

Review

# Towards Nuts and Bolts of Conducting Literature Review: A Typology of Literature Review

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**Abstract:** Literature reviews demonstrate the progress of knowledge and a comprehensive understanding of related phenomena, contexts, and variables in any subject. Learning how to efficiently conduct a literature review is crucial to succeeding in an academic and even up-to-speed career. Summing up and synthesizing previous research in a particular field of interest indicates enjoying a thorough grasp of the available knowledge. It also lends a hand in learning and moving forward towards being professional in a particular milieu. However, an unorganized growth in literature may hinder amelioration by broaching the probability of complicated, competing, and implausible arguments in the scholarly inquiry. This study is a just-out attempt to develop a typology of review types and present an explanatory insight into the most typical and applicable literature reviews by relying on the aim, significance, applicability, and pros and cons. The goals of conducted typology are to study and analysis different types of literature review to assist researchers to commence their evaluations and place their contribution.

**Keywords:** literature review; systematic literature review; critical literature review; types of literature review; methods; research methodology; scoping literature review; narrative review



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## 1. Introduction

The foundation of scientific research tasks/projects is to conduct research and establish a connection between the study's objective and the existing body of knowledge, regardless of the field. To implement the methodological scheme, the literature review section should be regarded as a seniority among all academics [1]. In a similar route, the collection of information is seen as a crucial element for any area to be deemed “scientific” and “credible” [2]. To be more accurate, formulating impactful literature reviews is of great significance in producing and accelerating knowledge. [3]. A literature review is at the heart of the scientific projects and engrosses a significant corner of academic activities, in other words, it is considered the pillar of all social, business and engineering research. In the current global research, the frontiers of knowledge bases are extending month by month. Thus, it is becoming more important to enhance the published body of information. Fundamental to this concept is the notion that ground-breaking ideas build upon previously published research [4]. In essence, a literature evaluation demonstrates the need or need for doing fresh investigations [5,6]. As one of the most fundamental properties of research work, Creswell [5] expounded the definition in a special frame:

“The literature review in the context of a research study fulfills numerous objectives: (a) It shares the findings of other studies which are relevant to the study being reported with readers. (b) It links a study and ongoing stretches in the literature and extends prior studies. (c) It sets up a pertinent framework to justify the significance of the study (pp. 20–21).

Many researchers suppose that their art of research report is accepted with no resistance from evaluators. They are unsuccessful in perceiving the underlying significance of the literature review. The detailed view of reviewers attracts the literature review which

is considered an “Achilles’ heel” of many researchers [7]. Looking at this issue through a scientific lens, researchers of some ilk are unaware of what fleshes out research, and likely they still presume that a literature review is not sheerly a formality [8].

Now, all the fundamentals necessary for a complete comprehension of the definition, aims, and relevance of a literature review have been emphasized. A literature review is one of the disciplines of research. This section will examine the topic at hand from the perspective of business research. Each study plan should adhere to a blueprint strategy to be carried out. Initially, a study contributes a fresh horizon of thought to an existing theory or empirical body of research by validating the theory in new contexts or elaborating it. To go ahead, elaboration or validation calls for a stretch of evidence that is employed to generate new hypotheses. They also play a part in explaining why and how the new lines of implications are relevant. One step beyond the basic concerns, the focus changes to practical issues. Researchers should centralize their integral aim in ascertaining how the new findings would untie the practical gaps [9].

It has been established that literature reviews aggregate data from much research, suggesting that when numerous results go in the same direction, more confidence in the reliability of conclusions may be accumulated [10]. In the second view, literature reviews open up new chambers for researchers to tap into broad questions. Put simply, they draw on research that exerted a variety of research methods and measurements [11]. In this sense, the literature review “foreshadows the researchers’ study” [12]. In summarizing the significance of literature review, [13] noted that literature reviews operate as a stimulant, motivating researchers to educate themselves on as large a body of relevant information as possible. Furthermore, they are apropos indicators to readers that the author(s) had a robust perception of the research topic. It has been maintained that through scrutinizing and reviewing the literature review on the previous literature, all shortcomings and foibles of prior studies will be lightened [14,15]. Therefore, they would enact as a lantern in creating and enriching the existing study context for conducting further research and even facilitating argument formulation.

