

# mylia\_ *Il Management Practices Board*®

a native model by Mylia, using Artificial intelligence as a vector for the development of a more human-centred learning path



## I. The scope of the project

As a global multibrand company with long experience in HR consulting and services, Mylia has sought to **observe** and **map** what are today the prevalent managerial behaviours and styles in Italy.

### The aim of the research is:

- To assess the intensity with which today managers act on certain behaviours within their organisations (*psychosocial approach* - Hollis, 1964; Hollis and Woods 1990);
- To understand possible interrelationships between behaviours;
- To provide an evaluation map to support companies in defining coherent development paths for their human resources to improve their performance;

Missing a pre-existing model, **it was decided to create one of superior complexity** starting from the experience of an advisory board of professionals dedicated to organization, work, training and learning.

For building the **Management Practices Board (MPB) model**, it was imperative:

- i. To conduct a literature review to confirm the scientific basis of the variables suggested, the methodology designed for data collection and variables' interrelationships analysis;
- ii. Confirm variables and scales;
- iii. Confirm the methodology;

## II. Variables and scales

The model structure consists of 4 macro-areas (Mapping, Influencing, Innovation and Connection) and 4 behavioural dimensions for each area:

- **Mapping** (Osservare, Ricercare, Rielaborare, Definire/Disegnare)
- **Influencing** (Influenzare, Responsabilizzare, Condividere, Motivare)
- **Innovation** (Decidere, Risolvere, Creare, Innovare)
- **Connection** (Collaborare, Comunicare, Fare networking, Aggiornare/Aggiornarsi)

For each behavioural dimension, these the scales identified:

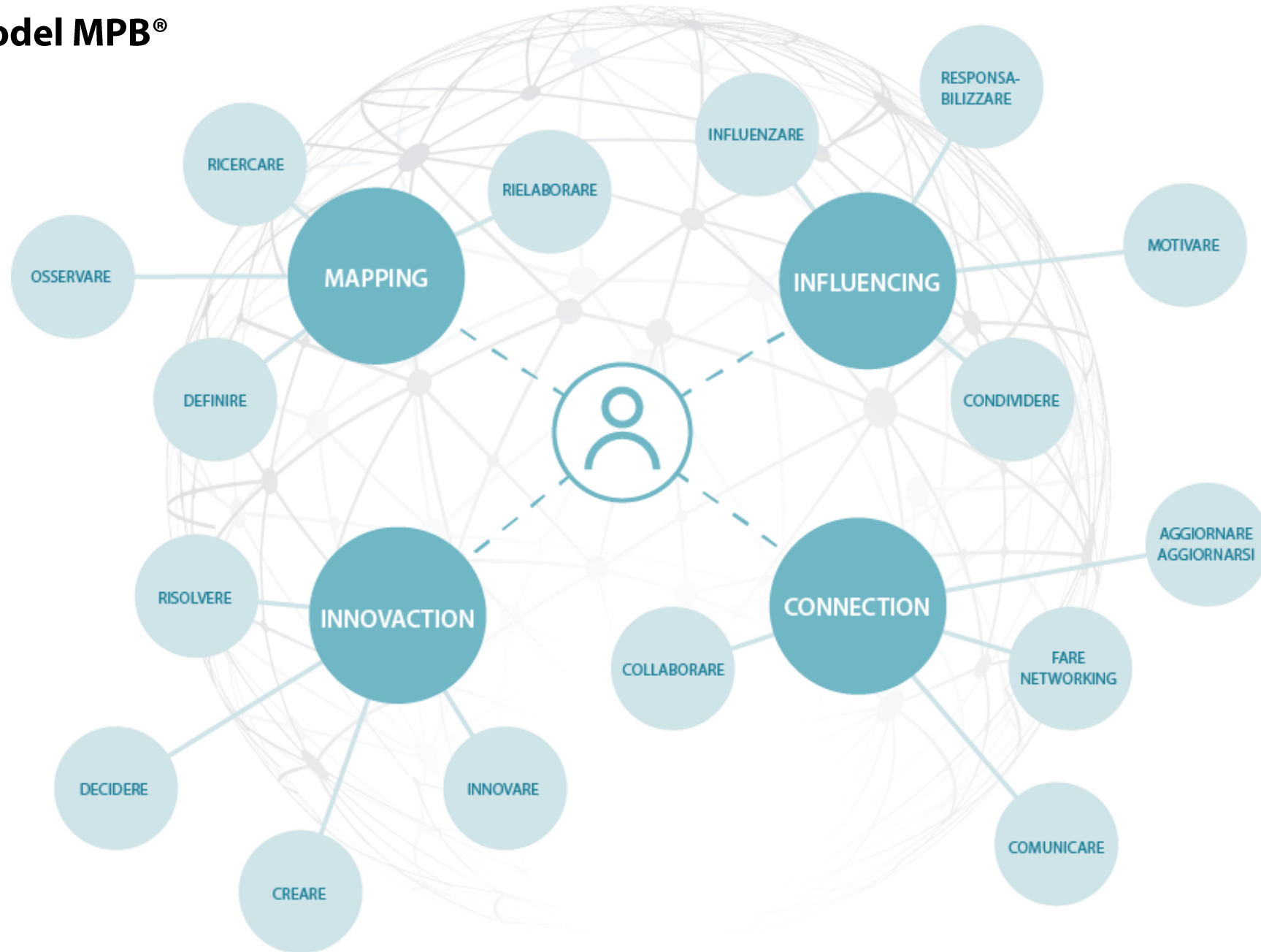
### a) Behavioural indicators.

