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Ten years of conflict management research 2007–2017: an update on themes, concepts and relationships

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Abstract

Purpose - The purpose of this study is to map the intellectual structure of conflict management studies by investigating the key themes, concepts and their relationships for the period 2007–2017. The study updates the previous decade (1997-2006) investigation by Ma et al. (2008) to reflect the increased publication efforts in the field.

Design/methodology/approach - Bibliometric analysis was used to trace the development path of the extant literature. The study included: activity indicators, such as distribution of articles and most-cited journals; relationship indicators, such as co-author analysis and keyword analysis, and the mapping of the theoretical foundations.

Findings - The analysis identified five key themes that help to track the direction of conflict management research: negotiation, mediation, trust, conflict management styles, and performance.

Originality/value - These themes show a wider diversification of topics in the field than in the past, corroborating previous results about the reputation and maturity of conflict management as an independent scientific field of research. This study will help scholars to improve their understanding of the evolution of conflict management studies and the direction that conflict management research is taking identifying available avenues for future research.

Keywords: Conflict management, bibliometric analysis, negotiation, mediation, trust, conflict management styles, performance

Ten years of conflict management research 2007–2017: an update on themes, concepts and relationships

1. Introduction

Management research on conflict management has seen an extensive increase in the decade 2007–2017, producing more than 700 articles compared to the 500 produced in the previous decade of 1997–2006 (Ma *et al.*, 2008). Best practice dictates that when there is a dramatic increase in research in a short time period, it is necessary and helpful to researchers to provide an up-to-date snapshot of the literature (Boyack and Klavans, 2014; Zupic and Čater, 2015). For this reason, we endeavor to provide a bibliometric analysis of conflict management to take stock of the state of the art of the literature.

The objective of this study is to provide management scholars with an update on, mapping and systematization of, conflict management research for the period 2007–2017. Given the changes that have emerged in the last ten years that have affected research in conflict management, such as for example the emergence of new forms of workplace organization, it is important for the field to trace its evolution and provide scholars in conflict management, as well as scholars from other field approaching conflict management, with a clear and updated documentation of the main themes, concepts and relationships in the field. To address this gap, and to be comparable and in continuity with previous evaluation of the field of conflict management (Ma *et al.*, 2008), this study proposes a bibliometric analysis that covers the years from 2007 to 2017. Stemming from Brown and Eisenhardt (1995) and Furrer *et al.* (2008), the study aims to help scholars and practitioners better understand the evolution of conflict management research and the direction it is taking, and identify available avenues for future research.

The study identified five streams of research with unbiased methods that can assist future scholars in producing ad hoc literature reviews of such streams. It proposes the analysis of knowledge created around conflict management by management scholars through several analyses, including: activity indicators, such as distribution of articles and most-cited journals; relationship indicators, such as co-author analysis and keyword analysis; and the mapping of the theoretical foundations of the field, based on normalized citations of sources. In terms of thematic areas, based on the analysis of keywords, five clusters emerged: negotiation; mediation; trust; conflict management styles; and performance. The results of this study show a wider diversification of topics in the field than in the past, corroborating previous results about the reputation and maturity of conflict management as an independent scientific field of research. The paper is structured as follows. The following section explains the value and operationalization of the adopted methodology. Then results are presented in terms of distribution of papers over time; most-important journals and their aggregation; most-important authors and their network analysis; keyword analysis highlighting six clusters that represent the main topics that have emerged in the last ten years; and the theoretical foundation of the field and how it has evolved from the past. Finally, the results are discussed and future research directions are identified.

2. Methodology

2.1 Analyzing academic literature

In recent years, the proliferation of scientific research has produced a huge volume of articles in all fields of research. As a result, it is increasingly difficult for scholars to keep track of the relevant studies in their fields. This calls for the need to produce scientific works that evaluate

and map the knowledge created in a certain field, or on a given topic, or during a time frame.

Several methods have been developed and used in management research to respond to this need and these have been grouped into three domains: literature reviews; meta-analyses; and science mapping with bibliometric analysis (Boyack and Klavans, 2014; Ding et al., 2014; Zupic and Čater, 2015).

Literature reviews, typically systematic, structured, partially-structured or critical (Callahan, 2014), provide a narrative account of the knowledge created in a field. Literature reviews have been quite successful in management research due to their ability to handle a diversity of studies and methodological approaches, often bridging different fields around a given topic (e.g., Caputo, 2013). They can provide in-depth analysis of a field of studies, a contextual understanding of a subject and, often, theoretical advancement through the identification of research agendas or a new theoretical framework (Tranfield *et al.*, 2003). However, the process of writing literature reviews is time-consuming, often lacks rigor, and is prone to the researchers' biases, resulting in a limited analysis of the selected studies or exclusion of important studies (Tranfield *et al.*, 2003).

Meta-analyses are aimed at synthesizing the empirical evidences from quantitative studies by aggregating multiple findings from different studies that investigate a chosen and exact relationship (Zupic and Čater, 2015). Meta-analyses offer a very powerful and rigorous method; however, they are quite limited in the scope and type of studies that can be analyzed. Hence, meta-analyses cannot be deployed to produce a comprehensive picture of the state-of-the-art of a field of studies.

Mapping science in a field using bibliometric methods offers a different perspective from literature reviews and meta-analyses by producing, through a combination of classification and

visualization, a spatial representation of the findings similar to a geographical map (Zupic and Čater, 2015). It can provide a broad analysis of a field or the intersection of more fields of research, similarly to a literature review, but without compromising on rigor and without limiting the number of studies analyzed (Bendixen, 1995). Bibliometric methods “can analyze any type of study as long as connections among studies exist in the corpus of analyzed studies” (Zupic and Čater, 2015, p. 436); therefore, bibliometric methods offer the powerful benefits of meta-analysis without compromising on the number of clear relationships investigated (Dabic et al., 2014). Bibliometric methods can handle a wide breadth of hundreds or even thousands of studies, providing a graphical representation of a research field (Zupic and Čater, 2015). Consequently, bibliometric studies, although they do not represent a substitute for meta-analyses or literature reviews, can serve as a complement to those traditional methods of literature investigation. Given their characteristics, bibliometric methods are particularly suitable to provide a macro picture of a research field and its evolution to guide further meso and micro investigations of the literature.

