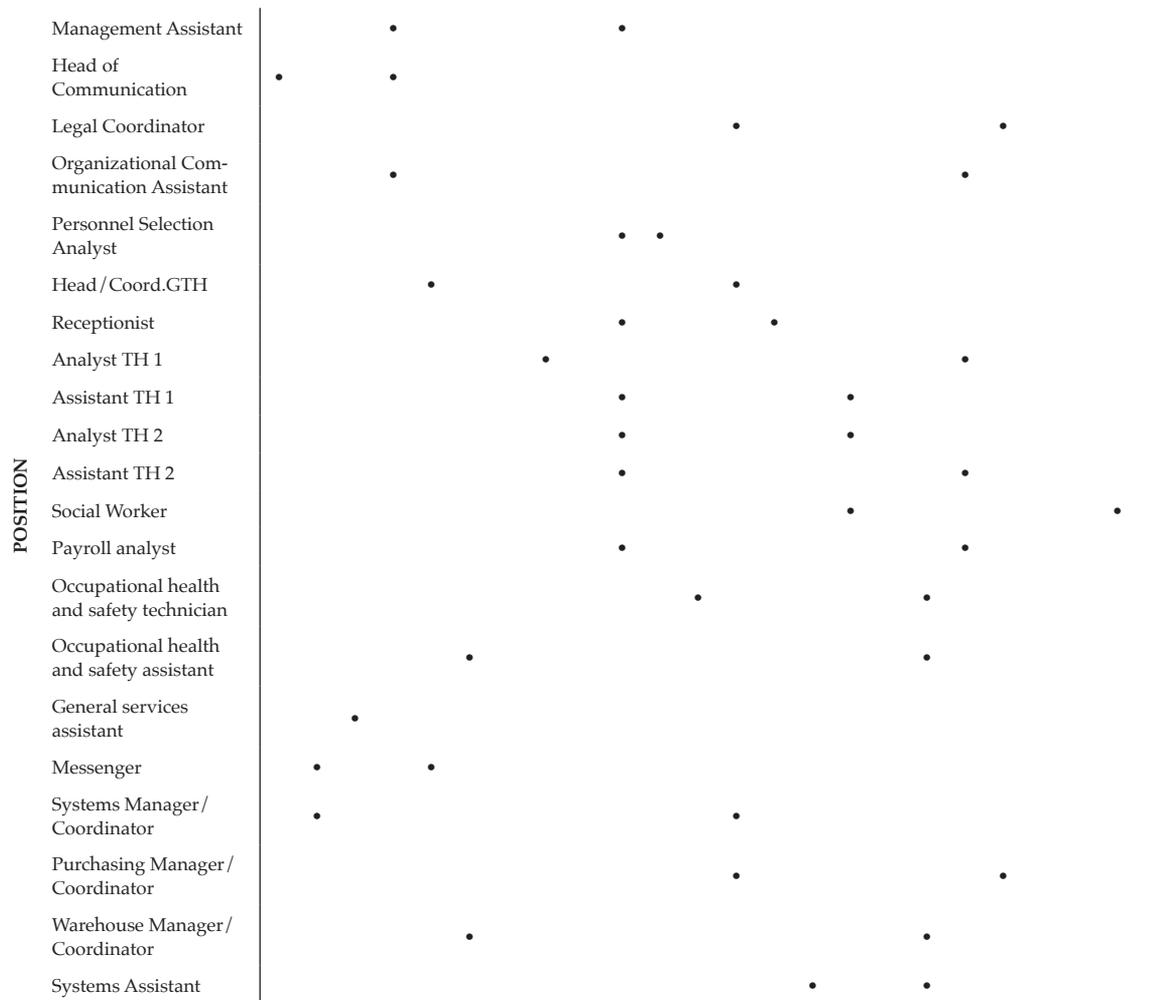
Figure 3
Table of relationships between type of disability/job skills

