

Career indecision: a systematic literature review

A review of
career
indecision

K.G. Priyashantha

*Department of Human Resource Management, Faculty of Management and Finance,
University of Ruhuna, Matara, Sri Lanka*

W.E. Dahanayake

General Sir John Kotelawala Defence University, Ratmalana, Sri Lanka, and

M.N. Maduwanthi

*Department of Human Resource Management, Faculty of Management and Finance,
University of Ruhuna, Matara, Sri Lanka*

79

Received 27 June 2022
Revised 25 August 2022
5 September 2022
Accepted 13 September 2022

Abstract

Purpose – Research has been conducted to investigate the factors that influence career indecision. This study attempted to synthesize empirical research on career indecision to (1) find the common determinants over the last two decades and (2) find the factors/areas that need to be addressed for future research on career indecision.

Design/methodology/approach – This study used the systematic literature review (SLR) methodology and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Following the predetermined inclusion criteria, 118 articles from the Scopus database were included for review.

Findings – From this research, the authors found four main determinants for career indecision, namely (1) career-related decision-making difficulties, (2) adolescent differences, (3) individual and situational career decision-making profiles (CDMPs) and (4) level of individual readiness for career choice, which have been researched in the last two decades. Additionally, eight factors/areas were found to be addressed in future research on career indecision which include those four common determinants, the other three determinants, namely (1) individual differences, (2) contextual/environmental factors, (3) social factors, and one outcome, subjective well-being.

Research limitations/implications – The study had limitations in conducting this research, and the findings of the study provide some theoretical and future research implications.

Practical implications – The seven determinants and the only outcome provide some implications for practitioners and policymakers.

Originality/value – The study found seven determinants and one outcome of career indecision derived from empirical studies conducted during 2000–2021.

Keywords Career decision-making, Career indecision, PRISMA, Systematic literature review

Paper type Literature review

© K.G. Priyashantha, W.E. Dahanayake and M.N. Maduwanthi. Published in *Journal of Humanities and Applied Social Sciences*. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and no commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licenses/by/4.0/legalcode>.

Authors' contributions: All authors contributed to the study conception, design, material preparation, data collection and analysis. All versions of drafts of the manuscript were written by Author 1. The other authors helped with the article selection process, and the revisions were made per the reviewers' comments. All authors read and approved the final manuscript., **Data availability:** Data collected during the current study are not publicly available. However, they can be available from the corresponding author upon reasonable request., **Ethical statement:** The authors confirm that this research paper meets the ethical requirements, and the authors have fully considered all foreseeable ethical implications of the research study, both intended and unintended.

Funding: No funding was available for this research.

Conflicts of interest: There are no conflicts of interest.



1. Introduction

Career decision-making refers to the ability of an individual's thought processes to incorporate self-knowledge with occupational knowledge to make occupational choices (Brown and Brooks, 1996). Individuals confident of their passion and possessing self-identification skills and abilities can direct their informed occupational knowledge to choose the best career that suits them. This career decision-making process has become a foremost developmental task for many young adults (Citarella, 2018). Nevertheless, when individuals are undecided about their preferred career directions, they become career indecisive, often deemed a critical issue among high school and university students (Gyarteng-Mensah *et al.*, 2022; Lipshits-Brazilier *et al.*, 2016).

Career indecision is "the inability to specify an educational or occupational choice" (Kelly and Lee, 2002). This phenomenon has been extensively researched in vocational psychology (Gati *et al.*, 2011a; Holland and Holland, 1977). This phenomenon is described with different determinants grounded by decision theory (Germeijs and De Boeck, 2002), self-determination theory (Ryan and Deci, 2000), social cognitive career theory (Lent *et al.*, 2002) and Gestalt psychotherapy theory (Marco *et al.*, 2003), to name a few. The determinants emphasized many aspects. Some research shows that expanding educational and vocational options are determinants of career indecision. These options equip the students with sufficient education and skill development that determine students' commitment to a chosen career field. Such commitments can evoke anxiety and distress among the students as the wrong decision would bring negative repercussions (Lipshits-Brazilier *et al.*, 2016). Other research studies have focused on various determinants (Dahanayake and Priyashantha, 2020; Maduwanthi and Priyashantha, 2018, 2020). Some of these have been categorized as social (Abu Talib and Tan, 2009; Jung, 2018), emotional (Fabio *et al.*, 2013) and cognitive and personality-related facets (Brown *et al.*, 2012; Gati *et al.*, 2011a).

Additionally, various other determinants can be found in the empirical research landscape in various contexts. They require to be analyzed for clustering and synthesizing in a logical base. Such a synthesis will contribute to the theory and instrument development and help identify the research gaps and future research directions. Furthermore, knowing the empirically proven determinants of career indecision might benefit policymakers and career counselors in determining necessary actions and treatments (Zobell *et al.*, 2019). Even though there were some meta-analyses (Bian, 2021; Udayar *et al.*, 2020), they have limitations in addressing the determinants of career indecision in empirical studies conducted during the 2000–2020 year period. Thus, there is a solid need to synthesize such determinants.

Accordingly, this study was conducted as a systematic literature review (SLR), which systematically and quantitatively analyzed selected empirical literature on career indecision in the last two decades. The objectives of this research were to (1) find the common determinants in career indecision over the last two decades and (2) find the factors/areas that need to be addressed for future research on career indecision.

2. Methods and methodology

2.1 Study selection process and methods

The research was carried out in an SLR. The article selection, analysis and reporting of the findings were made following the "Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)" guidelines (Liberati *et al.*, 2009). The PRISMA is highly recommended for SLRs as it prevents bias in article selection, analysis and reporting of the findings (Petticrew and Roberts, 2006; Priyashantha *et al.*, 2021a, 2021b).

The PRISMA flow diagram used to select the articles consists of three steps: "identification, screening and included." The identification stage includes choosing search terms, criteria and databases. Accordingly, "career indecision" was the search term and criterion. Then Scopus was the database used to search the articles.

Article screening included automatic and manual screening, retrieval of screened articles and determining their eligibility for review. At this point, the inclusion criteria were applied to include the articles. The article inclusion criteria are given in [Table 1](#). Accordingly, the year range from 2000–2021 was selected as an inclusion criterion as no similar studies specifically targeted the period. Empirical journal articles were used as an inclusion criterion for three reasons: first, they are recommended for SLRs ([Tranfield et al., 2003](#); [Xiao and Watson, 2019](#)). Second, they maintain consistency in methodological quality in getting findings ([Okoli and Schabram, 2010](#)), ensuring all selected articles' internal validity ([Petticrew and Roberts, 2006](#)). Finally, journal articles are treated as reliable since they undergo a rigorous peer-review procedure.

The automatic screening was done through the default limiting features of Scopus. Thus, the limiting options included the year range: 2000–2021, document type: articles, source type: journal and language: English based on the inclusion criteria. After that, the remaining articles' complete versions were downloaded and manually screened. At the manual screening, the study authors independently reviewed each abstract of the downloaded article and assessed them against the inclusion criteria. After removing unnecessary articles, the study authors manually and independently examined the remaining articles for their methodological eligibility. The eligibility assessment guarantees that articles of high methodological quality are included ([Meline, 2006](#)). A detailed explanation of how many articles were excluded on each criterion is given in [section 3.1](#).

2.2 Article risk of bias assessment

The quality of a review is reduced due to researcher bias in article selection and analysis ([Kitchenham and Charters, 2007](#)). The selection bias can be avoided by following a review protocol, a systematic, objective article selection procedure ([Priyashantha et al., 2022](#); [Xiao and Watson, 2019](#)), and performing a parallel independent quality assessment of articles by two or more researchers ([Brereton et al., 2007](#)). The analysis bias can be avoided through a preliminary protocol design that predetermines the analysis methods ([Xiao and Watson, 2019](#)). Thus, they all were followed in this study to avoid bias.

2.3 Methods of analysis

The analysis method used in this study was bibliometric analysis. The tools like Biblioshiny and VOSviewer were used to generate the results for analysis. Bibliometric analysis is a scientific technique for examining scientific activity in a study ([Paule-Vianez et al., 2020](#)). Two types of it include (1) evaluation, performance and scientific productivity analysis and (2) scientific maps ([Cobo et al., 2012](#)). The maps, generally called bibliometric networks, are built based on different information from an article ([Callon et al., 1983](#)). One such is the keywords in an article. The co-occurrence of keywords in an article could result in a variety of relationships between keywords ([Aparicio et al., 2019](#)). The relativization of the links between

Inclusion criterion	Focus on
1	publications from 2000–2021
2	publications with the keyword; career indecision
3	publications in academic journals
4	publications as articles
5	the articles in the English language
6	empirical research that employed quantitative methodologies and meta-analyses

Source(s): Authors' conception, 2022

Table 1.
Article inclusion
criteria

the keywords is required to obtain crucial information in a study. As a result, by default, the VOSviewer employs association strength normalization and generates a network in two dimensions known as “keyword co-occurrence network visualization” that has nodes representing each keyword located close to each other in a cluster if they are strongly related (van Eck and Waltman, 2014). As a result, a cluster can be used to represent a shared theme (Priyashantha *et al.*, 2021a, 2021b). The study’s first goal was to identify the common areas addressed; hence, this keyword co-occurrence analysis was used to achieve that.

The keyword density visualization is a variation of keyword co-occurrence network visualization. It was used to accomplish the study’s second objective: to find the factors/areas that need to be addressed for future research in career indecision. According to the VOSviewer manual, the density of keywords at each location in the density visualization map is depicted by color ranges ranging from blue to green, yellow and red by default. The closer a location’s color is red, the more keywords it has nearby and the higher its weight. The fewer keywords nearby and the lower the weights, the closer a point’s color is to green. The color yellow denotes that the keywords in a point are average. Thus, the keywords in the blue and green areas are said to be focused on more research.

Biblioshiny of R software was also used to generate “basic information about the article set,” “year-by-year article publishes” and “average citations received.” The VOSviewer software created the “country-wise article publications” and “journal-wise article publishes.” These were shown to give an overview of the profile of the article set chosen for the review.