*e.g.* for “Osservare” we chose “systemic vision”; “data connection building”; “information selection” and “proactivity”. Some indicators can be found within more than one dimension, *e.g.* “systemic vision” is both in “Osservare” and “Aggiornare/Aggiornarsi”, or “organizational knowledge” in “Collaborare” and “Condividere”.

### b) Items describing each dimension in the self-assessment test.

*e.g.* for Ricercare an item is a sentence like “in addition to industry websites I know the economic scenario also through generalist/social network/community web sources and blogs”.

### III. The Model MPB®



## IV. Methodology

- The **data collection** is conducted by:
  - the designer during the **preliminary interview** with the client and the **restitution interview** with the target (*metamodel approach* - Bandler & Grinder, 1975)
  - online **self-assessment test** consisting of 114 items:
    - ✓ 10 personal information (age, education, industry, role seniority, company seniority, etc.)
    - ✓ 104 descriptive action carried out in the work context
- In the filling in of the test, each user provides a response **from 1 to 5 on the intensity** with which she feels to perform a given action. The model does not consider any personality variable.
- The **reference population** is now composed of **586 heterogeneous** managers (Appendix).
- When the test is completed:
  - a) A linear map** shows the scores obtained **by each user** for every dimension. The scores are grouped by three levels of intensity: low, medium, high;
  - b) Neural maps** highlight interrelations between behaviours with respect to the growing reference population and locate the relative users' "behavioural position". **Maps can be individual or group.**
- The slides following provide an illustrative sample of the main elements of the model (*linear* and *neural* maps).

