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## **Bibliometric Analysis of Social Desirability**

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### **Abstract**

Several studies conducted to measure and determine the perceptions of the individual and the society on various issues presented and compared numerical sociological and psychological finding data. The perceptions determined about the study subject are influenced by social desirability, one of the personality inventory elements. The study was based on the visualization of the descriptive structure. In the study, CiteSpace software was used to develop and visualize the network structure. Web of Science database was used in CiteSpace software. Web of Science™ core collection database was searched for the term "Social Desirability" with abstract, author keywords, and Keywords Plus forms. In total, 5,489 studies on the subject were accessed. These studies were conducted in a total of 171 different fields including psychology, management, health, and educational research. The findings demonstrated that the concept of social desirability was comprehensively studied in various fields, and a knowledge map was developed based on these various fields.

**Keywords:** Social desirability, CiteSpace, Visualization, Social network.

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## Introduction

It could be argued that the individuals with similar physiological but different sociological, psychological, cultural and economic characteristics prioritize the solution of their problems when fulfilling their needs in daily life. These needs of the individual could be associated with any dimension in the cycle of life. However, since the requirements related to these dimensions are considered “very special or sensitive” for the individual, they are analyzed in comparison to the personality traits of the individual. In the process of fulfillment of the needs of the individual in these sensitive issues, the individual may exhibit certain self-reflective behavior in line with the accepted social norms (King & Bruner, 2000; De Vellis, 2003; Krumpal, 2013; Dönmez & Akbulut, 2016). Different concepts are used by different disciplines to explain such individual behavior. One of these concepts is social desirability (SD).

Social desirability is the desire of the individuals to answer the questions the way they think would lead them to the most favorable environment and elicit them. This desire reflects the personality dimension of the individual. To determine this desire, Edwards (1957) developed a single-factor social desirability scale and the scale is one of the most important measurement instruments used in several studies (Kapuza & Tyumeneva, 2017). Also, the social desirability scale developed by Crowne and Marlowe (1960) is another common scale utilized in the literature. As a personality dimension, social desirability is the desire of individual to be accepted in social or interpersonal relationships such as social acceptance, social approval, popularity, social status and leadership (US National Library of Medicine, 2007). In studies that aimed to determine the social or personal preferences of the individual or the society on any topic, it was observed that usually adjectives were used (Baskett & Freedle, 1972; Dunn-Rankin, Knezek & Abalos, 1978; McCreary & Korabik, 1994; Koğar & Gelbal, 2015).

The studies on social desirability presented various definitions of the concept, revealing various properties of social desirability. According to Dubois (2005), social desirability reflects values such as social desire, tolerance, intolerance, desire and social attractiveness. These values are encountered by the individual during her/his efforts to be liked by her/his social circle or the society. The individual attempts to adapt to the society by compromising her/his personality to adapt to the society. This adaptation process is accompanied by various perspectives. Thus, it could be suggested that social desirability includes various aspects of a situation. Namely, social desirability could be tackled based on two perspectives; the individual traits and the property of the objects according to Randall and Fernandes (1991). Based on the first perspective, social desirability is a stable personality trait where the individuals, who need constant social approval, avoid providing information that may disrupt their positive impression or involve in responding based on the social norms instead of expressing their real thoughts. Paulhus (1984, cited in Dönmez & Akbulut, 2016) addressed social desirability as a personality trait with the two dimensions of self-deception and impression management. In the sub-dimension of self-deception, the individuals unconsciously consider themselves positively and think that the responses compatible with the social norms truly reflect themselves. In the impression management sub-dimension, contrary to the self-deception, individuals give responses compatible with social norms although they are aware that these responses do not

reflect their thoughts. According to this perspective, social desirability is based on the problems that the individual encounters. For example, issues such as racist bias, democratic attitude and behavior, ideological approach, human rights and religious beliefs are more affected by social desirability when compared to issues such as health and happiness (Phillips & Clancy, acted in 1972. Dönmez & Akbulut, 2016). This development could negatively affect the validity of the data in studies that aim to determine the social desirability levels of the individual or the society.

Although social desirability, used to reveal and determine the emotional perspective and orientation about any topic, was scrutinized by various disciplines, the level of effectiveness of social desirability varied in these disciplines due to subjective perspective and personality traits. In the present study, several papers on social desirability were reviewed to determine the dimensions of these variations and visualize these dimensions using social network maps.