Using bibliometric methods, data are gathered through online databases with citation data (e.g. Web of Science by Clarivate, Scopus by Elsevier, EBSCO or ProQuest) and analyzed with ad-hoc software (e.g. BibExcel, VOSViewer). Scholars can base their findings on aggregated bibliographic data produced by other scholars in the field, who express their views through citation, collaboration and writing. These data are then aggregated and analyzed in terms of insights, social networks and topical interests (Zupic and Čater, 2015).

According to Zupic and Čater (2015), the main analyses that can be performed with bibliometric methods usually relate to *citations* (in terms of co-citation analysis and bibliographic coupling), *authorships* and *keywords*.

Co-citation analysis (McCain, 1990; Small, 1973) constructs measures of similarity between articles, authors or journals, by using the frequency with which two units are cited together, i.e. co-citation counts. This method assumes that the more two items are cited together, the more likely the content would be related. Articles, authors and journals are connected on the basis of how other scholars write about them, allowing for a rigorous aggregation performed by experts in the fields, who cite publications they judge valuable and interesting (Zupic and Čater, 2015). Due to the time necessary for publications to be produced and citations accumulated, this methodology offers a picture of the field of study in the past, rather than the present. However, as co-citation analysis is dynamic because it reflects changes through time, when performed over time it is helpful in detecting shifts in paradigm and evolution of the field (Pasadeos *et al.*, 1998; Zupic and Čater, 2015).

Bibliographic coupling (Kessler, 1963) is another form of analysis of the citations of an article, and measures the similarity between two articles by identifying the number of references they share. The assumption is that the more the references of two articles overlap, the stronger their connection would be. While co-citation analysis measures the similarity of cited articles, through citing articles, bibliographic coupling measures the similarity of citing articles by aggregating cited articles (Vogel and Güttel, 2013). Because the number of cited references in an article does not change over time, bibliographic coupling can be considered a static analysis as it is not influenced by when the analysis is performed. Due to its characteristics and the fact that citation habits change with time, this method is best used within a limited time frame (Zupic and Čater, 2015). Moreover, while co-citation analysis allows for a clearer identification of the most important articles (the more an article is cited, the more important it is for the field), bibliographic coupling cannot be used to make such judgements, making it a challenge to

identify which articles are more important. Yet, this is also a weakness of co-citation analysis because it provides more information for older articles. However, scholars can adopt normalized measures for the citation to limit this aspect (Waltman *et al.*, 2011).

Although powerful, bibliometric methods based on citations have several limitations and have been subject to criticism. For example, Wallin (2005) pointed out that scholars may cite work to criticize its mediocrity or to refute it. However, negative citations are quite rare and scholars cannot assume that the critic is always correct (Zupic and Čater, 2015). A similar argument is being put forward regarding the possible biased results arising from extensive self-citation in some fields; however, the impact of this aspect on one field is limited because, as Zupic and Čater (2015) correctly point out, “one would have to publish a tremendous amount to reasonably increase the citation frequencies” (p. 434).

Co-author analysis (Acedo *et al.*, 2006) is used to perform a social network analysis of scholars by analyzing collaborations on scientific articles. It is assumed that a collaborative relationship between two authors exists when they co-publish an article. As co-authorship reflects stronger ties than co-citation, co-author analyses are considered suitable for investigating social networks rather than the intellectual structures of a given field (Zupic and Čater, 2015). This analysis allows scholars who wish to map the field to investigate collaborations in depth, not only in terms of individuals, but also in terms of institutions and geographical areas, providing a good complement to co-citation analysis when the aim is to perform a clear map of the field.

Another type of bibliometric method used to complement the others is *co-word analysis* (Callon *et al.*, 1983), which is a form of content analysis that uses the words in the article to build relationships that form a conceptual structure of the domain. It assumes that when words frequently co-occur in the article, the concepts related to those words are closely related (Zupic

and Čater, 2015). As this is the only bibliometric method that uses the content of the articles to directly measure similarity, where the others use indirect measures such as citations and authorships, co-word analysis is particularly powerful and appropriate to develop a semantic map that helps in understanding the conceptual structure of a field. This type of analysis can be applied to different sections of the articles, from the text itself to the title, keywords and abstracts, with the unit of analysis being a concept and not the article itself.

2.2 The visualization of similarities technique

While literature reviews seem more appropriate when investigating in-depth and delimited scopes, and meta-analyses are bounded by pre-identified relationships between constructs, science-mapping based on bibliometric studies is seen to be more appropriate when the aim of the researchers is to provide a full account and a picture of the evolution of a large field of studies (Boyack and Klavans, 2014; Ding et al., 2014; Lu and Wolfram, 2012; Zupic and Čater, 2015). Therefore, to perform an accurate analysis of conflict management as a field of research, a bibliometric analysis based on the visualization of similarities (VOS) technique (van Eck *et al.*, 2006; van Eck and Waltman, 2010) is adopted following a three-step process. Following the previous investigation of the field by Ma *et al.* (2008), the first step involved a comprehensive search of the Thomson Reuters Web of Science Core Collection database, which offers the most valuable and high-impact collection of data and is recognized as the most reliable database for bibliometric studies (Ding *et al.*, 2016; Falagas *et al.*, 2008; Gu, 2004). Web of Science Core Collection ensures that all the papers, books and other materials are manually scanned and selected to guarantee the inclusion only of the most high-end and high-impact research (Kullenberg and Kasperowski, 2016; Leydesdorff *et al.*, 2013).

The second step involved the selection of the research query. As this study contributes a necessary update on a previous bibliometric investigation of the literature in conflict management (Ma *et al.*, 2008), it was necessary to ensure consistency of results to allow for a comparison of the last two decades, providing scholars with insights about the evolution of the field. Hence, the broad series of research terms used in Ma *et al.* (2008) was expanded by adding “conflict behavior” and “conflict behaviour”. The resulting query was *TS= (“conflict management” OR “conflict resolution” OR “conflict style” OR “conflict handling” OR “conflict behavior” OR “conflict behaviour”)* where the “TS” operator performed a full search of the selected terms in titles, abstracts and keywords. Consistently with the best practices in bibliometric research (Ding *et al.*, 2016) the final search string was identified by following several attempts with different keywords. To ensure the inclusion of all relevant data, a cross-validation was made with Scopus and EBSCO Business Premier, and Web of Science Core Collection resulted in being the most appropriate database to use. Only peer-reviewed articles were retained and a total of 708 papers resulted in the final dataset.