## a) Linear map



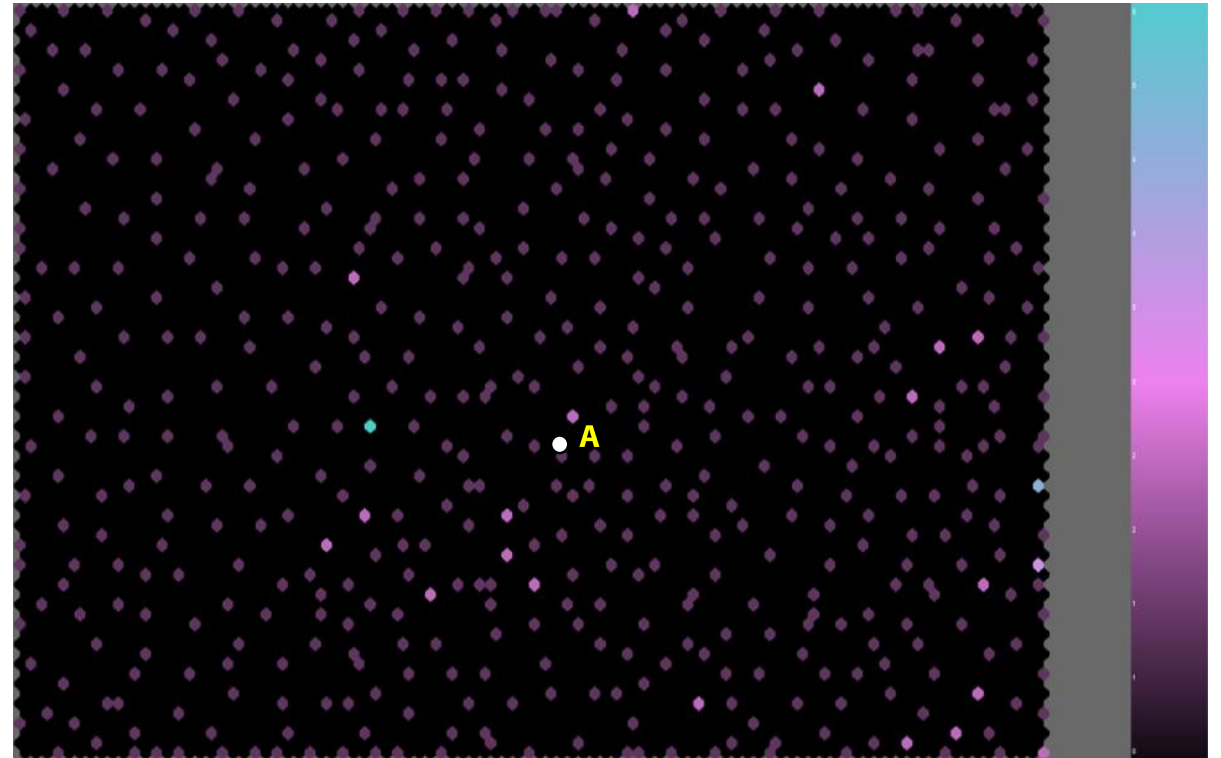
- Linear analysis at **individual level**
- Shows in **absolute value** the scores obtained by the user that completed the self assessment test
- The level of intensity of action can be **low** (light blue), **medium** (yellow) and **high** (red)

## b) Neural maps

- Neural maps are **artificial neural networks** (ANN) (Gurney, 1997; Floreano & Mattiussi, 2002) trained with unsupervised learning and called **Self Organizing Maps** (SOMs) by Teuvo Kohonen (Kohonen, 1995; Van Hulle, 2012).
- These maps **process the data** collected through the self-assessment test and **return**:
  - The **positioning** of each manager within the maps with respect to the reference population
  - To **interrelationships** between behaviours
- **Maps size**: 7144 potential combinations