### **Method**

In the present study, the correlations between the previous papers on social desirability were compared and analyzed with the descriptive method. This study was based on the visualization of the descriptive structure. In the study, the CiteSpace software was utilized to develop and visualize the network structure. The CiteSpace software analyzes common citations based on the topic, country, journal, bibliography, etc. of the published references and outputs a network structure. The software is used to reveal the structures associated with the scientific paradigms on the subject of study. It establishes a link between the new and old paradigms for this purpose (Chen, 2014). It is also described as a well-known visualization instrument to analyze and visualize trends in the past literature (Chen, 2006). The software could conduct analyses on various databases. Web of Science (WoS) is the world's leading scientific citation search and analytical information platform (Li, Rollins & Yan, 2018) and the Web of Science database was used in the CiteSpace software in the present study. Citation indexes included this database based on the dataset updated on 09.01.2020 were "Science Citation Index Expanded (SCI-EXPANDED)" and "Social Sciences Citation Index (SSCI)" data since 1980, "Arts & Humanities Citation Index (A & HCI)" data since 1975, "Conference Proceedings Citation Index- Science (CPCI-S)" and "Conference Proceedings Citation Index- Social Science & Humanities (CPCI-SSH)" data since 1990, "Book Citation Index- Science (BKCI-S)" and "Book Citation Index- Social Sciences & Humanities (BKCI-SSH)" included in 2005, and "Emerging Sources Citation Index (ESCI)" included in 2015.

### **Collection of the study data**

The concept of "Social Desirability" was searched in Web of Science™ core collection database abstracts, author keywords, and Keywords Plus. In total, 5,489 studies were accessed with the social desirability keyword. These studies were conducted in a total of 171 disciplines including psychology, management, health, and educational research. It was observed that the studies in the field of education were very limited. There were 176 studies in the field of psychology education and 128 studies in the field of educational sciences. The first article indexed in the Web of Science was a study published in 1977. The review of these studies based on the manuscript type revealed that 5,082 (92,585%) were articles. The other most frequent manuscript types included 243 papers (4.427%), 166 literature reviews (3.024%), 66 meeting notes (1.202%), and 58 book chapters (1.057%). In the present study, only the papers were included to prevent repetitions where an author could both publish the

same research as a paper and a book chapter. The number of papers published during the last 25 years is presented in Figure 1.