The third step consisted of the core bibliometric analysis. We performed a similarity analysis using the bibliometric tool VOSviewer 1.6.8, with co-citation analysis as the ratio to aggregate the data. Regarding the aggregation method, co-citation analysis allows us to reveal the theoretical foundations of the research field by assessing the similarities among cited articles to have an historical perspective about the knowledge produced by the journal. Indeed, as pointed out by Zupic and Čater (2015, p. 439), co-citation analysis permits addressing questions such as: *“What is the intellectual structure of literature X?; What is the structure of the scientific community in a particular field?; and How has the structure of this field developed over time?.*

The VOSviewer tool allows the results from the co-occurrence matrix to be shown. Co-occurrences result from the presence, frequency and proximity of similar pairs of terms in the data, in our case of cited references (van Eck and Waltman, 2014). Next, the script performs a set of routines to build a two-dimensional map in which the items 1 to n are positioned to such a degree that it represents the distance between any pair of items x and y , reflecting their similarity in term of cited references. In addition, a cluster density view is performed with additional mathematical steps. When the density of the items is calculated, each cluster is associated with a color, where the color of an item is determined by the cluster to which the item belongs. The color of a point in the map is determined in VOSviewer with a two steps process. In the first, the colors of the clusters are mixed together. This is done by calculating a weighted average of the colors, where the weight of a color equals the item density for the corresponding cluster. In the second step, the color obtained in the first step is mixed with the (black or white) background color of the cluster density view. However, it is worth noting that each analysis that uses this visualization procedure will cluster items based on the dimension in analysis (e.g. keywords, authors, etc.), as it is recommended to use primary colors as much as possible, it may happen that different analysis will use the same colors for their cluster, as in the case of our paper.

In doing this, VOS analysis offers a large set of information in one single graphical map and the map built by the text-mining routine is a plot in which the items' distance can be interpreted as an indication of the relatedness of the terms. In fact, the smaller the distance between the terms, the stronger the terms are related to each other (c. In addition, the cluster analysis highlights the knowledge base diversity in an aggregate way. In the case that the papers belong to the same cluster, it means they are strongly linked together as a group on the basis of their shared references; this indicates that a cluster represents a stream of research or a particular topic on a

similarity basis. However, for a detailed mathematical explanation about VOS technique and VOSviewer, please see van Eck and Waltman (2007; 2010).

3. Results

The bibliometric analyses performed provided results based on different levels of analysis of the field: articles and journals; scholars; keywords; and theoretical foundations of the field of conflict management in the years 2007–2017.

3.1 Activity indicators: distribution of articles and most-cited journals

The first analysis concerned the number of publications produced in the field. Figure 1 shows how the publication of conflict management studies has grown consistently in the investigated timeframe (2007–2017), with 2017 being the most prolific year. In total, the field produced more than 708 articles, published by 192 journals, and cited 7.225 times, confirming the growing trend in the field. Out of the 708 published articles, 84 (11.86%) were published in Special Issues, and contributed to 15.91% (N = 992) of the citations, meaning that articles published in Special Issues resulted in more citations and had a stronger influence in the field. The average number of citations for an article was 10.20, while the median was 4.00, and the mode 0.00 (21.33% of articles in the dataset had 0 citations). For journals, the average number of citations was 37.43, while the median was 12.00 and the mode 0.00 – meaning that, unfortunately, contrary to other management fields, most of the conflict management articles have not been cited during the period 2007–2017. A total of 92 articles (12.99 %), declared to have received funding for their studies, produced 6.46% of the citations (N = 467).

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To identify the key publications, a bibliometric analysis of the journals that publish articles in the area of conflict management has been undertaken. Table 1 lists the most frequently cited journals in the field of conflict management in the period, among which the *International Journal of Conflict Management*, *Journal of Business Ethics* and *Journal of Organizational Behavior* are the most cited. Comparing this result with the analysis of the previous decade (Ma *et al.*, 2008), it is possible to ascertain how the field has evolved. The *International Journal of Conflict Management* has a substantial increase in citations, from 160 (1997–2006) to 815 (2007–2017), confirming the quality and specialization of the literature published in this journal during this period. It is reasonable to argue that the field has evolved towards publishing in more specialized journals, rather than general management or organizational psychology journals. Indeed, the *Negotiation Journal* grew its citations from 79 to 224, while *Negotiation and Conflict Management Research* (top-10 with 130 citations) and *Group Decision and Negotiation* (top-15 with 98 citations) outranked prestigious journals that were on top of the list in the previous decade (Ma *et al.*, 2008). Yet conflict management literature is also well cited in well-established journals such as *Journal of Business Ethics*, *Journal of Organizational Behavior*, *Academy of Management Perspectives*, *Journal of Applied Psychology*, *Journal of Business Research* and *Group and Organization Management*, as well as in more sectorial journals such as *Industrial Marketing Management* and *International Journal of Product Innovation Management*. Such data confirm the status of a well-established field that not only has its own dissemination medium, but is also capable of opening up and applying its own knowledge to other contexts and fields.

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To provide a map of the journals and how publications aggregate around journals, a co-citation analysis was performed. Figure 2 shows how the *International Journal of Conflict Management* constitutes the central node of the social network of journals. Moreover, albeit all journals are connected with each other, confirming again the establishment of a common knowledge around conflict management, we can see how the journals aggregate. For example, it appears that *Journal of Business Ethics* and *International Journal of Human Resource Management* have dealt with similar topics, linked to those investigated in the *Journal of Organizational Behavior*. Similarly, there are strong ties between *Journal of Organizational Behavior*, *Negotiation Journal*, *Small Group Research* and *Group Decision and Negotiation*, and these are closely related to the topics published in the *International Journal of Conflict Management*. Another cluster seems to be related to journals more focused on industrial and operational management, such as *Information & Management*, *International Journal of Project Management*, *Industrial Marketing Management* and *Journal of Business Research*, all of which show strong ties.

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3.2 Relation indicators: co-author analysis

Having identified the most influential publishing outlets, this section presents the results of the *co-author analysis* (Acedo *et al.*, 2006), or social network of authors, based on the co-citation analysis for the authors. The co-citation analysis of authors has produced a social network analysis for the years 2007–2017 that shows how authors in the field of conflict management

tend to aggregate on six clusters (Figure 3). Table 2 presents the ten most cited authors for each cluster. The most cited scholars in absolute terms were Mannix, Cropanzano, Tjosvold, Greer, Jehn, De Dreu, Behfar, Ayoko, Ndubisi, Gelfand, Oetzel and Roche. These scholars have the most influence in the development of the field of conflict management and, thus, collectively define the last decade of conflict management research from a managerial perspective.

