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A co-citation analysis of purpose: trends and (potential) troubles in the foundation of purpose scholarship

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ABSTRACT

This article represents the first document co-citation on the purpose construct. Document co-citation is a bibliometric methodology that provides a clear, systematic structure for examining the intellectual foundations of a field or construct. Our analysis yielded several novel insights, including a few potentially troubling ones. For instance, it revealed that the origins of purpose, a construct that has deep roots in philosophy and significant implications for a variety of fields, derived almost exclusively from the study of psychology. Foundational work was primarily conducted by scholars in North America, and early conceptualizations of purpose were inconsistent. Originating documents often used the term interchangeably with meaning. These practices, which have persisted at least to some degree, are likely to yield inconsistent and unreliable conclusions. Implications of our findings as well as cautions and directions for future research are addressed.

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Purpose in life; youth purpose; positive aging; bibliometric method; document co-citation

Research on purpose has grown significantly in recent years. A PsychInfo search for articles containing the phrase ‘purpose in life’ revealed that fewer than 150 articles were published on the topic before 2000, but 7,697 were published between 2000–2021 (Bronk et al., 2022).

Given the recent growth in research on the topic, the present article was designed to take stock of the intellectual foundations that undergird this body of research. We explored the evolution of the foundational theory and research. Specifically, we examined the following research questions:

- (1) *What is the underlying intellectual structure of purpose scholarship?*
- (2) *Which fields provide the foundation for research on purpose?*
- (3) *How have researchers responsible for the foundational texts in this field conceptualized purpose, how have they measured it, and what methods have they utilized to do so?*

By answering these questions, we hoped to orient readers to the historical and intellectual roots of purpose; identify strengths and cracks in that foundation; and advance future theory and research on the construct.

To accomplish this, we conducted the first document co-citation on purpose. Document co-citation is a bibliometric methodology that provides a clear,

systematic structure for reviewing published literature on a field or construct (Zupic & Cater, 2015). Document co-citation leverages citation and other metadata from research documents and provides a powerful method for diving deeper into these questions than traditional review approaches. Rather than relying on the subjectivity of the scholar conducting the review, bibliometric methods use technology to leverage the big data of citation indices to allow for an objective identification of key papers. Also, bibliometric methods allow broader inclusion criteria across time, source, theory, and method to provide a more robust and comprehensive review of the research on purpose. More specifically, document co-citation helps answer the questions we have posed by revealing the intellectual roots of research on purpose. This approach assumes that the more often two secondary documents are cited together by primary purpose research, the more likely their content is related. As the most valid and frequently used bibliometric method, document co-citation provides a measure of the influence of foundational theory and research underlying the purpose field. Bibliometric methods are not new. They have been used since at least the 1960s (e.g., Pritchard, 1969), and more recently, they have been used to study related topics, including positive psychology (Schui & Krampen, 2010) and positive youth development (Qi et al., 2020).

Using co-citation analysis, we examined the most frequently co-cited articles (e.g., secondary documents)

from the body of purpose research (e.g., primary documents). We generated a map of the top 100 secondary documents (e.g., the top 100 cited references) to investigate the evolution and intellectual structure of the field. When used in conjunction with qualitative analysis of top papers, document co-citation can identify patterns among the most influential works and ultimately help scholars draw conclusions regarding the underlying intellectual structure of an area of scholarship, in this case research on purpose. Document co-citation offers insight into how purpose became the prevalent research topic it is today. After a description of purpose, we provide a detailed methodology of the co-citation analysis process and interpret the bibliometric results.

Purpose in life

Despite the increase in scholarly interest in purpose, researchers have defined the construct in inconsistent ways. Broadly speaking, two conceptualizations of purpose dominate the literature. Some researchers view purpose as consisting of two dimensions, goal-directedness and personal meaningfulness. For instance, McKnight and Kashdan (2009) note that purpose is a central, self-organizing life aim that *organizes and stimulates goals*, manages behaviors, and *provides a sense of meaning*. Similarly, Ryff and colleagues (Ryff, 1989; Ryff & Singer, 1998, 2008) identify individuals with purpose as those who have *goals and a sense of directness* and who also *feel there is meaning to the present and past life*. Also, Damon et al. (2003) suggest that purpose includes *a goal-oriented intention to act in personally meaningful ways*. These two dimensions of purpose are widely acknowledged as central to the construct (Bronk, 2013).

Other researchers view purpose as consisting of these two dimensions and one more. Viktor Frankl (1959) and Damon et al. (2003) conceptualize purpose as also featuring *a desire to contribute to the broader world*. Viktor Frankl (1959) was the first psychologist to seriously consider the role purpose played in human survival. In his ground-breaking book, *Man's Search for Meaning*, he introduced the notion of purpose as one that transcends the self:

Being human always points, and is directed, to something, or someone, other than oneself—be it a meaning to fulfill or another human being to encounter. The more one forgets himself to a cause to serve or another person to love—the more human he is and the more he actualizes himself Self-actualization is possible only as a side-effect of self-transcendence. (1959; p. 133)

Damon et al. (2003) conceptualization of purpose builds on Frankl's idea of self-transcendence and proposes a commitment to the world beyond the self as a third dimension of the construct. They note that this beyond-the-self dimension is the one that distinguishes purpose from meaning and that it is responsible for many of the positive outcomes associated with leading a life of purpose. A commitment to beyond-the-self intentions deters the psychological risks of self-absorption and promotes thriving above and beyond that experienced among individuals who aspire to self-focused aims (Damon, 2008). Some research supports this claim. For instance, individuals oriented toward more other-oriented life goals, as compared to individuals oriented toward more self-oriented life goals, report higher levels of life satisfaction and openness (Bronk & Finch, 2010). Individuals with higher levels of prosocial, beyond-the-self intentions have also been found to have more humanistic, political, and integrated personality dispositions later in life (Mariano & Vaillant, 2012), and beyond-the-self orientations to purpose (as opposed to creative, financial, or personal recognition purposes) are predictive of greater generativity, personal growth, and integrity (Hill et al., 2010).

Despite the different conceptualizations of the construct, most researchers frame purpose using relational developmental systems theories (Lerner & Callina, 2014), which suggest that development is the result of mutually influential relations between individuals and their contexts. Relational developmental systems theories emphasize the importance of multiple levels of context, from family to community to culture to historical time, in shaping development, and they reject Cartesian splits (Overton & Müller, 2013). Relational developmental systems theories view development as a function of nature *and* nurture, continuity *and* discontinuity, and stability *and* instability. Accordingly, the content of purpose, the development of purpose, and the pursuit of purpose are shaped by and shape multiple ecological contexts. The pursuit of purpose is the result of epigenetic processes that unfold in predictable ways as well as due to particular circumstances.

Based on relational developmental systems framings, research finds that purpose, regardless of its precise conceptualization, is consistently associated with positive outcomes, including physical and psychological health. For instance, with regards to psychological well-being, purpose is associated with hope, happiness, and life satisfaction (Bronk et al., 2009; Robak & Griffin, 2000). Regarding physical well-being, purpose has been linked to improved cardiovascular health, better sleep, and even longevity (Cohen et al., 2016; P. L. Hill & Turiano, 2014; Turner et al., 2017). The consistently strong

Table 1. Steps involved in the co-citation process.

Step	Researcher Decision	Result
1	WoS Search Terms of all fields 'purpose in life' OR 'youth purpose' OR 'purpose in work' OR 'purpose at work' OR 'adolescent purpose' OR 'sense of purpose' OR 'purpose in midlife' OR 'purpose in older adulthood' OR 'purposefulness' OR 'purpose during adolescence' OR 'pathways to purpose.'	2,683 Primary Documents
2	Duplicates Consolidated 'frankl v. e., 1963, mans search meaning' Frankl 1959/1963 'frankl ve, 1959, mans search meaning' Frankl 1959/1963 'damon w., 2008, path purpose helping' Damon 2008 'damon w., 2008, path purpose young p' Damon 2008	2,681 Primary Documents 84,855 Secondary Documents
3	Minimum Number of Citations setting equal to 15	295 Secondary Documents
4	Visual Network Map Restriction setting equal to 100 Clustering Resolution setting equal to 1.00 Minimum cluster size equal to 1 Merge small clusters setting enabled	100 Secondary documents 4 Clusters with 27, 27, 25, 21 secondary documents each

Note. Primary documents are those returned from the search. Secondary documents are those cited by the primary documents and are the focus of document co-citation analysis. VosViewer was used for the document co-citation analysis.

relationship between purpose and well-being likely helps explain the increase in scholarly attention to the construct.

