Contributions to the planning of human resources in the territorial level

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Abstract: Human resource planning at the territorial level is an essential requirement which contributes to decision making, both corporate and territorial levels, hence the need to observe this phenomenon with a prospective and systemic approach to ensure human resources in quantity and quality required for the performance of activity levels in the short, medium and long-term. These elements characterise this paper, which bases its study on the main theoretical observations made of the literature on the subject, providing a tool with the capability to determine the human resource requirements at the territorial level. This research aims to design and apply a procedure for the planning of human resources at the territorial level, characterised by its systemic, prospective and control nature. The main results of the applications are reflected in the improvement of the efficiency and effectiveness indicators, highlighting a reduction of the deficit of human resources in the territory of 33.4% and a decrease of the surplus of 30.7%, achieving a better use and availability of human capacities installed in the territory as a contribution to its prospective development.
1 Introduction

The development of globalisation and the rise of technology and communications, have determined the recognition of the human resource (HR) as a key factor in achieving organisational and territorial results, in times of criticisms transformations these resources are distinguished as the competitive advantage of contemporaneity.

In this context, human resources management (HRM) plays a leading role as a potential development process for the territories (Rodriguez Fariñas, 1990; Pocovi, 2009;
Bonardo, 2009, Boffill Vega, 2009; Becerra and Toledo, 2010; Pérez Izquierdo and Argüelles Pando, 2011; Torres Cala, 2011; Cribeiro Díaz, 2011; Kim and Oh, 2011; Martínez Vivar et al., 2016). To this end, planning, selection, training, incentives, recruitment, selection and safety and health activities are carried out in a holistic manner, in which HR planning (PRH) stands out (Harper and Lynch, 1992; Barranco, 1994; Sikula, 1994; Cuesta Santos, 2001, 2010; Marrero Fornaris, 2002; De Miguel Guzmán, 2001; Morales Cartaya, 2009; Sánchez Rodríguez, 2005). This last activity is manifested from two fundamental currents, the first associated with organisational management, which has experienced in its evolution a broad theoretical development, expressed mainly by the proposals developed by De Miguel Guzmán (2001) and Cuesta Santos (2010), as well as the consideration of trends in contemporary HRM and the integration of qualitative and quantitative analyses. And the second, manifested from the territorial level (Rodríguez Fariñas, 1990; Pocovi, 2009; Bonardo, 2009; Boffill Vega, 2009; Becerra and Toledo, 2010; Pérez Izquierdo and Argüelles Pando, 2011; Torres Cala, 2011; Cribeiro Díaz, 2011; Kim and Oh, 2011), which adopts a prospective character oriented to the exploitation of the endogenous potentialities leading to the consolidation of the social and economic results of the level under study (Torres Cala, 2011; Cribeiro Díaz, 2011).

Currently, the territorial HRP is oriented not only quantitative, but recognises and covers the need to consider the profiles of training or technical skills as a variable that is planned, which include authors such as: Pérez Izquierdo and Argüelles Pando (2011), Cribeiro Díaz (2011) and Martínez Vivar et al. (2016), however, neither these nor the other posed regard to the HRP from the quantitative optical expose an integration tool of this important feature, while not successful schedule execution of the remaining processes to ensure HRM thus expressing this systemic approach in their territories. Comprehensively aspects have been addressed in a fragmented manner by the authors consulted, merely tools to this process to ensure their systemic nature.

The proposal to use indicators of efficiency and effectiveness as a form of control of the HRM in the territories is another trend in this area (Rodríguez Fariñas, 1990; Pocovi, 2009; Torres Cala, 2011; Pérez Izquierdo and Argüelles Pando, 2011; Cribeiro Díaz, 2011; Martínez Vivar et al., 2016), however, still does not reach the required integrity between it and the HRP at this level.

Meanwhile, techniques developed for the determination of quantitative HR needs have a strong organisational orientation and although it is possible to extrapolate the territorial level, the same is done with very low probability of success, without proper methodological guidance to ensure their successful implementation.