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To mitigate the bias against early scholars typical of citation analysis, the co-citation analyses performed with VOSViewer adopted normalized citations when aggregating clusters. Figure 3 shows how the authors aggregate in each cluster. While it can be noted, similarly as for the analysis of journals, that authors in the field are all connected with each other, it is also possible to discern groups of authors that work on similar topics.

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From Figure 3 it is possible to observe that though clusters are created, there is a strong cross-fertilization and collaboration among authors from different clusters. This shows that scholars interested in conflict management from a managerial perspective tend to work together in the long term and research teams emerge on different projects. Only authors in the purple cluster seem to be working as a separate entity and are connected with the rest of the field only through the co-authorships of Brett.

3.3 Relation indicators: keywords analysis

To complement the previous analysis and produce a map of the intellectual structure of the field of conflict management a *co-word analysis* (Callon *et al.*, 1983) was undertaken on the basis of the keywords provided by the authors, in which co-occurrences are considered to aggregate topics (Figure 4). Because we are investigating conflict management as a field, and following best practices in bibliometric research (e.g., Ding *et al.*, 2016) some keywords were excluded from the analysis to allow for a meaningful visual representation. The excluded keywords were either too generic, such as ‘conflict management’ or ‘conflict’, hence aggregating virtually all studies in our dataset, duplicate of others, or related to a specific case or country being analyzed. By excluding those keywords we allowed more specialist clusters to emerge, which resulted in a more fine-grained result.

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Table 3 shows the number of occurrences for each keyword included in the co-word analysis aggregated by the clusters found. In the case of the co-word analysis five clusters were found: (1) Negotiation; (2) Mediation; (3) Trust; (4) Conflict Management Styles; and (5) Performance. As can be noted from Figure 4, albeit the existence of identifiable clusters, the keywords that represent a proxy for the topics investigated by the scholars are also connected not only within the cluster, but also among different clusters, confirming the cross-disciplinary and cross-fertilization effect among topics in the field of conflict management.

‘Negotiation’, the first cluster, is a strategic means for handling conflict and is outlined as the procedure whereby two or more parties choose what each will offer in a relationship (Thompson, 1991). It is argued that cognitive biases undermine the information-sharing process in negotiation and influence the value created and claimed from the negotiation (Thompson, 1991).

The process of negotiation is argued to be infused with a wide range of emotions (Elfenbein, 2007) and, therefore, not surprisingly the closest sub-category to negotiation is emotions. Indeed, recent research has examined the outcomes of emotion on negotiation in more depth. For example, when the negotiator expresses emotional inconsistency, the recipient may make greater concessions than when the negotiator expresses a consistent emotion (Sinaceur et al., 2013). It has also been suggested that people can regulate the emotions of others to achieve personal instrumental benefits and can intentionally make both friends and adversaries feel bad (Netzer et al., 2015). Likewise, the field of negotiation theory stresses the importance of power as a factor to enhance the bargaining power of actors (Dür et al., 2010; Zartman and Rubin, 2002). There is also a close relationship of gender to emotion and power, which could be explained by gender differences being amongst the most enduring issues in negotiation research (Mazei et al., 2015). Undoubtedly, central works in negotiation help to confirm the cross-disciplinary nature by integrating key ideas from across several disciplines. The most distant sub-categories to fall under negotiation are integration and bargaining. It is interesting that they also are not related to each other or any other category. This could be due to a reduced interest in these areas of studies, at least partly because of the transformation of industrial relations in advanced capitalist societies (Baccaro and Howell, 2011). Another reason is that negotiation is being steadily replaced by mediation (Currie et al., 2017). Ultimately, there exists a strong tie between the studies focusing on ‘negotiation’ and ‘mediation’.

‘Mediation’, the second cluster, is a process by which a neutral third party – a mediator – helps people in conflict negotiate a mutually acceptable agreement and it is the parties to the mediation that control the outcome (e.g., Martinez-Pecino et al., 2008; Moore, 2014). Mediation is often necessary in negotiation as disputing parties are often not aware of the predictable patterns of

behavior in conflict situations, and cannot usually identify options available for resolving differences; as a consequence, the resulting conflict often escalates and requires third-party professional mediators (Bollen and Euwema, 2013; Carpenter and Kennedy, 1988). In addition, mediation gives parties much more control over the way their dispute or difference is dealt with, and over the outcome. If negotiations have so far failed, mediation provides an alternative to pursuing litigation or other more formal processes by facilitating communication, promoting understanding, assisting the parties to identify their needs and interests, and using creative problem-solving techniques to enable them to reach their own agreement (Carpenter and Kennedy, 1988). In some countries, it has been detected that the decline of unionization and collective bargaining has been coupled with the transfer of workplace conflict from strikes to a range of individual manifestations of conflict (Dix et al., 2009). Along these lines, the analysis of mediation showed diverse sub-categories: cognition; communication; emotion; ethnic conflict; social conflict; and even civil war.

‘Trust’ is the third cluster, and many theories emphasize that it is the most relevant to behavior in situations involving a conflict of interests. For example, trust is essential to initiate, establish and maintain social relationships, encourages the initiation of mutual cooperation, results in greater relationship commitment and satisfaction, facilitates the flourishing of groups and nations, and promotes the stability and quality of social networks (Balliet and Van Lange, 2013). Indeed, trust permeates the range of possible social relationships and in this study, it emerged as a very central category with 11 related topics. To the left of there is: individual behavior; collectivism; knowledge sharing; cooperation; justice; arbitration; alternative dispute resolution; and workplace – these sub-categories showing a strong association with both mediation and

negotiation. For example, recent research suggests that mediation can act as a catalyst for new forms of trust between managers and employees and their representatives (Currie et al., 2017). Further sub-categories of trust include commitment, interpersonal relationships and mobbing, which appear to be more aligned with culture. It is worth noting how the topic of personality and individual differences has regained prominence in the field (Sharma, Bottom and Elfenbien, 2013) and how this topic is typically investigated together with performance in negotiations, innovation and social capital.

