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Mapping the Landscape of Gratitude Research: A PRISMA Guided Scoping Review

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ABSTRACT

Gratitude has gained a growing interest in psychological research because it is associated with mental health, well-being, physical health and positive functioning. Nevertheless, gratitude research has expanded across ideas, populations, and research settings, so it is difficult to see how the existing knowledge is organised. Therefore, this study aims to map the intellectual landscape of gratitude research in psychological studies by identifying major term clusters and interpreting the research areas within them. We conducted a scoping review based on bibliographic records collected from the Web of Science (WoS) database and reported it according to the PRISMA-ScR guideline. After title and abstract screening, we excluded 158 records, leaving 554 records to analyse. We used VOSviewer and BiblioSpy to examine term co-occurrence and network effects. The analysis identified 67 terms with 500 links, grouped into six research clusters. These clusters were spirituality and psychological health; positive psychology and life satisfaction; well-being, virtue, and meaning-making; mental health, character strengths, and social support; meaning in life and resilience; and mindfulness, coping, and post-traumatic growth. Gratitude research is more than happiness; it also links to psychological, spiritual, social, health, and adversity. By organising these areas into a clear research framework, this study offers a fuller view of the gratitude research field and suggests potential directions for future research.

1. Introduction

Gratitude has emerged as important variables across various disciplines particularly in psychology and social science research. It refers to "positive psychological state and attitude of appreciation" when face human and life circumstances [18,40,50,61]. The core element of gratitude is appreciating what is valuable and meaningful and being thankful [43,50].

Studies on gratitude have reported that practicing gratitude produces positive effects on people mentally, physically, and psychologically. Individual who practices gratitude will have positive outcomes on their mental health for instance they will experience less depression, less anxiety and improve the mental wellbeing [12,14,19,22].

In terms of psychological well-being, an individual who practiced gratitude would experience higher life satisfaction, more positive emotions, happiness, have purpose and direction in life [7,13,

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20,62]. In addition, gratitude also produce positive outcome to the physical health of individual such as better sleep condition, healthy heart rate while making the cardiovascular become healthier, and positive behaviour [5,11,34,35].

Due to the rising number of gratitude publications, it becomes difficult to understand the content, meaning and context of gratitude when the study was widely conducted across various disciplines and numerously associated with many kinds of concepts. Therefore, this study aims to identify major thematic clusters of gratitude research. The results of this study will contribute significantly to the body of knowledge by identifying the different thematic clusters in gratitude research.

These studies show that gratitude is not limited to psychological outcomes but also strongly affects all aspects of human well-being. Over time, gratitude has also been studied from an ever-expanding range of concepts and experiences. The literature in this work includes spirituality and religiosity, meaning of life, resilience, social support, mindfulness, coping, character strengths, mental health, and well-being.

The number of such concepts indicates that gratitude research is much more varied. Mapping these diverse areas is crucial to help the audience see the value of understanding how gratitude research is organised. This mapping can reveal the major research clusters and how concepts are interconnected, making the field more accessible and engaging. Although several studies have provided important evidence on the relationships and outcomes of gratitude, knowledge of individual relationships does not necessarily provide a clear picture of how gratitude research is organised. The growing literature therefore needs to map the major research areas and how gratitude-related concepts are linked. In this context, bibliometric and term co-occurrence analyses are useful because they can identify likely terms, relationships among terms, and clusters of related research concepts. Such mapping can help to understand the intellectual landscape of gratitude research better and complement the results of individual empirical studies. Thus, this research aims to map the intellectual landscape of gratitude research in psychological studies by identifying the major research clusters and the concepts that are within them. More specifically, this study investigates two research questions: (RQ1) Which major research clusters characterise gratitude research in psychological studies? Furthermore, (RQ2) What concepts and variables are most strongly associated with gratitude research? This study aims to organise the broad gratitude literature into more defined research areas and provide a perspective on the current status and future development of gratitude research.

2. Literature Review

Gratitude is an important area of positive psychology because it shapes how we evaluate our lives, relationships, and general well-being. Modern research has moved beyond viewing gratitude as simply a positive emotion to understanding it as a psychological tool that supports good functioning throughout different life situations. This broader perspective is reflected in recent research regarding gratitude and life satisfaction, psychological well-being, meaning in life, social relationships, resilience, and mental health [7,12,30]. Gratitude research also examines positively and negatively experienced life and the psychological resources people may use in response to stress and difficult situations.