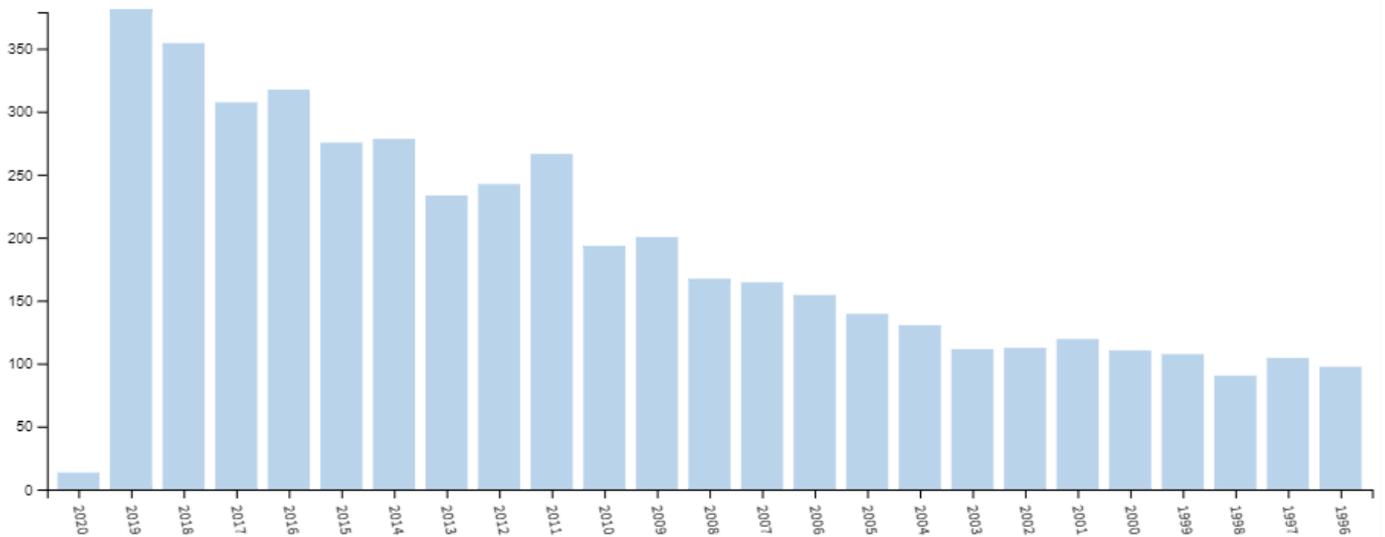


Figure 1. The frequency of studies published during the last 25 years

As seen above, there was an increase in the number of studies conducted on the topic based on time. It was determined that 2.522 (49.626%) studies were published in the USA, 472 (9.288%) were published in Canada, 414 (8.146%) were published in the UK and 400 (7.871%) were published in Germany. In Turkey, only 34 (0.669%) papers were published. The study was conducted on 5082 papers included in the database between 1975 and 2020. The papers were reviewed by the authors to prevent duplications or mistakes in the publication volume or title. This review yielded that a paper was republished in the same journal with explanation in a different year, 5 papers were published twice, and 1 study was published in two journals. The duplicate paper was removed to prevent bias in network analysis. In cases where a study was republished in the same journal, the first paper was removed from the dataset. Furthermore, duplicates of the remaining 5 papers were excluded from the data set. The study was conducted on a total of 5074 papers. Common citations were investigated based on analyses, countries and resources.

### Findings

The correlations between the papers and citations in these papers were analyzed on 5074 papers obtained after the data review conducted on 5082 articles registered in the system between 1975 to January 9, 2020. In the study, initially, the correlations between common citations on social desirability by country were analyzed.

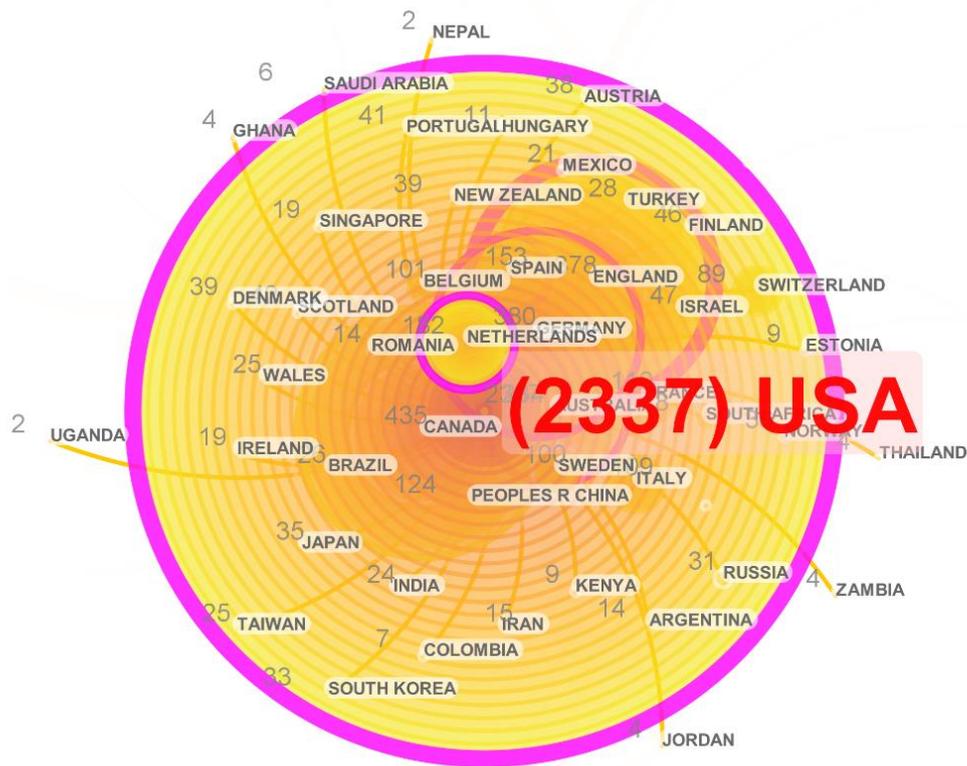


Figure 1: Citations and correlations between the citations by country

Table: The number of citations by country

Citation Count	References
2337	USA
435	Canada
380	Germany
378	England
234	Australia
182	Netherlands
153	Spain
124	Peoples' Republic of China
110	France
109	Italy