‘Conflict management styles’, the fourth cluster, have been described as specific behavioral patterns that individuals prefer to employ when dealing with conflict (e.g., Moberg, 2001). Conflict management styles have been classified into five types: integrating; obliging; dominating; avoiding; and compromising (Rahim, 1983). Research typically implies that there is a penchant for persons to use the integrating style and the compromising style when facing conflicts (Shih and Susanto, 2010). While integrating and dominating styles significantly predicted both instigator and target incivility, accommodating, avoiding and compromising play a much less dominant role (Trudel and Reio Jr., 2011). In the analysis, the 10 sub-groups of conflict management styles were identified. The first three – emotional intelligence, job satisfaction and workplace conflict – emerged to be more aligned with trust, whereas culture, task conflict, relationship conflict, team performance and virtual teams were more aligned with the fifth cluster performance. In fact, culture is notable for a few reasons. First, while it rests within conflict management styles, it also sits on the intersection of trust and performance. Additionally, it can be seen how studies on culture have investigated topics related to both conflict and negotiation. For instance, Zhang *et al.* (2014) establish that conflict style appears to be dependent on cultural values. Evidently, culture is not correlated with mediation. It

is pertinent to point out that Jehn's (1997) gold standard classification of conflicts is particularly tied with cultural studies, as well as the conflict management styles and the relationship between culture and emotional intelligence in conflict management. In addition, Zhang *et al.* (2014) establish that some emotions are positive in conflict resolution; however, this appears to be dependent on cultural values.

The remaining five sub-categories of conflict management styles – teams, virtual teams, team performance, task performance and relationship conflict form an interesting assemblage and are reflective of Jehn's (1995) seminal studies that discern relational conflict and task conflict within work teams. The first study defines relational conflict and is concerned with interpersonal discordancy, task conflict and team member incompatibility (Jehn, 1995). A second study presents the idea of process conflict – defined as incompatible preferences over how a task should be performed (Jehn, 1997). Recent scholarly research has built on these early studies and generated numerous ideas. For instance, Greer *et al.* (2011) suggest that influential teams will hold onto and try to increase their power, while Nishii (2013) found that an environment of inclusion is needed to lessen relational and task conflict, and Tepper *et al.* (2011) contend that supervisors tend to defend ill-treatment of subordinates when they consider they are weak members of the team. 'Virtual teams' is a new area of interest and new research suggests that individuals face additional challenges in handling conflict. They tend to experience greater and more diverse conflict (Wakefield *et al.*, 2008) owing to the lack of media richness, while the asynchronous nature of technologically transmitted messages means that communication is more difficult and often stressful (Furumo, 2009).

'Performance,' the fifth cluster, incorporates: innovation; social capital; governance; personality; and management effectiveness. These sub-clusters could be more reflective of the emerging

contingency perspective in conflict studies. Moreover, they are strongly associated with negotiation, trust and culture, which is exemplified in a study by De Clercq *et al.* (2009). This study confirms the beneficial role of intra-organizational social capital for innovation and indicates that, at higher levels of trust, conflict and innovation may weaken. Significantly, a number of scholars (Avgar *et al.*, 2014; Currie *et al.*, 2017) propose that firms with high levels of social capital are unlikely to endure workplace conflict and may enjoy increased performance. Overall, we recognize that the huge body of conflict management research is developed from a field that includes an assortment of scholars who advance and appropriate theory from many disciplines, including organizational theory, organizational behavior, strategy, sociology, social psychology, industrial psychology and industrial relations (Ferraro *et al.*, 2005).

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3.4 Theoretical foundations of the field (2007–2017)

In order to provide a scientific map of a field in its maturity it is also important to understand which theories and research from the past have most influenced the production of new knowledge in the last decade. Therefore, an analysis of the normalized citations for the documents that are most cited by articles published between 2007 and 2017 is performed (Table 4).

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From Table 4 it is possible to assert the main theoretical foundations that influence the literature in conflict management (2007–2017). From this analysis it emerges that certain classic studies of conflict and conflict management remain some of the most cited sources, similarly to previous

analysis of the field (Ma *et al.*, 2008). In particular, two classic books, Deutsch's (1973) *The Resolution of Conflict: Constructive and Destructive Processes* and Blake and Mouton's (1964) *The Managerial Grid*, are frequently cited together. In addition, two articles, Thomas and Schmidt's (1976) *A survey of managerial interests with respect to conflict* and Pondy's (1967) *Organizational Conflict: Concepts and Models*, particularly with reference to the definitions of conflict, are also frequently cited together. Furthermore, Rahim's (1983) article *A measure of styles of handling interpersonal conflict*, which developed one of the first and most-used scales for conflict management styles, appears among the most cited sources.

The studies in which Jehn (Jehn, 1995, 1997; Jehn and Mannix, 2001) developed the typology of conflicts in tasks, process and relationships, constitute one of the main pillars of the field and make this scholar the most influential contributor to the field of conflict management. This stream of research on types of organizational conflict is also underpinned by important articles by De Dreu and colleagues (De Dreu *et al.*, 2001; De Dreu and Weingart, 2003), while Amason's (1996) study focuses on functional and dysfunctional conflict in strategic decision making. These scholars have the most influence in the development of conflict management research in the period 2007–2017 from a managerial perspective and thus, collectively, define the theoretical foundations of the field.

3.5 Future research

While conflict management research has progressed and diversified into many fields in the period 2007–2017, there remains much to be done. Thus, while each theme that has been identified has different implications for organizational practice, in combination they represent a formidable challenge for research. The important future research directions for conflict management research will now be summarized utilizing the five themes of conflict.

Within the theme of ‘negotiation,’ according to Lee *et al.* (2017), gender studies and conflict are far from complete. Similarly, in the category of ‘mediation’ there remains scope for studies on social conflict and ethnic conflict. For instance, the conflict between individual and collective rationality represents a fundamental challenge that is poorly understood.

The domain of ‘conflict management styles’ has placed significant attention on emotional intelligence, but according to Sharma *et al.* (2013) there are glaring research gaps. As proposed by Jordan *et al.* (2010), future scholarships could explore the influence of the work context on emotional intelligence and conflict, while Zhang *et al.* (2015) note that studies could use specific measurement of cognitive ability to determine conflict management ability. In addition, although there is no dearth of research on culture management and conflict styles, attention has been largely directed to individual countries – rarely across regions or countries, and with little research investigating new constructs, such as cultural intelligence (Caputo, Ayoko, et al., 2018; Imai and Gelfand, 2010). Perhaps an example of the general need for and/or fascination with culture and conflict managements styles is endorsed by global attention given to the challenges of the US/North Korea Trump/KIM negotiations in June 2018.