2.1 Gratitude, Psychological Well-being and Mental Health

Psychological well-being and mental health are two of the most important areas of gratitude research. Cregg and Cheavens [12] conducted a meta-analysis of 27 gratitude intervention studies with 3,675 participants and observed small improvements in depression and anxiety following gratitude interventions. This suggests the value of gratitude as a positive psychological practice, but it it should not be interpreted as evidence such gratitude alone can solve mental health problems. More recent research shows gratitude is related to other aspects of well-being. Buenconsejo et al. [7] found the fact that gratitude improves well-being in Filipino undergraduate students.

Gratitude proved associated with higher life satisfaction and psychological well-being, and academic self-efficacy led to this association. Life satisfaction is a central theme in this literature. Kerry *et al*., [30] conducted a systematic review and concluded that gratitude and life satisfaction have a strong positive relationship in the literature. That said, they also stated that intervention findings are more complicated than correlational results. This distinction is important because gratitude for well-being does not imply that gratitude interventions will necessarily result in the same level of improvement in a wide range of people and contexts. Recent research has increasingly focused on the psychological basis of gratitude and well-being.

2.2 Gratitude, Meaning in Life and Positive Functioning

The meaning of life has become an important concept in gratitude research. While gratitude is commonly studied as an outcome, meaning in life is also seen as a psychological pathway that can help explain gratitude and well-being more broadly. Çebi and Demir [8] investigated gratitude in a model of 825 university students as a predictor of meaning in life and found that gratitude was related to self-concept clarity and self-construal. We can interpret this evidence as suggesting that gratitude and meaning are integrated into broader personal and social processes rather than independent processes.

Nevertheless, the Intervention evidence is more cautious. Czyżowska and Gurba [13] found that a gratitude intervention in young adults improved psychological well-being in several dimensions, such as purpose in life and good relationships, and reduced stress, anxiety, and depressive symptoms. However, the intervention failed to increase meaning in life. This is important because it indicates that gratitude, purpose, psychological well-being and meaning in life are related but should not be viewed as the same thing. It is also important to differentiate between evidence showing an association and evidence that the effects are changed after an intervention.

Longitudinal and intervention-oriented work also suggests that meaning in life is an important pathway within the broader gratitude literature [8,13]. With these studies, meaning in life seems to be a powerful explanation for gratitude being related to generally better functioning. At the same time, the mixed intervention findings also show that gratitude is more complex than a simple direct effect.

2.3 Gratitude as a Social and Relational Resource

More recent studies also show that gratitude has a social dimension. Gratitude is in relationships and may enhance how people perceive social connection and support. These findings indicate gratitude can be related to well-being at least in part, through the quality of interpersonal relationships.

This relational perspective is also a step further in gratitude research, extending it beyond the emotional and psychological aspects of gratitude. It suggests that gratitude can function not only through a social support factor, but also through better relationship quality, self-efficacy and meaning. This is also consistent with the wider evidence in the literature, in which we have found gratitude to be associated with social support, spirituality, religiosity, resilience, coping and good psychological functioning. In reality, gratitude needs to be seen not only as a matter of individual well-being as well as as a social and contextual aspect as well.

2.4 Gratitude and Physical Health

Gratitude research has also been applied to physical health and health-related behaviour. However, the evidence for gratitude research is less consistent than for psychological well-being. Boggiss et al. [5], in a review of gratitude interventions, identified positive findings for physical health and health behaviours but concluded that the overall evidence was mixed. So claims about the physical benefits of gratitude should be taken with caution. This is a good approach for understanding the development of the field and research in gratitude. Psychological outcomes such as life satisfaction, positive affect and psychological well-being have been widely explored, but physical health remains one of the areas in which evidence is still being developed. The shift in focus from psychological to social, spirituality, meaning, resilience, and coping has helped gratitude research evolve into a more integrated and diverse field.

