INDIVIDUAL VALUES, TEAMWORKING AND KNOWLEDGE MANAGEMENT – A SYSTEMATIC LITERATURE REVIEW

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INTRODUCTION

Knowledge management is a recent concept discussed more fully from the 1990s and on, defined as a process of promoting the flow of knowledge between individuals and groups within the organization (ALAVI; LEIDNER, 2001). Knowledge creation and sharing represent a crucial aspect of knowledge management and, specially in the industrial shop floor contest, are closely related to work teams's effectiveness (WZOREK; CORDEIRO, 2014; MARX, 2010; MUNIZ; SOUSA; FARIA, 2011).

Work teams are one of the most popular type of teams. Cohen and Bailey (1997) puts that work teams normally are directed by a supervisor who make the most of the decisions, including how things are done and who does each of these things. In contrast, they also mention a self-managing or autonomous work team, which involves employees in making decisions. Many authors have stated that team members' autonomy is one of the main drivers of a successful knowledge management on the shop floor level (SCHURING, 1996; MARX, 2010; SACOMANO NETO; ESCRIVÃO FILHO et al., 2000). In contrast, some qualitative studies, such as one conducted by Wzorek and Cordeiro (2014) propose that autonomy alone cannot be associated with a more effective Knowledge management on the shop floor. According to Cordeiro, Pelegrino and Muller (2010), Cowan and Todorovic (2000) and others, the role played by a greater level of team autonomy in the causation of a better performance is closely dependent on the values or the level of consciousness of team members.

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Values reflect individuals' views on what is most important in life that in turn guides behavior (HINES, 2011). Such a definition is really close to that of worldviews or level of consciousness provided by Cowan and Todorovic (2000).
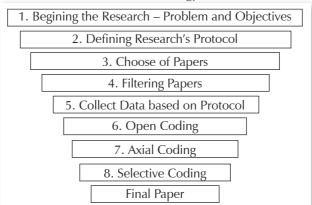
Considering the interplay of the three above mentioned variables (knowledge management, teamwork and human vaues), these research main purpose can be summarized by the following question: How does human values, teamworking and knowledge management interrelate with each other on the industrial shop floor?

1   METHOD

In terms of its objectives, this is a descriptive research, for it is focused on identify and present the already developed research on the above-mentioned fields. However, it also presents some features of an explanatory research for it aims to provide a categorization of these studies and how they interrelate with each other. The reason a systematic literature review was chosen is due to its strategic and rigorous manner of conducting the literature review, which allows one to identify gaps in the theory, which can be explored later on (COOK; MULROW; HAYNES, 1997).

Grounded theory was used to develop the open, axial and selective codings (data analysis). Open coding is the process of reading papers and summarizing their characteristics in terms of method, objectives and findings, creating very narrow and specifically defined categories and allocating papers to them. The axial coding correlates and identifies relationships among the open codes, consolidating them into more broad and useful categories. Finally, the selective coding process rescues the research question in order to develop core categories and compare them with the research's initial aims, figuring out literature gaps (DROHOMERETSKI et al., 2015; CHO; LEE, 2014).

The research was divided into eight main phases, according to FIG. 1:

FIGURE 1 – Research Methodology

1. Begining the Research – Problem and Objectives
2. Defining Research's Protocol
3. Choose of Papers
4. Filtering Papers
5. Collect Data based on Protocol
6. Open Coding
7. Axial Coding
8. Selective Coding
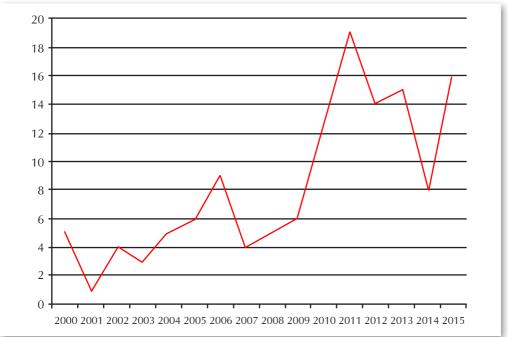Final Paper

SOURCE: The authors (2016)

To initiate the papers search on CAPES database, the authors decided to use all available journals from all available databases. By accessing CAPES via PUC-PR, these were the databases available: Scopus (Elsevier); OneFile (GALE); MEDLINE/PubMed (NLM); Science Citation Index Expanded (Web of Science); ProQuest Advanced Technologies & Aerospace Collection; Social Sciences Citation Index (Web of Science); Technology Research Database; SciVerse ScienceDirect (Elsevier); Materials Research Database; Wiley Online Library; ASSIA: Applied Social Science Index and Abstracts; Engineering Research Database; Materials Business File; Advanced Technologies Database with Aerospace; Emerald Journals (Emerald Group Publishing); Mechanical & Transportation Engineering Abstracts; Computer and Information Systems Abstracts; ERIC (U.S. Dept. of Education); Civil Engineering Abstracts; ANTE: Abstracts in New Technology & Engineering. The paper search focused on the period comprehended from 2000 to 2015.