The CiteSpace software includes 2 basic elements: node and network (Jing, Ghosh, Sun and Liu, 2020). The analysis of the citation count based on country demonstrated that the highest number of citations were published in the USA (2337 citations). Canada and Germany were the other leading countries based on the number of citations. In Turkey, the number of citations was 28. The analysis of the citations based on country demonstrated that these citations were interrelated and the countries with the least citations were Uganda and Nepal and as seen in the figure above, the citations in these

countries were not correlated with the studies published in other countries. The purple rings in the above figure represent centrality (Liang et al., 2018; Qi, Chen, Hu, Song, and Cui, 2019; Chen, 2005). USA, which was represented by the largest purple ring, could be considered as the country with the highest number of interactions with other countries. Information on centrality by country is presented in Table 2.

*Table 2 : Centrality based on common citations between the countries*

<b>Centrality</b>	<b>References</b>
46	USA
43	England
39	Netherlands
37	Australia
36	Germany
34	Peoples' Republic of China
32	Spain
31	Italy
31	Canada
30	Sweden

The countries with the highest centrality depicted in Table 2 could be observed as the purple rings in Figure 1. Thus, it was observed that the top 3 countries with the highest contribution to research were the United States, England and the Netherlands. It was determined that the network structure density was 0.2216, which was not too high. Furthermore, 65 nodes and 461 networks were obtained for the common citation network structure among the countries. The analysis of the network structure based on the resources in the papers on social desirability revealed the network structure presented in Figure 2. It was determined that the density of the network structure that reflected the correlations between 5074 papers was 0.005. Concurrently, it was observed that there were 1720 nodes and 7404 networks in this structure. The basic assumption behind the common citation was that the related document was cited by successful studies on the subject of the study (Tsay, Xu & Wu, 2003). If 2 references or authors appear in the same bibliography (resources), this could be considered a common citation. Based on the similarity of the content of these 2 authors or references, the more references between the two publications, the stronger their correlations (Gmür, 2003; Tsay, Xu, and Wu, 2003). As seen in Figure 2, the citations in resources were highly correlated.





**Figure 3:** Citation clusters based on the resources

Based on the network structure, 24 common citation clusters were determined. Two coefficients reflect the significance of the network obtained with the analysis of 5074 papers on social desirability. These are "mean silhouette value" and "Modularity Q". It was found that the modular Q value obtained with the network structure was 0.8379 and the mean silhouette value was 0.3358. A high Modularity Q value reflects that fact that the papers on the network were logically divided into clusters (Chen, 2014). Mean silhouette value depicts the homogeneity of the clusters (Chen, 2014; Liang et al., 2018). It could be suggested that the determined structure was a loose structure. This was due to the fact that the papers authored in different disciplines were included in the network; and therefore, reflected a more heterogeneous structure. In clusters, the colors reflect temporal differences. Thus, it could be suggested that the clusters #0, #3, #21 and #26 included more recent studies.

Information on the largest 9 clusters is presented in Table 3.