Overall, gratitude research has expanded across a wide range of interrelated domains. On the one hand, there is strong evidence of gratitude in psychological well-being and life satisfaction, while more modern research on meaning in life, self-efficacy, social relationships, resilience and other factors is also examining gratitude [7,8,30]. Nonetheless the evidence from intervention and physical health studies is not consistent, and gratitude is likely to be influenced by outcome, population and research design. Despite this expanding body of knowledge, much of the existing literature is focused on specific relationships, outcomes, populations or interventions. As gratitude research expands into psychological, social, spiritual, health and adversity-related areas, it becomes increasingly difficult to understand how these different concepts are organised within the wider field. Therefore, a deeper mapping of the literature is needed to identify the major research clusters, examine relationships among frequently occurring concepts and provide a clearer representation of the intellectual landscape of gratitude research.

3. Methodology

This study used a scoping review with bibliometric analysis and computational thematic synthesis (CTS) to map the intellectual landscape of gratitude research in psychology studies. The study selection process was performed in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) to ensure transparency in study identification, screening, and inclusion [57]. Bibliometric analysis is a systematic approach for exploring patterns and relationships in a large body of scientific literature [16].

The bibliographic records were retrieved from the Web of Science (WoS) Core Collection, which focused on gratitude in the psychological context. We found 712 records (titles and abstracts) and excluded the 158 records that were not aligned with the focus of the study, leaving 554 records to be analysed. The selection process is illustrated in the PRISMA-ScR flow diagram in Figure 1.

The final dataset was analysed using BiblioSpy with Computational Thematic Synthesis (CTS). CTS was used to compute and categorise recurring term patterns of 554 publications into research

clusters to provide a systematic and data-driven basis for further thematic analysis. However, the research areas were not based on manual classification, and researchers were free to interpret and analyse them and label the resulting research areas [16]. VOSviewer was used to visualise the connection between terms and clusters [59]. 67 terms, 500 links and 6 research clusters were found in the analysis and were used to identify the most important research areas in the gratitude literature.

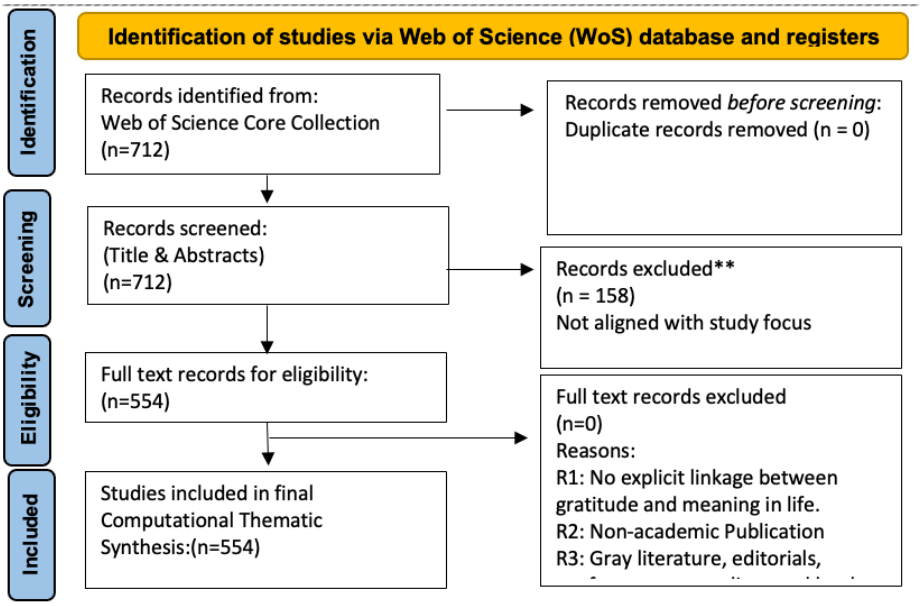

Fig. 1. Preferred reporting items for Systematic Reviews and Meta-Analyses (PRISMA)

4. Results

The computational analysis identified 67 terms with 500 links and divided them into 6 clusters based on the related terms in the network and the relationships within the network. Each cluster was initially just a group of related terms rather than a specific research topic. Therefore, the thematic label for each cluster was formed by studying the top terms and links for each cluster as a whole based on the number of terms they happen to occur in and the total link strength (TLS), along with the conceptual relationship of the terms in the cluster. The labels were used to summarise the main research area represented by each cluster rather than to replace all the individual terms found in the computational analysis. Each cluster were remarked using six different colours. The terms were grouped together based on their cluster, term co-occurrence, links, total link strength, and relevance.