The contradictions and limitations discussed in the theoretical elements have determined the existence of dissimilar omissions in the practical development of HR planning at the territorial level. In addition, lacks are observed to contextualise the subject from the territorial order with a prospective, systemic and control approach. Aspects reflected in the territory under study in the various analyses carried out as part of this research, which can be summarised as follows:

- While there are strategies that regulate HRM processes at the territorial level, these are not addressed from the HRP, such element in addition to limiting its prospective nature, not conceived its planning affects systemic interweaving, which determined that although there are the RH that are in demand, they manifest themselves territorially into deficit or excess.
• HRP at the territorial level generally does not project from planning interests of
development of the territory, which determines who has a restricted prospective
nature, causing situations of imbalance in the requirements of HR, both qualitative
by not prospectively conceived modification environment and consequently
technical competences to use it, and quantitatively showing that for 2009 there is a
deficit of HR ascending to 1,386.00, just as is appreciated excess employees already
trained or in training ascending to 2,468.00, distributed in different specialties.

• The process of territorial HRP is restricted to the quantitative determination of
staffing needs, without considering the inclusion of the implementation schedule of
the remaining processes of HRM at this level, which affects its systemic nature, not
ensure the necessary order and level of interrelatedness of these, limiting their
effectiveness and efficiency and consequently its impact to meet the requirements
demanded by HR development interests at the territorial level.

• The HRP at the territorial level, lack control mechanisms to measure results in terms
of efficiency and effectiveness that contribute to make adjustments to ensure the HR
in quantity and quality required.

The hitherto addressed evidence of both theoretical and practical insufficiencies in the
HRP at the territorial level, which suffers from a prospective and systemic nature for the
satisfaction of both quantitative and qualitative HR requirements and their control, which
lead to deficit states or exceeding the HR at this level, which constitutes a research
problem to solve.

2 Theoretical analysis

2.1 Importance, features, trends and limitations of HRM at territorial level

HRM in the territorial level is recognised by a group of authors, which have developed
actions related to training, recruitment, selection, incentives, planning quantitative and
qualitative of HR and health and safety (Rodríguez Fariñas, 1990; Pocovi, 2009;
Bonardo, 2009; Boffill Vega, 2009; Becerra and Toledo, 2010; Pérez Izquierdo and
Argüelles Pando, 2011; Torres Cala, 2011; Cribeiro Díaz, 2011; Kim and Oh, 2011;
Martínez Vivar et al., 2016; Martínez Pérez et al., 2017; Sánchez Rodriguez et al., 2017;
Cornejo Martínez et al., 2017). Processes that help to ensure the HR, both in quantity and
in quality levels demanded by development at the territorial level. Highlighting features
linked to the systemic nature (Rodríguez Fariñas, 1990; Pocovi, 2009; Bonardo, 2009;
Pérez Izquierdo and Argüelles Pando, 2011; Cribeiro Díaz, 2011; Kim and Oh, 2011;
Martínez Vivar et al., 2016) and quantitative (Pocovi, 2009; Becerra and Toledo, 2010;
Pérez Izquierdo and Argüelles Pando, 2011; Torres Cala, 2011; Cribeiro Diaz, 2011; Kim
and Oh, 2011; Martínez Vivar et al., 2016), which show to this process as essential to
obtaining and maintaining the critical resource in achieving territorial goals.

Similarly, in the literature different trends for the development of the HRP at the
territorial level, among which the prospective nature (Armstrong Stassen, 2009; Pocovi,
2009; Boffill Vega, 2009; Pérez Izquierdo and Argüelles Pando, 2011; Torres Cala, 2011;
Cribeiro Díaz, 2011; Martínez Vivar et al., 2016) are evident; while management by
competences (Arias Guevara, 2008; Cribeiro Díaz, 2011; Martínez Vivar, et al., 2016)
Aspects that have not been fully materialised through the development of methodological tools for its implementation and thus constitute a knowledge gap study.

2.2 Analysis of approaches to HR planning

To develop a comprehensive analysis of the approaches of HRP consulted a data matrix for comparison was built, performing the same hierarchical cluster analysis. It were observed two streams to address the HRP, organisational and other territorial.