The three variables focused by the research (Knowledge Management, Teamworking and Human Values) were deployed into the following keywords (using the string code cited before): Knowledge Management; Knowledge Sharing; Knowledge Management on the shop floor; High-involvement Innovation; Teamworking; Team work; Semi-autonomous Groups; autonomous groups; Levels of Consciousness; Levels of Human Development; Worldviews; Values.

At the beginning of the search process, all possible filters (period, language, and article) were used to refine journals findings, focusing exactly in the research questions. For example, in the search for "autonomous teams", the category "Robotics" was disabled, because this issue wasn't related to the research questions presented in the study. This sort of action diminished the numbers of papers found from (approximately) 312.000 to 10.000 papers, considering all those three main subjects: Knowledge Management, Teamworking and Human Values on the shop floor.

Using these criteria, the authors evaluated titles and abstracts in order to make sure they were related to research objectives, which limited the search further to 131 publications. This process was performed in two subsequent steps: i) discarding papers which focus was different from Business companies with an industrial context and those which conclusions couldn't be at least extrapolated to the shop floor context; ii) Discarding those papers that didn't explore the relationship between the variable under study and at least one of the other two variables. Exhibit 1 the amount papers per year.

EXHIBIT 1 – Publications Per Year
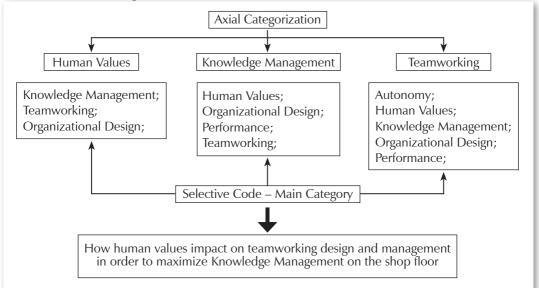
2   FINDINGS AND DISCUSSION

With all papers collected and divided into folders, the open coding was developed. Seventeen different open codes were identified for the variable Knowledge Management, varying from "How humans values affect knowledge management and organizational performance" to "How knowledge management affects team performance". All papers found in the search conducted with the keywords for the 'Knowledge Management' variable were allocated to one of these categories. The papers found in the search with one of the keywords for the variable 'Teamworking' originated fourteen different open codes. Finally, the paapers found in the search with one of the keywords for the variable "Human Values" were divided into five different categories.

The axial categorization was performed aggregating the categories of the open coding into more broad categories related to the aim of the study. As an instance, for the variable "Knowledge Management" five different open codes (all of them focusing performance related issues within the Knowledge Management context) were agregated into just one axial category named "Performance". "Performance", "Human Values", "Organizational Design", and "Teamworking" were the main axial categories on which papers focusing primarily on Knowledge Management were divided into. In a similar fashion, papers focusing mainly on Teamworking were divided into five axial categories: "Performance",

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"Knowledge Management", "Organizational Design", "Autonomy and Human Values". Finally, papers focusing primarily on Human Values were divided into only three axial categories: "Organization Design", "Knowledge Management and Performance" and "Teamworking" (the axial coding process can be seen in Exhibit 2).

After the conclusion of the axial coding for each one of the three variables, each group of axial categories (related to one of the variables) was cross-checked with the other two groups in order to identify possible redundancies. In this process, three sets of redundant categories were identified, for in each of them the same interplay of variables were under investigation. For example, one of the three axial categories for the variable "Teamworking" was "Human Values", which included all papers focused on the impact of human values in teamworking effectiveness. Besides, one of the five axial categories for the variable "Human Values" was "Teamworking", including all papers aiming to investigate how teamworking relates to human values. So, these two categories were fused into just one, presented as one of the nine areas of research (shown in Exhibit 3).

The Exhibit 2 present the three axial categories put together to form a whole regarding the interrelations of the three variables. This process was performed to assure that the main objective of this research, i.e., to identify the influence of the values of team members on their teams' performance in terms of knowledge sharing and creation was accomplished (or not) by one or more of the selected articles.

In all three categorizations, the focus was to identify papers which investigate how human values impact on teamworking design and management in order to maximize knowledge creation in the shop floor. Therefore, this was the selective coding defined for all three coding processes conducted.