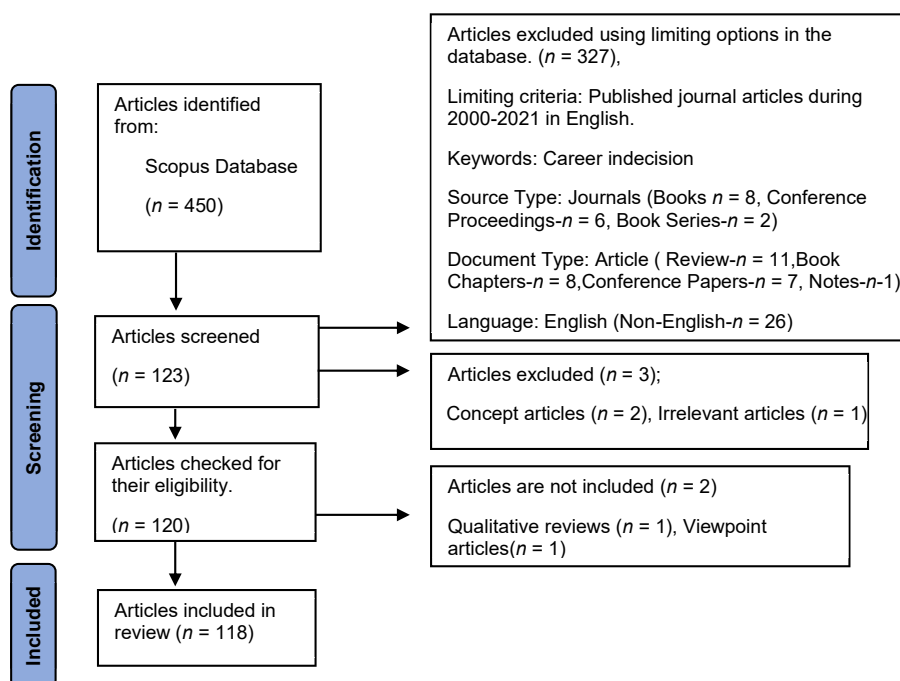
3. Results and findings

3.1 Study selection

The first stage required identifying the articles as the PRISMA article selection flow diagram was used to select the articles to be reviewed. Scopus generated 450 articles at this point for the predetermined search criteria mentioned in [section 2.1](#). The automatic screening functionality of Scopus was used for the initial screening of those articles. The task was completed with the inclusion criteria listed in [Table 1](#).

Out of the 450 articles, 66 were rejected as they did not meet the first inclusion criterion. There were 158 articles with the keyword career indecision, and the remaining 226 articles were excluded because they did not meet the second inclusion criterion. The third inclusion criterion was a focus on publications in academic journals. As a result, the books ($n = 8$), conference proceedings ($n = 6$) and book series ($n = 2$) on career indecision were excluded because they did not meet the third criterion. Then the reviews ($n = 11$), book chapters ($n = 8$), conference papers ($n = 7$) and notes ($n = 1$) were also excluded as they did not meet the fourth criterion. Other than that, the articles in other languages ($n = 26$) were excluded as they did not meet the fifth inclusion criterion, focusing on the article in English.

Then 123 articles were retained for manual screening, and their list containing title, authors, journal, publication year, abstract and received citations were downloaded into an MS Excel sheet. After that, the study authors independently assessed each abstract against the inclusion criteria and found that three articles were irrelevant according to the fourth inclusion criterion. They were excluded based on concept papers ($n = 2$) and irrelevant papers ($n = 1$). The remaining 120 articles were screened by the authors manually for their eligibility assessment. The sixth inclusion criterion mentioned in [Table 1](#), “empirical research that employed quantitative methodologies and meta-analyses,” was used in that task. Accordingly, three articles (qualitative reviews $n = 2$ and viewpoint articles $n = 1$) were excluded as they did not meet the sixth inclusion criterion. Finally, 118 articles were retained for review, and the MS Excel sheet was then adjusted to meet the bibliographic analysis. The article selection flow diagram is depicted in [Figure 1](#).



Source(s): Review data, 2022

Figure 1. PRISMA article selection flow diagram

3.2 Article characteristics

Table 2 shows the primary information of the articles included in the review. There were 118 articles published from 2000 to 2021 in 38 journals by 232 authors in 27 countries. The average citation received per article is 20.76, and the total number of references considered for the review was 5,494. Further, the total keywords included in the review were 288.

Annual article production, average article citations received per year, the most relevant sources from which the articles are published and country-specific article publications are all essential characteristics of the article set. Thus, Figure 2 shows the annual article production, indicating a gradual increase. It also shows researchers' increasing concern about career

Description	Results
Timespan	2000:2021
Journals	38
Articles	118
Average years from publication	8.56
Average citations per article	20.76
Average citations per year per doc	1.823
References	5,494
Authors' keywords	288
Authors	232
Countries	27

Source(s): Review Data, 2022

Table 2. Primary information about the article set

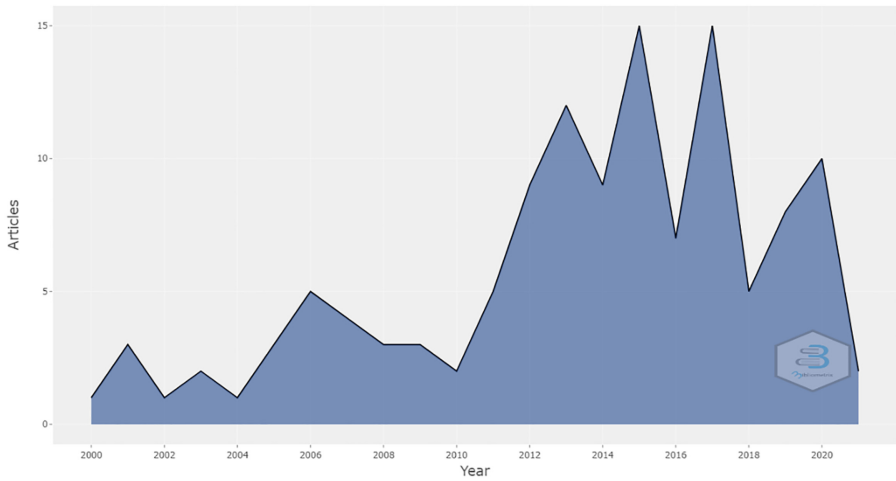


Figure 2.
Annual article
production

Source(s): Review data, 2022

indecision. [Figure 3](#) shows the average article citations received per year. It reveals a gradual decrease in citations. Citations received for an article represent its popularity. Thus, the decreasing trend of citations indicates a decrease in career indecision research's popularity. The most relevant sources of the articles published are shown in [Figure 4](#). It shows the 20 journals which published the highest number of articles. Accordingly, the *Journal of Career Assessment* (39 articles), *Journal of Vocational Behavior* (22 articles) and *Journal of Career Development* (22 articles) are first, second and third, respectively, in career indecision article publications. Besides that, career development quarterly has published seven articles. Three articles each have been published by the *Journal of Counselling Psychology* and the *Orientation Scolaire et Professionnelle*. The *Australian Journal of Career Development*, the *Frontiers in Psychology* and the *International Journal for Education and Vocation* have

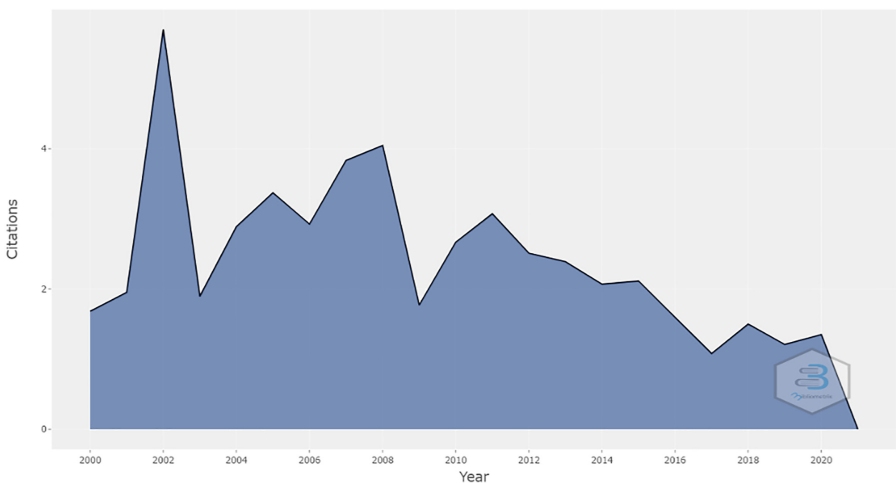
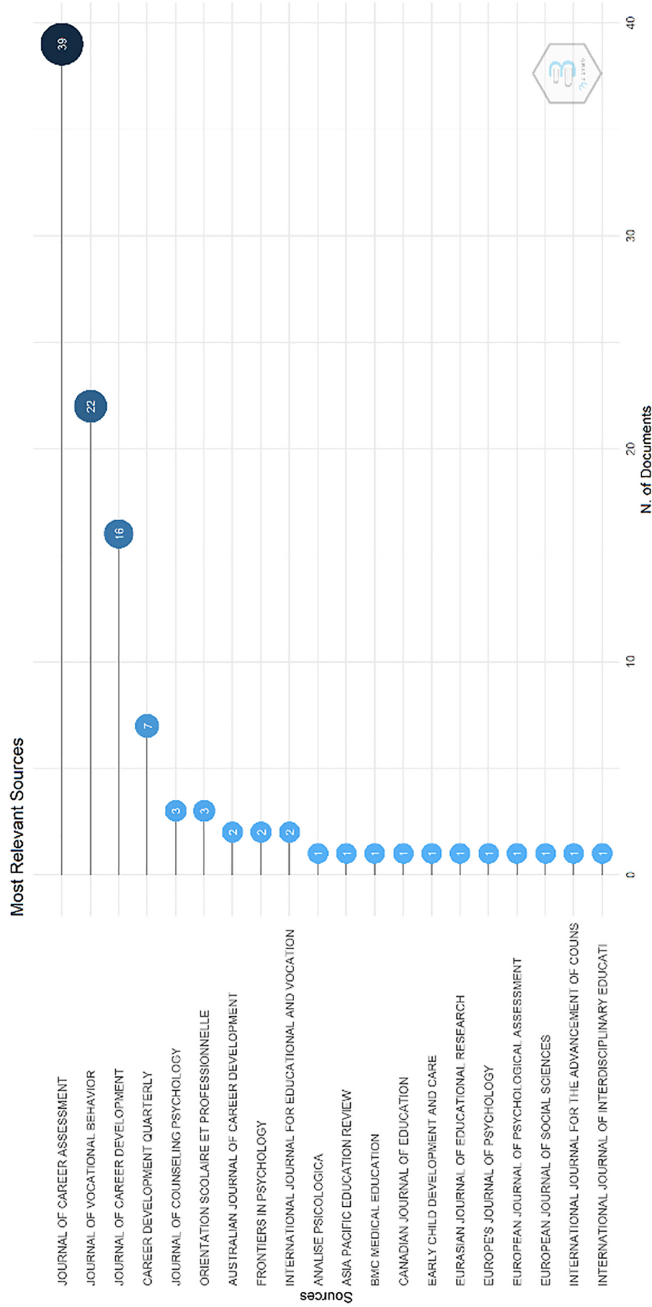


Figure 3.
Average article
citations received
per year

Source(s): Review data, 2022



Source(s): Review data, 2022

Figure 4.
The most relevant
sources the articles
published

published two articles each. The rest of the journals listed in Figure 4 have published one article each. Figure 5 depicts the number of articles published in each country. The size of the colored nodes in the figure represents the number of publications in each country. As a result, the USA (39 articles), Israel (29 articles), France (9 articles) and South Korea (9 articles) rank first, second and third in country-wise publications, respectively.