Dendrogram obtained in the presence of five major groups was observed, four of them associated with the organisational level. The first linked to the proposals made by Harper and Lynch (1992), Sikula (1994) and Cuesta Santos (2010) stands out with a more methodological and philosophical than technical approach; the second, with Marsán Castellanos (1987), Maynard (1996), Barranco Saiz, 1994; Niebel (1997), and MES (2006), shows a markedly quantitative; the third group (Cuesta Santos, 2001; Marrero Fornaris, 2002; Sánchez Rodríguez, 2005; Morales Cartaya, 2009), focuses on the qualitative planning; the fourth (De Miguel Guzmán, 2001; Cuesta Santos, 2010), assumes the systemic and strategic approach and control through the balanced scorecard and the fifth group (Rodríguez Fariñas, 1990; Gaete Quezada, 2009; Pocovi, 2009; Bonardo, 2009; Boffill Vega, 2009; Becerra and Toledo, 2010; Pérez Izquierdo and Argüelles Pando, 2011; Torres Cala, 2011; Críbeiro Díaz, 2011; Kim and Oh, 2011) linked to HRP in the territorial level, highlighting a technical and methodological treatment proposals of Rodríguez Fariñas (1990), Arias Guevara (2008) and Críbeiro Díaz (2011), which is addressed in isolation by Rodríguez Fariñas (1990); while Boffill Vega (2009) and Becerra and Toledo (2010) analysed the process of quantitative planning and reward (incentives), the same way they analyse Bonardo (2009) and Kim and Oh (2011), who include the training process and qualitative integration to quantitative analysis, to which proposals Torres Cala (2011) and Pérez Izquierdo and Argüelles Pando (2011) are joined where a purely qualitative planning and training process itself is manifest in the proposal for MES (2006).

In the whole consulted authors addressing the issue from territorial issues, a fragmented vision stands to develop a systemic approach to HRM and HRP in particular at the territorial level, addressing irregularly and very limited integration between qualitative elements and quantitative. Also there is no consensus for systemic treatment of HRM processes that contribute to the assurance requirements HR at this level. Similarly it can not incorporate consulted analysis, control tools that integrate the evaluation of the processes taking place, limiting contributions to the demographic evaluation aimed to predict the availability of both people and jobs from a vision restricted to act on the relations between the variables that affect the HRP at the territorial level.

On the other hand limitations to the development of the prospective approach, to distinguish in the proposals consulted shortcomings for consideration and integration of development scenarios and the HRP at the territorial level, as well as the proper planning processes to be observed meet the needs demanded; while insufficient treatment that develops on the processes that ensure the technical skills required for the realisation of the interests at this level.
Generally this group highlights the authors who consult addressing theory HRP at the territorial level, do not achieve sufficient depth and simultaneously vary including criteria to address HRM processes that occur at this level, and their proposals are seen limited in how to act, while the depth of the treated variables varies including aspects that particularly limited from conception and implementation to integration trends HRP at this level, highlighting limitations with its prospective design, its systemic approach, considering the scope of functions of HRM and the lack of a control approach.

3 Methodology

From the explicit deficiencies, as part of the state of the art with regard to the limitations of the consulted approaches to the HRP at the territorial level, among which are: limited systemic nature to address the HRP at this level based on the restricted integration of quantitative planning with the qualitative and the remaining processes of HRM, poor prospective on the HRP at this level and its control, coupled with the evolutionary state this in the territory under analysis. This section is intended to provide a method for HRP at the territorial level, which pursues fundamental objective in a single proceeding, the solution to the limitations contained in the analyses developed so far.

3.1 Empirical demonstration of the relationship between the variables involved in HR planning at the territorial level

To identify the variables associated with the HRP at the territorial level, a panel of experts familiar with the issue settled, in order to obtain their views on the participants variables drawn from the theoretical analysis, confirming the existence of a strong concordance in results. Then, the ordering of the variables obtained according to the degree of importance was required, concluding arrays for processing data using the statistical package SPSS Statistics (version 21, 2015). Principal component analysis (Table 1), where in the first four components can explain the 75.85% of the total variance, highly positive aspect was used.

<table>
<thead>
<tr>
<th>Reliability analysis: Cronbach alpha coefficient: 0.893</th>
</tr>
</thead>
<tbody>
<tr>
<td>Validity analysis: Contributions to the planning of human resources in the territorial level</td>
</tr>
<tr>
<td>Sphericity test Bartlett: 15,504.807</td>
</tr>
<tr>
<td>Significance: 0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Study of variables</th>
<th>Axis I</th>
<th>Axis II</th>
<th>Axis III</th>
<th>Axis IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eigenvalues</td>
<td>7.8</td>
<td>7.4</td>
<td>5.8</td>
<td>5.4</td>
</tr>
<tr>
<td>Contribution to the total variance</td>
<td>22.37%</td>
<td>21.16%</td>
<td>16.69%</td>
<td>15.62%</td>
</tr>
<tr>
<td>Cumulative percentage of variance explained</td>
<td>22.37%</td>
<td>43.53%</td>
<td>60.23%</td>
<td>75.85%</td>
</tr>
</tbody>
</table>
Based on the analyses it can be concluded that:

The HRP at the territorial level is a construct in interacting a sets of variables that are grouped into four essential dimensions, that manifest from its interaction with the HRP at this level, highlighting the systemic nature of this process from connectivity between dimensions and the prospective nature as an intrinsic part of each dimension.