One step beyond the nature and significance of literature reviews is the matter of centralization. Literature reviews could embrace several various focuses, which vary from one study to another. The leading focus deals with researchers’ conception of general research questions [16]. About the research questions, underlying concepts of research questions should cover all the domains of prior literature about the research topic, even if it does not straightly conform. In the second view, literature reviews enjoy high potential in educating readers about whether studies contribute to the accumulated knowledge or not. Hence, literature reviews help in fulfilling the integral aim through spotlighting on delineating themes and notions and stretches of relevant issues to the topic.

Cooper [15] categorized literature evaluations into a single category of emphasis by grouping all areas of attention under one umbrella. In this regard, literature reviews can be integrative (based on general conclusions, and previous studies are recapped). Methodological (dealing with multifarious methodological approaches that have been employed in prior research and their contributions to the overall research body), and theoretical reviews (highlighting sundry theories in clarifying a phenomenon). Over the years, various types of literature reviews have cropped up [3,17–19]. On the continuum of literature review, the four main types include traditional or narrative, meta-analysis, and systematic literature reviews [19]. Tapping on this matter on hand from another perspective, Paré, Trudel [3] extended the existing categorization. In this view, qualitative systematic reviews, and an umbrella, were added. In another classification, Paré and Kitsiou [18] enumerated other types namely, scoping and critical reviews. Regardless of categorization, the advancement of literature in any field might lead to the obverse, as it opposes the scholarly objective of promoting an in-depth perception of dynamics across numerous variables and contexts [20]. In this regard, the unplanned evolution of a discipline might result in the emergence of integrated, conflicting, and unsustainable ideas that would impede academic progress. This paper describes the different types of literature reviews

and their strengths and limitations to assist Computer Science and Engineering researchers in adopting literature reviews as one of the research methods. In the following section, various classification of literature reviews including the pros and cons and the scope of applicability is discussed.

## 2. Types of Literature Review

Numerous sorts of literature reviews have developed over time. Briefly, the following are some step-by-step tips for conducting a literature review:

- I. Narrowing the subject and picking papers accordingly
- II. Literature search
- III. Reading and reviewing the selected articles thoroughly
- IV. Organizing the chosen papers by identifying patterns and developing subthemes
- V. Creating a thesis or mission statement
- VI. Developing the paper
- VII. Reviewing the work

The selection of a certain kind is determined by your study methodology and design. In the following subsections, several classifications of literature reviews, including their merits and drawbacks and scope of application, are examined.

### 2.1. Narrative Literature Review

As a social process including aggregate and iterative steps, this type of literature review has its basis in process theory. According to the purpose and application scope, narrative reviews focus on developing theories as their main goal [21,22], and typically they have appositeness in various fields namely humanities, management research, and social sciences [23,24].

A narrative review is defined as a thorough narrative synthesis of prior published information. Looking at the definition from a different perspective, narrative reviews are qualitative summaries of the relevant literature (whether statistics were used or not). They have a lot of potential for bringing together studies that looked at different research questions and approaches/methodologies [4]. The process of conducting this type is considered non-structured, multilayered, and calls for sundry cumulative written outcomes which occur in a social context [22]. Narrative reviews might become more robust through the inclusion of tables and making comparisons among quantitative results of different strings of studies. Interestingly, researchers found that the benefits of narrative reviews are extending to some other types of literature review such as systematic reviews and meta-analyses [25,26].

In addition to the extensive coverage of benefits and application in narrative reviews, some drawbacks have been found, hence researchers are recommended to be cautious in this regard. The greatest weakness has been attributed to the issue of “bias” in drawing the conclusions (Webster and Watson [27]). Bias may be rooted in the seedling stage of processing a review. There is less consensus about how experts have been selected. Furthermore, funders may choose experts whose opinions agree with their own and shun those whose opinions are different. About the essence of evidence, some complicated and evolving background knowledge and notions need the Top of Form.