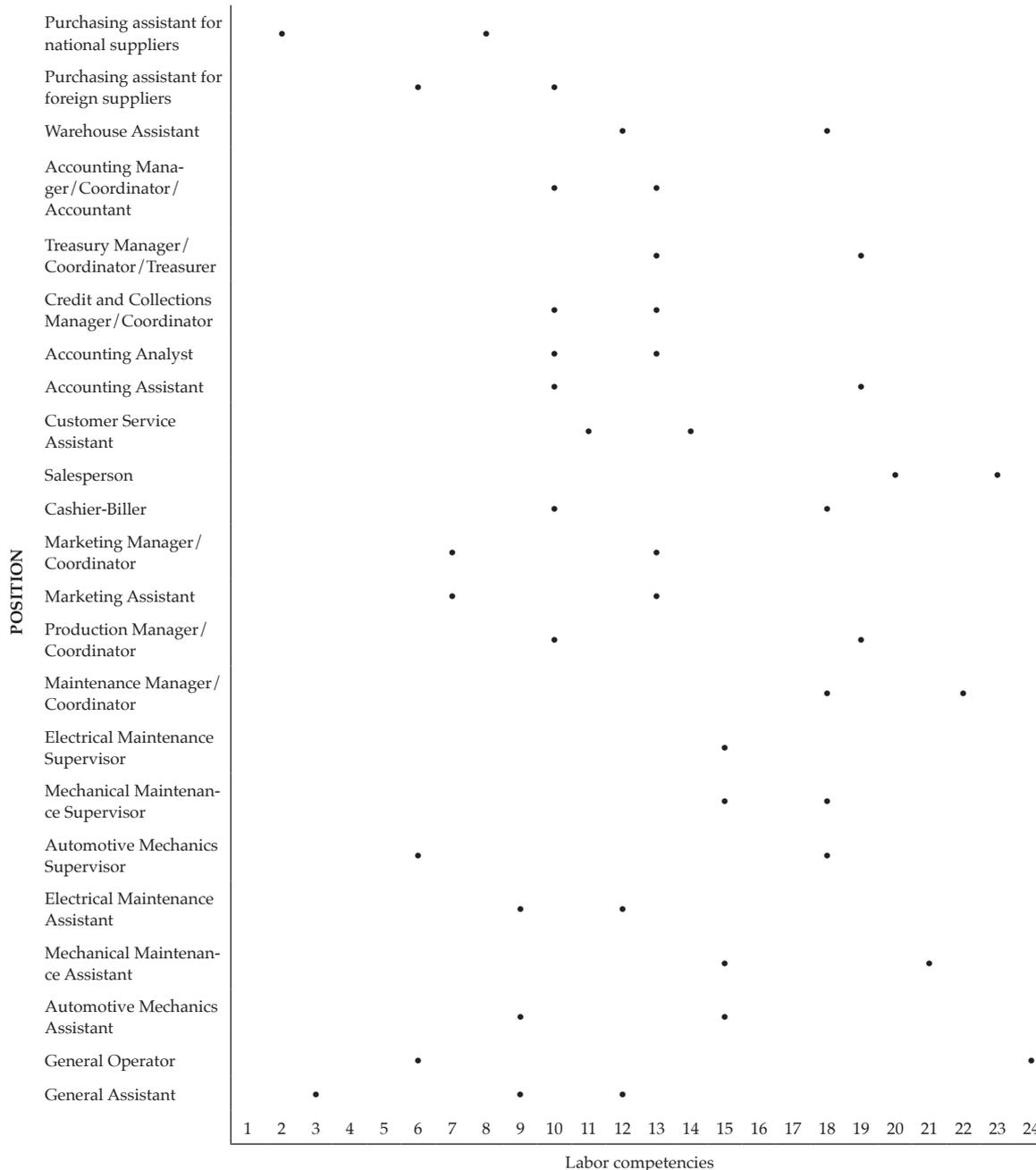


It is observed that the development of competencies is related to the type of disability, so it

is assumed that people with multiple disabilities will be even less likely to develop.