Table 3. Clusters based on the resources

Cluster ID	Size	Silhouette	Label (LLR)	Mean (Cited Year)	The paper that most actively cited the cluster
0	208	0.883	general factor	2010	Uziel, Liad (2010) Rethinking social desirability scales: from impression management to interpersonally oriented self-control. <i>Perspectives On Psychological Science</i> DOI 10.1177/1745691610369465.
1	174	0.781	general factor	2001	Roth, PL (2005) Personality saturation in structured interviews. <i>International Journal Of Selection And Assessment</i> , 13, P13 Doi 10.1111/J.1468-2389.2005.00323.x."
2	146	0.786	work alienation	1990	Cunningham, MR (1994) Self-presentation dynamics on overt integrity tests - experimental studies of the reid report. <i>Journal Of Applied Psychology</i> , V79, P16 Doi 10.1037/0021-9010.79.5.643.
3	103	0.883	crosswise model	2010	Heck, Daniel W (2018) Rrreg: an r package for correlation and regression analyses of randomized response data. <i>Journal Of Statistical Software</i> , V85, P29 DOI 10.18637/jss.v085.i02.
4	88	0.933	energy intake	1999	Novotny, J (2003) Personality characteristics as predictors of underreporting of energy intake on 24-hour dietary recall interviews. <i>Journal Of The American Dietetic Associations</i> . DOI 10.1016/S0002-8223(03)00975-1.
5	82	0.896	personality research	1998	Moradi, B (2002) Feminist identity development measures: comparing the psychometrics of three instruments. <i>Counseling Psychologist</i> , 30, p21. DOI 10.1177/0011000002301004.
6	80	0.922	generalized anxiety disorder	1994	Furnham, A (1999) Repression and effective coping styles. <i>European Journal of Personality</i> , 13, p28. DOI 10.1002/(SICI)1099-0984(199911/12)13:6<465::aid-per348>3.0.co;2-k.
7	68	0.908	multicultural counseling competence	1998	Worthington, RL (2000) Multicultural counselling competencies: verbal content, counselor attributions, and social desirability. <i>Journal of Counseling Psychology</i> . DOI 10.1037/0022-0167.47.4.460. Constantine, MG (2000) Self-report multicultural counseling competence scales: their relation to social desirability attitudes and multicultural case conceptualization ability. <i>Journal of Counseling Psychology</i> , V47, P10 DOI 10.1037//0022-0167.47.2.155.
8	63	0.93	pervasive influence	1985	Denollet, J (1991) Negative affectivity and repressive coping - pervasive influence on self-reported mood, health, and coronary-prone behavior. <i>Psychosomatic Medicine</i> , 53, P19 DOI 10.1097/00006842-199109000-00005.

The largest cluster was the #0 cluster that included 208 papers. This cluster was called general factor cluster. The silhouette value of the cluster was determined as 0.883. This demonstrated that the papers in the cluster had a very homogeneous structure. The average publication year was 2010 in this cluster. Thus, it could be suggested that the publications in this cluster were quite new and correlated. The study that cited the papers in this cluster the most was "Uziel, Liad (2010) Rethinking social

desirability scales: from impression management to interpersonally oriented self-control. Perspectives on Psychological Science.”

The second most populated cluster was the #1 cluster that included 174 papers and had a silhouette value of 0.781. The cluster was named similarly with the first cluster. The paper with the most citations to this cluster was “Roth, PL (2005) Personality saturation in structured interviews. International Journal Of Selection And Assessment, 13, p.13”. However, the review of the mean publication date of the papers in this cluster demonstrated that they were slightly older than the first cluster. Thus, even when the clusters are named similarly, the cluster trend could be different.

