Using VOSviewer to explore job satisfaction and motivational factors with increasing productivity in project organized IT company

Tomaž Kokot

Purpose of the article research

For the theoretical research of data in the field of linking employee satisfaction and motivational factors, which are not only financially focused on higher productivity in project-organized IT companies, we chose the method of finding the most important terms in various publications in this field.

The analysis was performed using a bibliometric network created with the VOSviewer software tool.

VOSviewer

Through analysis, we identified which keywords are most relevant to the topic we are studying.

How are data displayed in VOSviewer

VOSviewer software offers three visualizations:

network visualization, **overlay visualization**, and **density visualization**.

The data is displayed on a network map, which also shows their connections and the total strength of those connections. By moving to the selected item, the program highlights the information between this item and other related items. The network contains words and clusters that are colored in different colors, representing different research clusters connected by network links, which represent the similarity between the items.

In the article, two visualization methods were used to present the investigated data.

Network Visualization

In the network visualization objects are represented by a word and a circle.

The size of the word and the size of the circle depend on how often the items is represented.

The color of the items is the same in the group that connects the items, and the lines between the items represent that connection.

The distance between the items indicates their relatedness, which means that the closer they are, the more the two items are connected.

Density Visualization

We also used density visualization, where elements are represented by words in a similar way as in network visualization.

In this case, each item has a color that colors the items density range (the default colors in the program are blue, green, and yellow).

The larger are number of objects near the item and the stronger their links are, the more main and other item in group is colored yellow. Conversely, the smaller is the number of items and the weaker is the connections between them and around the item, the closer the color approaches to blue.

Research Methodology

We used the Dimensions database.

We filtered the data using: the main thematic categories related to the field of our research, the period of publications from 2012 to February 2021 and two different search sets.

The final database contained in one case more than two thousand units of literature, and in another almost sixty thousand of units of literature.

References for each individual set were transferred to VOSviewer, using files intended for use in bibliometric analysis.
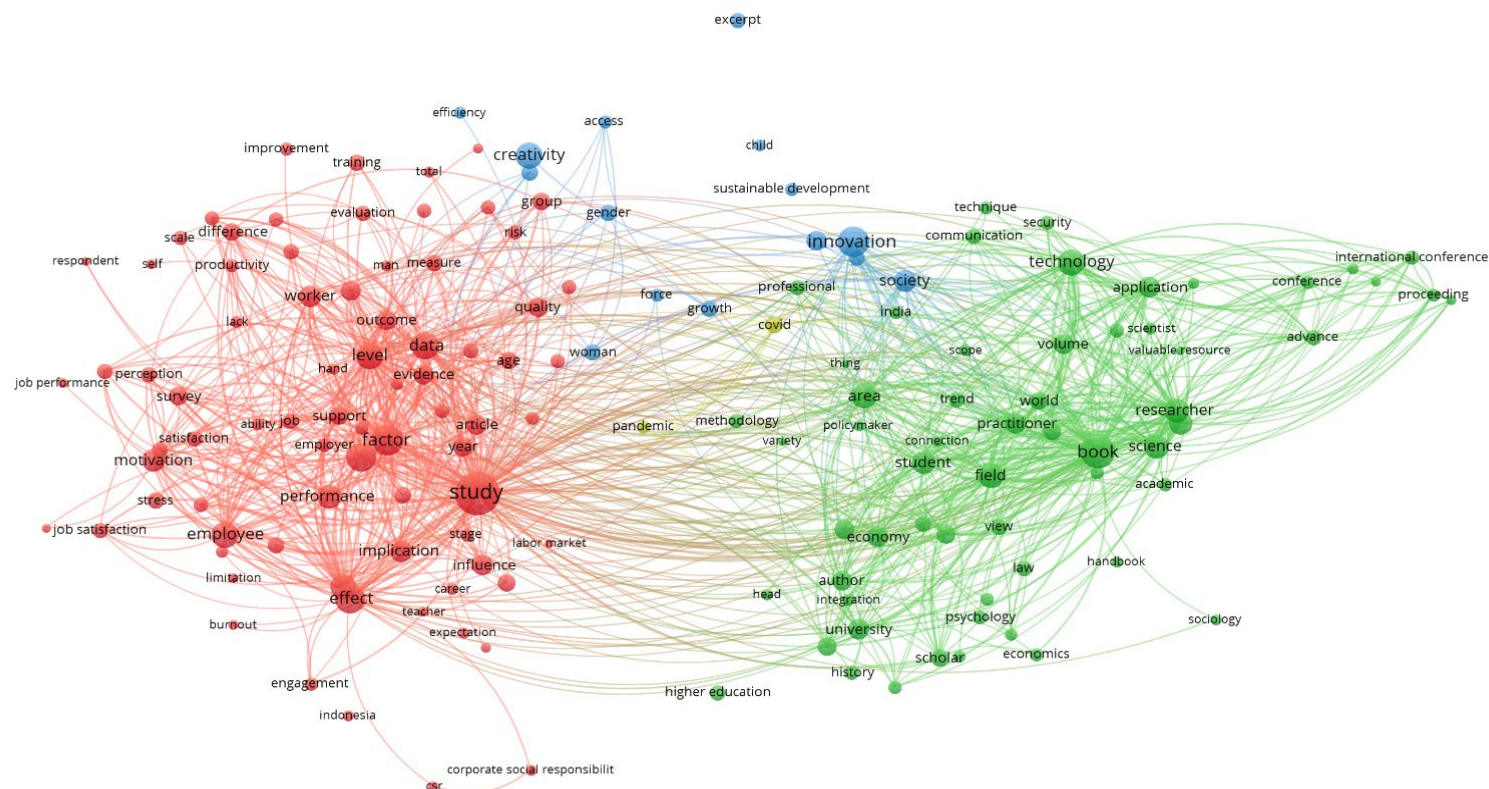
The analysis for the first searched set:

Productivity, non-salary motivational factor in the IT sector showed that the most frequently used words are **study** and **book**.