The category of ‘trust’ and conflict has received a lot of attention, but mobbing and bullying and the relationship of trust in conflict management (Einarsen et al., 2016) remain under-researched. ‘Knowledge-sharing’ and conflict research have also barely scratched the surface, and capacities for future exploration include individual traits in knowledge-sharing such as age, gender, race, education and personal values and characteristics, which could be addressed in future studies (Jiang et al., 2016).

Topics that call for attention relating to ‘performance’ include innovation/entrepreneurship and the notion that conflict stimulates innovation (Rahim, 2017). Entrepreneurship and conflict

management is another captivating topic that appears to remain virtually unexplored (Wu and Huarng, 2015); in particular scholars need to shed more light on the missing link between entrepreneurial cognition and conflict handling (Chen et al., 2015). Similarly, recent studies have highlighted the need for further research investigating conflict management and negotiation within family businesses (Caputo, Marzi, et al., 2018; Caputo and Zarone, 2018).

Nonetheless, we align with Currie *et al.* (2017) and select one area that is need of future research: the necessity to examine the role of HR in conflict management. While it is accepted that with the advent of a neoliberal state workplace conflict is managed somewhat differently (Currie et al., 2017), many difficulties subsist (Teague et al., 2015). Consequently, there is a dire need for researchers to examine the contemporary role that HR has adopted in companies in relation to conflict management. Moreover, it is evident that the employee's perspective around this issue has barely been explored (Fevre et al., 2012), and, therefore, an insight into the employee's perspective could be most enlightening and calls for pressing attention.

4. Conclusion

More than ten years have passed since the last knowledge map of the field of conflict management covered studies published until 2006 (Ma et al., 2008). It is timely, therefore, to update this knowledge map to testify to the growing interest in conflict management from managerial scholars. This study, however, went beyond a simple update of the previous depiction of the field and, as the technology evolved, was able to exploit bibliometric tools with cutting-edge capabilities. For instance, this study adopted the novel methodology of visualisation of similarities through VOSviewer software, a widely used software for bibliometric research in the medical and science fields. The result is an updated and contemporary knowledge map of the

field based on a large number of studies (more than 700 articles were analysed), which allowed the researchers to identify the main streams, teams and sources in the field of conflict management. The results suggest that in the period 2007–2017, management studies in conflict management, although relying on established and common theoretical foundations, evolved around different streams: gender, emotions and power in negotiations; culture and conflict management styles in the workplace; trust and cooperation; mediation and social conflict; performance and governance. This result exemplifies a wider diversification of topics in the field compared to the past and, as a result, future management studies in conflict management will probably continue to investigate more fine-grained aspects of conflict, contributing to the growth and maturity of the field (albeit still a niche field, scholars typically produced 10 citations during the 10-year period of 2007–2017). Indeed, conflict management in this 10-year period has further consolidated its reputation in academic research as a mature and legitimate academic field. The field includes specific journals, such as the *International Journal of Conflict Management*, that further develop and consolidate their position as leading outlets for conflict management research. However, a strong impact comes from conflict management studies published in non-conflict management dedicated journals, who tend to be cited more (see Table 1) such as the *Journal of Business Ethics* and the *Journal of Organizational Behavior*. Our results suggest that the trend of publishing conflict management research in generalist journals continues to happen in the conflict management field (Ma et al., 2008). This trend is probably due to the pressure faced by scholars to be published in top-ranking journals, which typically differ from country to country. For example, the *International Journal of Conflict Management*, the leading journal in the field, is highly regarded in the US, Australia and New Zealand, but is not yet included in the British, French, German or Italian list. Similarly, generalist journals

usually benefit from a wider audience, resulting in higher citation metrics compared to field-dedicated journals. Therefore, when faced with the dilemma of where to publish, scholars tend to look at general journals. While this could contribute to the cross-fertilization of different fields and a larger audience for conflict management scholars, at the same time it may hinder the development of conflict management as a field.

Authors biographies

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Dr Giacomo Marzi is Lecturer in Strategy and Enterprise at the Lincoln International Business School - University of Lincoln and his research is mainly focused on innovation management and new product development. He has authored and co-authored a number of papers that appeared in conferences, edited books and journals such as *Journal of Business Research*, *Scientometrics*, *International Journal of Conflict Management*, *International Journal of Innovation and Technology Management*, and *Business Process Management Journal*. He carried out research activities as Visiting Scholar in the University of Zagreb (HR).

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Dr Mario Silic is a post-doctoral researcher at the Institute of Information Management, University of St. Gallen, Switzerland. He holds a Ph.D. from University of St Gallen, Switzerland. His research motivation focuses on the fields of information security, open source software, human-computer interaction and mobile. He has published research in *Information & Management*, *Computers & Security*, *Computers in Human Behavior*, *Information Management & Computer Security*, *International Journal of Information Technology & Decision Making*, *Records Management Journal* and *Journal of Global Information Management*.

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Tables and Figures

Tables

Table 1 – Most-cited journals (2007–2017)

Journal	Number of Citations	Number of Articles	Average Number of Citations per Paper
International Journal of Conflict Management	815	127	6.42
Journal of Business Ethics	475	17	27.94
Journal of Organizational Behavior	284	8	35.50
Small Group Research	265	12	22.08
Negotiation Journal	224	55	4.07
European Journal of Operational Research	218	4	54.50
Journal of Applied Psychology	218	4	54.50
Journal of Managerial Psychology	216	10	21.60
Academy of Management Perspective	202	2	101.00
Ecological Economics	200	2	100.00
MIS Quarterly	181	2	90.50
Industrial Marketing Management	159	10	15.90
Negotiation and Conflict Management Research	130	43	3.02
Group & Organization Management	126	5	25.20
Information & Management	125	5	25.00
International Journal of Project Management	124	9	13.78
Journal of Management Studies	117	2	58.50
British Journal of Industrial Relations	113	4	28.25
Group Decision and Negotiation	98	30	3.27
Energy Policy	95	2	47.50
Journal of Business Research	92	10	9.20
World Development	91	4	22.75
Transportation Research	89	3	29.67
International Journal of Human Resource Management	81	11	7.36
Human Relations	78	4	19.50
Journal of Management Information Systems	78	6	13.00
Journal of Product Innovation Management	72	4	18.00
Creativity and Innovation Management	71	3	23.67

Note: Only journals with at least 70 citations are included in the table. Number of Citations is calculated as the total number of citations received by articles published in the journal during the time frame 2007–2017. Number of Articles is calculated as the total number of articles published by the journal during the time frame 2007–2017. Average Number of Citations per Paper is calculated dividing the number of papers in a journal divided the total amount of citation of the papers in the journal.