Document co-citation methodology

As mentioned, we leveraged document co-citation to uncover the foundational documents in the field of purpose research. Following guidelines from Donthu et al. (2021) and Zupic and Cater (2015), this method involved a search process to identify primary and secondary documents, generation of a network map, and qualitative coding. Table 1 summarizes the steps involved in the co-citation process.

Identifying primary and secondary documents

Documents refer to publications from any written source (e.g., peer-reviewed journals, books, book chapters). Primary documents refer to those documents returned from keyword searches on purpose (Zupic & Cater, 2015). To identify primary documents, we entered the following search terms into Web of Science, searching all fields (e.g., title, abstract, and keywords): 'purpose in life' OR 'youth purpose' OR 'purpose in work' OR 'purpose at work' OR 'adolescent purpose' OR 'sense of purpose' OR 'purpose in midlife' OR 'purpose in older adulthood' OR 'purposefulness' OR 'purpose during adolescence' OR 'pathways to purpose.' We chose this broad list of search terms to ensure our review would be inclusive and capture different perspectives on purpose, including those originating from a range of disciplines and featuring a range of samples. However, we excluded the terms 'purpose' and 'purposeful' due to the excessive number of published pieces that include these terms in the title or abstract (e.g., *the purpose of this paper* or *purposeful sampling*). In total, our search identified 2,683 primary documents.

Document co-citation analysis focuses on secondary documents (Zupic & Cater, 2015). Secondary documents are documents cited by the primary documents. The reference lists of the 2,683 primary documents on purpose included a total of 84,887 secondary documents.

Procedures

After identifying our list of primary and secondary documents from Web of Science, we utilized VosViewer © software to conduct the document co-citation (Van Eck & Waltman et al., 2014). Like many analyses, document co-citation requires judgment calls. Specifically, to identify the most relevant secondary documents, we set the minimum number of citations equal to 15. In other words, we included in our analysis secondary documents cited 15 or more times. A total of 297 secondary documents met this criterion. Next, as is common practice in bibliometric studies (e.g., Vogel et al., 2020), we focused on the top 100 secondary documents with the highest co-citation strength. Co-citation strength reflects the frequency with which secondary documents are cited together in primary documents' reference lists (Zupic & Cater, 2015). The more frequently two secondary documents are co-cited, the higher their co-citation strength. Again, the fundamental assumption of document co-citation is that such documents are the most important and have the most in common, thereby allowing us to examine the underlying intellectual foundation and structure of the body of purpose research.

Qualitative coding

Using the 100 articles, books, and book chapters with the highest co-citation scores, we conducted a content analysis (Hsieh & Shannon, 2005) to identify themes and patterns that shed light on the foundation of research on the purpose construct. Content analysis is a widely used

qualitative approach to coding data that identifies and quantifies themes or concepts within written documents, and it is a recommended addition to document co-citation (Anderson & Lemken, 2020).

Consistent with this method, two research team members read through the top 100 secondary documents several times. Based on an initial understanding of the data set, two members of the research team reread the documents, coding them along nine dimensions, including (1) the type of document (e.g., peer-reviewed journal article, book, book chapter), (2) the journal name, for those documents that were journal articles, (3) the field in which the article, book, or book chapter was published (e.g., positive health, positive psychology, health and medicine, etc.), (4) the country of the first author's affiliation (e.g., authors' affiliations were usually listed in journal articles, books, and book chapters. When this information was missing, which was rare, we looked up authors online to identify the country in which they were working at the time they authored the relevant publication.), (5) the nature of the document (e.g., empirical study, theoretical article, etc.), (6) the study's methodology, for those documents that featured studies, (7) measurement tool used to assess purpose, when relevant, (8) the study sample, when relevant, and (9) the document's conceptualization of purpose. Coders met to compare results, and when differences arose, they talked through their different perspectives until a consensus was reached (C. E. Hill & Knox, 2021). Findings from the analysis were organized to address the research questions.

Document co-citation results

Two primary analyses were conducted. First, we examined the content of the top 100 co-cited secondary documents. These documents had the highest co-citation strength, meaning they were frequently cited together in the primary purpose documents. These sources represent the foundational knowledge base for research on purpose. Second, we examined the intellectual structure of these top 100 co-cited documents by describing the network map and four clusters we observed. Examining commonalities among and differences across the four emergent clusters shed light on how the intellectual foundations of purpose research are structured. Table 2 includes the top 100 co-cited documents, by cluster and co-citation strength.

Content of top 100 secondary documents

Beginning with a description of the top 100 co-cited documents, we sought to describe the constructs'

intellectual foundations. To that end, we coded the top 100 documents in several ways. First, we coded documents based on publication type. Eighty-six of the manuscripts were peer-reviewed journal articles, ten were books, two were manuals (one was a coding manual for a purpose scale and the other was an MPLUS manual), and two were book chapters.

Next, we coded source documents based on their samples. In some cases, studies included more than one group of individuals (e.g., adults, young adults, and adolescents); we coded these for each of the represented sample groups. In other cases, studies included young, midlife, and older adults; we coded these as featuring 'adult' samples. Most studies featured adult samples (51) and/ or adolescent samples (18). A sizable minority of studies featured young adults (17) or older adults (14), and a few featured only women (5) or adults with clinical diagnoses (2; Sample figures total more than 100 because some studies included participants from more than one age group).

We also examined the fields of study most responsible for foundational research on purpose. Foundational articles appeared in a wide range of high-profile, primarily psychological journals, including the *Journal of Personality and Social Psychology* (9), *American Psychologist* (4), the *Journal of Positive Psychology* (4), *Psychology Bulletin* (3), and the *Journal of Behavioral Medicine* (3). Not more than two appeared in any other journal. The breadth of publication outlets reflects the multifaceted nature of the foundations of purpose research.

Given that no single journal dominated early research on purpose, we next coded the different fields represented by each document – including books, book chapters, and manuals. Field determination was based on the journal in which the document appeared (in the case of peer-reviewed journal articles) or on document content (in the case of books, book chapters, and manuals). In some cases, documents reflected the work of more than one field (e.g., Ryff and colleagues 2004 article, *Positive health: Connecting well-being with biology*, was coded as both 'Health and Medicine' and 'Positive Psychology'). The five fields most responsible for the foundational research on purpose included Positive Psychology (53 of the 100 documents originated in this field), Health and Medicine (25), Developmental Psychology (23), Personality and Social Psychology (18), and Gerontology & Positive Aging (17). Table 3 includes a complete list of the coded fields and examples of the manuscripts originating from each one. Although most psychological fields were represented, missing were documents from a cognitive or neuropsychological perspective, and with the exception of documents from Health and Medicine, also missing were documents

Table 2. Top 100 co-cited documents by cluster and co-citation strength.