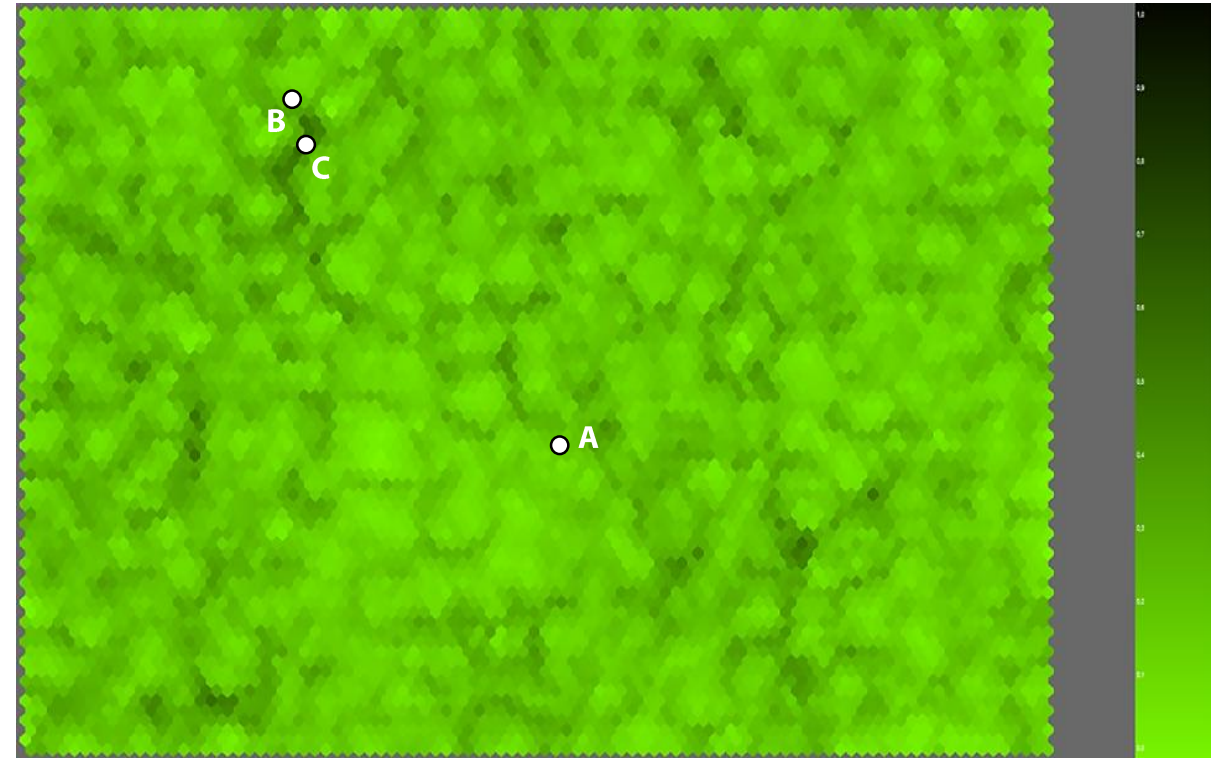
The combinations of 104 items of 586 subjects are distributed compared to 7144 potential combinations calculated by the artificial intelligence.

The dots become **gradually brighter** depending on how many subjects fall into the same combination.



Position of the subject A (the white circle) in our BMU\_Histogram

- Neural Maps show **absolute** and **relative distances** between dots (*affinities* and *diversities*)
- Each dot is a combination of 104 items
- The relative distance is defined by different shades of green:
  - **the bright green** color identifies full proximity
  - **the black** color means large distance