Additionally, Table 3 shows the research design used for the selected articles. Out of the 118 articles, 94 used cross-sectional design, 22 used a longitudinal design and two used meta-analyses as their research design. As a result, most of the included articles represented cross-sectional design studies. Thus, Table 3 information reveals the methodological quality of the included articles.

3.3 Results of articles

This section contains the results of the articles and their synthesis. The section is divided into two sections to fulfill the study’s two objectives: (1) to find the common determinants in career

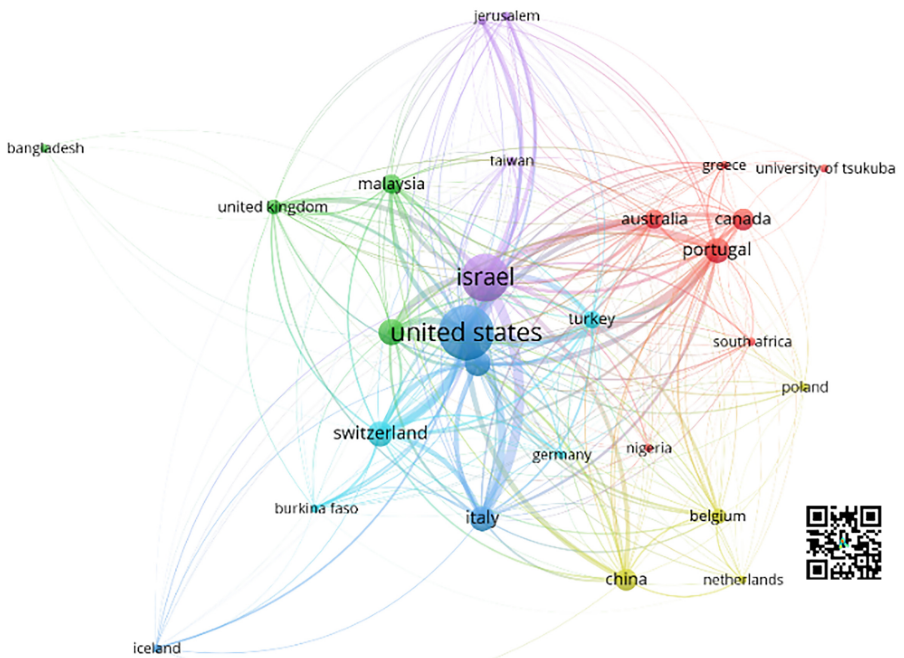


Figure 5.
Country-wise article
publications

Source(s): Review data, 2022

Table 3.
The research design of
the included articles

Research design	Number of articles
Cross-sectional studies	94
Longitudinal studies	22
Meta-analyses	02
Total articles	118

Source(s): Review data, 2022

indecision over the last 2 decades and (2) to find the factors/areas that need to be addressed for future research in career indecision. The first objective is addressed in Section 3.3.1, while the second is addressed in Section 3.3.2.

3.3.1 Common determinants in career indecision over the last two decades. The keyword co-occurrence network visualization, shown in Figure 6, was created using VOSviewer version 1.6.18 to address the study's first objective. The keywords with a minimum of five occurrences and above in the articles were considered to create it. There were 12 keywords, including the main keyword, career indecision and its interrelationships with other keywords are denoted in Figure 6. The line thickness in the figure denotes the strength of the relationship between the keywords. The size of the node denotes the frequency of occurrences. Higher frequency denotes higher the size of the nodes. Thus, while strongly correlating career counseling, career decision-making and career decision-making difficulty with career indecision, they can be said to have frequently occurred in studies. It means that those four areas have been widely researched.

Four clusters denote the nodes in Figure 6 in different colors: red, green, blue and yellow. Different clusters portray how investigations have differed in different areas of investigations. The different clusters of keywords and their basic bibliometric information are given in Table 4. Thus, the four clusters seem to represent the common themes of (1) career-related decision-making difficulties, (2) adolescents' differences, (3) individual and situational career decision-making profiles (CDMPs) and (4) level of individual readiness for career choice. These findings related to each theme are explained below.

3.3.1.1 Cluster 1– red: career-related decision-making difficulties. The keywords career assessment, career choice, career counseling and career decision-making difficulties fell into this cluster. As the cluster should share a common theme, including the source journals and

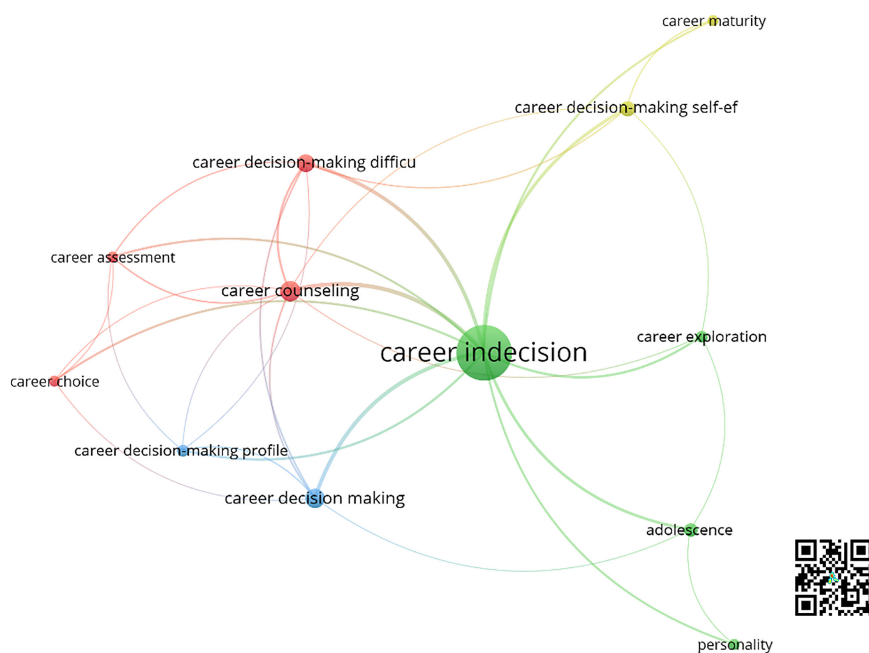


Figure 6.
The map of keyword
co-occurrence network
visualization

Source(s): Review data, 2022

Cluster/color (4 keywords)	Cluster theme	Keywords	Authors	Total citations received	Journals
1-Red (4 keywords)	Career-related decision-making difficulties	Career assessment	Gati and Levin (2014), Saka and Gati (2007), Vidal-Brown and Thompson (2001), Abu Talib and Tan (2009), Essig and Kelly (2013)	1,110	Journal of Career Assessment Career Development Quarterly Journal of Career Development Journal of Vocational Behavior Japanese Journal of Educational Psychology KEDI Journal of Educational Policy Sleep and Hypnosis Journal of Hospitality and Tourism Education International Journal for Educational and Vocational Guidance
		Career choice	Faria (2013), Hacker <i>et al.</i> (2013), Gadassi <i>et al.</i> (2015), Hagiwara and Sakurai (2008), Page <i>et al.</i> (2008)		
		Career counseling	Braunstein-Bercovitz and Lipshits-Braziler (2017), Argyropoulou <i>et al.</i> (2007), Lipshits-Braziler <i>et al.</i> (2015, 2016, 2017a), Akyol and Bacanlı (2019), Obi (2015), Maree (2020), Stauffer <i>et al.</i> (2013), Vertsberger and Gati (2016)		
2-Green (4 keywords)	Adolescents' differences	Adolescence	Citarella (2018), Emmanuelle (2009), Faria (2013), Marcionetti and Rossier (2017), Nalbantoglu Yilmaz and Cetin Gunduz (2018), Vignoli (2015)	360	Eurasian Journal of Educational Research International Journal of Interdisciplinary Educational Studies Journal of Career Assessment Journal of Vocational Behavior Journal of Career Development Career Development Quarterly TPM - Testing, Psychometrics, Methodology in Applied Psychology Universal Journal of Educational Research Journal of Counseling Psychology
		Career exploration	Park <i>et al.</i> (2017), Vignoli (2015), Paixão and Gamboa (2017), Kin and Rameli (2020), Marcionetti and Rossier (2017), Faria (2013)		
		Career indecision Personality	Marcionetti and Rossier (2017), Kin and Rameli (2020), Park <i>et al.</i> (2020), Penn and Lent (2019), Park <i>et al.</i> (2017), Gadassi <i>et al.</i> (2015)		

Table 4. Keywords categorized into clusters based on the co-occurrence results and basic bibliometric information for each cluster

(continued)

Cluster/color	Cluster theme	Keywords	Authors	Total citations received	Journals
3-Blue (2 Keywords)	Individual and situational career decision-making profiles	Career decision-making Career decision-making profiles	Gadassi <i>et al.</i> (2012, 2013), Gati <i>et al.</i> (2010, 2012), Lam and Santos (2018) Gati <i>et al.</i> (2010), Lipshits-Brazilier <i>et al.</i> (2019), Vertsberger and Gati (2015), Gadassi <i>et al.</i> (2013), Ginevra <i>et al.</i> (2012), Willner <i>et al.</i> , 2015	151	Journal of Counseling Psychology Journal of Career Assessment Journal of Vocational Behavior Journal of Career Development
4- Yellow (2 Keywords)	Level of Individual readiness for career choice	Career decision-making self-efficacy Career maturity	Park <i>et al.</i> (2021), Park <i>et al.</i> (2020), Udayar <i>et al.</i> (2020), Penn and Lent (2019), Citarella (2018), Mao <i>et al.</i> (2017) Park (2015), Creed <i>et al.</i> (2005), Patton and Creed (2007)	178	Career Development Quarterly Sustainability (Switzerland) Journal of Career Assessment International Journal of Interdisciplinary Educational Studies Journal of Career Development Frontiers in Psychology Journal of Vocational Behavior

Source(s): Review Data, 2022

Table 4.

citation information for the cluster is crucial. Accordingly, the nine journals which carried articles containing those keywords are listed in Table 4. Furthermore, 1,110 citations were found for the articles containing those keywords. As a result of the abundance of empirical research and citations, the data in this cluster have a substantial impact. Moreover, the findings associated with each keyword are explained as follows.

Career assessment: The lack of career assessment determines career indecision (Essig and Kelly, 2013). Career assessment tools include the Career Decision-Making Difficulties Questionnaire (CDDQ), the CDMPs Questionnaire (Gati and Levin, 2014) and the Emotional and Personality-Related CDDQ (Gati and Levin, 2014; Saka and Gati, 2007). Further, Career Assessment Diagnostic Inventory (CADI) (Vidal-Brown and Thompson, 2001) and the Career Factor Inventory (CFI) (Abu Talib and Tan, 2009) have also been used for career assessments.