Cluster	Co-cite strength	APA Reference	
Blue	1017*	Frankl, V.E. (1959/ 1963). <i>Man's searching for meaning: An introduction to logotherapy & Schuster.</i>	
	984*	Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. <i>Journal of Counseling Psychology, 53</i> (1), 80–93. DOI: 10.1037/0022-0167.53.1.80.	
	932*	Crumbaugh, J. C., & Maholick, L. T. (1964). An experimental study in existentialism: The psychometric approach to Frankl's concept of noogenic neurosis. <i>Journal of Clinical Psychology, 20</i> (2), 200–207. DOI: 10.1002/1097-4679.	
	591*	Zika, S., & Chamberlain, K. (1992). On the relation between meaning in life and psychological well-being. <i>British Journal of Psychology, 83</i> , 133–45.	
	567*	Crumbaugh, J. C. (1968). Cross-validation of Purpose in Life Test based on Frankl's concepts. <i>Journal of Individual Psychology, 24</i> , 74–81.	
	453	King, L. A., Hicks, J. A., Krull, J. L., & Del Gaiso, A. K. (2006). Positive affect and the experience of meaning in life. <i>Journal of Personality and Social Psychology, 90</i> (1), 179–196. DOI: 10.1037/0022-3514.90.1.179.	
	408	Yalom, I. D. (1980). <i>Existential psychotherapy.</i> Basic Books.	
	397	Reker, G. T., Peacock, E. J., & Wong, P. T. (1987). Meaning and purpose in life and well-being: A life-span perspective. <i>Journal of Gerontology, 42</i> (1), 44–49. DOI: 10.1093/geronj/42.1.44.	
	319	Harlow, L. L., Newcomb, M. D., & Bentler, P. M. (1986). Depression, self-derogation, substance use, and suicide ideation: Lack of purpose in life as a mediational factor. <i>Journal of Clinical Psychology, 42</i> (1), 5–21. DOI: 10.1002/1097-4679.	
	318	Steger, M. F., Oishi, S., & Kashdan, T. B. (2009). Meaning in life across the life span: Levels and correlates of meaning in life from emerging adulthood to older adulthood. <i>The Journal of Positive Psychology, 4</i> (1), 43–52. DOI: 10.1080/17439760.802.303.127.	
	309	Crumbaugh, J. C., & Maholick, L. T. (1969). Manual of instructions for the Purpose-in-Life-Test. <i>Psychometric Affiliates.</i>	
	288	Baumeister, R. F. (1991). <i>Meanings of Life.</i> Guilford.	
	281	Steger, M. F., Kashdan, T. B., Sullivan, B. A., & Lorentz, D. (2008). Understanding the search for meaning in life: Personality, cognitive style, and the dynamic between seeking and experiencing meaning. <i>Journal of Personality, 76</i> (2), 199–228. DOI: 10.1111/j.1467-6494.2007.00484.x	
	271	Meier, A., & Edwards, H. (1974). Purpose-in-Life Test: Age and sex differences. <i>Journal of Clinical Psychology, 30</i> (3), 384–386. DOI: 10.1002/1097-4679.	
	268	Reker, G. T., & Cousins, J. B. (1979). Factor structure, construct validity and reliability of the Seeking of Noetic Goals (SONG) and Purpose in Life (PIL) tests. <i>Journal of Clinical Psychology, 35</i> (1), 85–91. DOI: 10.1002/1097-4679.	
	246	Reker, G. & Wong, P. T. P. (1988). Aging as an individual process: Toward a theory of personal meaning. In J. E. Birren & V. L. Bengston (Eds.), <i>Emergent Theories of Aging</i> (pp. 214–246). Springer Publishing Company.	
	230	Steger, M. F., & Kashdan, T. B. (2007). Stability and specificity of meaning in life and life satisfaction over one year. <i>Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being, 8</i> (2), 161–179. DOI: 10.1007/s10902-006-9011-8.	
	221	Battista, J., & Almond, R. (1973). The development of meaning in life. <i>Psychiatry, 36</i> (4), 409–427. DOI: 10.1080/00332747.1973.11023774.	
	217	Park, C. L. (2010). Making sense of the meaning literature: An integrative review of meaning making and its effects on adjustment to stressful life events. <i>Psychological Bulletin, 136</i> (2), 257–301. DOI: 10.1037/a0018301	
	206	Crumbaugh, J. C. (1977). The Seeking of Noetic Goals Test (song): A complementary scale to the Purpose in Life Test (PIL). <i>Journal of Clinical Psychology, 33</i> (3), 900–907.	
	199	Stegmaier, M. J. (2012). <i>Henry Adams in the Secession Crisis Dispatches to the Boston Daily Advertiser, December 1860-March 1861.</i> Louisiana State University Press.	
	197	Reker, G. T., & Chamberlain, K. (2000). <i>Exploring existential meaning: Optimizing human development across the life span.</i> SAGE Publications	
	197	Shek, D. T. (1988). Reliability and factorial structure of the Chinese version of the Purpose in Life Questionnaire. <i>Journal of Clinical Psychology, 44</i> (3), 384–392. DOI: 10.1002/1097-4679(1988)44(3)	
	196	Steger, M. F., & Frazier, P. (2005). Meaning in life: One link in the chain from religiousness to well-being. <i>Journal of Counseling Psychology, 52</i> (4), 574–582. DOI: 10.1037/0022-0167.52.4.574.	
	177	Dyck, M. J. (1987). Assessing logotherapeutic constructs: Conceptual and psychometric status of the Purpose in Life and Seekign of Noetic Goals Tests. <i>Clinical Psychology Review, 7</i> , p. 439–447. DOI: 10.1016/0272-7358.	
	Red	2796*	Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. <i>Journal of Personality and Social Psychology, 57</i> (6), 1069–1081. DOI: 10.1037/0022-3514.57.6.1069.
		871*	Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. <i>Annual Review of Psychology, 52</i> , 141–166. DOI: 10.1146/annurev.psych.52.1.141
		858*	Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. <i>Journal of Personality Assessment, 49</i> , 71–75. DOI: 10.1207/s15327752jpa4901_13.
		646*	Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. <i>Journal of Personality and Social Psychology, 54</i> (6), 1063–1070. DOI: 10.1037/0022-
		614*	Keyes, C. L. M., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: The empirical encounter of two traditions. <i>Journal of Personality and Social Psychology, 82</i> (6), 1007–1022. DOI: 10.1037/0022-3514.82.6.1007.
		563	Ryff, C. D., & Singer, B. (1998). The contours of positive human health. <i>Psychological Inquiry, 9</i> (1), 1–28. DOI: 10.1207/s15327965pli0901_1.
		421	Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. <i>Applied Psychological Measurement, 1</i> (3), 385–401. DOI: 10.1177/014662167700100306.
		395	Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: A eudaimonic approach to psychological well-being. <i>Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being, 9</i> (1), 13–39. DOI: 10.1007/s10902-006-9019-0.
		384	Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. <i>Structural Equation Modeling, 6</i> (1), 1–55. DOI: 10.1080/10705519909540118.
		362	Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. <i>Journal of Personality and Social Psychology, 64</i> (4), 678–691. DOI: 10.1037/0022-3514.64.4.678.
358		Ryff, C. D. (1989). Beyond Ponce de Leon and life satisfaction: New directions in quest of successful ageing. <i>International Journal of Behavioral Development, 12</i> (1), 35–55. DOI: 10.1177/016502548901200102.	
355		Diener, E. (1984). Subjective well-being. <i>Psychological Bulletin, 95</i> (3), 542–575. DOI: 10.1037/0033-2909.95.3.542	

(Continued)

Table 2. (Continued).