We have determined in the program to draw the 10 most frequently used words. These are grouped into 4 groups (shown by each color) and there are 155 links between them.

Words that are in the same group have a stronger connection to each other, which means that they appear together in publications and have a common theme.

Among the most frequently used keywords for the first searched set are: study, book, factor, innovation, effect, creativity, employee, technology, data, motivation and worker.

The analysis for the second searched set: **Efficiency and productivity in the IT sector** showed that the most frequently used words are **effect** and **production**.

We have determined in the program to draw the 20 most frequently used words. These are grouped into 4 groups (shown by each color) and there are 269 links between them.

Words that are in the same group have a stronger connection to each other, which means that they appear together in publications and have a common theme.

Among the most frequently used keywords for the second searched set are: effect, production, country, application, relationship, condition, increase, region, relationship, evidence, review and solution.
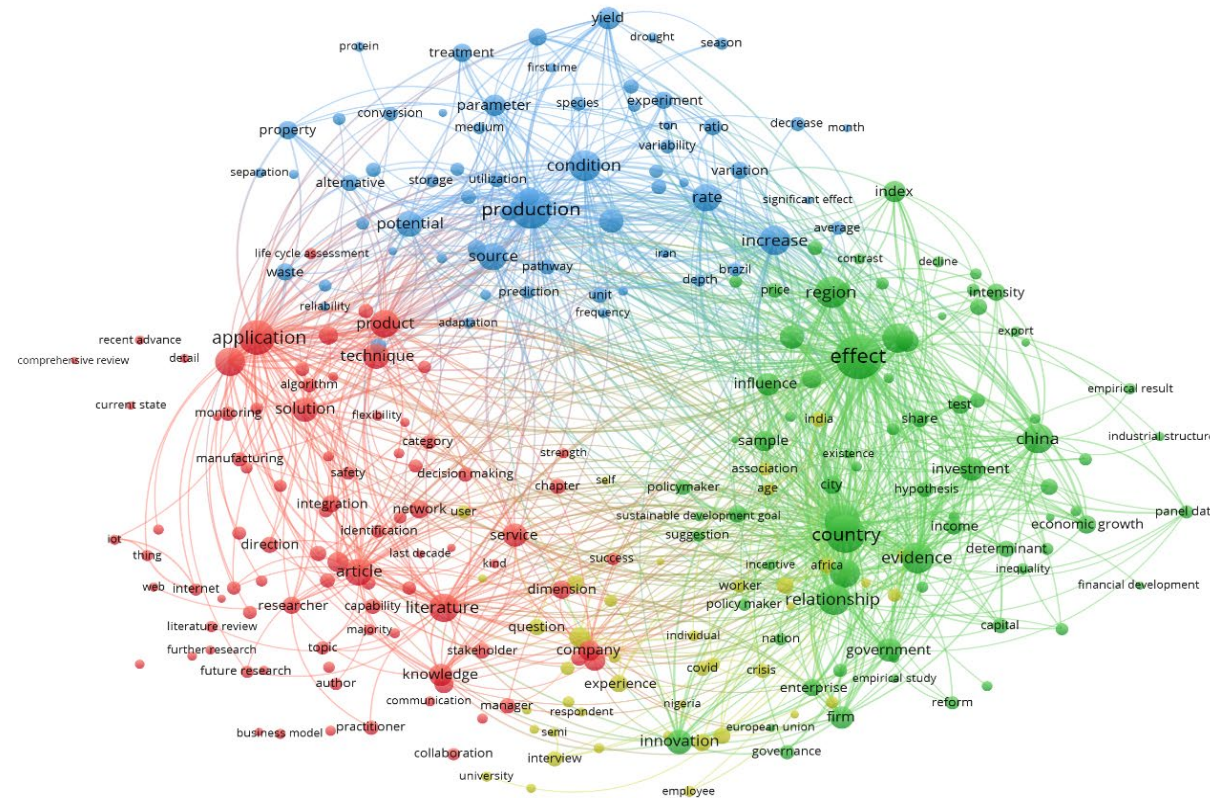
Analysis results

With the bibliometric method, which was performed with the program VOSviewer and keyword analysis in the research area, we came to the following results:

- The most common keywords in the first set are not the most helpful in further research of the literature. But along with the other most common keywords, they provide links to a review of more relevant literature. In the second set, the most common keywords are the most relevant. Their link and other most common keywords, will help for a broader review of the literature.

We can say that the found keywords from both sets are those that are mostly related to the field of our research and are useful for further review of the literature in the selected field.

Thank you very much for your attention throughout this presentation.