Career choice: Career choice difficulties/anxiety determines career indecision (Faria, 2013; Hacker *et al.*, 2013; Hagiwara and Sakurai, 2008). The comprehensive information gathering, analytic information processing, a more internal locus of control, more effort invested, less procrastination, greater speed of making the final decision, less dependence on others and less desire to please others are some factors affecting career choices (Gadassi *et al.*, 2015).

Career counseling: Career counseling is an effective coping mechanism/determinant for dealing with career indecision (Akyol and Bacanli, 2019; Argyropoulou *et al.*, 2007; Maree, 2020; Obi, 2015; Stauffer *et al.*, 2013; Vertsberger and Gati, 2016). It is sought by its higher expected effectiveness, perceived severity of career-planning difficulties and motivation to engage in career-adjustment activities (Braunstein-Bercovitz and Lipshits-Brazilier, 2017). Counselors perceive productive coping and support-seeking as good strategies for career

indecision. Productive coping entails six strategies: instrumental information seeking, emotional information seeking, problem-solving, flexibility, accommodation and self-regulation (Lipshits-Brazilier *et al.*, 2015). Support-seeking includes instrumental support, emotional support and delegation (Lipshits-Brazilier *et al.*, 2015, 2016, 2017a).

Career decision-making difficulties: career decision-making difficulties determine career indecision (Lam and Santos, 2018; Phang *et al.*, 2020; Silva *et al.*, 2021; Taber, 2013). Career decision-making difficulties are measured through CDDQ (Akyol and Bacanlı, 2019; Levin *et al.*, 2020). Thus, career decision-making difficulties can be reduced through workshops and counseling programs that develop career decision-making self-efficacy (Gadassi *et al.*, 2013).

Regarding the findings under each keyword, lack of career assessments, lack of career choice and absence of career counseling are reasonably said to be considered under the common theme of career decision-making difficulties.

3.3.1.2 Cluster 2 – green: adolescents’ differences. The keywords that fell into this cluster were adolescence, career exploration, career indecision and personality. Since the subject of the investigation of this study was career indecision, the other three keywords, excluding career indecision, were considered for review. As stated in cluster 1, as these keywords should share common characteristics, evaluating the source journals and citation information for the cluster is crucial. Accordingly, we found nine journals as the sources for articles containing those keywords, while such articles received 360 citations, as listed in Table 4. As stated in cluster 1, more citations and source journals for the cluster imply an abundance of empirical investigations, and the cluster is deemed to have a significant impact. Further, findings associated with each keyword are explained below.

Adolescence: Most career indecision research has been done with adolescents (Citarella, 2018; Emmanuelle, 2009; Faria, 2013; Marcionetti and Rossier, 2017; Nalbantoglu Yilmaz and Cetin Gunduz, 2018; Vignoli, 2015) as they are open to different careers.

Career exploration: Career exploration reduces career indecision (Faria, 2013; Kin and Rameli, 2020; Marcionetti and Rossier, 2017; Paixão and Gamboa, 2017; Park *et al.*, 2017; Vignoli, 2015).

Personality: Personality determines career indecision (Gadassi *et al.*, 2012; Kin and Rameli, 2020; Marcionetti and Rossier, 2017; Penn and Lent, 2019). Notably, emotional intelligence reduces career indecision, and ego resilience and self-control also reduce career indecision through a higher future perspective (Park *et al.*, 2020). Besides neuroticism and conscientiousness, parents’ awareness levels predict career indecision (Faria, 2013; Marcionetti and Rossier, 2017; Penn and Lent, 2019).

Thus, the career exploration problems with lack of motivation, personality problems and parents’ awareness levels mentioned above seem to represent the adolescents’ differences.

3.3.1.3 Cluster 3 – blue: individual and situational career decision-making profiles. Two keywords, namely career decision-making and CDMPs, fell into this cluster. Since they could share common characteristics, it is essential to state the source journals and citation information for the cluster. Accordingly, four journals were identified with articles containing these keywords, with a citation count of 151, as listed in Table 4. The information indicates a reasonably low level of publications and citations compared to the first and second clusters. Further, the findings associated with each keyword are explained as follows.

Career decision-making: Most CDMPs have been investigated with the keyword career decision-making (Gadassi *et al.*, 2012, 2013; Gati *et al.*, 2010, 2012; Lam and Santos, 2018).

Career decision-making profile (CDMP): The CDMP is how individuals make career decisions (Gati *et al.*, 2010). The CDMP has 12 individual and situational dimensions representing a continuum on a bipolar scale (Lipshits-Brazilier *et al.*, 2019). Out of the dimensions, “comprehensive information gathering,” “analytic information processing,” “internal locus of control,” “much effort invested,” “less procrastination,” “greater speed of making the final decision,” less dependence on others and “less desire to please others” results

to lower career indecision (Gadassi *et al.*, 2013, 2013, 2013; Ginevra *et al.*, 2012; Vertsberger and Gati, 2015; Willner *et al.*, 2015).

When evaluating the findings, the CDMP describes how individuals make career decisions based on situational and individual factors. Hence, considering a theme on individual and situational career decision-making profiles is reasonable.

3.3.1.4 Cluster 4 – yellow: the level of individual readiness for career choice. Decision-making self-efficacy and career maturity were the keywords that fell into this cluster. The articles associated with these two keywords have been published in seven journals. Table 4 lists the titles of those journals. In addition, the two keywords associated with each article have received 178 citations. The following subheadings explain the findings related to these two keywords.

Career decision-making self-efficacy: Career decision-making self-efficacy determines career indecision negatively (Faurie and Giacometti, 2017; Mao *et al.*, 2017; Park *et al.*, 2020, 2021; Penn and Lent, 2019). Self-efficacy has different types: generalized self-efficacy, process-related self-efficacy, content-related self-efficacy and self-esteem, which reduces career indecision (Udayar *et al.*, 2020).

Career maturity: Career maturity is the ability and stability in a career (Super, 1980). More career matured people make independent career-related choices (Prideaux and Creed, 2001) and less career indecision (Creed *et al.*, 2005; Park, 2015; Patton and Creed, 2007).

The findings above appear that both the keywords are related to the individual rather than contextual (Lipshits-Braziler *et al.*, 2017a, b). Moreover, meta-analytic research has proven that the lack of readiness is described by low career decision-making self-efficacy and low career-related maturity (Brown and Rector, 2008; Gati and Saka, 2001; Xu and Bhang, 2019). Thus, a common theme of “level of individual readiness for career choice” is reasonable for this cluster.

As illustrated in Figure 6, all keywords are connected to career indecision. It means that each keyword is associated with career indecision. The corresponding findings for each cluster’s keywords emphasize that the keywords are determinants of career indecision. Therefore, four common themes, namely (1) career-related decision-making difficulties, (2) adolescent differences, (3) individual and situational CDMPs, and (4) level of individual readiness for career choice, developed for each cluster, can be treated as determinants of career indecision. Additionally, we identified that many journals had published articles on the first and second determinant categories rather than the third and fourth. Furthermore, the amount of citations for an article reflects its impact. As a result, more citations for each category of determinants suggest a greater influence. As a result, the first and second categories of determinants have a significant impact.

3.3.2 *Factors/areas that need to be addressed for future research.* To achieve the study’s second objective, we checked all the keywords used in the research to see whether the factors/areas represented by the keywords could create established knowledge. The areas represented by the keywords that cannot generate established knowledge should be subjected to further research. To determine this, we created keyword co-occurrence density visualization using VOSviewer by entering all the keywords shown in Figure 7. The density visualization map usually consists of three colors, red, yellow and green, as shown in Figure 7.

Keywords falling into the red area imply much research related to the area represented by the keywords. Hence, there is established knowledge related to that area (van Eck and Waltman, 2014). According to Figure 7, career indecision is the only keyword that falls into the red area. Although it is implied that there has been a large amount of research related to career indecision, it is difficult to determine that there is a connection with other keywords as a number of the other keywords have fallen into the red area. Moreover, if a keyword falls in the yellow area, it implies a moderate amount of research, whereas keywords falling in the green area means very little research is done. In that case, moderate and little research does

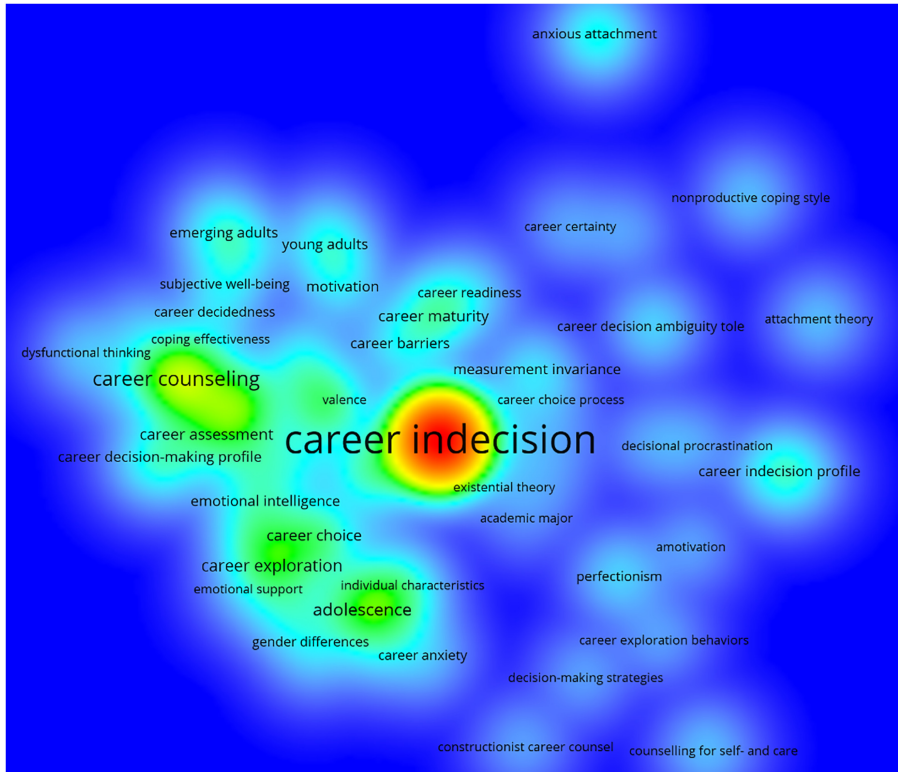


Figure 7.
The map of keyword
co-occurrence density
visualization

Source(s): Review data, 2022

not create established knowledge. Complying with this argument, the four determinants, explained in section 3.3.1, indicate insufficient research for established knowledge as they fall into the yellow and green areas in Figure 7. Thus, future researchers need to conduct further research focusing on those areas.