EXHIBIT 2 – Axial Categorization – Interrelations between the three variables

SOURCE: The authors (2016)

Considering the crossed aspects of the Axial Coding performed, it was possible to define nine main areas of research in the interplay of the three variables. These areas are shown in Exhibit 4.

EXHIBIT 3 – Areas of Research

Areas of Research	Main Subjects Investigated
Human Values vs. Knowledge Management	Investigate how Human Values affects Knowledge Management sharing and creation.
Human Values vs. Teamworking	Focus on the role played by human values and culture on teams' effectiveness.
Human Values vs. Organizational Design	Investigate the interplay of the two variables, focusing on both how organizational design effectiveness is affected by human values and culture and how organizational design can change human values.
Knowledge Management vs. Organizational Design	Focus on types of Organizational Designs that enable a better Knowledge sharing and creation
Knowledge Management vs. Performance	Focus on both how knowledge management initiatives enhances organizational performance and how to measure Knowledge Management performance.
Knowledge Management vs. Teamworking	Explore how Knowledge Management is affected by teamworking.
Teamworking vs. autonomy	Investigate the role played by autonomy in teamworking effectiveness.
Teamworking vs organizational design	Explore the interplay of teamworking and organizational design in a macro-level, i.e., how teamworking affects organizational design effectiveness and how organizational design in a macro level limits teamworking performance.
Teamworking vs. Performance	Investigate how to improve teamworking performance.

SOURCE: The authors (2016)

Regarding this article main purpose, i.e., to identify how people values impact teamworking in order to maximize knowledge management performace, many studies emphasized the impact of workers's consciousness levels on Knowledge creation. Authors such as Matzler et al. (2008) conducted an empirical study on which it was identified that individuals consciousness levels impacts knowledge sharing performance. In a similar way, Glazer et al. (2004) made cross-cultural comparisons, collecting data from workers from different countries such as Hungary, Italy, UK and USA. The authors found that values influence people's commitment with the organizations and human values are influenced by national culture. Accordingly, on a study developed by Taewon Moon (2013), it was found that cultural values affects human values, which in consequence, affects teamworking.

Pais (2010), in a study of self-managed teams, described an increase of commitment and productivity when people experienced autonomy. On the other hand, Devaro (2008) found that there is no statistically significant difference between the predicted gains from autonomous against non-autonomous teams. The opposition between these two findings is an indication that there is something in-between autonomy and team effectiveness, i.e., there might be a modulator of these two variables, inhibiting a direct causal relationship between teams' autonomy and teams' performance.

Intrinsic and extrinsic motivation influences workers' intention to share knowledge, but also, results and job oriented cultures have positive impacts on employee's intention in the knowledge management process. Some studies showed the importance of a trust environment in order for workers to want to share their knowledge and their own experiences with their teams. A strong positive relationship was found between trust and knowledge sharing for all types of teams, but the relationship was stronger when task interdependence was low, supporting the position that trust is more critical than autonomy as a driver of knowledge sharing and creation (STAPLES; WEBSTER, 2008).

Worker's lack of consciousness may negatively affect the intention to share knowledge, consequently guiding to a weak decision-making and communication in organizations. Also, it limits the organization in some aspects like the ability to refuse external risks, implement innovation and managing risks (ISRAILIDIS et. al, 2015). This result implies that more complex levels of consciousness and values are needed to cope with the volatility, uncertainty, complexity and ambiguity increasing, typical of the new industrial environment.

Finally, it wasn't possible to identify a study aimed in the analyse of the impact of team member values on different teams' designs effectiveness in terms of knowledge sharing and creation, what represents an important literature gap to be explored in subsequent researches.

CONCLUSION

It was possible to identify in the literature many works emphasizing how human values affect teams and their performance. The same was found regarding the interplay of human values and knowledge management. Furthermore, the impacts knowledge sharing and management have on organizational performance is the focus of many of the identified papers. Finally, it was also possible to find many works on the interplay of organizational and teams design, knowledge management and sharing. Nevertheless, there was no paper focusing on how human values impact on teamworking design and management in order to maximize knowledge management on the industrial shop floor. Despite the fact that nine different categories of studies were identified, most of them were focused on the interplay of only two of the three variables that were the focus of this research. This finding alone represents the accomplishment of one of research's main objectives, i. e., identifying a gap in the literature.

Furthermore, the study provided many insights into the terms most used for its three main variables. For example, it was realized that the term "self-managed teams" refers to all types of teamwork without a formal supervision defined by the management level.

For future work, it is suggested that the categories defined in this study can help organize other knowledge management, teamworking and workers values studies. Furthermore and most of all, it is suggested that the interplay of team members' values and teamwork design and their impact on knowledge management performance on the shop floor constitutes a new field of study in the area.

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