Cluster	Co-cite strength	APA Reference
	334	Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. <i>Psychological Bulletin</i> , 125(2), 276–302. DOI: 10.1037/0033-2909.125.2.276.
	309	Ryff, C. D. (1995). Psychological well-being in adult life. <i>Current Directions in Psychological Science</i> , 4(4), 99–104. DOI: 10.1111/1467-8721.ep10772395.
	296	Rosenberg, M. (1965). <i>Society and the Adolescent Self-Image</i> . Princeton University Press.
	267	Schmutte, P. S., & Ryff, C. D. (1997). Personality and well-being: Reexamining methods and meanings. <i>Journal of Personality and Social Psychology</i> , 73(3), 549–559. DOI: 10.1037/0022-3514.73.3.549.
	267	Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. <i>American Psychologist</i> , 55(1), 5–14. DOI: 10.1037/0003-066X.55.1.5.
	242	Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. <i>Journal of Personality and Social Psychology</i> , 51(6), 1173–82.
	231	Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. <i>The American Psychologist</i> , 55(1), 68–78.
	228	Bradburn, N. M., & Noll, C. E. (1969). <i>The structure of psychological well-being</i> . Aldine.
	215	van Dierendonck, D. (2004). The construct validity of Ryff's Scales of Psychological Well-being and Its Extension with Spiritual well-being. <i>Personality and Individual Differences</i> , 36(3), 629–643. DOI: 10.1016/S0191-8869(03)00122-3
	214	Cohen, J. (1988). <i>Statistical Power Analysis for the Behavioral Sciences (2nd ed.)</i> . Lawrence Erlbaum & Associates.
	207	McGregor, I., & Little, B. R. (1998). Personal projects, happiness, and meaning: On doing well and being yourself. <i>Journal of Personality and Social Psychology</i> , 74(2), 494–512. DOI: 10.1037//0022-3514.74.2.494
	205	Maslow, A. H. (1968). <i>Toward a psychology of being (2nd ed.)</i> . D. Van Nostrand.
	203	Muthén, L. K., & Muthén, B. O. (2017). Mplus: Statistical Analysis with Latent Variables: User's Guide (Version 8). Accessed online 15 September 2021: https://www.statmodel.com/HTML_UG/introV8.htm
	202	Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. <i>Journal of Personality and Social Psychology</i> , 67(6), 1063–1078. DOI: 10.1037/0022-3514.67.6.1.
	187	Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. <i>Journal of Health and Social Behavior</i> , 43(2), 207–222. DOI: 10.2307/3,090,197.
Green	790*	Boyle, P. A., Barnes, L. L., Buchman, A. S., & Bennett, D. A. (2009). Purpose in life is associated with mortality among community-dwelling older persons. <i>Psychosomatic Medicine</i> , 71(5), 574–579. DOI: 10.1097/PSY.0b013e3181a5a7c0.
	684*	Scheier, M. F., Wrosch, C., Baum, A., Cohen, S., Martire, L. M., Matthews, K. A., Schulz, R., & Zdzienicka, B. (2006). The Life Engagement Test: Assessing purpose in life. <i>Journal of Behavioral Medicine</i> , 29(3), 291–298. DOI: 10.1007/s10865-005-9044-1.
	669*	Boyle, P. A., Buchman, A. S., Barnes, L. L., & Bennett, D. A. (2010). Effect of a purpose in life on risk of incident Alzheimer disease and mild cognitive impairment in community-dwelling older persons. <i>Archives of General Psychiatry</i> , 67(3), 304–310. DOI: 10.1001/archgenpsychiatry.2009.208
	649*	Hill, P. L., & Turiano, N. A. (2014). Purpose in life as a predictor of mortality across adulthood. <i>Psychological Science</i> , 25(7), 1482–1486. DOI: 10.1177/0956797614531799.
	629*	Pinquart, M. (2002). Creating and maintaining purpose in life in old age: A meta-analysis. <i>Ageing International</i> , 27(2), 90–114. DOI: 10.1007/s12126-002-1004-2
	577	Kim, E. S., Sun, J. K., Park, N., & Peterson, C. (2013). Purpose in life and reduced incidence of stroke in older adults: 'The Health and Retirement Study.' <i>Journal of Psychosomatic Research</i> , 74(5), 427–432. DOI: 10.1016/j.jpsychores.2013.01.013.
	527	Ryff, C. D. (2014). Psychological well-being revisited: Advances in the science and practice of eudaimonia. <i>Psychotherapy and Psychosomatics</i> , 83(1), 10–28. DOI: 0.1159/000353263
	521	Kim, E. S., Strecher, V. J., & Ryff, C. D. (2014). Purpose in life and use of preventive health care services. <i>PNAS Proceedings of the National Academy of Sciences of the United States of America</i> , 111(46), 16,331–16,336. DOI: 10.1073/pnas.1414826111.
	520	Kim, E. S., Sun, J. K., Park, N., Kubzansky, L. D., & Peterson, C. (2013). Purpose in life and reduced risk of myocardial infarction among older US Adults with coronary heart disease: A two-year follow-up. <i>Journal of Behavioral Medicine</i> , 36(2), 124–133. DOI: 10.1007/s10865-012-9406-4.
	479	Ryff, C. D., Singer, B. H., & Love, G. (2004). Positive health: Connecting well-being with biology. <i>Philosophical transactions of the Royal Society of London. Series B, Biological sciences</i> , 359(1449), 1383–1394. DOI: 10.1098/rstb.2004.1521
	457	Cohen, R., Bavishi, C., & Rozanski, A. (2016). Purpose in life and its relationship to all-cause mortality and cardiovascular events: A meta-analysis. <i>Psychosomatic Medicine</i> , 78(2), 122–133. DOI: 10.1097/PSY.0000000000000274.
	385	Boyle, P. A., Buchman, A. S., & Bennett, D. A. (2010). Purpose in life is associated with a reduced risk of incident disability among community-dwelling older persons. <i>The American Journal of Geriatric Psychiatry: Official Journal of the American Association for Geriatric Psychiatry</i> , 18(12), 1093–1102. DOI: 10.1097/JGP.0b013e3181d6c259
	359	Hooker, S. A., & Masters, K. S. (2016). Purpose in life is associated with physical activity measured by accelerometer. <i>Journal of Health Psychology</i> , 21(6), 962–971. DOI: 10.1177/1,359,105,314,542,822.
	334	Boyle, P. A., Buchman, A. S., Wilson, R. S., Yu, L., Schneider, J. A., & Bennett, D. A. (2012). Effect of purpose in life on the relation between Alzheimer disease pathologic changes on cognitive function in advanced age. <i>JAMA Psychiatry</i> , 69(5), 499–506.
	311	Friedman, E. M., Hayney, M., Love, G. D., Singer, B. H., & Ryff, C. D. (2007). Plasma interleukin-6 and soluble IL-6 receptors are associated with psychological well-being in aging women. <i>Health Psychology</i> , 26(3), 305–313. DOI: 10.1037/0278-6133.26.3.30.
	296	Martela, F., & Steger, M. F. (2016). The three meanings of meaning in life: Distinguishing coherence, purpose, and significance. <i>The Journal of Positive Psychology</i> , 11(5), 531–545. DOI: 10.1080/17,439,760.2015.1137623.
	289	Krause, N. (2009). Meaning in Life and Mortality, <i>The Journals of Gerontology: Series B</i> , 64(4), 517–527. DOI: 10.1093/geronb/gbp047.
	288	Ryff, C. D., Love, G. D., Urry, H. L., Muller, D., Rosenkranz, M. A., Friedman, E. M., Davidson, R. J., & Singer, B. (2006). Psychological well-being and ill-being: Do they have distinct or mirrored biological correlates? <i>Psychotherapy and Psychosomatics</i> , 75(2), 85–95. DOI: 10.1159/000090892.
	286	Schaefer, S. M., Morozink Boylan, J., van Reekum, C. M., Lapate, R. C., Norris, C. J., Ryff, C. D., & Davidson, R. J. (2013). Purpose in life predicts better emotional recovery from negative stimuli. <i>PLoS One</i> , 8(11), e80329. DOI: 10.1371/journal.pone.0080329.

(Continued)

Table 2. (Continued).