Furthermore, while we discovered four determinants of career indecision using keywords with more than five occurrences, as shown in section 3.3.1, we wanted to see whether keywords with fewer than five occurrences represented common areas. As a result, we utilized VOSviewer to pick keywords with fewer than five occurrences, which were then clustered into four, as shown in Table 5.

The four clusters shown in Table 5 share the common themes of individual differences, contextual/environmental factors, social factors and outcomes of career indecision. The theme of individual differences represents 17 keywords. Articles in nine journals have reported those keywords. Since this cluster has received the highest citations compared to the other three clusters, its impact is said to be higher. The second cluster contained three keywords representing the common theme of contextual/environmental factors. Articles in three journals have reported them, and the cluster has received 35 citations. The third cluster represents the social factors, which have three keywords. Articles have reported them in three journals, and the cluster received the least number of citations. The fourth cluster represents the outcome of career indecision. The only keyword included in it was subjective well-being. An article published by the *Journal of Vocational Behavior* has reported it and obtained 28

Theme	Keywords	Author	Citations	Journal
Individual differences	Perfectionism, motivation, decisional procrastination, career decisional ambiguity tolerance, career readiness, valence, emotional intelligence, dysfunctional thinking, perceived coping effectiveness, gender differences, career anxiety, anxious attachment, subjective well-being, nonproductive coping style, decision-making strategies (aspiration and procrastination)	Gati <i>et al.</i> (2011b), Kang <i>et al.</i> (2020), Page <i>et al.</i> (2008), Hagiwara and Sakurai (2008), Jung (2018), Bańka and Hauziński (2015), Park <i>et al.</i> (2019), Kleiman <i>et al.</i> (2004), Walker and Tracey (2012), Phang <i>et al.</i> (2020), Puffer (2011), Boysan and Kagan (2016), Lipshits-Brazilier <i>et al.</i> (2017b), Atitsogbe <i>et al.</i> (2018), Lam and Santos (2018), Braunstein-Bercovitz (2014), Nalbantoglu Yilmaz and Cetin Gunduz (2018), Shin and Kelly (2015)	437	<i>Asia Pacific Education Review</i> <i>Journal of Career Assessment</i> <i>Journal of Psychologists and Counsellors in Schools</i> <i>Career Development Quarterly</i> <i>Sleep and Hypnosis</i> <i>Journal of Vocational Behavior</i> <i>Journal of Counseling Psychology</i> <i>Social Psychology of Education</i> <i>Universal Journal of Educational Research</i> <i>Journal of Vocational Behavior</i> <i>Journal of Career Assessment</i>
Contextual/ environmental factors	Academic major, career barriers, career certainty	Kin and Rameli (2020), Jaensch <i>et al.</i> (2015), Constantine and Flores (2006)	35	<i>Journal of Career Development International</i> <i>Journal for Educational and Vocational Guidance</i> <i>Journal of Career Development</i>
Social factors	Emotional support, emerging adults, young adults	Mao <i>et al.</i> (2017), Uthayakumar <i>et al.</i> (2010), Park <i>et al.</i> (2021)	12	<i>Journal of Vocational Behavior</i>
Outcomes	Subjective well-being		28	<i>Journal of Vocational Behavior</i>

Table 5. Keywords categorized into clusters with keywords fewer than five occurrences in articles

citations. In addition to the journal and citation information, the main findings related to each keyword are given below.

Individual differences: Individual differences account for self-oriented perfectionism (Gati *et al.*, 2011b; Kang *et al.*, 2020; Page *et al.*, 2008), level of motivation (Hagiwara and Sakurai, 2008; Jung, 2018), decisional procrastination (Bańka and Hauziński, 2015), career decisional ambiguity tolerance (Park *et al.*, 2019), career readiness (Kleiman *et al.*, 2004) and valence (Walker and Tracey, 2012). Additionally, emotional intelligence (Phang *et al.*, 2020; Puffer, 2011), dysfunctional thinking (Boysan and Kagan, 2016), perceived effectiveness of coping strategies (Lipshits-Brazilier *et al.*, 2017b) and perceived nonproductive coping style (Lipshits-Brazilier *et al.*, 2017b) accounts the individual differences. Furthermore, gender differences (Atitsogbe *et al.*, 2018; Lam and Santos, 2018), anxious attachment (Braunstein-Bercovitz, 2014), career anxiety (Nalbantoglu Yilmaz and Cetin Gunduz, 2018) and decision-making

strategies (aspiration and procrastination) (Shin and Kelly, 2015) also represent the individual differences. Thus, all these individual differences were found to impact career indecision.

The contextual/environmental factors: The contextual/environmental factors account for the academic major of the students (Kin and Rameli, 2020), barriers to careers (Jaensch et al., 2015) and level of certainty of the career (Constantine and Flores, 2006). They were found to impact career indecision.

The social factors: The social factors include the parents' and counselors' emotional support (Mao et al., 2017). They were found to impact career indecision. Additionally, researchers have investigated emerging adults (Uthayakumar et al., 2010) or young adults (Park et al., 2021) as the subject of this career indecision, which was also categorized into this category.

Outcomes: The only outcome of career indecision found was subjective well-being (Uthayakumar et al., 2010).

In a nutshell, as this section deals with the study's second objective of finding factors/areas that need to be addressed in future research in career indecision, two ways were deployed with keywords. The first was the keywords with more than five occurrences, and the second was those with less than five occurrences. Analysis of keywords with more than five occurrences found four determinants as follows: (1) career-related decision-making difficulties, (2) adolescent differences, (3) individual and situational CDMPs and (4) level of individual readiness for career choice. Analysis of keywords with less than five occurrences derived four areas, including three types of determinants, namely (1) individual differences, (2) contextual/environmental factors, (3) social factors and one outcome (subjective well-being). Based on these two analyses, we found seven determinants and one outcome. Since these were systematically and logically identified through the keyword co-occurrence density visualization, as mentioned in Figure 7, it was revealed that the findings were insufficient for established knowledge. Therefore, future researchers should focus on all these eight areas for more research.

3.4 Reporting bias assessment

The PRISMA guidelines provide a standard reporting format that eliminates biases caused due to missing the results of the included articles to be reported. Thus, the current study's report complied with the PRISMA format that avoided the authors using their format.

4. Discussion

This study was designed based on the SLR that attempted to synthesize the career indecision empirical research published during the 2000–2021 period. It was based on two objectives: (1) to find the common determinants in career indecision over the last two decades and (2) to find the factors/areas that need to be addressed for future research on career indecision. The first objective was achieved by finding four common career indecision determinants. They are (1) career-related decision-making difficulties, (2) adolescent differences, (3) individual and situational CDMPs and (4) level of individual readiness for career choice. The second objective was achieved by finding seven determinants and one outcome of career indecision recommended for future research. The seven areas of determinants include (1) career-related decision-making difficulties, (2) adolescent differences, (3) individual and situational CDMPs, (4) level of individual readiness for career choice, (5) individual differences, (6) contextual/environmental factors and (7) social factors. The only outcome of career indecision found was subjective well-being.

All seven determinants and one outcome can be integrated into a holistic model and tested by future researchers. Since each common determinant and outcome was obtained from different keywords, they might also be viewed as dimensions for each determinant and outcome. These keywords would help construct a measurement instrument to test the suggested holistic model. These are the study's main theoretical contributions.

Additionally, the study found gaps in determinants such as cultural values, institutional and technological support for dealing with career indecision, and more outcomes of career indecision.

Although this study satisfied almost all of the SLR requirements, one limitation was that the articles were drawn from a single database. Extracting more articles could have been done if more databases had been targeted. Moreover, the study selected only the empirical studies to maintain the articles' validity as they complied with the SLR methodology. The results could have been different if other article types had been selected.

5. Conclusion

Various determinants determine occupational decision-making in career-related lives. More research has been conducted to investigate the determinants that influence career indecision. This study attempted to synthesize the career indecision empirical research to (1) find the common determinants in career indecision over the last two decades and (2) find the factors/areas that need to be addressed for future research on career indecision. An SLR methodology, along with PRISMA guidelines, was adopted. Following the predetermined inclusion criteria, 118 articles were included for the review from the Scopus database.

The first objective was achieved by findings of four areas of determinants for career indecision. They include (1) career-related decision-making difficulties, (2) adolescent differences, (3) individual and situational CDMPs and (4) level of individual readiness for career choice. The second objective was achieved by finding eight areas for future research. They include all those common four determinants found for objective one, three more determinants, namely (1) individual differences, (2) contextual/environmental factors and (3) social factors, and the only outcome, subjective well-being.

6. Practicality and research implications

When the practicality of the findings is concerned, the seven determinants of career indecision imply that policymakers, decision-makers or employees must systematically assess the causes before taking ad-hoc interventions. Notably, assessing career decision-making difficulties and CDMPs, knowing individual differences and understanding contextual and social factors for career indecision will help decision-makers to make counseling interventions. Knowing those factors by the counselors will help increase their counseling sessions' effectiveness. These different determinants imply that the decision-makers and the counselors are required to follow different strategies. Knowing that there are such determinants and outcomes of career indecision encourages indecisive career employees to seek counseling interventions. Additionally, as our study found that employee well-being can be increased by reducing career indecision, the decision-makers imply investing more effort in increasing career decisiveness.

The theoretical implication includes the seven determinants, and the only outcome, subjective well-being, can be incorporated into a comprehensive conceptual model. As a result, hypotheses can be developed for each determinant and outcome as they have been found based on empirical evidence. In this manner, the model may be empirically tested, and the measuring instrument can be created by utilizing the areas represented by each keyword in each cluster.

The findings have numerous implications for future researchers. First, the seven determinants and outcomes we identified can be researched. The seven determinants include (1) career-related decision-making difficulties, (2) adolescent differences, (3) individual and situational CDMPs, (4) level of individual readiness for career choice, (5) individual differences, (6) contextual/environmental factors and (7) social factors whereas the only outcome derived was subjective well-being. The gaps identified in this research, such as the determinants of cultural values and institutional and technological support on career indecision and more individual, organizational and social outcomes, could be regarded as possible implications in future research.