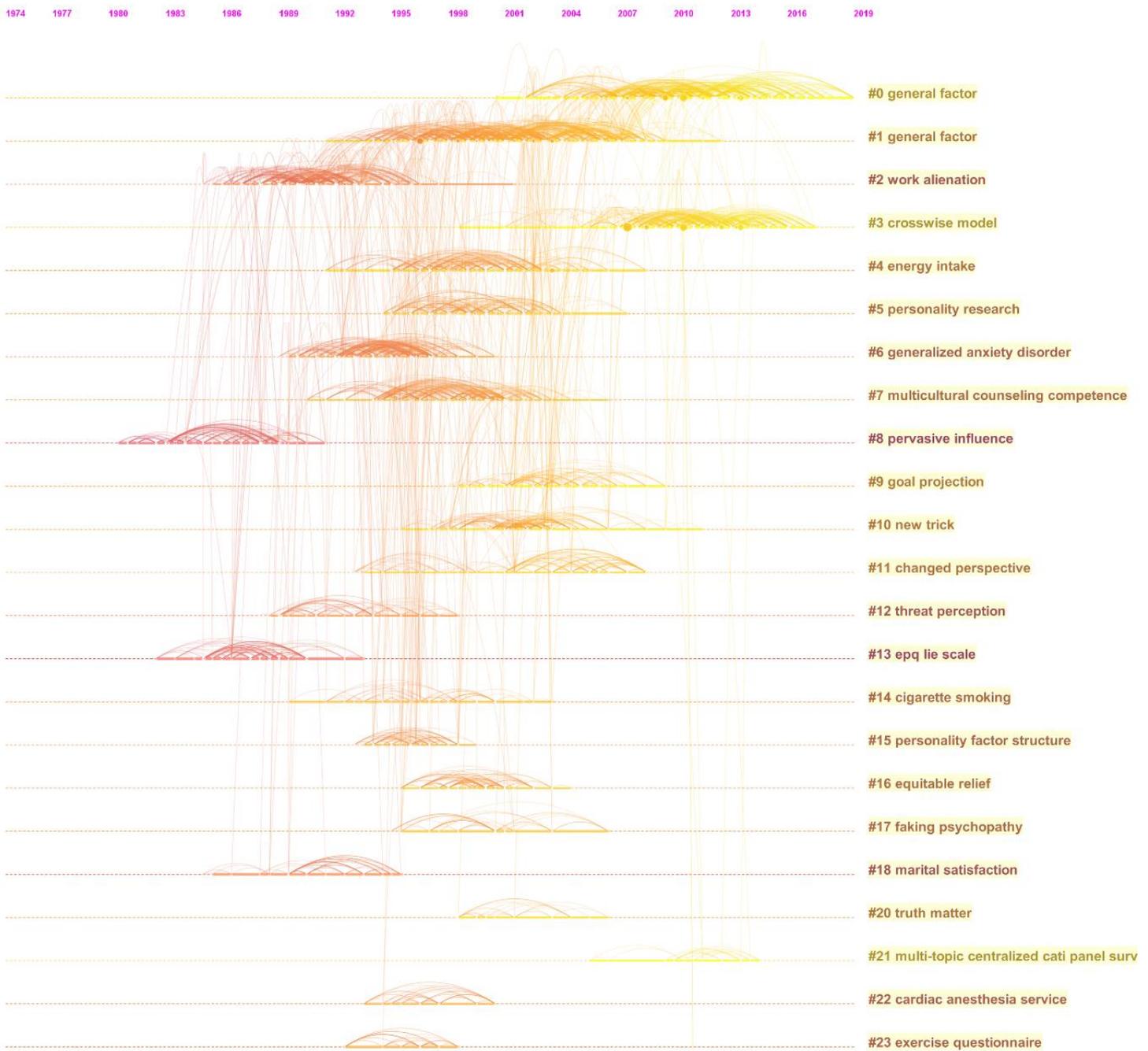
The third largest cluster was the #2 cluster with 146 papers and with a silhouette value of 0.786. This cluster was named as work alienation. The paper which most actively cited the papers in this cluster was “Cunningham, MR (1994) Self-presentation dynamics on overt integrity tests - experimental studies of the Reid report. Journal Of Applied Psychology, 79, p16.”