Cluster 1

Cluster 1 is the largest cluster, marked in red. In this cluster, the most frequently occurring terms were identified as gratitude, spirituality, depression, anxiety, quality of life, forgiveness, palliative care, validity, meaning of life, adolescent, religiosity, cancer, reliability and spiritual care. Gratitude is the most prominent term in terms of occurrence, links, and TLS (154 occurrences, 63 links and 282 TLS). Next is spirituality (32 occurrences, TLS = 64) and depression (28 occurrences and TLS = 67). From this cluster, it can be understood that the presence of gratitude in individual when they experience adversity and hardship situation in life. When the individual faced this situation, they tend to have greater connection with god and shows stronger religious and spiritual value when facing hard situation. The combination of spirituality-related terms (spirituality, religiosity and spiritual

care), psychological terms (depression and anxiety), and health-related terms (quality of life, palliative care and cancer) led us to see our cluster as "Gratitude, Spirituality and Psychosocial Health."

Cluster 2

The second cluster, marked in blue, consists of 13 terms and is dominated by positive psychology (59 occurrences; TLS = 109), life satisfaction (34; TLS = 78), and subjective well-being (21; TLS = 42). This cluster consists of positive psychology, life satisfaction, subjective well-being, meaning, well-being, hope, awe, meditation, materialism, personality, positive emotions, optimism, and self-transcendence. The strong presence of positive psychology, life satisfaction, subjective well-being, hope, positive emotions, and optimism provides the conceptual basis for this cluster to be seen as "Positive Psychology and Life Evaluation."

Cluster 3

The third cluster was marked in green and consists of 16 terms with well-being being the most common (67 occurrences; TLS = 137), and happiness (24 occurrences; TLS = 45). This cluster consist of well-being, happiness, qualitative research, virtue, Religion, compassion, phenomenology, emotion, suffering, meaning-making, culture, thematic analysis, purpose, affect, joy, and faith. From these collective terms, it can be understood that gratitude is strongly connected with positive psychological situation and emotions. These emotions can be in form of positive and negative where it can create gratitude within a person. The fact that well-being and happiness are in combination with virtue, compassion, religion, purpose, and meaning-making leads us to see this cluster as the "Well-being, Virtue and Meaning-Making" cluster.

Cluster 4

The fourth cluster, as illustrated in the diagram, was marked in yellow. Cluster 4, by definition, contains 10 terms, including mental health (24 occurrences; TLS = 46), character strengths (16; TLS = 40), flourishing (12; TLS = 32), adolescents (12; TLS = 30), and social support (11; TLS = 28). It includes 10 terms: mental health, character strengths, adolescents, flourishing, social support, gratitude to god, psychological well-being, intervention, elderly, and meta-analysis. Based on the collective terms, gratitude has a strong link with individual well-being, motivational factors, and social support. In this cluster, most groups that experience this kind of gratitude are the elderly group. The co-occurrence of character strengths, flourishing, social support, mental health, and psychological well-being supports the interpretation of this cluster as "Character Strengths, Social Resources and Flourishing."

Cluster 5

The fifth cluster in the diagram was marked as purple. It contains six terms, and is dominated by meaning in life (68 occurrences; 45 links; TLS = 141), resilience (21; TLS = 45) and COVID-19 (15; TLS = 32). The terms were identified as meaning in life, resilience, COVID-19, university students, suicidal ideation, and protective factors. Collectively, these terms show that gratitude has been studied more with variables such as meaning in life, hardship, and life crises experienced by individuals. The most visible group of respondents identified in this cluster is university students. The close grouping of meaning in life, resilience, protective factors, and suicidal ideation, especially in the case of COVID-19, makes this cluster the "Meaning in Life, Resilience and Protective Resources."

Cluster 6

The last cluster is cluster 6, which was marked as orange. This cluster contains 8 terms to be grouped together: mindfulness, narrative, posttraumatic growth, trauma, coping, positive affect, satisfaction with life, and qualitative. Taken together, these terms suggest that gratitude was more commonly discussed with a coping strategies variable. Cluster 6 comprises 8 terms, and mindfulness is the most frequent (17 times, TLS = 28), narrative, posttraumatic growth, trauma, coping, positive affect, satisfaction with life, and qualitative. The combination of mindfulness, coping, trauma, and post-traumatic growth has been used by us to describe this cluster as "Mindfulness, Coping and Post-traumatic Growth."