Cluster	Co-cite strength	APA Reference
	267	Zilioli, S., Slatcher, R. B., Ong, A. D., & Gruenewald, T. L. (2015). Purpose in life predicts allostatic load ten years later. <i>Journal of Psychosomatic Research</i> , 79(5), 451–457. DOI: 10.1016/j.jpsychores.2015.09.013.
	260	Wood, A. M., & Joseph, S. (2010). The absence of positive psychological (eudemonic) well-being as a risk factor for depression: A ten-year cohort study. <i>Journal of Affective Disorders</i> , 122(3), 213–217. DOI: 10.1016/j.jad.2009.06.032.
	254	Kim, E. S., Hershner, S. D., & Strecher, V. J. (2015). Purpose in life and incidence of sleep disturbances. <i>Journal of Behavioral Medicine</i> , 38(3), 590–597. DOI: 10.1007/s10865-015-9635-4.
	237	Yu, L., Boyle, P. A., Wilson, R. S., Levine, S. R., Schneider, J. A., & Bennett, D. A. (2015). Purpose in life and cerebral infarcts in community-dwelling older people. <i>Stroke</i> , 46(4), 1071–6. DOI: 10.1161/STROKEAHA.114.008010.
	236	Sone, T., Nakaya, N., Ohmori, K., Shimazu, T., Higashiguchi, M., Kakizaki, M., Kikuchi, N., Kuriyama, S., & Tsuji, I. (2008). Sense of life worth living (ikigai) and mortality in Japan: Ohsaki Study. <i>Psychosomatic Medicine</i> , 70(6), 709–715. DOI: 10.1097/PSY.0b013e31817e7e64.
	233	Lewis, N. A., Turiano, N. A., Payne, B. R., & Hill, P. L. (2017). Purpose in life and cognitive functioning in adulthood. <i>Aging, Neuropsychology, and Cognition</i> , 24(6), 662–671. DOI: 10.1080/13825585.2016.1251549.
	222	Heintzelman, S. J., & King, L. A. (2014). Life is pretty meaningful. <i>The American Psychologist</i> , 69(6), 561–74. DOI: 10.1037/a0035049.
	216	Abbott, R. A., Ploubidis, G. B., Huppert, F. A., Kuh, D., Wadsworth, M. E. J., & Croudace, T. J. (2006). Psychometric evaluation and predictive validity of Ryff's Psychological Well-being Items in a UK Birth Cohort Sample of Women. <i>Health & Quality of Life Outcomes</i> , 4.
Yellow	1332*	McKnight, P. E., & Kashdan, T. B. (2009). Purpose in life as a system that creates and sustains health and well-being: An integrative, testable theory. <i>Review of General Psychology</i> , 13(3), 242–251. DOI: 10.1037/a0017152.
	981*	Damon, W., Menon, J., & Bronk, K. C. (2003). The development of purpose during adolescence. <i>Applied Developmental Science</i> , 7(3), 119–128. DOI: 10.1207/S1532480XADS0703_2.
	880*	Bronk, K. C., Hill, P. L., Lapsley, D. K., Talib, T. L., & Finch, H. (2009). Purpose, hope, and life satisfaction in three age groups. <i>The Journal of Positive Psychology</i> , 4(6), 500–510. DOI: 10.1080/17439760.903.271.439.
	547*	Burrow, A. L., & Hill, P. L. (2011). Purpose as a form of identity capital for positive youth adjustment. <i>Developmental Psychology</i> , 47(4), 1196–1206. DOI: 10.1037/a0023818.
	536*	Burrow, A. L., O'Dell, A. C., & Hill, P. L. (2010). Profiles of a developmental asset: Youth purpose as a context for hope and well-being. <i>Journal of Youth and Adolescence</i> , 39(11), 1265–1273. DOI: 10.1007/s10964-009-9481-1.
	516	Erikson, E.H. (1968). <i>Identity: youth and crisis</i> . Norton & Co.
	503	Damon, W. (2008). <i>The Path to Purpose: Helping our children find their calling in life</i> (1st Free Press hardcover). Free Press.
	393	Hill, P. L., Burrow, A. L., Brandenberger, J. W., Lapsley, D. K., & Quaranto, J. C. (2010). Collegiate purpose orientations and well-being in early and middle adulthood. <i>Journal of Applied Developmental Psychology</i> , 31(2), 173–179. DOI: 10.1016/j.appdev.2009.12.001.
	342	Bronk, K.C. (2011). The role of purpose in life in healthy identity formation: A grounded model. <i>New Directions for Youth Development</i> , 31–44. DOI: 10.1002/yd.426.
	311	Moran, S. (2009). Purpose: Giftedness in intrapersonal intelligence. <i>High Ability Studies</i> , 20(2), 143–159. DOI: 10.1080/13598130.903.358.501.
	306	Kashdan, T. B., & McKnight, P. E. (2009). Origins of purpose in life: Refining our understanding of a life well lived. <i>Psihologijske Teme</i> , 18(2), 303–316.
	292	Hill, P. L., & Burrow, A. L. (2012). Viewing purpose through an Eriksonian lens. <i>Identity: An International Journal of Theory and Research</i> , 12(1), 74–91. DOI: 10.1080/15283488.2012.632394.
	281	Malin, H., Reilly, T. S., Quinn, B., & Moran, S. (2014). Adolescent purpose development: Exploring empathy, discovering roles, shifting priorities, and creating pathways. <i>Journal of Research on Adolescence</i> , 24(1), 186–199. DOI: 10.1111/jora.12051.
	275	Hill, P. L., Burrow, A. L., O'Dell, A. C., & Thornton, M. A. (2010). Classifying adolescents' conceptions of purpose in life. <i>The Journal of Positive Psychology</i> , 5(6), 466–473. DOI: 10.1080/17439760.2010.534488.
	275	Moran, S., Bundick, M. J., Malin, H., & Reilly, T. S. (2013). How supportive of their specific purposes do youth believe their family and friends are? <i>Journal of Adolescent Research</i> , 28(3), 348–377. DOI: 10.1177/0743558412457816
	269	Bronk, K. C., & Finch, W. H. (2010). Adolescent characteristics by type of long-term aim in life. <i>Applied Developmental Science</i> , 14(1), 35–44. DOI: 10.1080/10888690.903.510.331.
	261	Bronk, K. C. (2012). A grounded theory of the development of noble youth purpose. <i>Journal of Adolescent Research</i> , 27(1), 78–109. DOI: 10.1177/0743558411412958.
	254	Bundick, M. J. (2011). The benefits of reflecting on and discussing purpose in life in emerging adulthood. <i>New Directions for Youth Development</i> , 132, 89–103. DOI: 10.1002/yd.430.
	252	Kiang, L. (2012). Deriving daily purpose through daily events and role fulfillment among Asian American youth. <i>Journal of Research on Adolescence</i> , 22(1), 185–198.
	242	Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. <i>American Psychologist</i> , 55(5), 469–480. https://doi.org/10.1037//0003-066X.55.5.469 .
	224	Steger, M. F., Kashdan, T. B., & Oishi, S. (2008). Being good by doing good: Daily eudaimonic activity and well-being. <i>Journal of Research in Personality</i> , 42(1), 22–42. DOI: 10.1016/j.jrp.2007.03.004.

from fields outside psychology. Although several documents, especially those that referenced eudemonic well-being, touch briefly on philosophy, only one was published in a philosophy journal. None was published in a social work, criminal justice, religious studies, educational, or business journal, despite the fact that purpose has important implications for these fields. For instance,

many high-profile publications targeting business audiences reference purpose (e.g., Harvard Business Review, 2020; EY Global Review, 2020), and many schools feature purpose-cultivating programs and interventions (e.g., Project Wayfinder, QUESTion, nXu). We had expected to find that foundational documents came from a broader range of fields.

Table 3. Co-citation documents coded by originating field.

Field	Number of secondary documents	Sample secondary document
Positive Psychology	53	Diener, E. (1984). Subjective well-being. <i>Psychological Bulletin</i> , 95(3), 542–575. DOI: 10.1037/0033-2909.95.3.542
Health & Medicine	25	Boyle, P. A., Barnes, L. L., Buchman, A. S., & Bennett, D. A. (2009). Purpose in life is associated with mortality among community-dwelling older persons. <i>Psychosomatic Medicine</i> , 71(5), 574–579. DOI: 10.1097/PSY.0b013e3181a5a7c0.
Developmental Psychology	23	Damon, W., Menon, J., & Bronk, K. C. (2003). The development of purpose during adolescence. <i>Applied Developmental Science</i> , 7(3), 119–128. DOI: 10.1207/S1532480XADS0703_2.
Personality & Social Psychology	18	Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. <i>Journal of Personality and Social Psychology</i> , 67(6), 1063–1078. DOI: 10.1037/0022-3514.67.6.1.
Gerontology & Positive Ageing	17	Ryff, C. D. (1989). Beyond Ponce de Leon and life satisfaction: New directions in quest of successful ageing. <i>International Journal of Behavioral Development</i> , 12(1), 35–55. DOI: 10.1177/016502548901200102.
Clinical & Counseling Psychology	13	Harlow, L. L., Newcomb, M. D., & Bentler, P. M. (1986). Depression, self-derogation, substance use, and suicide ideation: Lack of purpose in life as a mediational factor. <i>Journal of Clinical Psychology</i> , 42(1), 5–21. DOI: 10.1002/1097-4679.
Measurement & Assessment	10	Crumbaugh, J. C. (1968). Cross-validation of Purpose in Life Test based on Frankl's concepts. <i>Journal of Individual Psychology</i> , 24, 74–81.