Position of subjects A, B and C (the white circles) in our U-Matrix

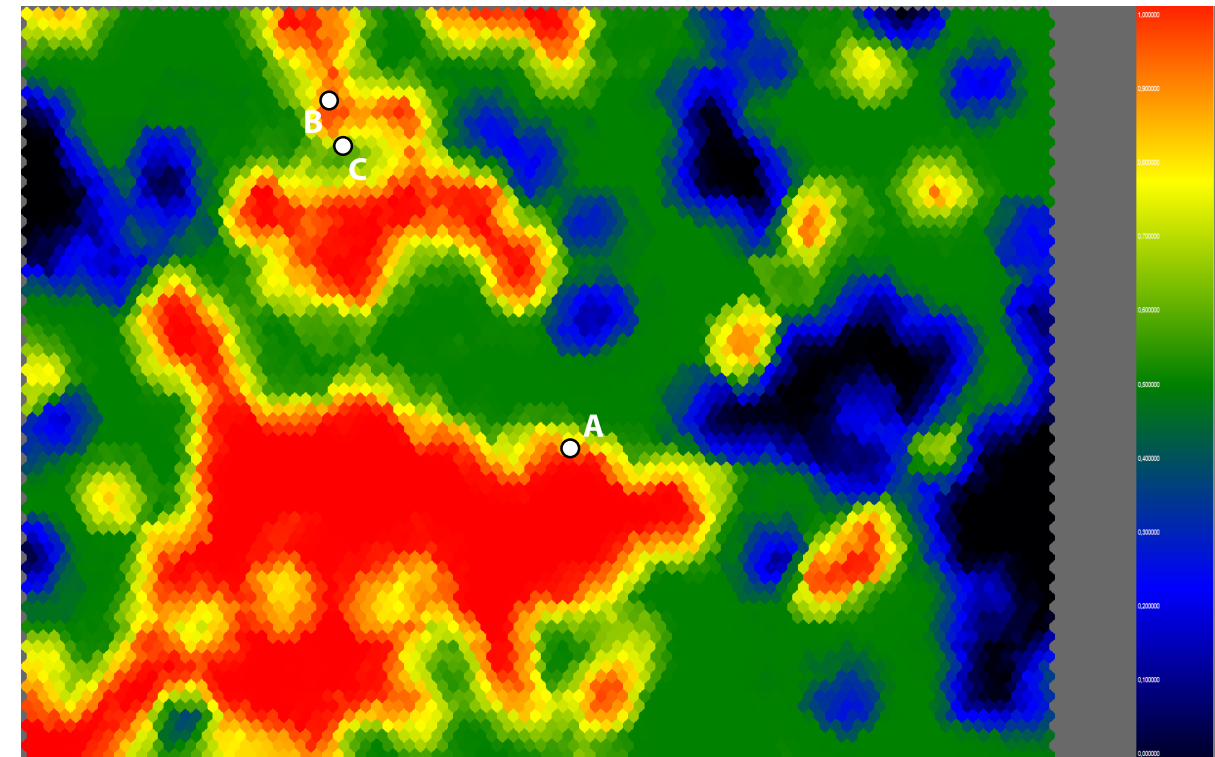
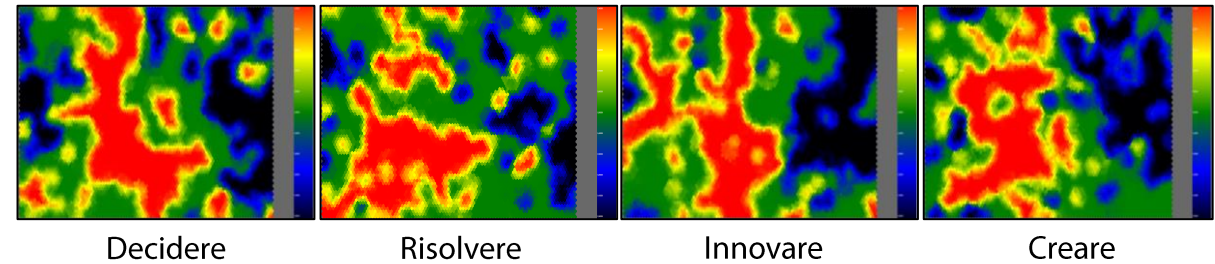
In the picture:

- Dots A, B, C are very different combinations
- Dot A combination with respect to dots B and C is very different (*absolute distance*)
- Dot C combination is different too with respect to dot B, even though they are closer (*relative distance*)