The instruments used in the principal component analysis, show an acceptable level of validity and reliability, enabling the statistical description of the multidimensional construct that explains the development process of HRP in a territory.

Developed analysis, enable from the identification of the variables involved in the HRP at the territorial level, the design of a process for management (Figure 1).

Figure 1  General procedure for HR planning at the territorial level

The proposed procedure consists of five phases and fifteen steps that systematically address both the prospective approach, when analysing the confluence of state and sectoral interests with territorial interests associated with the prospective economic, social and political development of the territory, such as systemic approach to relate the interactions between variables that affect the HRP and consideration of HRM processes that manifest at this level. Likewise they include a set of indicators that help measure the efficiency and effectiveness of HRP in particular and the HRM in general, with the aim
of regulating prospectively behaviour of the different states of the extreme situation (SL) and the performance relevant to HRM processes that ensure the equilibrium state of the HR.

In phase 1 the multi-institutional team that was constituted as the HRP commission of territory led by the employment agency sector in the Provincial Government and the various HR directors of the applicant organisations, achieving the commitment to the application of settled procedure and ensuring the necessary knowledge on methods and techniques for the development of the remaining phases. In the development step 4 both demographic and economic, social and political that characterise the territory and its prospective projection for the period selected planning (2020) were collected, this projection became prospective interest for development territorial and made compatible with the interests of development of the territory from the use of the criterion of experts formed group; this phase ends in alignment with the HR requirements from the territory with the compatibility of interests conducted within selected planning.

In phase 2 both quantitative and qualitative requirements of HR for the selected territory were determined and HRM processes inherent in this level that contribute to meeting these requirements were analysed. Starting with quantification territorial level HR requirements for specialties derived from projected activity levels in the organisational levels from the harmonisation of regional interests, consolidating these results by formula (1).

\[
AHRa_{specialty_{-j}} = \sum_{entry_{-i}} (AHRa_{specialty_{-j}} - HRVO_{specialty_{-j}})
\] (1)

\(AHRa\) HR set amount from the organisations level identification of the variables according to this level generate mobility by HR specialties.

\(ARH\) quantification and qualification of HR required at regional level for the year is planned with the aim of satisfying the compatibilización of interest.

\(HRVO\) the HR at the organisational level to vary at the time of processing in positions that demand a level of specialisation: university level (UL), technical level (TL) qualified worker (QW), and the planning level activity for the year projected to be estimated as: retirees, emigrants, immigrants, the sick and other casualties.

Obtaining that more or less than zero \(CRHa\) determining the SL expressed in step 8 oriented mathematically determine the influence of territorial variables that affect the mobility of HR, according to the formula (2) is required.

\[
NHR_{specialty_{-j}} = AHRa_{specialty_{-j}} - (EHR_{specialty_{-j}} - HRV_{specialty_{-j}} - HRFNE_{specialty_{-j}})
\] (2)

\(NHR\) the amount of necessary HR specialty being tested for performance projected level of activity at territorial level.

\(EHR\) Existing HR specialty being analysed in positions that demand a level of expertise (UL, TL, QW) or not at the time of processing.
HRV  The HR to vary the territorial level at the time of processing in positions that demand a level of expertise (UL, TL, QW) and to plan the level of activity for the year is projected to be estimated as emigrants and immigrants at territorial level.

HRFNE  Refers to the employment exchange of the government organisation responsible for managing HR in the territory; which is planned for the year is analysed to predict is the result of processes of extinction and (or) merging organisations, optimisation of job position structures, etc.

Results obtained as three states: exceedance state when NHR is negative, deficit state when NHR is positive and equilibrium state when NRH is zero.

Later in phase 3 were planned, from the analyses carried out, the HRM strategies at territorial level that contribute to reduce deficits and (or) excess and consequently the rapprochement and maintenance the equilibrium state to provide with opportunity the HR that requires the interests of development of the territory under analysis. For this, the timing of the HRM processes at the territorial level set from the use of the critical path method as illustrated in Figure 2, specifying the moments of start and end of each of the processes and resource requirements both financial and material and human resources for implementation.