Figure 4
Position/job skills relationship





The figure shows the relationship of labor competencies with respect to the positions subject to personnel with disabilities. According to the criteria of experts in disability and those responsible for human talent management, there are positions of various hierarchies that can be occupied by people with disabilities; therefore, it is not a radical limitation to have or not a disability to

occupy managerial, supervisory or operational positions. For evaluating positions, in addition to the requirements of the position focused on data such as studies and experience, the skills that are subject to an exhaustive review in the case of individuals with disabilities are those shown in Figure 4. For example, in the case of a receptionist position, the skills to be evaluated from

an occupational perspective are competencies 10 (information management) and 14 (speech skills), reason for which Arroyo (2009) proposes to maintain an active forum for the constant review of professional competencies for the promotion of labor inclusion.

Results of strategic components C1, C2 and C3

The results of the development of the components are integrated as information within the computer platform created for this purpose, so that the study is not limited to a theoretical contribution, but involves an instituted social praxis.

Corporation (C1)

Mission obtained. GTIL is a pioneer scientific group in the development of inclusive technologies for the labor insertion of people with disabilities, from a Corporate Social Responsibility approach.

Vision achieved. By 2030 we will be leaders in the design and implementation of intelligent systems that offer platforms for the labor management of people with disabilities.

Our values are based on the concept of Common Good.

Strategic issues

- Management of labor and occupational inclusion processes.
- Human talent management, based on the 3Cs and CSR.
- Management of technological innovation, based on intelligent systems.

Quality policy. Our continuous improvement processes are necessary because people with disabilities go beyond the concept of customer, they are our reason for being; hence, we seek to improve their living conditions by integrating them into the productive environment. And inclusive companies are our allies and we are committed to their CSR programs.

Quality indicators

- I1. Increase the number of inclusive CSR programs in the country.
- I2. Increase the number of people with disabilities in operational-technical, supervisory and managerial positions.
- I3. Increase the number of job skills training programs for people with disabilities.

The elements presented above correspond to the information of the first component C1. The GTIL platform visually displays each component with its elements. Figure 5 of the platform presents its deployment.

Figure 5

Basic elements of corporate level C1. It only applies to GTIL group

Working Group for the Educational and Labor Inclusion of People with Disabilities (GTIL)			
	C1 Inclusion group	C2. Customers	C3. Collaborators
GTIL <i>Technology platform</i>	Mission		
	Vision		
	Values		
	Policy		

Customers (C2)

Once the corporate base C1 of the GTIL Inclusion Group has been built, we proceed to the development of the second C, which maintains two differentiated segments in the computer platform; the first one for the company and the second one for people with disabilities. These allow identifying positions and competencies, respectively.

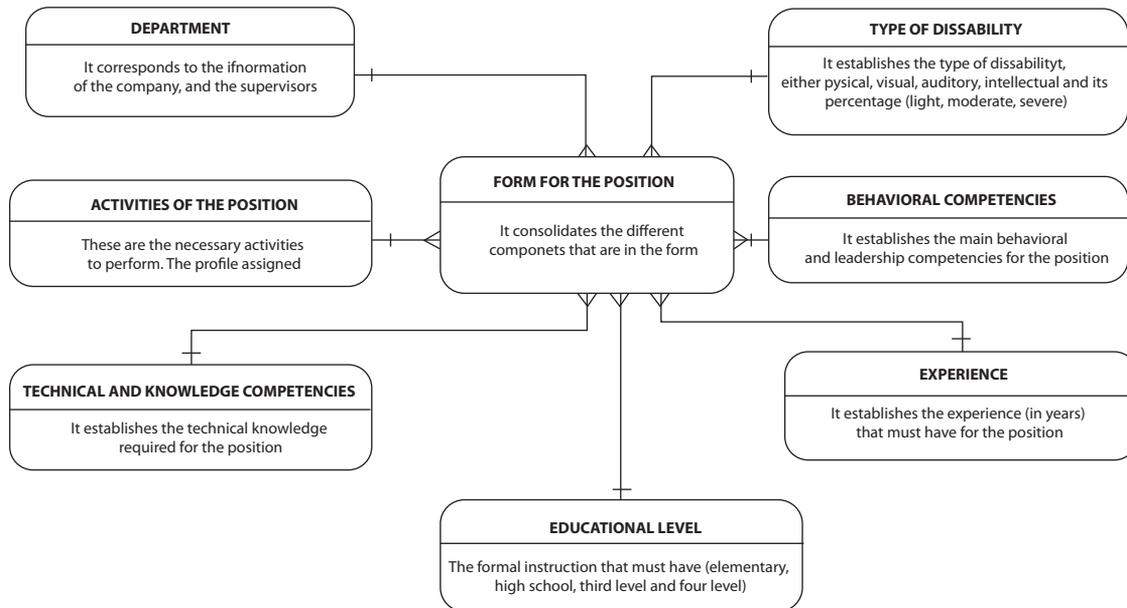
At the company level, the computer module enables the creation of specifications such as:

- **Departments:** the departments that correspond to the company that wish to participate in the labor inclusion project are detailed.
- **Position profiles:** the position profiles of each department are established.
- **Education level:** the education levels of the applicants are detailed according to the type of position.
- **Disability:** each type of disability to be considered in the labor inclusion project is detailed.

- **Competencies:** the competencies of each position are specified.
- **Behavioral competencies:** additional competencies to lead a specific position are specified.
- **Experience:** the experience established to comply with the job profile is detailed.
- **Activities:** each of the activities to be developed in the position is detailed.
- **Tools:** refers to the tools that will be used to develop the activities, whether physical or virtual.
- **Forms:** each form is generated according to the information entered in each of the items detailed above, so that they can be assembled according to the type of company and position.

Figure 6 details the articulation of the primary information collected by GTIL researchers at the level of the company segment, making it possible to visualize the subsequent correlations at the level of computer modules:

Figure 6
Information gathering module



At the individual level. The computer module allows compiling biographical information, type and percentage of disability, and the individual's complete CV (see Figure 7).

Figure 7
Basic elements of corporate level C2. Applies one per customer

Working Group for the Educational and Labor Inclusion of People with Disabilities (GTIL)				
GTIL Technology platform	C1 Inclusion group	C2. Customers	C3. Collaborators	
	Mission Vision Values Policy	Human talent guide	People	Register your resume

Collaborators (C3)

At the moment, the project of labor inclusion with people with disabilities is the only project that has been conducted in Ecuador; therefore, there is no segment of its own called competition. In its absence, the third C is considered as Collaborators that correspond to a significant number of public institutions, educational institutions that participate indirectly in the project. For this reason, the computer platform provides a space to describe them and generate synergies in relation to the project.

The following is a list of the main international institutions: International Labor Organization (ILO), World Health Organization (WHO); at the local level, Ministry of Labor, Ministry of Economic and Social Inclusion, Ministry of Labor Relations, Ecuadorian Corporation for the Development of Research and Academia (CEDIA), National Council for the Equality of Disabilities (CONADIS), among others, to visualize the complementary action that underlies the concepts of corporate social responsibility, a section of the computer platform is also dedicated to them. Figure 8 shows its space.

Figure 8
Basic elements of corporate level C3. Applies one per company

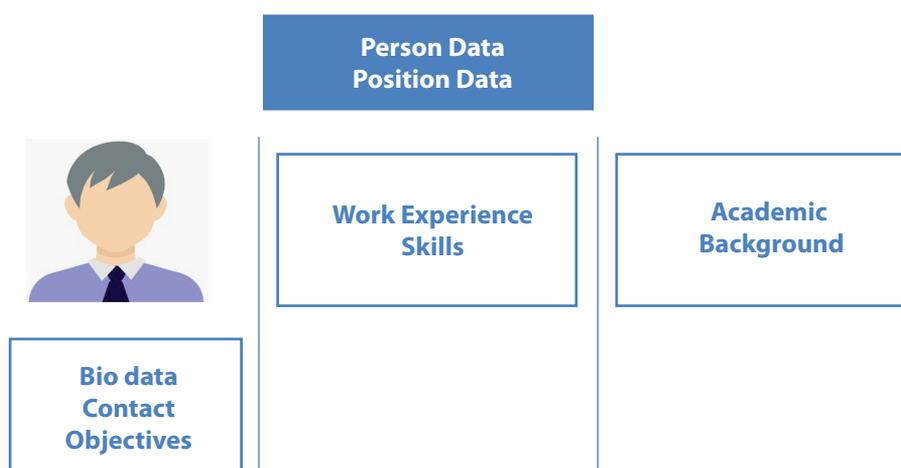
Working Group for the Educational and Labor Inclusion of People with Disabilities (GTIL)			
GTIL Technology platform	C1 Inclusion group	C2 Customers	C3 Collaborators
	Mission Vision Values Policy	Human talent guide	International Labor Organization (ILO) World Health Organization (WHO) University Ecuadorian Corporation for the Development of Research and Academia (CEDIA)