Note: This table only includes fields where more than 2 documents originated, and the total number of documents adds up to more than 100 because some were coded into more than one field. Documents were coded into fields based on (1) the journal in which they appeared, in the case of peer reviewed journals, and (2) the document content.

Next, we examined the affiliations for the authors most responsible for the foundational work in purpose. To do that, we coded the top 100 documents based on the first author's country of employment at the time of their foundational purpose publication. To ascertain this, we recorded the country listed in the first (or contact) author's contact information for the peer-reviewed journal articles. For books, book chapters, and manuals, we Googled the authors to see which country they were working in when they published the relevant manuscript. Results suggested foundational research on purpose have a strong western bias. Nearly all secondary documents (90) were authored by individuals in North America, a few were authored by individuals in Europe (5), a few by individuals in Australia or New Zealand (3), and two by scholars in Asia (1 in Hong Kong and 1 in Japan). We can surmise from this conclusion that

conceptualizations and foundational knowledge of the purpose construct are based primarily on Western perspectives, which may not be relevant in other cultural contexts. This is important to bear in mind as Eastern scholars launch research on purpose or as Western scholars take purpose research into other cultural contexts.

Next, we surveyed conceptualizations of purpose. Table 4 summarizes the definitions that appeared most commonly in secondary documents. A review of the 100 secondary documents revealed that researchers do not define purpose in consistent ways. Seventy-six of the 100 source documents included definitions of the purpose in life or meaning in life construct. Of these, 20 featured research on meaning in life, which is a wholly distinct construct from purpose. We do not include an exhaustive review of these documents, but we felt it was important to point out that one-fifth of the secondary

Table 4. The number of source documents by conceptualization of purpose.

Number of documents	Conceptualization of purpose
21	A version of Ryff's definition, such as Ryff's (1989), "An individual with purpose, has goals, intentions, and a sense of direction, all of which contribute to the feeling that life is meaningful" (p. 1071).
20	Various definitions of meaning in life (not purpose; e.g., Reker & Wong, 1988; Steger et al., 2006)
12	Damon et al. (2003), "a stable and generalized intention to accomplish something that is meaningful to the self and leads to engagement with some aspect of the world beyond the self" (p. 121).
10	Frank as cited by Crumbaugh & Maholick (1964), 'the ontological significance of life from the point of view of the experiencing individuals' (Crumbaugh & Maholick, 1964, p. 201).
7	Multiple definitions of purpose; E.g., Hill and Burrow (2012), "Erikson suggested that a sense of purpose corresponded to having 'the courage to envisage and pursue valued goals uninhibited by the defeat of infantile fantasies, by guilt and by the foiling fear of punishment' (1964, p. 122). A recent review by McKnight and Kashdan (2009) described the construct as 'a central, self-organizing life aim that organizes and stimulates goals, manages behaviors, and provides a sense of meaning' (p. 242). Central to both definitions are the notions of goal pursuit and organization (see also Burrow & Hill, in press; Ryff, 1989), and it becomes apparent that goal setting is an important underlying theme to Erikson's view of adaptive identity development" (p. 75).
3	McKnight and Kashdan (2009), "a central, self-organizing life aim that organizes and stimulates goals, manages behaviors, and provides a sense of meaning. Purpose directs life goals and daily decisions by guiding the use of finite personal resources" (p. 1089).
3	Other definitions of purpose, E.g., Harlow et al., (1986), 'In our study, the construct of purpose in life or meaningfulness can be viewed as the positive end of a continuum with the concept of hopelessness or meaninglessness at the negative end' (p. 6).

Note: The number of documents totals less than 100 because some documents did not include a definition of purpose or meaning.

documents reference not purpose, but instead meaning in life. Citing research on meaning when researching purpose is – of course – problematic. Scientific research is predicated on the idea that one term refers to one idea. This issue was further exemplified in how secondary documents defined purpose.

Of the secondary documents that included definitions of purpose, the most common definition used was one put forth by Ryff (1989). Twenty-one of the source documents relied on Ryff's conceptualization, which views purpose as a motivational construct that provides 'a sense of directedness and intentionality' (p. 1071). An individual with purpose 'has goals, intentions, and a sense of direction, all of which contribute to the feeling that life is meaningful' (p. 1071). According to Ryff (1989), purpose in life represents one of six dimensions of psychological well-being.

Damon et al. (2003) put forth the next most commonly cited definition of purpose. Their conceptualization, which appeared in 12 of the source documents, defines purpose as a 'a stable and generalized intention to accomplish something that is meaningful to the self and leads to engagement with some aspect of the world beyond the self' (Damon et al., 2003, p. 121). This conceptualization of purpose overlaps with Ryff's in that it highlights the role of goals and personal significance, but it adds a motivation to contribute to the world beyond the self.

Another commonly cited definition was one based on Frankl's ground-breaking purpose work. This definition, which was featured in 10 of the source documents, suggests that purpose is 'the ontological significance of life from the point of view of the experiencing individuals' (Crumbaugh & Maholick, 1964, pg. 201). Other source documents relied on McKnight and Kashdan's (2009) conceptualization, which regards purpose as 'a central, self-organizing life aim that organizes and stimulates goals, manages behaviors, and provides a sense of meaning. Purpose directs life goals and daily decisions by guiding the use of finite personal resources' (p. 1089). This definition was used in three of the secondary documents. Other source documents either drew on multiple definitions of construct (7) or proposed their own definitions (3).

This analysis reveals an unexpectedly high degree of variability in the conceptualization of purpose. In addition, our review revealed that some researchers claimed to be studying meaning but offered conceptualizations of purpose (e.g., King et al., 2006), and others claimed to be studying purpose but offered conceptualizations of meaning (e.g., Kim et al., 2013a; Kim et al., 2013b). Early research was particularly likely to use *purpose* and *meaning* interchangeably (e.g., Meier & Edwards, 1974), but

more recent research has as well (e.g., King et al., 2006). Defining constructs inconsistently and using terms interchangeably creates conceptual opaqueness.

Finally, we examined the secondary documents to learn how researchers have measured and studied purpose. We reviewed the types of studies featured in source documents to investigate these issues. Of the 86 peer-reviewed journal articles, most featured empirical studies (66 were empirical and 20 were theoretical). Of the empirical, peer-reviewed journal articles, most featured quantitative studies (58), and only a few featured mixed methods (4) or qualitative studies (4). Most of the quantitative studies relied on survey research (40) or were scale development and/or scale validation studies (18). When quantitative studies featured surveys of purpose, most made use of some version of Ryff and Keyes (1995) Scales of Psychological Well-being (22), Crumbaugh and Maholick's (1964) Purpose in Life Test (7), the Revised Youth Purpose Survey (7; Bundick et al., 2006), or the Meaning in Life Questionnaire (4; Steger et al., 2006). When qualitative studies featured interviews about purpose, most relied on the Revised Youth Purpose Interview Protocol (7; Andrews et al., 2006).

Intellectual structure of purpose foundations

After conducting a review of the top 100 co-cited secondary documents, we turned to the intellectual structure of these documents. Doing so affords further insight into how purpose foundations are organized and related. Figure 1 features the co-citation analysis of the top 100 secondary documents from our WOS search.

Four distinct clusters, or knowledge domains, emerged in the co-citation analysis. The secondary documents were fairly evenly distributed across the four clusters, with 27 documents in the red cluster, 27 in the green cluster, 25 in the blue cluster, and 21 in the yellow cluster. In the following sections, we take a deeper dive into each of the clusters to identify the different streams of knowledge that undergird research on purpose. We describe each cluster in terms of the documents it includes. Table 5 features the five most co-cited documents in each cluster and a brief description of each cluster.