Figure 2  Timing HRM processes at territorial level

Strategies for specialty concentrated in the state of deficits were planned from step 13, which can also be observed from step 11, from balancing the excesses of specialties deficits according to the affinity between the profiles, this balance is not achieved then it
is necessary to design training plans (training plans of undergraduate and graduate) to ensure the deficit requirements.

For planning training strategies using formula (3) is required, obtaining that if HRT positive result the training plan period analysed, if zero the training plan is not necessary and if negative be construed as a surplus in training.

\[
HRT_{\text{specialty}_j} = NHR_{\text{specialty}_j} + RA_{\text{specialty}_j} + Inf_{\text{specialty}_j} - BA_{\text{specialty}_j} - EF_{\text{specialty}_j}
\]

**HRT** HR to training.

**RA** behaviour pattern rework process of training for the specialty \(j\) for the period under review.

**BA** behavioural pattern of the casualties in the process of training for the specialty \(j\) for the period under review.

**EF** behavioural pattern of emigration for the specialty formable \(j\) for the period under review.

**Inf** behavioural pattern of immigration formable specialty \(j\) for the period under review.

Finally, the recruitment processes are adapted from the applicants organisations using training centres to undertake oriented from two directions, first in the design and implementation of tools selection to carry out the selection of HR to be applied in step 11, and second for access to the training plan and the implementation process to ensure the employment of those HR that have been applied to other areas in the territory analysed and the working relationship of the final results (graduates) of the training process. In phase 4, implementation and adjustments, planned and implemented was possible to determine and eradicate deviations from planning execution.

### 4 Results and discussions

In the development of Phase 1 they were created and assigned the responsibilities of the multi-institutional team of the territory, plus several workshops that contributed to the commitment and understanding of the technical development of the process and managed to secure the interests of development of the territory were developed and its compatibility with the institutional interests and requirements of HR.

In the development of phase 2 obtaining HR requirements was achieved both in quantity and quality at territorial level and HRM processes from the territory that ensure satisfaction of these were analysed; stressing that the availability of HR by training levels, as shown in Figure 3, highlights the period 2012 and which mostly affects the inappropriate use of HR are forecast these results improved from the year 2013. The associated groups strategies assumed from the territorial level for labour relocation of HR employees poorly.
Pensions, according to Figure 4, show a downward trend in general, there is a marked irregularity analysed by levels. Similarly, the labour fluctuation between their own territory tourism organisations behaves as illustrated in Figure 5.
Contributions to the planning of human resources in the territorial level

Figure 5  Historical performance of the labour fluctuation between organisations of their own territory under study (see online version for colours)

From the diagnosis of evolution factors evaluated, HR requirements, generally obtained as shown in Table 2 states the limit situation of HR training levels through 2020 were obtained.

Table 2  States SL by training levels until 2020 for the territory under study

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</tr>
</thead>
<tbody>
<tr>
<td>Equilibrium</td>
<td>NHR</td>
<td>-74</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>-25</td>
<td>9</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>TM</td>
<td>-651</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>57</td>
<td>14</td>
<td>10</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>OC</td>
<td>-15</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>-2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Exceedence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NS</td>
<td>27</td>
<td>7</td>
<td>0</td>
<td>17</td>
<td>6</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td></td>
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<tr>
<td>TM</td>
<td>378</td>
<td>103</td>
<td>46</td>
<td>31</td>
<td>11</td>
<td>2</td>
<td>0</td>
<td>0</td>
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<td></td>
</tr>
<tr>
<td>OC</td>
<td>109</td>
<td>31</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Deficit</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>NS</td>
<td>137</td>
<td>93</td>
<td>71</td>
<td>84</td>
<td>27</td>
<td>78</td>
<td>47</td>
<td>51</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>TM</td>
<td>401</td>
<td>61</td>
<td>120</td>
<td>76</td>
<td>61</td>
<td>104</td>
<td>51</td>
<td>78</td>
<td>67</td>
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</tr>
<tr>
<td>OC</td>
<td>174</td>
<td>211</td>
<td>76</td>
<td>111</td>
<td>92</td>
<td>97</td>
<td>94</td>
<td>97</td>
<td>94</td>
<td></td>
</tr>
</tbody>
</table>

Subsequently, to determine the causes and carry out alternative solutions to achieve equilibrium state of HR needs, HRM processes in the territory were diagnosed.

Recruitment from the evaluation index candidates specialties in deficits was acceptable in terms of absence of a favourable relationship between the candidates
presented to the specialties in this state were concentrated and the supply of places, with the exception of the specialties associated with gastronomic and technical sciences profiles.