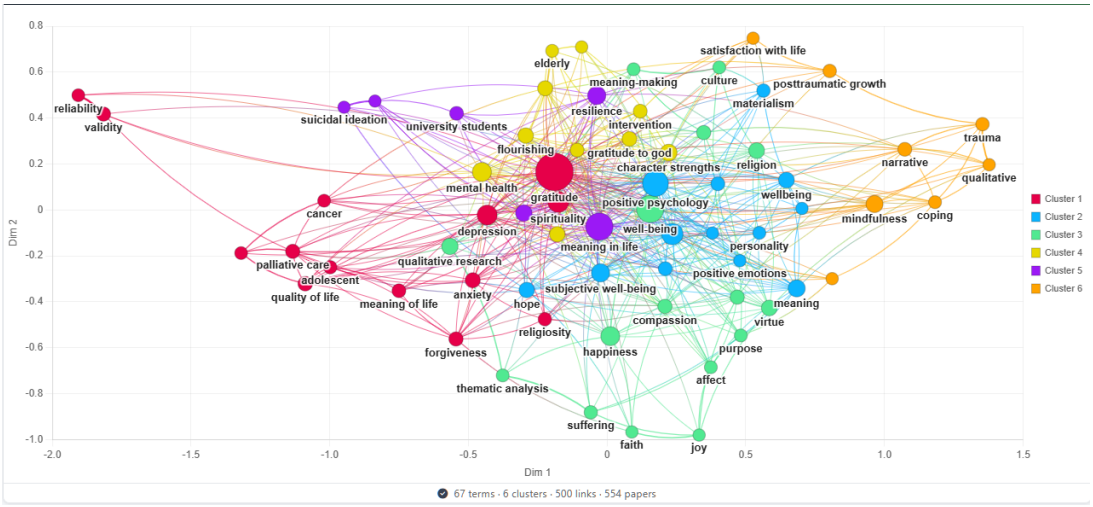

Fig. 2. Co-occurrence map based on cluster

Source: Co-occurrence map generated by VOSviewer

5. Discussion

The six clusters identified in this study show that gratitude has become a broad area of psychological research across well-being, spirituality, mental health, meaning, resilience, social resources, and responses to adversity. This trend is consistent with recent bibliometric evidence showing that gratitude research has moved in recent years from philosophical and religious perspectives to psychological, health, developmental and positive psychology research [21]. Meta-analytic evidence suggests that gratitude interventions can produce modest improvements in psychological well-being, although effects vary across studies [12,31]. This indicates that gratitude research is increasingly concerned not only with whether gratitude is good for us, but also with how it relates to our mind, feelings, emotions, social interactions, and life in contexts where gratitude is necessary for life.

Cluster 1: Gratitude, Spirituality and Psychosocial Health.

The first cluster places gratitude in spirituality, mental health, illness and psychosocial adjustment. The fact that gratitude is present alongside spirituality, depression, anxiety, quality of life, palliative care, cancer, religiosity and spiritual care indicates that gratitude is increasingly explored in the context of psychological or health problems. Tan *et al*., [55] conducted a randomised controlled trial among advanced cancer patients who explored the impact of mindful gratitude journaling on psychological distress, quality of life and suffering. Borelli *et al*., [6] also assessed gratitude in advanced cancer patients and caregivers in early palliative care. In Malaysian cancer

patients, Mohamed Hussin *et al*., [42] showed gratitude can be a complex psychological experience and not a one-dimensional positive reaction. Elfers *et al*., [17] compared gratitude with resilience in grief and loss.

Psychosocial support of this cluster is also provided by the evidence of gratefulness in coping. Tomczyk *et al*., [56] show that gratitude is associated with well-being of women with breast cancer by adaptive coping, while Jans-Beken [26] considered mature gratitude as a coping mechanism during COVID-19. Perez *et al*., [45] found that spirituality is very important for gratitude and life satisfaction in Filipinos, and Bali *et al*., [4] investigated spirituality as a mediator between gratitude and psychological well-being among emerging adults. Collectively, these studies strengthen the idea that gratitude research has moved beyond positive emotion to understanding gratitude in illness, psychological distress, spirituality, coping and adjustment.