References

- Abu Talib, M. and Tan, K.A. (2009), "Predictors of career indecision among Malaysian undergraduate students", *European Journal of Social Sciences*, Vol. 8 No. 2, pp. 215-224.
- Akyol, E.Y. and Bacanlı, F. (2019), "Building a solution-focused career counselling strategy for career indecision", *Australian Journal of Career Development*, Vol. 28 No. 1, pp. 73-79, doi: [10.1177/1038416218779623](https://doi.org/10.1177/1038416218779623).
- Aparicio, G., Iturralde, T. and Maseda, A. (2019), "Conceptual structure and perspectives on entrepreneurship education research: a bibliometric review", *European Research on Management and Business Economics*, Vol. 25 No. 3, pp. 105-113, doi: [10.1016/j.jedeen.2019.04.003](https://doi.org/10.1016/j.jedeen.2019.04.003).
- Argyropoulou, E.P., Sidiropoulou-Dimakakou, D. and Besevegis, E.G. (2007), "Generalized self-efficacy, coping, career indecision, and vocational choices of senior high school students in Greece: implications for career guidance practitioners", *Journal of Career Development*, Vol. 33 No. 4, pp. 316-337, doi: [10.1177/0894845307300412](https://doi.org/10.1177/0894845307300412).
- Atitsogbe, K.A., Moumoula, I.A., Rochat, S., Antonietti, J.P. and Rossier, J. (2018), "Vocational interests and career indecision in Switzerland and Burkina Faso: cross-cultural similarities and differences", *Journal of Vocational Behavior*, Vol. 107, pp. 126-140, doi: [10.1016/j.jvb.2018.04.002](https://doi.org/10.1016/j.jvb.2018.04.002).
- Bañka, A. and Hauziński, A. (2015), "Decisional procrastination of school-to-work transition: personality correlates of career indecision", *Polish Psychological Bulletin*, Vol. 46 No. 1, pp. 34-44, doi: [10.1515/ppb-2015-0004](https://doi.org/10.1515/ppb-2015-0004).
- Bian, X. (2021), "Career indecision: an integrative review and research agenda", *European Journal of Training and Development*, Vol. ahead-of-print No. ahead-of-print, doi: [10.1108/EJTD-06-2021-0084](https://doi.org/10.1108/EJTD-06-2021-0084).
- Boysan, M. and Kagan, M. (2016), "Associations between career decision-making difficulties, maladaptive limitedness schemas, sleep quality, and circadian preferences among Turkish college students", *Sleep and Hypnosis - International Journal*, Vol. 18 No. 4, pp. 97-100, doi: [10.5350/Sleep.Hypn.2016.18.0124](https://doi.org/10.5350/Sleep.Hypn.2016.18.0124).
- Braunstein-Bercovitz, H. (2014), "Self-criticism, anxious attachment, and avoidant attachment as predictors of career decision making", *Journal of Career Assessment*, Vol. 22 No. 1, pp. 176-187, doi: [10.1177/1069072713492938](https://doi.org/10.1177/1069072713492938).
- Braunstein-Bercovitz, H. and Lipshits-Braziler, Y. (2017), "Career-planning beliefs as predictors of intentions to seek career counseling", *Journal of Career Assessment*, Vol. 25 No. 2, pp. 352-368, doi: [10.1177/1069072715616129](https://doi.org/10.1177/1069072715616129).
- Brereton, P., Kitchenham, B., Budgen, D., Turner, M. and Khalil, M. (2007), "Lessons from applying the systematic literature review process within the software engineering domain", *Journal of Systems and Software*, Vol. 80 No. 4, pp. 571-583, doi: [10.1016/j.jss.2006.07.009](https://doi.org/10.1016/j.jss.2006.07.009).
- Brown, D. and Brooks, L. (1996), *Career Choice and Development*, 3rd ed., Jossey-Bass Publishers, 350 Sansome Street, San Francisco, CA.
- Brown, S.D. and Rector, C.C. (2008), "Conceptualizing and diagnosing problems in vocational decision making", in *Handbook of Counseling Psychology*, 4th ed., John Wiley & Sons, pp. 392-407.
- Brown, S.D., Hacker, J., Abrams, M., Carr, A., Rector, C., Lamp, K., Telander, K. and Siena, A. (2012), "Validation of a four-factor model of career indecision", *Journal of Career Assessment*, Vol. 20 No. 1, pp. 3-21, doi: [10.1177/1069072711417154](https://doi.org/10.1177/1069072711417154).
- Callon, M., Courtial, J.P., Turner, W.A. and Bauin, S. (1983), "From translations to problematic networks: an introduction to co-word analysis", *Social Science Information*, Vol. 22 No. 2, pp. 191-235, doi: [10.1177/053901883022002003](https://doi.org/10.1177/053901883022002003).
- Citarella, A. (2018), "Economic crisis and adolescents' educational outcomes: a case study in southern Europe", *The International Journal of Interdisciplinary Educational Studies*, Vol. 13 No. 4, pp. 1-16, doi: [10.18848/2327-011X/CGP/v13i04/1-16](https://doi.org/10.18848/2327-011X/CGP/v13i04/1-16).
- Cobo, M.J., López-Herrera, A.G., Herrera-Viedma, E. and Herrera, F. (2012), "SciMAT: a new science mapping analysis software tool", *Journal of the American Society for Information Science and Technology*, Vol. 63 No. 8, pp. 1609-1630, doi: [10.1002/asi.22688](https://doi.org/10.1002/asi.22688).

- Constantine, M.G. and Flores, L.Y. (2006), "Psychological distress, perceived family conflict, and career development issues in college students of color", *Journal of Career Assessment*, Vol. 14 No. 3, pp. 354-369, doi: [10.1177/1069072706286491](https://doi.org/10.1177/1069072706286491).
- Creed, P., Prideaux, L.A. and Patton, W. (2005), "Antecedents and consequences of career decisional states in adolescence", *Journal of Vocational Behavior*, Vol. 67 No. 3, pp. 397-412, doi: [10.1016/j.jvb.2004.08.008](https://doi.org/10.1016/j.jvb.2004.08.008).
- Dahanayake, W. and Priyashantha, K.G. (2020), "Undecided careers among agriculture undergraduates: an analysis of determinants", *9th International Conference on Management and Economics*, Faculty of Management and Finance, University of Ruhuna, available at: https://www.researchgate.net/publication/352288917_Key_Determinants_of_Attitudes_towards_Electronic_Human_Resource_Management_Adoption.
- Emmanuelle, V. (2009), "Inter-relationships among attachment to mother and father, self-esteem, and career indecision", *Journal of Vocational Behavior*, Vol. 75 No. 2, pp. 91-99, doi: [10.1016/j.jvb.2009.04.007](https://doi.org/10.1016/j.jvb.2009.04.007).
- Essig, G.N. and Kelly, K.R. (2013), "Comparison of the effectiveness of two assessment feedback models in reducing career indecision", *Journal of Career Assessment*, Vol. 21 No. 4, pp. 519-536, doi: [10.1177/1069072712475283](https://doi.org/10.1177/1069072712475283).
- Fabio, A.D., Palazzeschi, L., Asulin-Peretz, L. and Gati, I. (2013), "Career indecision versus indecisiveness: associations with personality traits and emotional intelligence", *Journal of Career Assessment*, Vol. 21 No. 1, pp. 42-56, doi: [10.1177/1069072712454698](https://doi.org/10.1177/1069072712454698).
- Faria, L.C. (2013), "Influência da condição de emprego/desemprego dos pais na exploração e indecisão vocacional dos adolescentes", *Psicologia: Reflexão e Crítica*, Vol. 26 No. 4, pp. 772-779, doi: [10.1590/S0102-79722013000400018](https://doi.org/10.1590/S0102-79722013000400018).
- Faurie, I. and Giacometti, N. (2017), "Effets de l'indécision de carrière et du sentiment d'efficacité personnelle sur le vécu de la transition lycée-université", *L'Orientation Scolaire et Professionnelle*, Vols 46/2, doi: [10.4000/osp.5378](https://doi.org/10.4000/osp.5378).
- Gadassi, R., Gati, I. and Dayan, A. (2012), "The adaptability of career decision-making profiles", *Journal of Counseling Psychology*, Vol. 59 No. 4, pp. 612-622, doi: [10.1037/a0029155](https://doi.org/10.1037/a0029155).
- Gadassi, R., Gati, I. and Wagman-Rolnick, H. (2013), "The adaptability of career decision-making profiles: associations with self-efficacy, emotional difficulties, and decision status", *Journal of Career Development*, Vol. 40 No. 6, pp. 490-507, doi: [10.1177/0894845312470027](https://doi.org/10.1177/0894845312470027).
- Gadassi, R., Waser, A. and Gati, I. (2015), "Gender differences in the association of depression with career indecisiveness, career-decision status, and career-preference crystallization", *Journal of Counseling Psychology*, Vol. 62 No. 4, pp. 632-641, doi: [10.1037/cou0000113](https://doi.org/10.1037/cou0000113).
- Gati, I. and Levin, N. (2014), "Counseling for career decision-making difficulties: measures and methods", *The Career Development Quarterly*, Vol. 62 No. 2, pp. 98-113, doi: [10.1002/j.2161-0045.2014.00073.x](https://doi.org/10.1002/j.2161-0045.2014.00073.x).
- Gati, I. and Saka, N. (2001), "Internet-based versus paper-and-pencil assessment: measuring career decision-making difficulties", *Journal of Career Assessment*, Vol. 9 No. 4, pp. 397-416, doi: [10.1177/106907270100900406](https://doi.org/10.1177/106907270100900406).
- Gati, I., Landman, S., Davidovitch, S., Asulin-Peretz, L. and Gadassi, R. (2010), "From career decision-making styles to career decision-making profiles: a multidimensional approach", *Journal of Vocational Behavior*, Vol. 76 No. 2, pp. 277-291, doi: [10.1016/j.jvb.2009.11.001](https://doi.org/10.1016/j.jvb.2009.11.001).
- Gati, I., Gadassi, R., Saka, N., Hadadi, Y., Ansenberg, N., Friedmann, R. and Asulin-Peretz, L. (2011a), "Emotional and personality-related aspects of career decision-making difficulties: facets of career indecisiveness", *Journal of Career Assessment*, Vol. 19 No. 1, pp. 3-20, doi: [10.1177/1069072710382525](https://doi.org/10.1177/1069072710382525).
- Gati, I., Gadassi, R., Saka, N., Hadadi, Y., Ansenberg, N., Friedmann, R. and Asulin-Peretz, L. (2011b), "Emotional and personality-related aspects of career decision-making difficulties: facets of