Compared with the indicators evaluated associated with the selection, the index of valid human resources it have behaved unfavourable essentially affecting lack of knowledge territorial level of availability both RH inadequately used (to redirect) and availability requirements of positions (job positions not occupied and (or) positions occupied with profiles of unrelated occupants).

In assessing the occupancy rate of the training plans it was found to be acceptable, except for the specialties of economic profile and technical sciences, emphasising in these results elements such as training plans for UL (plans entry to university level) present a provincial nature although it is formed from municipal demands of RH requirements, but its execution (entrance exams) have a provincial nature. This determines that there is no correspondence between what is demanded by the municipality and what enters from the plan of the municipality, observed for the period assessed a level of occupation of the plan regarding claims of 37.2% resulting for the municipality object of analysis, a training deficits and other participating municipalities plan a possible excess of training to have more occupants in the plan required.

In cases of TL and QW plans resulting from the evaluation of the continuity of studies of pupils who reach the 9th grade limiting the continuation of studies at senior high school observed a surplus in training except for the specialties of economic profile, since does not exists on the territory capacities for the training of these requirements. Another element is the lack of consideration for drawing up the plan of income (at any level) of emigrations and (or) immigrations of students in training (expressed in changes of address of a municipality, casualties on educational standards among others), which limits the dynamic observation of the formation processes and therefore not be covered by the plans exist in the HR training process in states of deficit and (or) excesses for the implementation of labour induction plan.

Other elements are associated with lack of territorial policies aimed at improving and (or) conditioning of aesthetic conditions territory, entertainment and basically the deteriorating housing stock that has elements that affect the poor evaluation index incentives at territorial level. The index of approved controls on safety and health in the territory poorly evaluated there an index of expenses diseases: 6,152.00 USD in the year and an expense ratio up occupational accidents are: 1,630.00 USD in the year.

In evaluating the indicators related to the efficiency of HRM in the territory it was obtained that economic index by excess formation was as poor by excelling pay an extra in training (this data is only referred to undergraduate training for both the UL, TL as QW) of: 143,240.00 USD in the year, focusing on the fundamental levels of TL and QW and to a lesser extent UL.

The elements resulting diagnosis contributed to planning processes HRM at this level affect the kind of manifested state as illustrated by the example given in Table 3 as part of phase 3 and reducing gaps excesses and (or) deficits of HR to obtain and sustain equilibrium state as shown in Figure 6, in which was obtained for the period 2013 the equilibrium state for the level of QW, also in 2014 for the TL and in 2015 for the UL.
Table 3  Example for the timing of the application process for the state of excess

<table>
<thead>
<tr>
<th>Activities</th>
<th>Optimum time (OT)</th>
<th>Most likely time (MLT)</th>
<th>Pessimistic time (PT)</th>
<th>Medium time duration (MTD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantify specialties excess and deficits in the territory and extraterritorial</td>
<td>1</td>
<td>1.5</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>Analyse suitability of profiles</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Conclude suitability of profiles and quantify amount to apply on deficits</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Interviews</td>
<td>1</td>
<td>2</td>
<td>2.5</td>
<td>1.8</td>
</tr>
<tr>
<td>Decision making</td>
<td>2</td>
<td>2.5</td>
<td>3</td>
<td>2.5</td>
</tr>
<tr>
<td>Conformation of bags to apply</td>
<td>0.5</td>
<td>1</td>
<td>1.5</td>
<td>3</td>
</tr>
<tr>
<td>Analysis of incentives and basic health and safety requirements</td>
<td>1</td>
<td>1.5</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>Budget incentives and health and safety requirements</td>
<td>0.5</td>
<td>1</td>
<td>1.5</td>
<td>1</td>
</tr>
<tr>
<td>Implementation of the budgets of incentives and health and safety requirements</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Application of employment exchanges</td>
<td>1</td>
<td>1.5</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>Total duration of the activity (months)</td>
<td>17</td>
<td>24</td>
<td>30.5</td>
<td>25.8</td>
</tr>
</tbody>
</table>

Figure 6  Trend until 2020 to get the state of equilibrium levels of training in the territory under study (see online version for colours)
Table 4 shows the cumulative results of the application of the procedure in the territory under study, highlighting improvements in some indicators of both process and system of HRM. Determining the significance of the changes in the indicators from the student's t-test, using the SPSS (version 21.0, 2015), showing that in the vast majority of indicators substantial progress was achieved, as shown in Table 5.