Table 2 - Author citation frequencies by cluster

	Azure		Yellow		Green		Red		Blue		Purple	
	Author	No. of citations	Author	No. of citations	Author	No. of citations	Author	No. of citations	Author	No. of citations	Author	No. of citations
1	Mannix, E	225	Cropanzano, R	209	Tjosvold, D	174	Ayoko, Ob	92	Gelfand, Mj	79	Roche, Wk	71
2	Behfar, Kj	133	Greer, Ll	182	Somech, A	73	Ndubisi, No	91	Oetzel, J	75	Teague, P	65
3	Chen, Cc	56	Jehn, Ka	143	Desivilya, Hs	71	Ma, Z	60	Leslie, Lm	58	Van Kleef, Ga	47
4	Chen, Hg	55	De Dreu, Ckw	137	Zhang, X	66	Parayitam, S	57	Nowak, A	36	Hipel, Kw	46
5	Chang, Jyt	10	Rispens, S	47	Li, Y	62	Tidstrom, A	50	Bui-Wrzosinska, L	29	Kilgour, Dm	33
6	Jiang, Jj	10	Euwema, M	19	Liu, H	60	Wang, G	40	Coleman, Pt	22	Bendersky, C	22
7	Klein, G	10	Bollen, K	18	Liu, Y	59	Boros, S	38	Kugler, Kg	20	Xu, H	17
8	Wang, Etg	10	Baillien, E	16	Zhang, Zx	57	Curseu, Pl	38	Severance, L	19	Chen, Y	12
9	Zhang, L	7	De Witte, H	16	Lin, Cp	36	Van De Ven, Ah	29	Das, Tk	18	Brett, J	7
10	Bear, Jb	5	Giebels, E	16	Wong, A	26	Kidder, Dl	26	Kumar, R	18	Avgar, Ac	5

Table 3 – Keyword occurrences by cluster (2007–2017)

	Yellow		Green		Red		Blue		Purple	
	Keyword	Occurrences	Keyword	Occurrences	Keyword	Occurrences	Keyword	Occurrences	Keyword	Occurrences
1	Negotiation	58	Conflict Management Styles	14	Trust	20	Mediation	30	Performance	11
2	Gender	10	Culture	13	Cooperation	8	Communication	13	Governance	6
3	Emotions	8	Task Conflict	10	Justice	8	Ethnic Conflict	8	Innovation	5
4	Power	8	Emotional Intelligence	9	Alternative Dispute Resolution	7	Social Conflict	6	Management Effectiveness	5
5	Bargaining	5	Job Satisfaction	9	Individual Behaviour	7	Civil War	5	Personality	5
6	Integration	5	Relationship Conflict	9	Workplace	7	Cognition	5	Social Capital	5
7			Teams	9	Mobbing	6	Emotion	5		
8			Virtual Teams	7	Arbitration	5				
9			Workplace Conflict	6	Collectivism	5				
10			Team Performance	5	Commitment	5				
11			Time	5	Creativity	5				
12					Interpersonal Relations	5				
13					Knowledge Sharing	5				

Table 4 – Most-cited articles in the field (2007–2017)

References	Citations
Jehn KA, 1995, Admin Sci Quart,	105
De Dreu CKW, 2003, J Appl Psychol,	78
Rahim MA, 1983, Acad Manage J,	78
Podsakoff PM, 2003, J Appl Psychol,	71
Jehn KA, 1997, Admin Sci Quart,	63
Amason AC 1996, Acad Manage J,	60
Deutsch M, 1973, Resolution Conflict	60
Blake RR, 1964, Managerial Grid	59
Jehn KA, 2001, Acad Manage J,	58
Fornell C, 1981, J Marketing Res,	48
Simons TI[L?], 2000, J Appl Psychol	46
Baron RM, 1986, J Pers Soc Psychol,	45
Aiken L, 1991, Multiple Regression	41
Rahim MF, 2002, Int J Confl Manage	40
Thomas KW, 1976, Hdb Ind Org Psychol,	39
Hofstede G, 1980, Cultures Consequence	38
De Dreu CKW, 2001, J Organ Behav,	36
Friedman RA, 2000, Int J Confl Manage	34
Anderson JC, 1988, Psychol Bull,	33
Chen GQ, 2005, J Manage Stud,	31
Hofstede G, 2001, Cultures Consequence	31
Mohr J, 1994, Strategic Manage J,	31
Morgan RM, 1994, J Marketing,	31
Tjosvold D, 1998, Appl Psychol-Int Rev,	31
Wall JA, 1995, J Manage,	31
Pondy LR, 1967, Admin Sci Quart	30

Note: only studies cited at least 30 times were included in the table.

Figures

Figure 1 - Distribution of conflict management articles (2007–2017)

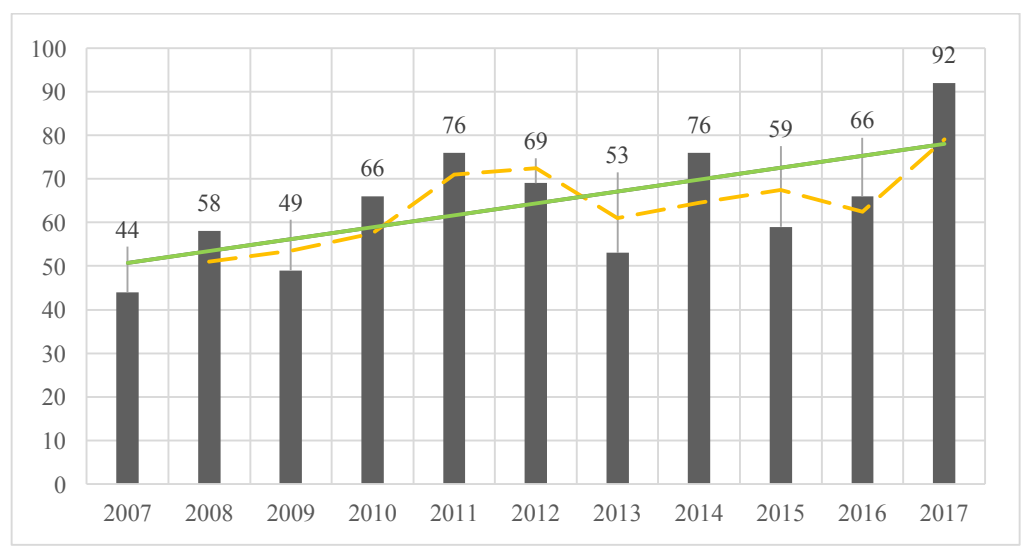


Figure 2 - Visualization of the social network of journals (2007–2017)