#### Bottom of Form

In the second view, the completeness and wide coverage of narrative reviews in different fields have been corroborated. However, this type does not ineluctably follow regulations in searching for evidence [28]. Concerning evidence, Schlesselman and Collins [26] asserted that some complicated and evolving background knowledge and notions need a wide range of situational choices about the inclusion of evidence and thus call for more flexible narrative reviews. Thirdly, in typical narrative reviews, there are no traces of how conclusions and decisions were made about the pertinence of studies and the validity of the included studies. Casting much light, Schlesselman and Collins [26] maintained that

the findings of one piece of research should meet the referees' sense of legitimacy. However, readers might not make any judgments on the authors' choices. Table 1 is the summary of narrative review characteristics.

**Table 1.** Summary of Narrative Review Characteristics.

Review Type	Questions Scope	Applicability Scope	Weakness	Strength
Narrative	Broad	Humanities Management research Social sciences	<ul style="list-style-type: none"> <li>■ Not following regulation in searching evidence</li> <li>■ No traces on how conclusions and decisions were made about the pertinence of studies</li> <li>■ No traces on validity of the included studies</li> </ul>	<ul style="list-style-type: none"> <li>■ Wide coverage</li> <li>■ More prone to bias and error</li> <li>■ High potential in integrating studies with various research questions and approaches/methodologies</li> <li>■ Benefits of narrative reviews can be extended over some other types of literature review</li> </ul>

## 2.2. Systematic Literature Review

Contrary to narrative reviews, systematic literature reviews adopt a more robust approach to reviewing the literature. The rigorousness of such reviews can be attributed to the fact that systematic reviews mostly have their centralization in answering structured and particular research questions [29]. Generally speaking, systematic reviews have their applicability scope in domains namely healthcare literature, traditional social science, and business management literature reviews [30,31]. At the heart of all fields, the string of systematic review utilization has been interwoven with healthcare movements in the late 1970s and early 1980s. They have emerged in unwinding the gaps in finding an “evidence-based medicine movement” by using and organizing the accessible knowledge on the efficaciousness of healthcare remedies into dependable formats [29]. Systematic reviews were defined as “a method of making conclusions from a bundle of information and is considered as a means of sharing the answers to research questions about what works and what does not” [29]. In line with the definition, Jesson, Matheson [30] have demonstrated that this type of review concentrates on accelerating the body of research knowledge and can be both qualitative and quantitative.

Compared to narrative reviews, systematic reviews encompass a more goal-based appraisal of evidence. Thus, since systematic reviews adopt a methodological approach, they are less prone to bias and error. As in narrative reviews, the type of exerted methods in singling out the pertinent data are not pellucid enough. Therefore, the selection of the study can be arbitrary (can be affected by reviewers' bias) [32,33]. One line of strength in systematic reviews is associated with the level of precise and reliable appraisals, meaning that they are critically appraised, the strength of evidence is assessed, and quantitative synthesis of data is carried out [34]. In the third view, a reproducible process of systematic research synthesis lends a hand in untying any incertitude between the original study, traditional literature reviews, and experts' credence [35]. Looking at the benefits from a research-based view, it has been highlighted that systematic reviews assist in abating the time interval between research discovery and implementation and enhance the generalizability of the results.

Encapsulating all benefits under one umbrella, systematic reviews are regarded as one of the most impactful tools in gaining thorough utilization of the global investment in research domains, and furthermore, they could help in recognizing areas that require more rigorous bunches of evidence. Therefore, up-and-coming novel research questions are produced [34].

Even though systematic reviews are regarded as the most powerful approach to finding a conclusive answer to a research question, some flaws should be pinpointed. The major drawback has been addressed and expounded in the light of the benefits, in systematic reviews (in quantitative studies), researchers can integrate data by using meta-analytic techniques. This would enhance the likelihood of distinguishing the original/real effects that smaller research could not detect. From this respect, since all the small biases and true effects are identified, such an increased effect might be considered a stumbling block [36]. The second problem is attributed to the scope of focus since systematic reviews have a concentration on narrow focus. Thus, they do not lend themselves to comprehensive coverage. The third limitation address the selection of studies, information loss on significant outcomes, improper subgroup analyses, and inconsistency with the novel experimental data [37]. Table 2 presents the summary of systematic review characteristics.