- career indecisiveness”, *Journal of Career Assessment*, Vol. 19 No. 1, pp. 3-20, doi: [10.1177/1069072710382525](https://doi.org/10.1177/1069072710382525).
- Gati, I., Gadassi, R. and Mashiah-Cohen, R. (2012), “Career decision-making profiles vs styles: convergent and incremental validity”, *Journal of Vocational Behavior*, Vol. 81 No. 1, pp. 2-16, doi: [10.1016/j.jvb.2012.03.004](https://doi.org/10.1016/j.jvb.2012.03.004).
- Germeijs, V. and De Boeck, P. (2002), “A measurement scale for indecisiveness and its relationship to career indecision and other types of indecision”, *European Journal of Psychological Assessment*, Vol. 18 No. 2, pp. 113-122, doi: [10.1027//1015-5759.18.2.113](https://doi.org/10.1027//1015-5759.18.2.113).
- Ginevra, M.C., Nota, L., Soresi, S. and Gati, I. (2012), “Career decision-making profiles of Italian adolescents”, *Journal of Career Assessment*, Vol. 20 No. 4, pp. 375-389, doi: [10.1177/1069072712448739](https://doi.org/10.1177/1069072712448739).
- Gyarteng-Mensah, H., Owusu-Manu, D.G., Edwards, D., Baidoo, I. and El-Gohary, H. (2022), “An assessment of students’ job preference using a discrete choice experiment: a postgraduate case study”, *Journal of Humanities and Applied Social Sciences*, Vol. 4 No. 3, pp. 159-178, doi: [10.1108/JHASS-02-2020-0025](https://doi.org/10.1108/JHASS-02-2020-0025).
- Hacker, J., Carr, A., Abrams, M. and Brown, S.D. (2013), “Development of the career indecision profile: factor structure, reliability, and validity”, *Journal of Career Assessment*, Vol. 21 No. 1, pp. 32-41, doi: [10.1177/1069072712453832](https://doi.org/10.1177/1069072712453832).
- Hagiwara, T. and Sakurai, S. (2008), “Self-determination level of the motivation for searching for something to commit to”, *The Japanese Journal of Educational Psychology*, Vol. 56 No. 1, pp. 1-13, doi: [10.5926/jjep1953.56.1_1](https://doi.org/10.5926/jjep1953.56.1_1).
- Holland, J.L. and Holland, J.E. (1977), “Vocational indecision: more evidence and speculation”, *Journal of Counseling Psychology*, Vol. 24 No. 5, pp. 404-414, doi: [10.1037/0022-0167.24.5.404](https://doi.org/10.1037/0022-0167.24.5.404).
- Jaensch, V.K., Hirschi, A. and Freund, P.A. (2015), “Persistent career indecision over time: links with personality, barriers, self-efficacy, and life satisfaction”, *Journal of Vocational Behavior*, Vol. 91, pp. 122-133, doi: [10.1016/j.jvb.2015.09.010](https://doi.org/10.1016/j.jvb.2015.09.010).
- Jung, J.Y. (2018), “Occupational/career amotivation and indecision for gifted and talented adolescents: a cognitive decision-making process perspective”, *Journal of Psychologists and Counsellors in Schools*, Vol. 28 No. 2, pp. 143-165, doi: [10.1017/jgc.2016.33](https://doi.org/10.1017/jgc.2016.33).
- Kang, M., Lee, J. and Lee, A.R. (2020), “The effects of college students’ perfectionism on career stress and indecision: self-esteem and coping styles as moderating variables”, *Asia Pacific Education Review*, Vol. 21 No. 2, pp. 227-243, doi: [10.1007/s12564-019-09609-w](https://doi.org/10.1007/s12564-019-09609-w).
- Kelly, K.R. and Lee, W.C. (2002), “Mapping the domain of career decision problems”, *Journal of Vocational Behavior*, Vol. 61 No. 2, pp. 302-326, doi: [10.1006/jvbe.2001.1858](https://doi.org/10.1006/jvbe.2001.1858).
- Kin, L.W. and Rameli, M.R.M. (2020), “Myers-briggs type indicator (mbti) personality and career indecision among Malaysian undergraduate students of different academic majors”, *Universal Journal of Educational Research*, Vol. 8 5A, pp. 40-45, doi: [10.13189/ujer.2020.081906](https://doi.org/10.13189/ujer.2020.081906).
- Kitchenham, B. and Charters, S. (2007), “Guidelines for performing systematic literature reviews in software engineering”, *EBSE Technical Report*, Vol. 2 No. 3, pp. 1-66.
- Kleiman, T., Gati, I., Peterson, G., Sampson, J., Reardon, R. and Lenz, J. (2004), “Dysfunctional thinking and difficulties in career decision making”, *Journal of Career Assessment*, Vol. 12 No. 3, pp. 312-331, doi: [10.1177/1069072704266673](https://doi.org/10.1177/1069072704266673).
- Lam, M. and Santos, A. (2018), “The impact of a college career intervention program on career decision self-efficacy, career indecision, and decision-making difficulties”, *Journal of Career Assessment*, Vol. 26 No. 3, pp. 425-444, doi: [10.1177/1069072717714539](https://doi.org/10.1177/1069072717714539).
- Lent, R.W., Brown, S.D. and Hackett, G. (2002), “Social cognitive career theory”, *Career Choice and Development*, Vol. 4 No. 1, pp. 255-311.
- Levin, N., Braunstein-Bercovitz, H., Lipshits-Braziler, Y., Gati, I. and Rossier, J. (2020), “Testing the structure of the Career Decision-Making Difficulties Questionnaire across country, gender, age,

- and decision status”, *Journal of Vocational Behavior*, Vol. 116, 103365, doi: [10.1016/j.jvb.2019.103365](https://doi.org/10.1016/j.jvb.2019.103365).
- Liberati, A., Altman, D.G., Tetzlaff, J., Mulrow, C., Gøtzsche, P.C., Ioannidis, J.P.A., Clarke, M., Devereaux, P.J., Kleijnen, J. and Moher, D. (2009), “The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration”, *PLoS Medicine*, Vol. 6 No. 7, e1000100, doi: [10.1371/journal.pmed.1000100](https://doi.org/10.1371/journal.pmed.1000100).
- Lipshits-Brazilier, Y., Gati, I. and Tatar, M. (2015), “Strategies for coping with career indecision: concurrent and predictive validity”, *Journal of Vocational Behavior*, Vol. 91, pp. 170-179, doi: [10.1016/j.jvb.2015.10.004](https://doi.org/10.1016/j.jvb.2015.10.004).
- Lipshits-Brazilier, Y., Gati, I. and Tatar, M. (2016), “Strategies for coping with career indecision”, *Journal of Career Assessment*, Vol. 24 No. 1, pp. 42-66, doi: [10.1177/1069072714566795](https://doi.org/10.1177/1069072714566795).
- Lipshits-Brazilier, Y., Gati, I. and Tatar, M. (2017a), “Strategies for coping with career indecision: convergent, divergent, and incremental validity”, *Journal of Career Assessment*, Vol. 25 No. 2, pp. 183-202, doi: [10.1177/1069072715620608](https://doi.org/10.1177/1069072715620608).
- Lipshits-Brazilier, Y., Tatar, M. and Gati, I. (2017b), “The effectiveness of strategies for coping with career indecision: young adults’ and career counselors’ perceptions”, *Journal of Career Development*, Vol. 44 No. 5, pp. 453-468, doi: [10.1177/0894845316662705](https://doi.org/10.1177/0894845316662705).
- Lipshits-Brazilier, Y., Braunstein-Bercovitz, H. and Kapach-Royf, N. (2019), “Strategies for coping with career indecision during the college-to-work transition: concurrent and predictive validity”, *Journal of Career Assessment*, Vol. 27 No. 3, pp. 440-456, doi: [10.1177/1069072718759983](https://doi.org/10.1177/1069072718759983).
- Maduwanthi, M.N. and Priyashantha, K.G. (2018), “Determinants of career indecision: with special reference to management undergraduates in Sri Lankan state universities”, *Proceedings of 7th International Conference of Management and Economics. International Conference on Management and Economics*.
- Maduwanthi, M.N. and Priyashantha, K.G. (2020), “Effect of gender and location on career indecision among management undergraduates in Sri Lankan state universities”, *4th CIPM Research Symposium*.
- Mao, C.H., Hsu, Y.C. and Fang, T.W. (2017), “Mediating effect of career decision self-efficacy on the relationship between parental support and indecision in Taiwan”, *Journal of Career Development*, Vol. 44 No. 6, pp. 471-484, doi: [10.1177/0894845316663319](https://doi.org/10.1177/0894845316663319).
- Marcionetti, J. and Rossier, J. (2017), “The mediating impact of parental support on the relationship between personality and career indecision in adolescents”, *Journal of Career Assessment*, Vol. 25 No. 4, pp. 601-615, doi: [10.1177/1069072716652890](https://doi.org/10.1177/1069072716652890).
- Marco, C.D., Hartung, P.J., Newman, I. and Parr, P. (2003), “Validity of the decisional process inventory”, *Journal of Vocational Behavior*, Vol. 63 No. 1, pp. 1-19.
- Maree, J.G. (2020), “Counselling for self- and career construction outcomes for an adolescent boy with Tourette’s disorder: single participant intervention research”, *Early Child Development and Care*, Vol. 190 No. 16, pp. 2627-2645, doi: [10.1080/03004430.2020.1787401](https://doi.org/10.1080/03004430.2020.1787401).
- Meline, T. (2006), “Selecting studies for systemic review: inclusion and exclusion criteria”, *CICSD*, Vol. 33 Spring, pp. 21-27, doi: [10.1044/cicsd_33_S_21](https://doi.org/10.1044/cicsd_33_S_21).
- Nalbantoglu Yilmaz, F. and Cetin Gunduz, H. (2018), “Career indecision and career anxiety in high school students: an investigation through structural equation modelling”, *Eurasian Journal of Educational Research*, Vol. 18 No. 78, pp. 1-20, doi: [10.14689/ejer.2018.78.2](https://doi.org/10.14689/ejer.2018.78.2).
- Obi, O.P. (2015), “Constructionist career counseling of undergraduate students: an experimental evaluation”, *Journal of Vocational Behavior*, Vol. 88, pp. 215-219, doi: [10.1016/j.jvb.2015.03.009](https://doi.org/10.1016/j.jvb.2015.03.009).
- Okoli, C. and Schabram, K. (2010), “A guide to conducting a systematic literature review of information systems research”, *SSRN Journal*, doi: [10.2139/ssrn.1954824](https://doi.org/10.2139/ssrn.1954824).