- Then we have 16 **Heatmaps**, that provide a representation of the **intensity of the interactions between the 16 behaviours** of the reference sample.
- Each heatmap corresponds to one dimension.
- For each dimension a **minimum** (lowest intensity) and a **maximum** (highest intensity) have been calculated:
  - The minimum is **black**
  - The maximum is **bright red**
- The correlations are **not causality relationships**.  
In the picture:
  - Dot A > Dot C in the intensity with which the dimension «Risolvere» is acted as a result of the interrelations with all the other 15 behaviours
  - Subject A self-declared as in the linear map that she acts with medium intensity this behaviour

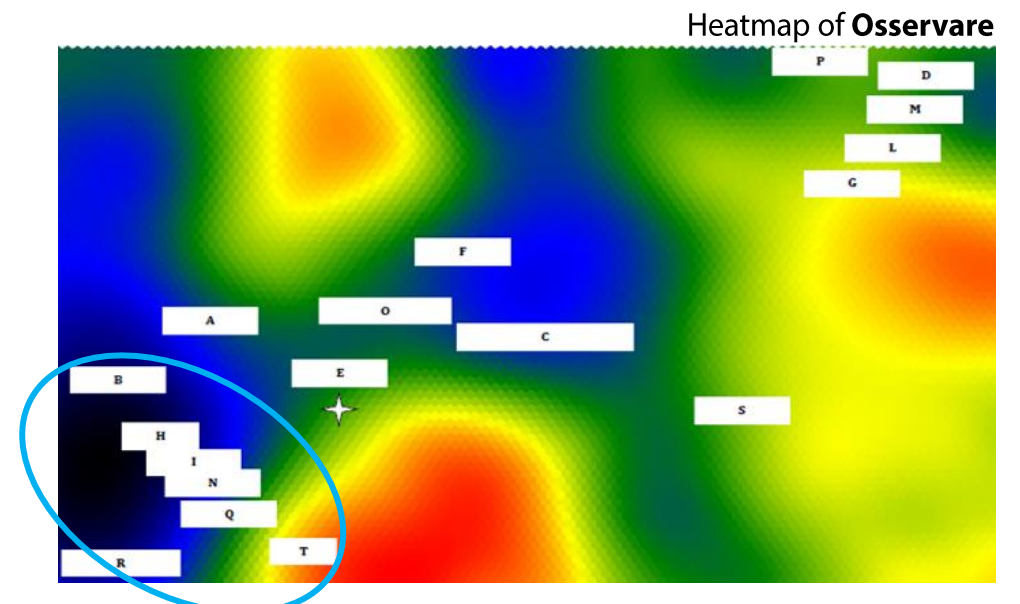
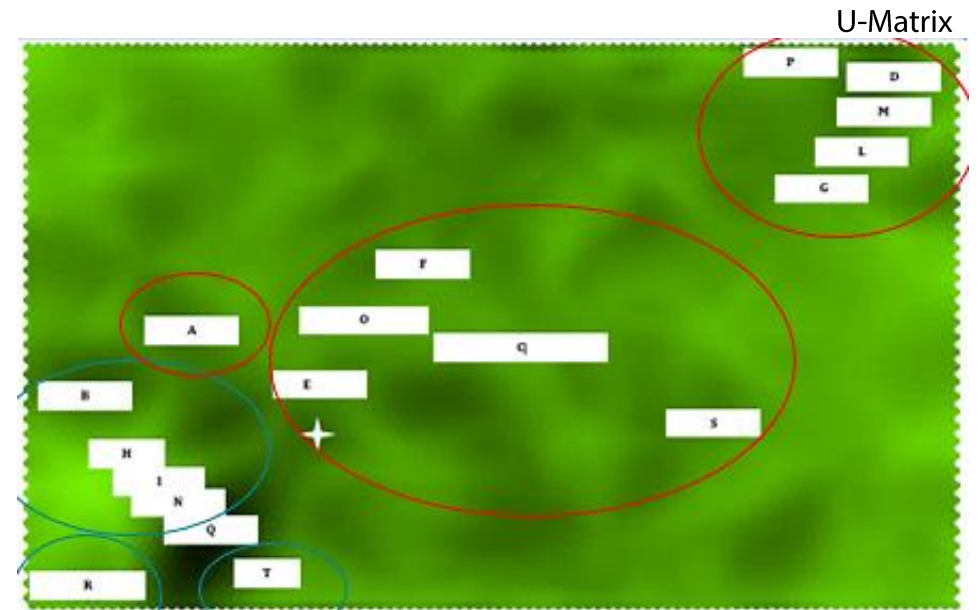
Macro-area: Innovaction