Cluster 2: Positive Psychology and Life Evaluation.

The second cluster is the established connection between gratitude and positive assessment of life. The presence of positive psychology, life satisfaction, subjective well-being, hope, optimism, positive emotions, meaning, personality, meditation, self-transcendence, etc. [30] indicates that gratitude is part of a larger set of psychological resources associated with good functioning. This is consistent with the overall evidence reviewed by Garg [21] which indicates that positive psychology is one of the major areas of gratitude research nowadays. Meta-analytic evidence also indicates that gratitude interventions can produce small improvements in well-being, although results are not uniform across studies [12, 31].

The cluster also indicates that gratitude is related to individual dispositions and processes that affect how people evaluate their lives. Szczesniak *et al*., [54] explored the relationship between Big Five personality traits and gratitude via emotional intelligence and Azad *et al*., [2] linked mindful and grateful personality traits with quality of life and health outcomes. Dong and Geng [15] showed that mindfulness and meaning in life mediated the relationship between dispositional awe and life satisfaction in adolescents. More recently, Skalski-Bednarz e*t al*., [52] used a two-wave longitudinal study to explore personality traits as predictors of forgiveness and gratitude/awe, while Russo et al. [48] investigated the relationship between personal values and gratitude among young adults. These studies show that gratitude is embedded in an overall system of life evaluation, meaning, personality, positive emotions and psychological well-being, rather than a single positive emotion in its own right.

Cluster 3: Well-being, Virtue and Meaning-making.

The third cluster takes gratitude in a different direction by tying it to well-being, virtue, compassion, religion, faith, purpose, suffering, and meaning-making. This interplay of these concepts indicates that gratitude research extends to both the hedonic aspects of well-being (happiness and positive affect) and eudaimonic aspects of life (purpose, virtue, and meaning). Recent studies confirm this broader perspective. Dong and Geng [15] have found relationships in mindfulness, meaning of life, awe, and life satisfaction; Russo *et al*., [48] studied gratitude in relation to personal values. These results are consistent with the fact that gratitude is being researched along with constructs that are not only about how people feel but also how they realize and value their lives.

In difficult situations, meaning-making is especially important. The studied literature shows that gratitude has been linked to meaning and purpose in illness, crisis, and suffering as well. In the case of older people, gratitude, family functioning, and purpose in life were the subject of research by Pérez-Rojo *et al*., [46] in a later phase of COVID-19. Cancer and end-of-life literature also links gratitude to the interpretation of difficult experiences and psychological adjustment. Consequently,

Cluster 3 extends the understanding of gratitude beyond happiness by placing it in a broader meaning and value-based context that involves purpose, spirituality, compassion, and responses to suffering.

Cluster 4: Character strengths, social resources and flourishing.

The fourth cluster shows how gratitude research connects personal strengths to social resources. Character strengths, social support, flourishing, psychological well-being, mental health, gratitude to God, intervention, adolescents and elderly populations are all in this cluster. Evidence supports this. Azañedo *et al*., [3] found character strengths predict subjective well-being, psychological well-being and psychopathological symptoms beyond functional social support. Moreover, Niemiec [44] mentioned the dual role of character strengths in strengthening well-being and reducing suffering. Furthermore, Upenieks *et al*., [58] studied gratitude to God and mental well-being among U.S. collegiate athletes, with meaning in life being one of the reasons this relationship exists.

Intervention studies provide more evidence for this cluster. Chamorro-Garrido *et al*., [9] investigated an intervention that uses autobiographical memory, gratitude, forgiveness and humour in older adults. Similarly, gratitude-based interventions have been used in adolescents and young adults to improve gratitude and other positive psychological outcomes. So, as well as character strengths and social support, flourishing is studied through a combination of internal psychological resources and external relational resources, not through individual characteristics alone. Importantly, adolescents and elderly individuals should be viewed as the most prominent research populations within the cluster, not as evidence that either population necessarily holds more gratitude.

Cluster 5: Meaning in life, resilience and protective resources.