Co-citation red cluster

The red cluster includes documents featuring *Carol Ryff's foundational theories and measures of psychological well-being*. This cluster has both the largest number of documents (27 documents) and the largest number of citations (2,176 citations). Most of the documents in this cluster are theoretical (18 theoretical and only nine

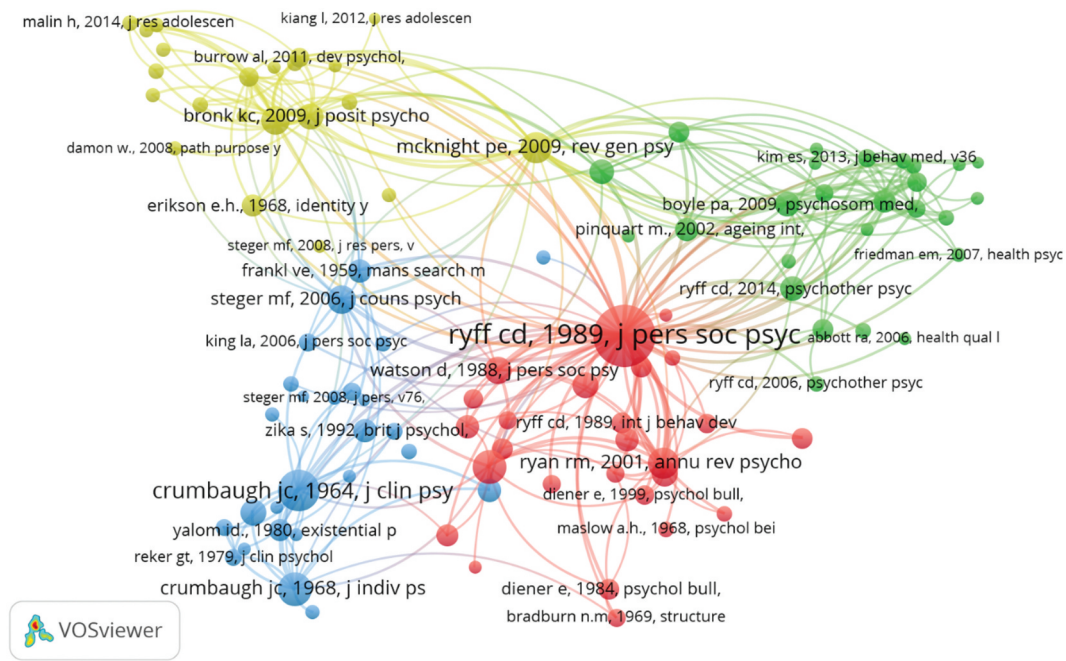


Figure 1. Co-citation map of top 100 secondary documents. Co-citation minimum strength threshold is 15. Red cluster = Foundational theories and measures of well-being; Yellow cluster = Developmental theories and studies of youth purpose; Green = Positive aging and health studies among older adults; Blue cluster = Theories and studies of purpose and meaning stemming directly from Frankl's work

empirical), and most discuss adult development. Documents in this cluster largely cohere around Ryff's program of research. She authored or co-authored seven of the documents, including the most frequently co-cited one (Ryff, 1989), and most documents in this cluster feature her conceptualization of psychological well-being and reference her conceptualization of purpose.

Perhaps the most striking feature of the red cluster is the large circle toward the top. This circle represents Ryff's (1989) manuscript entitled *Beyond Ponce de Leon and Life Satisfaction: New Directions in Quest of Successful Ageing*. This article offers a theoretical framework for psychological well-being based on Ryff's scales of psychological well-being. In this article, Ryff argues that purpose represents one of the six dimensions of psychological well-being. In addition to being the most connected document in the red cluster, this article is also the most well-connected purpose article across the other clusters as well. It links to secondary documents in each of the other clusters.

Co-citation blue cluster

The blue cluster includes 25 documents and 1,490 citations. Documents in this cluster feature *theories and studies of purpose and meaning closely tied to Frankl's work*. Accordingly, it comes as little surprise that Viktor Frankl's book (1959), *Man's Search for Meaning* is the

most connected and most widely co-cited document in this cluster. Frankl discussed the important role purpose and meaning play in human survival in his book. Because he was a psychiatrist, he offered a new approach to counseling, called Logotherapy, that focuses on helping patients discover and pursue life purposes as a means of minimizing negative indicators of mental health. Consequently, most documents in this cluster originated within the clinical and counseling space, and most feature adult samples. Also, perhaps because of their tie to Frankl's early work, documents in this cluster are, on average, older than documents published in the other clusters. The mean publication year for documents in this cluster is 1989.

Another notable characteristic of the documents in this cluster is their interchangeable use of the terms 'purpose' and 'meaning.' Frankl used these terms interchangeably, and so too did many of the early works that stem from his work. As previously discussed, using two different terms to refer to the same construct (also known as the jangle fallacy) is problematic, and this is perhaps where the confusion between the terms originated. Although this practice has improved in recent years, it continues to be a problem (Bronk, 2013).

Finally, in addition to including documents that use 'purpose' and 'meaning' interchangeably, this cluster also features documents that focus exclusively on 'meaning' (e.g., Steger et al., 2006; Steger et al., 2008;

Table 5. The five most co-cited documents from each cluster.

Cluster	Author, Year	Brief description	Co-cite strength
Ryff's foundational theories and measures of psychological well-being (Red)	Ryff, 1989	Establishes a theoretical grounding for research on well-being that includes purpose as one of six dimensions, and tests the model	2796
	Ryan & Deci, 2001	Reviews research on eudaimonic and hedonic well-being in light of self-determination theory	871
	Diener et al., 1985	Introduces a new measure of subjective well-being, the Life Satisfaction Scale	858
	Watson et al., 1988	Introduces the PANAS, a survey of positive and negative affect	646
	Keyes et al., 2002	Tests the assumption that subjective well-being and psychological well-being are related but distinct	614
Developmental theories and studies of youth purpose (Yellow)	McKnight & Kashdan, 2009	Offers a theoretical framework and definition for purpose in life	1332
	Damon et al., 2003	Offers a theoretical framework and definition for purpose among adolescents	981
	Bronk et al., 2009	A cross-sectional study of purpose, hope, and life satisfaction among adolescents, young adults, and midlife adults	880
	Hill & Burrow, 2012; Hill et al., 2016	A study that establishes purpose as a form of identity capital for adolescents and young adults	547
	Burrow & Hill, 2011; Hill et al., 2010	A study that examines purpose as a developmental asset for adolescents	536
Studies of purpose as a feature of positive aging and health among older adults (Green)	Boyle et al., 2009	Establishes that purpose is related (inversely) to all-cause mortality among older community-dwelling adults	790
	Scheier et al., 2006	Introduces the Life Engagement Test, which assesses the extent to which primarily older individuals with health issues are engaged in personally meaningful activities	684
	Boyle et al., 2009	Establishes that purpose is related (inversely) to all-cause mortality among older community-dwelling adults.	669
	P. L. Hill & Turiano, 2014	Establishes that purpose is related (inversely) to mortality across adulthood	649
	Pinquart, 2002	Features a meta-theory of studies that link purpose to mental health among midlife and older adults	629
Theories and studies of purpose and meaning stemming from Frankl's work (Blue)	Frankl, 1959, 1963	<i>Man's Search for Meaning</i> introduces his theory of purpose and logotherapeutic approach to counseling for purpose	1017
	Steger et al., 2006	Introduces and validates a new measure of the presence of and search for meaning in life	984
	Crumbaugh & Maholick, 1964	Tests Frankl's logotherapeutic ideas using their Purpose in Life Test	932
	Zika & Chamberlain, 1992	Using Crumbaugh & Maholick's Purpose in Life Test, examines the relation of meaning and psychological well-being in a sample of mothers and older adults	591
	Crumbaugh, 1968	Uses the Purpose in Life Test to test several of Frankl's hypotheses among clinical and typical samples of adults	567

Steger et al., 2009). Theoretical and empirical studies focused on meaning appear more commonly in this cluster than in any of the others.

Co-citation green cluster

The 27 documents that make up the green cluster have been cited a total of 1,180 times. Documents in this cluster cohere around the red cluster, and this makes sense since they largely are based on Ryff's conceptualization of purpose. Given this, it is perhaps not surprising to learn that most documents in this cluster were coded as originating within the gerontology and positive aging fields or the health and medicine fields.

However, documents in the green cluster differ from documents in the red cluster in several noteworthy ways. First, they tend to feature older samples. Whereas most of the studies in the red cluster feature

midlife adults, most in the green cluster feature older adults. Also, documents in this cluster were published more recently, on average (mean publication year was 2011), than documents in the red cluster (mean publication year was 1992). Finally, no single citation dominates this cluster the way Ryff's article dominated the red cluster. That said, Ryff did author or co-author the most articles in this cluster (5 articles), followed closely by Boyle (4 citations) and Kim (3 citations).