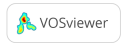
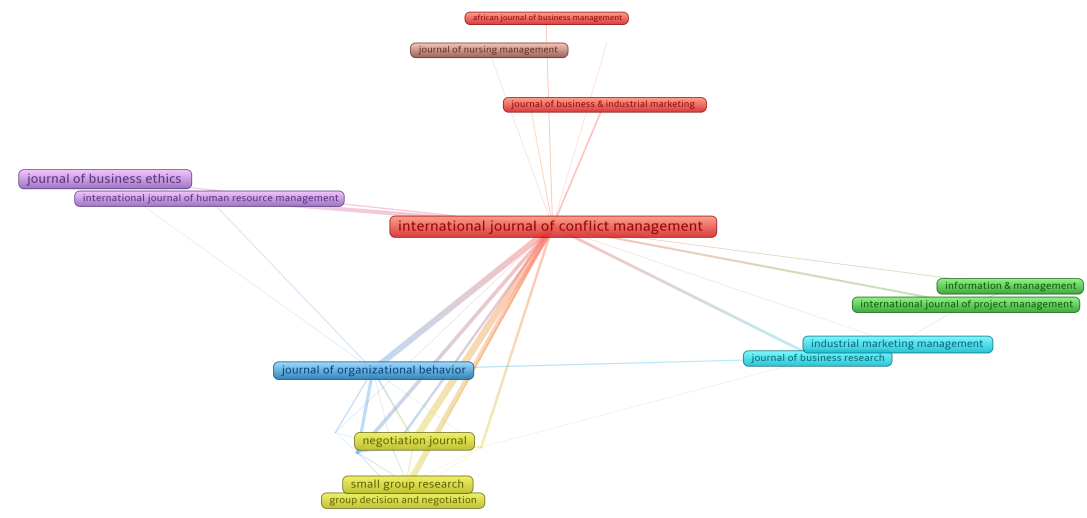


Figure 3 - Visualization of the social network of scholars (2007–2017)

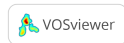
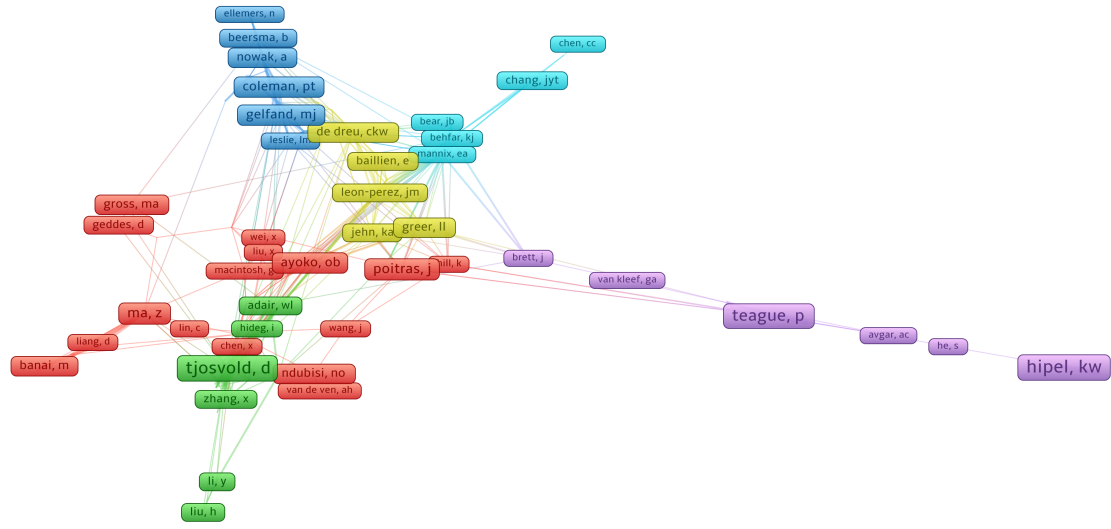
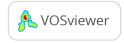
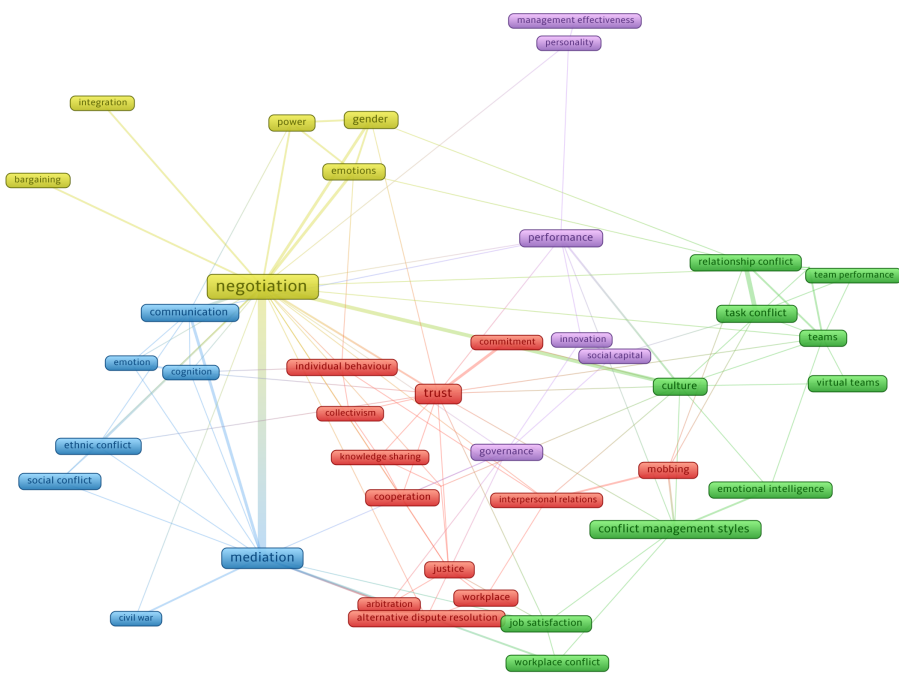


Figure 4 - Visualization of the co-word analysis (2007–2017)



Note: only keywords occurring at least 5 times were included in the table.