The fifth cluster is particularly important because it connects gratitude research with meaning in life, resilience, suicidal ideation, protective factors, COVID-19 and university students. This indicates a stream of research that hopes to address the potential role of positive psychological resources in vulnerability situations. Lin [37] investigated gratitude and suicidal ideation among Taiwanese undergraduates and examined how self-esteem and meaning in life are mediated. Kaniuka *et al*., [28] also investigated gratitude and suicide risk in college students, and Kaniuka *et al*., [29] found gratitude to be related to lower suicidal ideation among sexual minority individuals.

Resilience is another important part of this research stream. Lohner *et al*., [38] investigated a journal-based intervention to promote resilience among university students . Existential and positive psychological approaches have been considered as potential resources during this time. Cho and Jang [10] investigated an existential nursing intervention among college students during COVID-19. These studies explain the association between meaning in life, resilience, university students, COVID-19 and suicidal ideation. Nevertheless, the bibliometric relationship should be viewed as a pattern of research attention rather than as proof that gratitude directly prevents suicidal behaviour.

Cluster 6: Mindfulness, Coping and Post-traumatic Growth.

This sixth cluster also represents another important development in gratitude research: adaptation following adversity. Mindfulness, coping, trauma, post-traumatic growth, positive affect, satisfaction with life, and narrative are all the kinds of topics explored in recent years in the service of understanding and improving resilience and well-being. Adaptive coping strategies (including acceptance, positive reframing, problem-oriented coping, and social support) are also discussed in recent years in relation to adjustment and post-traumatic growth.

This interpretation also resonates with gratitude-specific empirical research. Tomczyk *et al*., [56] found that adaptive coping was involved in the relationship between grateful disposition and well-

being among women with breast cancer. Jans-Beken [26] also discussed mature gratitude as a coping resource during COVID-19. The gratitude literature has shown that more and more studies focus on positive behavior in the presence of adversity rather than in the absence of adversity. This distinction is crucial because it puts gratitude alongside mindfulness, coping, narrative processing, and post-traumatic growth in the context of a wider literature of psychological adaptation.

The six clusters show a significant evolution in gratitude research. Gratitude was once seen as a positive emotion, moral virtue, or individual attitude, whereas gratitude has been increasingly acknowledged in recent years and studied in empirical research as a complex psychological process of well-being, spirituality, meaning, social ties, resilience, coping, and mental health. This is in line with Garg's [21] bibliometric analysis (a recent movement toward more scientific and psychological investigation of gratitude), and the present study supports this understanding by suggesting that the five research areas are organized in six interconnected clusters. What is more interesting is that gratitude research is also relevant to both positive as well as negative aspects of life, and so is gratitude research in the context of how happiness and the meaning of life is not only about knowing happiness, but how people think and respond to hard life experiences.

6. Conclusion

This study assessed the intellectual landscape of gratitude research for psychological studies through a scoping analysis with bibliometric analysis and Computational Thematic Synthesis (CTS). Based on the 554 papers retrieved from the Web of Science Core Collection, we found 67 terms, 500 links, and six research clusters (Gratitude, Spirituality and Psychosocial Health; Positive Psychology and Life Evaluation; Well-being, Virtue and Meaning-Making; Character Strengths, Social Resources and Flourishing; Meaning in Life, Resilience and Protective Resources; Mindfulness, Coping and Post-traumatic Growth). Together, the results show that gratitude research extends beyond the well-established notion of positive emotions and well-being. The six clusters show two general but intersecting directions in the literature. The first is positive functioning: satisfaction, happiness, flourishing, hope, positive emotions, and character strengths. The second is responses to difficult life experiences: psychological distress, illness, suicidal ideation, trauma, resilience, coping, and post-traumatic growth. In both directions spirituality, meaning, purpose, and social resources serve as relevant links. Thus, this study contributes to gratitude research by providing a better picture of the literature that has emerged in a variety of psychological, social, spiritual, and health contexts. Instead of viewing gratitude as a single positive psychological construct, the results underscore a research landscape in gratitude that examines gratitude in relation to both positive functioning and adaptation to difficult life experiences. However, the links identified are not causal and should not be taken as evidence of cause and effect. This distinction will help us to better understand the mechanisms through which gratitude may affect other dimensions of human well-being and adaptation in the future.