Co-citation yellow cluster

Documents in the yellow cluster feature primarily *developmental psychological theories and studies of youth purpose*. This cluster is the smallest with only 21 documents and 1,002 citations. Two manuscripts are responsible for more than a quarter of these citations: one is an article by Damon et al. (2003) that introduces a theoretical

framework for youth purpose, and the other is a cross-sectional study by Bronk et al. (2009) that examines purpose, hope, and life satisfaction among adolescents, young adults, and midlife adults. Most of the documents in this category come from developmental science or positive psychology perspectives, and most feature empirical studies with adolescent and young adult samples.

As evidenced by a visual review of the display, this cluster stands on its own more than the others. Whereas the other three clusters are close to one another, the yellow cluster is set somewhat farther apart. One explanation for this may have to do with its conceptualization of purpose. Unlike articles in the other clusters, most articles in the yellow cluster rely on Damon et al. (2003) conceptualization of purpose, which features the three dimensions of goal-directedness, personal meaningfulness, and a beyond-the-self orientation. Another possible explanation for the distance between this cluster and the others may have to do with study samples. Most documents in the yellow cluster feature research on adolescents and young adults. In contrast, most documents in the other three clusters feature research on adults, including older adults. Although many of the documents in this cluster use the same theoretical framework of purpose, there is not one author who dominates the field. Hill is the most frequent author or co-author to appear in this cluster (6 articles), followed by Burrow (5 articles) and Bronk (5 articles). Also, research in this cluster is comparatively recent. The mean publication year is 2007.

Discussion

Given the growth in purpose research over the past twenty years, the present study examined the intellectual foundations of research on this construct. More specifically, we analyzed the secondary documents that helped build our current understanding of purpose. Our review revealed that secondary documents consisted primarily of peer-reviewed journal articles, as opposed to books or book chapters, in the *Journal of Personality and Social Psychology*, *American Psychologist*, the *Journal of Positive Psychology*. Most secondary documents were published in psychology journals. Given that research on purpose has implications for fields beyond psychology (e.g., philosophy, social work, criminal justice, education, business, religious studies, etc.), this finding was surprising. In addition to focusing on source documents, we also examined early purpose scholars who have shaped the field. Individuals from North American institutions authored 90% of the secondary documents. Lastly, our analyses revealed that most of the secondary documents

were empirical, most featured quantitative survey studies with adult samples, and most relied on Ryff's (1989) conceptualization of purpose.

In addition to reviewing the top 100 co-cited documents, we also examined these documents' intellectual structures, affording further insight into how purpose foundations are organized and related. Four streams of research emerged. The largest cluster featured research by Ryff and colleagues. It included studies conducted with midlife adults and based on Ryff's conceptualization of purpose, which views the construct as one of six dimensions of psychological well-being. The second most significant stream included research by Frankl and colleagues. This cluster primarily featured research with adults and consisted of studies that relied on Frankl's conceptualization of purpose, which uses *purpose* and *meaning* interchangeably. The third stream was characterized not so much by a particular scholar but by research focused on positive aging. Studies in this cluster featured older adult samples, and many relied on Ryff's definition of purpose. The last cluster was characterized by its use of adolescent and young adult samples. Most of these studies utilized Damon et al. (2003) conceptualization of purpose.

Although these findings offered a slew of novel insights, several insights have significant implications for the future study of purpose. For instance, this review revealed that authors of source documents have defined purpose in inconsistent ways, and some have used *purpose* and *meaning* interchangeably. These practices, which should be avoided in future research on the topic, contribute to the jingle-jangle fallacy (Reeves & Venator, 2014). The jingle fallacy refers to the erroneous assumption that two different constructs are the same because they have the same name, which happens when we offer two different conceptualizations of one construct (purpose), and the jangle fallacy refers to the use of two terms to refer to the same idea, which happens when we use *purpose* and *meaning* interchangeably. The jingle jangle fallacy plagues not only research on purpose, but also research on many other positive psychology and non-cognitive constructs (Reeves & Venator, 2014). Defining a construct inconsistently and using it interchangeably with another construct leads to inconsistent conclusions about its nature, indicators, outcomes, and correlates. In short, the science of purpose will be a mess if we fail to use a single, consistent definition. Defining purpose inconsistently and using the term interchangeably with other terms also yields problems for practitioners who want to use purpose interventions or otherwise apply purpose findings in practice. Purpose researchers need to come to a consensus regarding how to define the construct.

Another noteworthy finding yielded by this study is the heavy Western bent evident in foundational research on purpose. First authors from Western universities and locales prepared 90% of the foundational documents. This means that conceptualizations, measures, and methods of studying purpose were shaped by individuals from Western cultural contexts. The relational developmental systems framing, which researchers typically apply to research on purpose, emphasizes the role sociocultural factors play in the development of purpose (Lerner & Callina, 2014). What would a science of purpose look like today if it had emerged in an Eastern rather than a Western context? To what degree is foundational knowledge of purpose relevant in people in non-western, educated, industrialized, rich, and democratic (WEIRD) cultural contexts? As purpose researchers, we need to wrestle with these important questions, and we need to support research on purpose from other cultural perspectives.

This study also revealed that foundational research on purpose, a construct that is relevant to multiple fields, has derived almost exclusively from the field of psychology. Since Aristotle (2009), philosophers have concerned themselves with the study of purpose and related pursuits. However, philosophical musings on the construct are rarely reflected in foundational research on the topic. To understand the purpose construct fully, psychologists should build on the work of philosophers. Purpose is a multidisciplinary construct with implications and applications in many fields, and foundational research on the construct does not adequately reflect this. For instance, purpose has significant educational implications. It has often been applied in educational contexts (e.g., Malin, 2018), but none of the foundational research on the construct originated in educational journals. Accordingly, individuals seeking to apply foundational research in domains beyond psychology should proceed cautiously, and scholars from outside psychology should be encouraged to share their insights and conduct research on purpose to broaden our understanding of the construct.

Finally, understanding the origins of research on purpose sheds light on where research on the construct is headed. The two streams of purpose research with the newest publications feature studies with youth and older adults. Given this, it seems likely that research in these promising directions will continue to grow in the coming years.

Although this study yielded novel insights with important implications for practitioners and scholars interested in purpose, like all studies, it is not without its limitations. For instance, our analysis of the foundational research was shaped by the keywords used to generate primary documents. Had we used different keywords, our findings likely

would have varied. In particular, we limited our search terms to English words. Including terms for purpose in languages other than English would likely have altered our findings, including, perhaps, our finding that foundational purpose documents have a strong Western bias. That said, we did our best to identify as broad a list of English search terms as possible. In so doing, we sought to be inclusive and to capture a wide range of perspectives on purpose, including those from different cultures and fields. In addition, document co-citation research is based on the assumption that citations indicate influence and importance and that documents that are co-cited together share something (Zupic & Cater, 2015). It is up to researchers to interpret document co-citation findings and make meaning out of emergent patterns. We tried to minimize this limitation by having two independent members of the research team review and code all the data.

This study is the first document co-citation on purpose. The co-citation bibliometric approach enabled us to analyze the intellectual foundations of research on purpose, a construct that has garnered considerable scholarly attention in the past two decades (Bronk et al., 2022). Our analyses yielded a host of novel insights. It revealed that early research on this construct, which has roots in and implications for many other fields, derived almost exclusively from psychology. Findings also revealed that most early work in this field was conducted in North America, which means researchers and practitioners eager to apply this work in other settings need to proceed with caution. Early research relied on varied conceptualizations of purpose, and some early studies even used purpose and meaning – distinct constructs – interchangeably. These practices have likely yielded some inconsistent and unreliable conclusions. Finally, this study also identified four streams of purpose research that suggest scholars are poised to carry forth research on purpose in relation to positive youth development and positive aging. To support broader applications of purpose research, studies of purpose among individuals living in non-WEIRD settings is also warranted.

Data from this study are available upon request.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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