**Table 2.** Summary of Systematic Review Characteristics.

Review Type	Questions Scope	Applicability Scope	Weakness	Strength
Systematic	Narrow	Healthcare literature Traditional Social science Business management	<ul style="list-style-type: none"> <li>■ Over-magnification of small biases and true effects</li> <li>■ Not comprehensive coverage</li> <li>■ Inconsistency with the novel experimental data</li> <li>■ Loss of information on significant outcomes</li> <li>■ Improper subgroup analyses</li> </ul>	<ul style="list-style-type: none"> <li>■ Provision of a more goal-based appraisal of evidence</li> <li>■ Less prone to bias and error</li> <li>■ High level of precision and reliable appraisals</li> <li>■ Assessing strength of evidences</li> <li>■ Conducting quantitative synthesis of data</li> <li>■ Helping in recognizing areas require more rigorous evidences</li> <li>■ Generation of novel research hypotheses/questions</li> </ul>

### 2.3. Meta-Analysis Literature Review

In retrospection to the aforementioned types of reviews, it has been stated that compared to narrative reviews, meta-analysis literature reviews are newer and apply a quantitative method of integrating the results of prior studies [38]. There is a disagreement between users of the two methods, some scholars who tend to inject this approach into their studies opine that narrative approaches and reviews have become obsolete. However, both have specialized a promising place in science [39]. Meta-analysis is a preferred type of literature review in combining the results of a multitude of studies that have adopted comparable methods in addressing a similar research question. Put the definition in another way, meta-analysis literature reviews include taking results from the selected literature and analyzing the results under the shade of standardized statistical techniques [38,40]. The arrays of applicability in meta-analytic reviews are extended into realms of economic studies such as cost-effective analyses, biomedical, and medical research (establishing the association between the amount of exposure and disease) [41]. Further, the obtained results from meta-analyses can be applied in verifying the acceptable sample size of a future trial [42].

Interestingly, what makes a borderline between systematic and narrative reviews with meta-analysis literature reviews is the potentiality of drawing conclusions and finding patterns and relationships between the findings [43]. It has been discussed that by pooling

significant findings with non-significant findings from the related studies, meta-analysis reviews enjoy enhanced potential in appraising more accurate estimates of a phenomenon’s effects [44–46]. As one of the most powerful research methods, meta-analyses open up new chambers for researchers to draw apropos inferences through reliance on existing controversies [47]. Meta-analysis reviews hold a multitude of benefits namely an enhancement in power, detection patterns in studies with disorganized findings, and amelioration in precision [39]. The researchers have maintained that highly structured meta-analysis reviews could provide scholars with a comprehensive perception of state-of-art and accordingly enact a momentous role in disciplines’ advancement [10,48,49]. It is noteworthy to consider the dark sides of meta-analyses reviews in the context of empirical research, in this regard, the integral limitation is attributed to the incapability of this type in rectifying the imposed restrictions by previous insufficiently powered lines of studies. Put simply, meta-analytic reviews do not enjoy adequate potentiality in correcting shrimp sample bias and detecting the probable effect of pertinent moderators and mediators [42]. Tackling the second pitfall through the lens of statistics, meta-analyses mostly measure heterogeneity among studies. Some tests such as Cochran’s Q (it is a type of statistics that has its basis on the  $\chi^2$  test) revealed what percentage of the overall variation is beyond the matter of chance [34]. Such variation estimates are the introduction of inconclusiveness that should be scrutinized in evidence interpretations. Table 3 provides the summary of the meta-analyses review characteristics.

**Table 3.** Summary of Meta-Analyses Review Characteristics.

Review Type	Questions Scope	Applicability Scope	Weakness	Strength
Meta-analyses	Narrow	Economic studies Medical and Biomedical research	<ul style="list-style-type: none"> <li>■ Low potentiality in correcting sample bias</li> <li>■ Low detection in the probable effect of pertinent moderators and mediators</li> <li>■ Overmagnification on heterogeneity and variation</li> </ul>	<ul style="list-style-type: none"> <li>■ Providing much accurate estimates of a phenomenon effects</li> <li>■ Drawing apropos inferences through reliance on existing controversies</li> <li>■ Detecting patterns in studies with disorganized findings</li> <li>■ High potential in integrating studies with various research questions and approaches/methodologies</li> <li>■ Providing comprehensive perception of state-of- art</li> </ul>