**Table 4** Cumulative assessment of indicators of effectiveness and efficiency in the HRM in the territory under study

<table>
<thead>
<tr>
<th>Concept</th>
<th>Effectiveness: 2009 (▲) to 2012 (■)</th>
<th>Reference level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HRM processes at territorial level</td>
<td>Concept</td>
</tr>
<tr>
<td>Job position and staff inventory</td>
<td>Suitability of inventory positions at territorial level</td>
<td>ICT</td>
</tr>
<tr>
<td>Recruitment</td>
<td>Index candidates specialties deficits</td>
<td>ICED</td>
</tr>
<tr>
<td>Selection</td>
<td>Index human resource reoriented</td>
<td>IRHR</td>
</tr>
<tr>
<td></td>
<td>Index valid human resource</td>
<td>IRHV</td>
</tr>
<tr>
<td>Training and implementation</td>
<td>Impact of planning on satisfaction of employers at territorial level</td>
<td>IPSENT</td>
</tr>
<tr>
<td></td>
<td>Impact of training on productivity of labour at territorial level</td>
<td>S o D</td>
</tr>
<tr>
<td></td>
<td>Occupancy rate of training plans</td>
<td>IOPF</td>
</tr>
<tr>
<td>Incentives</td>
<td>Impact of planning on raising the social recognition of specialties at territorial level</td>
<td>IPRSS</td>
</tr>
<tr>
<td></td>
<td>Impact of planning on raising the sectoral recognition of specialties</td>
<td>IPRSC</td>
</tr>
<tr>
<td></td>
<td>Index incentives</td>
<td>II</td>
</tr>
<tr>
<td>Security and health</td>
<td>Pass rate controls</td>
<td>ICA</td>
</tr>
<tr>
<td></td>
<td>Index expense disease</td>
<td>IGE</td>
</tr>
<tr>
<td></td>
<td>Index expenses accidents</td>
<td>IGA</td>
</tr>
<tr>
<td>Planning</td>
<td>Index excess human resources</td>
<td>IERHT</td>
</tr>
<tr>
<td></td>
<td>Index deficits human resources</td>
<td>IDRHT</td>
</tr>
<tr>
<td></td>
<td>Index territorial mobility</td>
<td>IMT</td>
</tr>
<tr>
<td>Efficiency: 2009 (▲) to 2012 (■)</td>
<td>HRM territorial system</td>
<td>Concept</td>
</tr>
<tr>
<td>Economic index in excess training</td>
<td>IEEF</td>
<td></td>
</tr>
<tr>
<td>Index territorial productivity</td>
<td>IPT</td>
<td></td>
</tr>
<tr>
<td>Territorial average salary index</td>
<td>ISMT</td>
<td></td>
</tr>
<tr>
<td>Correlation average salary and territorial productivity</td>
<td>SMPTT</td>
<td></td>
</tr>
<tr>
<td>Economic impact of planning because of excess HR</td>
<td>IEPERH</td>
<td></td>
</tr>
</tbody>
</table>

Notes: D: deficient; A: acceptable; S: satisfactory; HS: highly satisfactory.
Table 5  Results of the test sensitivity of the indicators according to the Student t test by using SPSS (version 21.0, 2015)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>t</th>
<th>Standard error</th>
<th>Indicators</th>
<th>t</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT</td>
<td>–4.086** *</td>
<td>2.7462</td>
<td>IGA</td>
<td>–5.272** *</td>
<td>.2496</td>
</tr>
<tr>
<td>ICED</td>
<td>–5.471***</td>
<td>2.2737</td>
<td>IERHT</td>
<td>–8.319***</td>
<td>.1806</td>
</tr>
<tr>
<td>IRHR</td>
<td>–3.802***</td>
<td>5.5708</td>
<td>IDRHT</td>
<td>9.394***</td>
<td>.1890</td>
</tr>
<tr>
<td>IRHV</td>
<td>–10.706**</td>
<td>1.9522</td>
<td>IMT</td>
<td>–7.965***</td>
<td>1.8098</td>
</tr>
<tr>
<td>IPSENT</td>
<td>–4.607***</td>
<td>3.2818</td>
<td>IEEF</td>
<td>(6.228*)</td>
<td>.1766</td>
</tr>
<tr>
<td>S o D</td>
<td>–6.673***</td>
<td>2.3677</td>
<td>IPT</td>
<td>–7.846***</td>
<td>2.5578</td>
</tr>
<tr>
<td>IOPF</td>
<td>–4.446** *</td>
<td>3.3471</td>
<td>ISMT</td>
<td>–9.250**</td>
<td>2.0378</td>
</tr>
<tr>
<td>II</td>
<td>–4.529***</td>
<td>2.0224</td>
<td>SMPTT</td>
<td>–5.812**</td>
<td>2.9593</td>
</tr>
<tr>
<td>ICA</td>
<td>–5.906***</td>
<td>2.0616</td>
<td>IEPERH</td>
<td>–8.171***</td>
<td>3.2799</td>
</tr>
<tr>
<td>IGE</td>
<td>–9.699*</td>
<td>1.7321</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: *Significant; **Very significant; ***Very highly significant. The values of t shown in brackets are calculated by the Student t test for non-homogeneity of variance.