Once the information of each component has been integrated into the expert system, based on the rules and restrictions supplied to it, the

best candidate is identified. In the platform, the space is distinguished as the Recommender (Figure 9).

Figure 9
 Recommendation. It applies to the best candidate

	C1 Inclusion group	C2 Customers	C3 Collaborators	Recommender
GTIL Technology platform	Mission Vision Values Policy	Human talent guide	International Labor Organization (ILO) World Health Organization (WHO) University Ecuadorian Corporation for the Development of Research and Academia (CEDIA)	 <input type="text"/> <input type="text"/>



In short, the elements of the system, as spaces for collecting information, correspond to each of the 3Cs, thus in C1 it is constituted by Mission, Vision, Values and Quality Policy; in C2 it is constituted by the human talent guide with specific sections for the company and another for people with disabilities; in C3 it is constituted as a space where all the institutions that offer services in favor of people with disabilities can place their links to generate inclusive labor networks. Currently, the project is in pilot phase in four manufacturing companies of Ecuador, which has led their technical teams responsible for the areas of human talent management (HR) to confirm whether the positions in which their employees with disabilities are integrated are consistent with their biographical and skills profiles. Also, the GTIL project is in a massive socialization phase in MSMEs through the Chamber of Industry, production and employment of the Austro CIPEM

and two projects of doctoral studies are derived from this work. According to García *et al.* (2022), it is necessary that companies, before making any transformation, consider their external environment without neglecting the interests and needs of their own employees, in this case those with disabilities.

Conclusions and discussion

There is an evident constrain in the development processes of labor inclusion projects, mainly propitiated by the bibliography related to organizational management models that seek their studies from the considerations required by people with disabilities. The components of the administrative management model are the basis of projection for designing the modules of the computer system, providing the initial project with a horizon

of planning, socialization and assurance of the proposed inclusion objectives.

Computer systems are based on and provide functional logics, but in many cases they lack corporate logics that project them as systems that not only offer a service, in this case labor information on people with disabilities and positions available at the company level, but also allow understanding the organizational essence of their managers.

There are computer platforms worldwide that favor labor inclusion processes for people with disabilities, being conceived from the perspective of the preparation of competencies and/or labor simulators to acquire them, such is the case of the Discatel project in Spain, according to the Spanish Association of Experts in Customer Relationship (2010). There is no evidence of the development of other expert systems to predict the best candidate for a specific position based on rules and restrictions, because such work has historically been developed manually, although technically by the HR analysts of each company based on their own personnel selection logics. The relevance of having a software that integrates the 3Cs favors the identification in the same source of different actors (companies, people with disabilities, state entities), which would cause links and networking on the purposes of labor inclusion.

Studies such as the one presented by Garay and Carhuancho (2019) show that people with disabilities not only have fewer job opportunities, but are twice as likely to be poorer than those who do not have disabilities. The labor occupation rates of people with disabilities, at present, are not only the result of minimal state and/or private intervention projects, but also they are currently affected by intervening variables, such as the validity of occupational protocols that by Covid-19 restrict access and labor occupation of the sector.

As future lines of research, the GTIL project is currently planning a complementary project focused on the design of simulators for the development of educational and professional competencies of people with disabilities.

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