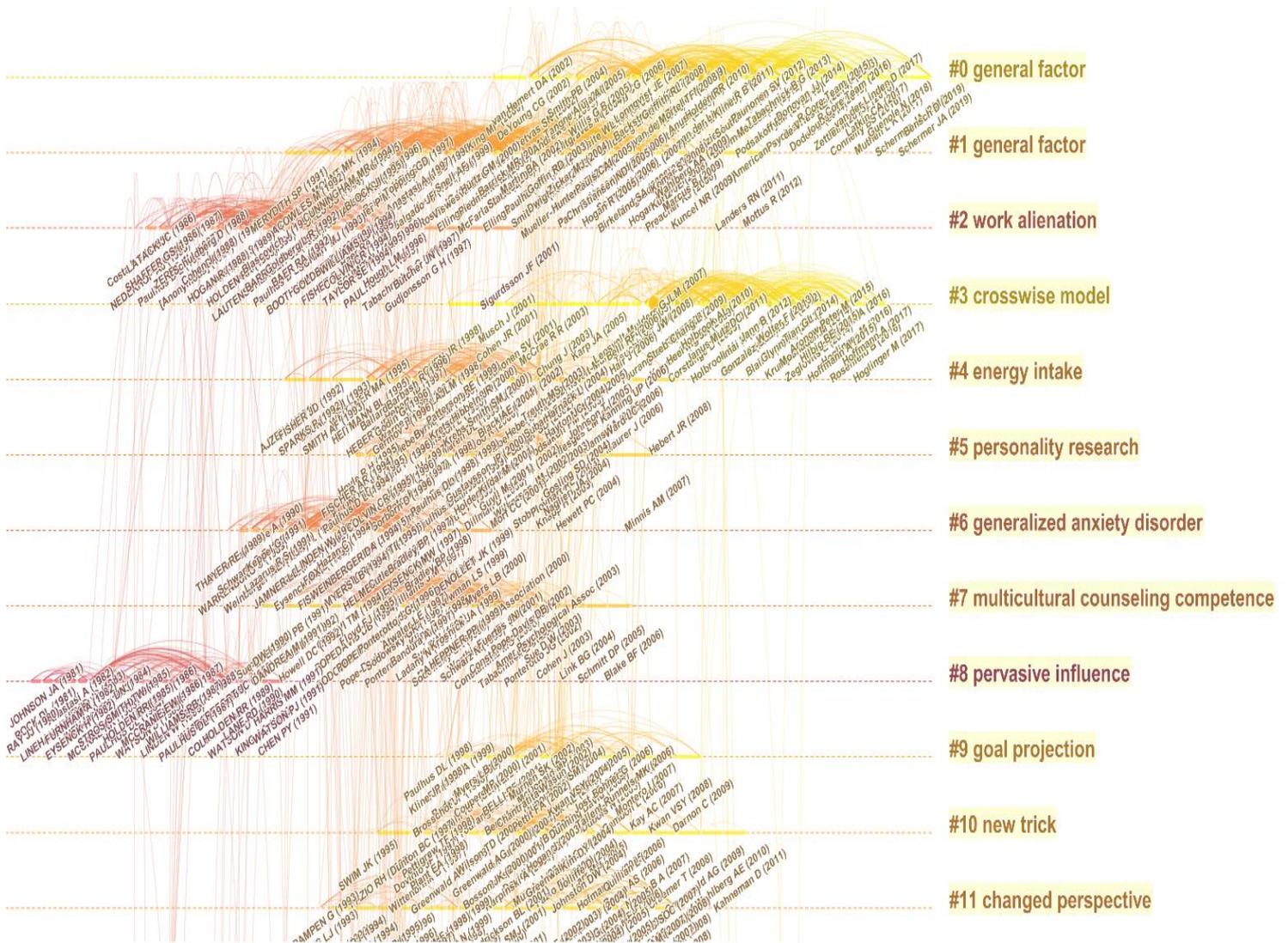
It is possible to review the information on other clusters in the table. Generally, it was observed that the clusters exhibited a very homogeneous structure. The analysis of the papers on the concept of social desirability demonstrated that the papers conducted on this topic were included in the cluster #8 with the name pervasive influence. The most cited papers and associated clusters are presented in Table 4.