The territorial productivity index was assessed as acceptable to a positive balance observed in the rising account balances territory: 40,641,000.00 USD, although profits compared to previous periods behaved negative; the average annual salary of the territory was assessed as deficient influenced essentially by lower profits resulting from these indicators show a median salary correlation unfavourable productivity up to 0.78, highlighting an economic impact of planning excess HR trained in the territory: 56,544.00 USD in the year.

5 Conclusions

The territorial development focuses as a spatial definition at different scales ranging from micro to the macro levels, designed to take advantage of endogenous potential and exogenous opportunities for improving human welfare from economic consolidation, standing out as a decisive factor in endogenous part the HR as irreplaceable element for achieving development and in turn the end of this process.

The theory of HRM has shown increasing business development on various levels which determines that its main contributions focus on the micro level, highlighting constraints on theoretical consultations to address the issue from the territorial level.

Contemporary HRP assumes the introduction of competence management approach, prospective analysis and permanent control and strategic planning itself. Elements that have been achieved materialise through methodological tools in corporate levels, observing deficiencies for its implementation at territorial level and consequently the knowledge gap addressed.
The existence of a over qualification of RH (this indicates that there are occupied positions requiring a lower level of qualification profile of the worker who occupies it) highlighted this situation is largely determined by issues related to the high remuneration of these positions with low complexity, working conditions and other elements that leave the limited sectoral recognition granted to certain positions and (or) professions; and the low social recognition they have certain job positions and (or) profiles of graduates that hinder their availability in quantity. Also could be added, as the cause of this phenomenon, favourable conditions for access to training programs both higher education and professional with technical or medium level and overcoming graduate degree programs existing in the country, although from the social order favouring equality for access (training programs in Cuba are free), from the territorial point and the country in general they represent unnecessary spending on education levels not required and consequently social dissatisfactions from limited expectations for employment in positions not support profiles training and with this unwanted performance of assigned duties.

The contribution of the HR is limited in the development of the destination and a second associated with the existence of a disqualification of the HR phenomenon (this is associated with the occupation of positions that demand a high level of requirements and its occupants have a minimum level of competence). This element, although generated in the performance bottlenecks functions also brings the detriment of the indicators of productivity, customer dissatisfaction both internal and external, and because in his summation is attentive to the fulfilment of the vision of development from territorial perspective.

There are valid candidates reserves (RH with the required competencies) in the territory to provide responses to the HR requirements demanded by the target object of analysis. On the other hand there are occupants in positions unrelated according to their graduate profiles, elements to be observed for the optimisation of position structures in the entities of the territory. Aspects which will help reduce existing deficits and guarantees of hiring competence needs while minimising the excesses of competencies does not required.

The cumulative application of the procedure in the territory under study has contributed specifically to:

- Ensure through the systemic nature of the procedure execution processes HRM that from the territory must be implemented to ensure both quantitative balance and qualitative improvement of the HR demanded by the organisation of the territory under study, oriented correctly identifying inventory of position and staff in territory, matching the design and use of incentive policies and health and safety as a basis for promoting sectoral and social recognition of specialties and selection and training as part of the processes that affect the satisfaction of employers.

- Make adjustments that contribute to the proper use of the qualities of training of existing HR in the territory decreasing the levels of disqualification and existing overqualification also adapt training processes to the needs of the territory, which impacts a significant decrease in expenses on income.

Generally it helps to make the territory HRP systematically, with an orientation toward improvement, based on what prospective and systemic where each cycle ensures the capacity to respond to new needs.
Contributions to the planning of human resources in the territorial level

References