Position of subjects A, B and C (the white circles) in the heatmap of "Risolvere"

## V. How to use the MPB model and its neural maps?

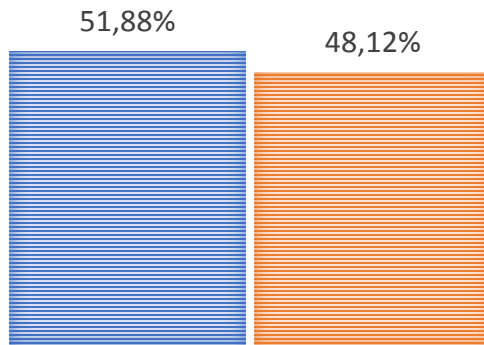
- **Targets:** 11 second line managers (red circles); 7 first line managers (light blue circles); the star is the ideal from the test by an HR team translating company principles and behaviours
- **Problem:** Second line managers disengaged and unsatisfied
- **Neural maps: surprising distance between the ideal and the first line; confirm of the distance between the two lines**
  - first line characteristics don't reflect principles and behaviours as by the ideal
  - first line language is not easily understood by second line
  - part of the second line is closer to the ideal than the first
  - areas of **common intensity of action** emerged between ideal and second line (different managerial styles)
  - first line revealed to be often in cold areas
- **Restitution interview:**
  - excessive directive uniformity and little space to innovation;
  - focus on entrepreneurship and less on collaboration;
  - company running at two different speeds;
  - disaffection and lack of sense of belonging;
  - communication breakdown and possible turnover