- Page, J., Bruch, M.A. and Haase, R.F. (2008), "Role of perfectionism and Five-Factor model traits in career indecision", *Personality and Individual Differences*, Vol. 45 No. 8, pp. 811-815, doi: [10.1016/j.paid.2008.08.013](https://doi.org/10.1016/j.paid.2008.08.013).
- Paixão, O. and Gamboa, V. (2017), "Motivational profiles and career decision making of high school students", *The Career Development Quarterly*, Vol. 65 No. 3, pp. 207-221, doi: [10.1002/cdq.12093](https://doi.org/10.1002/cdq.12093).
- Park, I.J. (2015), "The role of affect spin in the relationships between proactive personality, career indecision, and career maturity", *Frontiers in Psychology*, Vol. 6, doi: [10.3389/fpsyg.2015.01754](https://doi.org/10.3389/fpsyg.2015.01754).
- Park, K., Woo, S., Park, K., Kyea, J. and Yang, E. (2017), "The mediation effects of career exploration on the relationship between trait anxiety and career indecision", *Journal of Career Development*, Vol. 44 No. 5, pp. 440-452, doi: [10.1177/0894845316662346](https://doi.org/10.1177/0894845316662346).
- Park, I.J., Hai, S., Lee, S. and Sohn, Y. (2019), "Investigating psychometrics of career decision ambiguity tolerance scale", *Frontiers in Psychology*, Vol. 10, p. 2067, doi: [10.3389/fpsyg.2019.02067](https://doi.org/10.3389/fpsyg.2019.02067).
- Park, I.J., Gu, M. and Hai, S. (2020), "How can personality enhance sustainable career management? The mediation effects of future time perspective in career decisions", *Sustainability*, Vol. 12 No. 3, p. 1167, doi: [10.3390/su12031167](https://doi.org/10.3390/su12031167).
- Park, I., Hai, S., Akkermans, J. and Verbruggen, M. (2021), "Positive affect and career decision-making: the moderating role of interpersonal spin", *The Career Development Quarterly*, Vol. 69 No. 1, pp. 49-62, doi: [10.1002/cdq.12248](https://doi.org/10.1002/cdq.12248).
- Patton, W. and Creed, P. (2007), "The relationship between career variables and occupational aspirations and expectations for Australian high school adolescents", *Journal of Career Development*, Vol. 34 No. 2, pp. 127-148, doi: [10.1177/0894845307307471](https://doi.org/10.1177/0894845307307471).
- Paule-Vianez, J., Gómez-Martínez, R. and Prado-Román, C. (2020), "A bibliometric analysis of behavioural finance with mapping analysis tools", *European Research on Management and Business Economics*, Vol. 26 No. 2, pp. 71-77, doi: [10.1016/j.iedeen.2020.01.001](https://doi.org/10.1016/j.iedeen.2020.01.001).
- Penn, L.T. and Lent, R.W. (2019), "The joint roles of career decision self-efficacy and personality traits in the prediction of career decidedness and decisional difficulty", *Journal of Career Assessment*, Vol. 27 No. 3, pp. 457-470, doi: [10.1177/1069072718758296](https://doi.org/10.1177/1069072718758296).
- Petticrew, M. and Roberts, H. (2006), *Systematic Reviews in the Social Sciences: A Practical Guide*, Blackwell Pub, Malden, MA, Oxford.
- Phang, A., Fan, W. and Arbona, C. (2020), "Secure attachment and career indecision: the mediating role of emotional intelligence", *Journal of Career Development*, Vol. 47 No. 6, pp. 657-670, doi: [10.1177/0894845318814366](https://doi.org/10.1177/0894845318814366).
- Prideaux, L.A. and Creed, P. (2001), "Career maturity, career decision-making self-efficacy and career indecision: a review of the accrued evidence", *Australian Journal of Career Development*, Vol. 10 No. 3, pp. 7-12, available at: <https://research-repository.griffith.edu.au/handle/10072/3987>.
- Priyashantha, K.G., De Alwis, A.C. and Welmilla, I. (2021a), "The facets of gender stereotypes change: a systematic literature review", *12th International Conference on Business and Information (2021), Faculty of Commerce and Management Studies, University of Kelaniya, Sri Lanka*, pp. 862-882, available at: <http://repository.kln.ac.lk/handle/123456789/24018>.
- Priyashantha, K.G., De Alwis, A.C. and Welmilla, I. (2021b), "Gender stereotypes change outcomes: a systematic literature review", *Journal of Humanities and Applied Social Sciences*, ahead-of-print (ahead-of-print), doi: [10.1108/JHASS-07-2021-0131](https://doi.org/10.1108/JHASS-07-2021-0131).
- Priyashantha, K.G., De Alwis, A.C. and Welmilla, I. (2022), "Disruptive human resource management technologies: a systematic literature review", *European Journal of Management and Business Economics*, Vol. ahead-of-print No. ahead-of-print, doi: [10.1108/EJMBE-01-2022-0018](https://doi.org/10.1108/EJMBE-01-2022-0018).
- Puffer, K.A. (2011), "Emotional intelligence as a salient predictor for collegians' career decision making", *Journal of Career Assessment*, Vol. 19 No. 2, pp. 130-150, doi: [10.1177/1069072710385545](https://doi.org/10.1177/1069072710385545).

- Ryan, R.M. and Deci, E.L. (2000), "Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being", *American Psychologist*, Vol. 55 No. 1, pp. 68-78, doi: [10.1037/0003-066X.55.1.68](https://doi.org/10.1037/0003-066X.55.1.68).
- Saka, N. and Gati, I. (2007), "Emotional and personality-related aspects of persistent career decision-making difficulties", *Journal of Vocational Behavior*, Vol. 71 No. 3, pp. 340-358, doi: [10.1016/j.jvb.2007.08.003](https://doi.org/10.1016/j.jvb.2007.08.003).
- Shin, Y.J. and Kelly, K.R. (2015), "Resilience and decision-making strategies as predictors of career decision difficulties", *The Career Development Quarterly*, Vol. 63 No. 4, pp. 291-305, doi: [10.1002/cdq.12029](https://doi.org/10.1002/cdq.12029).
- Silva, V., Breno Costa, D., Farina, M., Oliveira, M. and Irigaray, T. (2021), "Indecisão e Maturidade Vocacional, Autoeficácia e Personalidade em Adolescentes Com e Sem Superdotação", *Revista Avaliação Psicológica*, Vol. 20, pp. 475-485, doi: [10.15689/ap.2021.2004.21963.09](https://doi.org/10.15689/ap.2021.2004.21963.09).
- Stauffer, S.D., Perdrix, S., Masdonati, J., Massoudi, K. and Rossier, J. (2013), "Influence of clients' personality and individual characteristics on the effectiveness of a career counselling intervention", *Australian Journal of Career Development*, Vol. 22 No. 1, pp. 4-13, doi: [10.1177/1038416213480495](https://doi.org/10.1177/1038416213480495).
- Super, D.E. (1980), "A life-span, life-space approach to career development", *Journal of Vocational Behavior*, Vol. 16 No. 3, pp. 282-298, available at: https://www.academia.edu/699833/A_life_span_life_space_approach_to_career_development.
- Taber, B.J. (2013), "Time perspective and career decision-making difficulties in adults", *Journal of Career Assessment*, Vol. 21 No. 2, pp. 200-209, doi: [10.1177/1069072712466722](https://doi.org/10.1177/1069072712466722).
- Tranfield, D., Denyer, D. and Smart, P. (2003), "Towards a methodology for developing evidence-informed management knowledge by means of systematic review", *British Journal of Management*, Vol. 14 No. 3, pp. 207-222, doi: [10.1111/1467-8551.00375](https://doi.org/10.1111/1467-8551.00375).
- Udayar, S., Levin, N., Lipshits-Braziler, Y., Rochat, S., Di Fabio, A., Gati, I., Sovet, L. and Rossier, J. (2020), "Difficulties in career decision making and self-evaluations: a meta-analysis", *Journal of Career Assessment*, Vol. 28 No. 4, pp. 608-635, doi: [10.1177/1069072720910089](https://doi.org/10.1177/1069072720910089).
- Uthayakumar, R., Schimmack, U., Hartung, P.J. and Rogers, J.R. (2010), "Career decidedness as a predictor of subjective well-being", *Journal of Vocational Behavior*, Vol. 77 No. 2, pp. 196-204, doi: [10.1016/j.jvb.2010.07.002](https://doi.org/10.1016/j.jvb.2010.07.002).
- van Eck, N.J. and Waltman, L. (2014), "Visualizing bibliometric networks", in Ding, Y., Rousseau, R. and Wolfram, D. (Eds), *Measuring Scholarly Impact*, Springer International Publishing, pp. 285-320, doi: [10.1007/978-3-319-10377-8_13](https://doi.org/10.1007/978-3-319-10377-8_13).
- Vertsberger, D. and Gati, I. (2015), "The effectiveness of sources of support in career decision-making: a two-year follow-up", *Journal of Vocational Behavior*, Vol. 89, pp. 151-161, doi: [10.1016/j.jvb.2015.06.004](https://doi.org/10.1016/j.jvb.2015.06.004).
- Vertsberger, D. and Gati, I. (2016), "Career decision-making difficulties and help-seeking among Israeli young adults", *Journal of Career Development*, Vol. 43 No. 2, pp. 145-159, doi: [10.1177/0894845315584162](https://doi.org/10.1177/0894845315584162).
- Vidal-Brown, S.A. and Thompson, B. (2001), "The career assessment diagnostic inventory: a new career indecision assessment tool", *Journal of Career Assessment*, Vol. 9 No. 2, pp. 185-202, doi: [10.1177/106907270100900206](https://doi.org/10.1177/106907270100900206).
- Vignoli, E. (2015), "Career indecision and career exploration among older French adolescents: the specific role of general trait anxiety and future school and career anxiety", *Journal of Vocational Behavior*, Vol. 89, pp. 182-191, doi: [10.1016/j.jvb.2015.06.005](https://doi.org/10.1016/j.jvb.2015.06.005).
- Walker, T.L. and Tracey, T.J.G. (2012), "The role of future time perspective in career decision-making", *Journal of Vocational Behavior*, Vol. 81 No. 2, pp. 150-158, doi: [10.1016/j.jvb.2012.06.002](https://doi.org/10.1016/j.jvb.2012.06.002).
- Willner, T., Gati, I. and Guan, Y. (2015), "Career decision-making profiles and career decision-making difficulties: a cross-cultural comparison among US, Israeli, and Chinese samples", *Journal of Vocational Behavior*, Vol. 88, pp. 143-153, doi: [10.1016/j.jvb.2015.03.007](https://doi.org/10.1016/j.jvb.2015.03.007).

- Xiao, Y. and Watson, M. (2019), "Guidance on conducting a systematic literature review", *Journal of Planning Education and Research*, Vol. 39 No. 1, pp. 93-112, doi: [10.1177/0739456X17723971](https://doi.org/10.1177/0739456X17723971).
- Xu, H. and Bhang, C.H. (2019), "The structure and measurement of career indecision: a critical review", *The Career Development Quarterly*, Vol. 67 No. 1, pp. 2-20, doi: [10.1002/cdq.12159](https://doi.org/10.1002/cdq.12159).
- Zobell, C.J., Nauta, M.M. and Hesson-McInnis, M.S. (2019), "Career indecision profile-65 scores: test-retest reliability and measurement equivalence in college and noncollege samples", *Journal of Career Assessment*, Vol. 27 No. 3, pp. 510-526, doi: [10.1177/1069072718775692](https://doi.org/10.1177/1069072718775692).

Corresponding author

K.G. Priyashantha can be contacted at: prigayan@badm.ruh.ac.lk