7. Implications of Research

The findings have a multitude of implications for the future of gratitude research. First of all, the six-cluster structure allows us to organise a richer and more diverse set of knowledge. The bibliometric evidence of gratitude is found to have been expanding in positive psychology, health, and other psychological areas [21]. So far, we show that these areas are divided into identifiable but interconnected research clusters. This will provide an insight into how to place the research in

gratitude studies for future researchers and how to relate research areas that have been treated separately.

In the second piece, our findings highlight the necessity to interrogate the relationship between positive functioning and responses to adversity more fully. Gratitude has long been associated with life satisfaction, positive feelings and psychological well-being [30,47], but in the present situation we have depression, anxiety, serious illness, suicidal ideation, trauma, resilience, coping, and post-traumatic growth. Other studies have shown gratitude is relevant in difficult life situations in cancer patients, caregivers and people who are suffering from psychological problems [6,42,55,56]. Recent evidence supports this view even further. Sánchez-Álvarez *et al*., [49] found that in a five-week gratitude and optimism programme for university students, those who were a part of the programme reported greater gratitude, optimism, and life satisfaction and decreased depression and suicide risk. As a result, future gratitude research should not only focus on positive outcomes but on the conditions and processes through which gratitude might be relevant when people are suffering.

Third, meaning and spirituality are important cross-cutting domains for future research. In the clusters, meaning, meaning in life, meaning-making, and purpose are related to one another, and spirituality, religiosity, religion, faith, spiritual care, and gratitude to God. Studies have already shown that gratitude, spirituality, meaning, and psychological well-being are associated with psychological well-being [4,45,58]. Recent studies further support the relationship between meaning and psychological resilience in life and psychological vulnerability in university students [25]. Although gratitude was not studied in this study, it is the only study that has presented evidence that there is a meaning-resilience pathway in Cluster 5. As such, future studies might test whether meaning, spirituality, or resilience are mediators, moderators, or explanations in certain relationships between gratitude and psychological outcomes.

Fourth, the findings highlight the importance of population and contextual diversity. Adolescents, university students, elderly people, cancer patients, caregivers, and other groups are present in the literature, but there is no evidence that gratitude is similar in these groups. Some recent research provides clues. Anand *et al*., [1] studied gratitude and social support in relation to flourishing across 413 older adults; this is the combination of concepts identified in Cluster 4. Similarly, Sánchez-Álvarez *et al*., [49] examined gratitude intervention results among university students, and Pérez-Rojo *et al*., [46] studied gratitude, family functioning, and purpose in life among older adults. Future comparative and cross-cultural studies could determine if the relationship observed in this network has a variation based on age, culture, health status, or social context.

Fifth, future studies should move beyond associations to investigate psychological mechanisms and temporal processes. There are many links between gratitude, well-being, meaning, resilience, coping, social support and other forms of psychological constructs that are commonly found in research. However, bibliometric co-occurrence cannot determine the direction of these relationships. Longitudinal studies, mediation and moderation models and carefully planned experimental or intervention studies would provide better evidence of how these constructs are shaped over time. Huang *et al*., [25] are the ones which have shown that this is a trend: they identified serial pathways involving meaning in life and psychological resilience, and Sánchez-Álvarez et al. [49] assessed changes after gratitude and optimism intervention. Such approaches could help to shift gratitude research from identifying associations to explaining the mechanisms underlying psychological outcomes.

Finally, the findings have implications for applied psychological research. The presence of intervention, coping, social support, resilience and post-traumatic growth indicates a greater interest in transferring gratitude research into practice. Recent intervention studies and meta-analyses have provided encouraging but not uniform results [12,31,32]. The presence of further evidence of

interventions in 2026 will help to justify further research and also highlight the need to determine what works and where, under what circumstances and how such interventions are done. In the future, gratitude interventions should be based not on a single thing but on the design of the interventions, on the cultural background, on the duration, and on the psychological processes underlying them.

In summary, these implications show that the contribution of this research is more than finding specific clusters of research. If we can see the six clusters from a larger perspective of the gratitude research landscape, we can appreciate the relationships between gratitude and positive functioning, adversity, spirituality, meaning, and social and psychological resources. Such a holistic perspective is beneficial to orient future work to gratitude as a broader psychological focus. More than anything, the study is a way of organising an increasingly diverse field and showing how various research areas within this field are linked within the general psychological literature.

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