# Appendix\_Reference population data (586 managers)

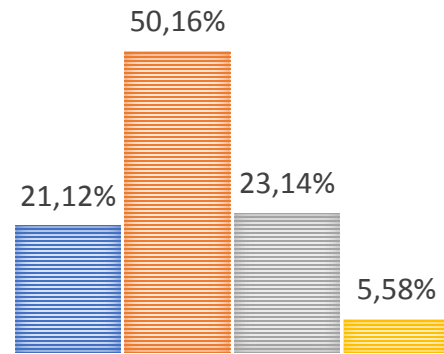
## GENRE

Femmine Maschi



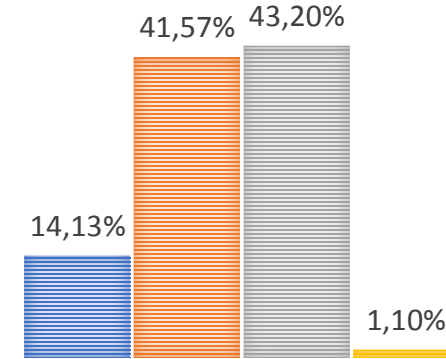
## AGE

25-35 36-45 46-55 Over 55



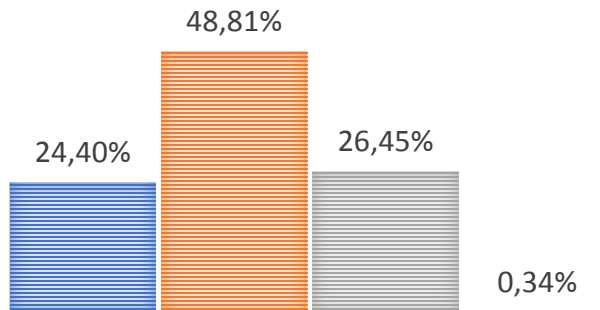
## POSITION

Director Head Clerk Entrepreneur



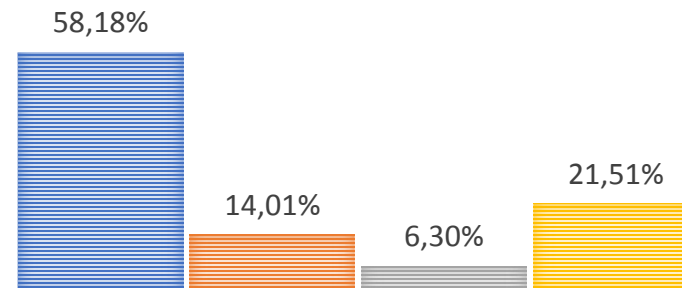
## EDUCATION

Diploma Laurea Post-Laurea Missing



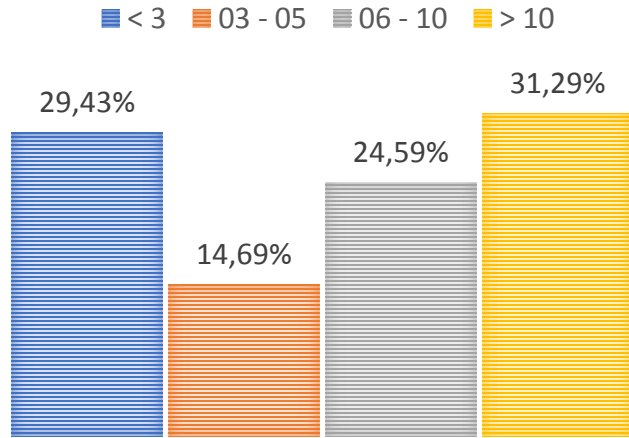
## N. OF HUMAN RESOURCES MANAGED

< 10 10 - 20 21 - 50 > 50

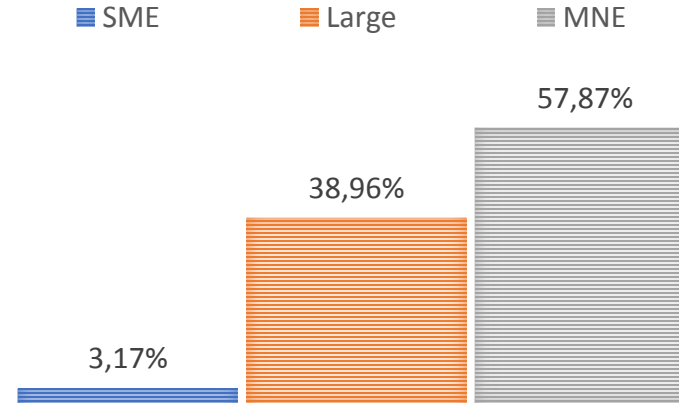


# Appendix\_Reference population data (586 managers)

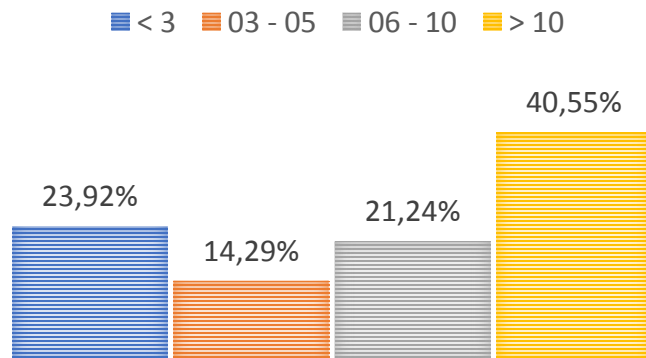
## ROLE SENIORITY (IN YEARS)



## COMPANY SIZE



## SENIORITY IN COMPANY (IN YEARS)



## INDUSTRY