Table 3. The most cited papers and associated clusters

Citation count	References	Cluster #
89	Tourangeau, R., & Yan, T. (2007). Sensitive questions in surveys. <i>Psychological Bulletin</i> , 133(5), 859–883. <a href="https://doi.org/10.1037/0033-2909.133.5.859">https://doi.org/10.1037/0033-2909.133.5.859</a>	6
68	Holbrook A. & Krosnick, J. A. (2010). Social desirability bias in voter turnout reports. Tests using the item count technique. <i>Public Opinion Quarterly</i> , 74(1). 37-67. <a href="https://doi.org/10.1093/poq/nfp065">https://doi.org/10.1093/poq/nfp065</a>	6
63	Uziel L.(2010). Rethinking Social Desirability Scales: From Impression Management to Interpersonally Oriented Self-Control, <i>Perspect Psychol Sci</i> , 5(3). <a href="https://doi.org/10.1177/1745691610369465">https://doi.org/10.1177/1745691610369465</a>	5
60	Krumpal, I. (2013), Determinants of social desirability bias in sensitive surveys: a literature review. <i>Quality &amp; Quantity</i> , 47(4). 2025-2047. <a href="https://doi.org/10.1007/s11135-011-9640-9">https://doi.org/10.1007/s11135-011-9640-9</a>	5
58	Ones, D. S., Viswesvaran, C., & Reiss, A. D. (1996). Role of social desirability in personality testing for personnel selection: The red herring. <i>Journal of Applied Psychology</i> , 81(6), 660–679. <a href="https://doi.org/10.1037/0021-9010.81.6.660">https://doi.org/10.1037/0021-9010.81.6.660</a>	5
54	Backstrom, M. Bjorklund, F. & Larsson, M. R.(2009), Five-factor inventories have a major general factor related to social desirability which can be reduced by framing items neutrally. <i>Journal Of Research In Personality</i> , 43(3), 335-344. <a href="https://doi.org/10.1016/j.jrp.2008.12.013">https://doi.org/10.1016/j.jrp.2008.12.013</a>	3
46	American Psychiatric Association (2013). Diagnostic and Statistical Manual of Mental Disorders	4
45	Kreuter, F., Stanley, P. & Tourangeau, R. (2008), Social desirability bias in cati, ivr, and web surveys the effects of mode and question sensitivity. <i>Public Opinion Quarterly</i> , 72(5).847-865. <a href="https://doi.org/10.1093/poq/nfn063">https://doi.org/10.1093/poq/nfn063</a>	6
44	Blair, G. & Kosuke, I.(2012). Statistical Analysis of List Experiments, <i>Political Analysis</i> , 20(1), 47-77. <a href="https://doi.org/10.1093/pan/mpr048">https://doi.org/10.1093/pan/mpr048</a>	5
44	Rosse, J. G., Stecher, M. D., Miller, J. L., & Levin, R. A. (1998). The impact of response distortion on preemployment personality testing and hiring decisions. <i>Journal of Applied Psychology</i> , 83(4), 634–644. <a href="https://doi.org/10.1037/0021-9010.83.4.634">https://doi.org/10.1037/0021-9010.83.4.634</a>	6

As seen in Table 4, the most cited article was “Tourangeau, R., & Yan, T. (2007) Sensitive questions in surveys. *Psychological Bulletin*, 133 (5), 859–883” in the 6th cluster (generalized anxiety disorder). It was observed that the article was cited 89 times based on the review of all the papers in the data set. The second most cited article was “Holbrook A. & Krosnick, J. A. (2010) Social desirability bias in voter turnout reports. Tests using the item count technique. *Public Opinion Quarterly*, 74 (1). 37-67”, which also received 68 citations and located in Cluster 6. The other papers are presented in Table 4. It was observed that the most cited articles were in the 5th and 6th clusters. Thus, it could be suggested that the studies conducted in these clusters may theoretically be considered as the building blocks. Paper timelines could be examined to observe the periods when the studies were conducted.





(II)

Figure 4: Co-citation timeline for 6 clusters (I) and the papers included in this timeline (II)

The development chart for each cluster is presented separately based on time. The correlations between the papers and clusters are observed. As seen in the figure, it could be suggested that the most recent studies were in cluster #0 called the "general factor," followed by cluster #3 called "crosswise mode". Furthermore, it was determined that the papers on the topic of the present study were included in cluster #8 called "pervasive influence," in cluster #2 called "work alienation" and cluster #13 called "treat perception".

**Conclusion**

In bibliometric studies, the correlations between the research could be analyzed to form joint areas of study. In present study, papers on the concept of social desirability were analyzed with CiteSpace software using the data available in the Web of Science database. The concept of social desirability has been widely studied in different fields based on the literature review. In the present study, a knowledge map was obtained about this concept based on these different fields. The data were first analyzed based on the country of publication. As a result, it was determined that the United States was the most cited country, followed by Canada and Germany. Based on the country of

publication, it was observed that the network structure was reasonable; however, it was not homogeneous. Thus, it could be suggested that the citations by studies conducted in different countries were diverse. The analyses conducted based on the resources demonstrated that the structure was reasonably clustered; however, the homogeneity was low. Thus, it could be suggested that the authors cited papers in other sub-fields as well. The analysis of the common citations among the resources revealed a total of 24 clusters. These clusters were formed based on their proximity in the study area and named using the LLR algorithm. The papers that cited the papers in these clusters the most and the most cited papers in the network were determined in the study. These findings would guide the individuals who would conduct research on social desirability and prevent them from overlooking the papers that they should review. As seen in timeline, the present study would also guide future researchers on which time periods they should focus. Similar bibliometric studies could guide scholars in the future since it would provide information on their respective fields of study.

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