#### 2.4. Umbrella Literature Review

Making a bridge on what has been discussed earlier in this section, umbrella reviews are typically characterized as reviews of prior published meta-analyses and systematic reviews. They are one of the highest methods in representing evidence synthesis [50]. Taking the great prevalence and contribution of umbrella reviews in advancing the body of knowledge at this time interval, they are becoming highly injected with their vitality in the biomedical literature reviews, medical research, psychology, and genetics [51,52]. Addressing the applicability of umbrella reviews, it has been demonstrated that meta-analyses and systematic reviews generally have their major concentration on synthesizing the previous results and detecting the biases. However, as the number of reviews in these types increases, researchers find themselves in an overwhelming world. To find a remedy addressing this problem, umbrella reviews have emerged to fill out the existing knowledge gap [51]. Scholars who have conducted reviews in the channel of umbrella reviews opined

that in most cases they are required to rely on the available information of systematic and meta-analyses, though, caution should be made in conceding the potential limitations [53]. Secondly, in selecting factors with a sufficient string of evidence and corroborating the data, umbrella reviews adopted systematic and meta-analyses literature reviews [54]. In line with thoroughly presenting the evidence in the scope of umbrella reviews, researchers should sufficiently take the limitations into account. From this respect, one of the most critical pitfalls is the limited scope of the report, meaning that umbrella reviews could just provide a report on what researchers have interrogated and published [55]. The second drawback is attributed to the necessity of knowledge novelty. In this regard, umbrella reviews can encompass all the studies even beyond what has been included in the range of published reviews. Such a comprehensive inclusion calls for fresher literature research, and accordingly, it requires more time and works devotion that becomes unfeasible [52]. Table 4 is the summary of umbrella review characteristics.

**Table 4.** Summary of Umbrella Review Characteristics.

Review Type	Questions Scope	Applicability Scope	Weakness	Strength
Umbrella	Narrow	Medical research Psychology Biomedical Genetics	<ul style="list-style-type: none"> <li>■ Limited scope of report</li> <li>■ Requiring more time and work devotion</li> </ul>	<ul style="list-style-type: none"> <li>■ High potential in representing evidence synthesis</li> <li>■ Detecting the biases</li> </ul>

### 2.5. Descriptive Literature Review

A descriptive literature review is the summarization of individual research and mostly provides researchers with nuts and bolts of two important sections of methodology and results of the cited research [56]. The integral aim of this type of review is to present an explicable pattern of the existing literature reviews, these patterns generally provide quantified reports in the form of frequency analysis such as research methodology and research outcomes [56]. The process of conducting a descriptive review is systematic and includes searching, filtering, categorizing, codifying, and analyzing [57]. Magnifying the systematicity of the procedure, scholars delineated that at the seedling stage reviewers need to collect as many research papers as possible. In this line, they should carry out thorough research on the related literature [44,58,59]. Following the data collection, reviewers scrutinize each paper individually to reflect the frequencies of the topic, researchers, and the employed methods and to detect the patterns and trends among the surveyed research papers [60]. The overall resulting patterns are the manifestos of a research area. Extending the significance line to applicability scope, descriptive reviews have their utilization traces in educational settings, engineering research studies, and psychology. Highlighting the benefits of descriptive reviews, it has asserted that this type provides an in-depth picture of the intended fields of interest. Second, researchers can utilize the results of descriptive literature reviews to generate new research hypotheses and questions from cause-and-effect relationships [61]. One more advantage to be played out is attributed to the potential of descriptive reviews in expounding pros and cons in a particular field of study, researchers and policymakers can benefit from the suggested solutions to address the niches. Despite the beneficial horizons, the major pitfall in descriptive literature reviews deals with the nature of interpretations. The researchers feel free to use the results in formulating new research questions from the cause-and-effect patterns, though they should not establish any cause-and-effect relationships [61]. Table 5 illustrates a summary of descriptive review characteristics.

**Table 5.** Summary of Descriptive Review Characteristics.

Review Type	Questions Scope	Applicability Scope	Weakness	Strength
Descriptive	Broad	Educational settings Engineering Psychology	<ul style="list-style-type: none"> <li>■ No establishment of cause-and-effect relationships</li> </ul>	<ul style="list-style-type: none"> <li>■ Providing rich/detailed information about methodology and results section of the cited research</li> <li>■ Helping to generate new research hypotheses and questions from cause-and-effect relationships</li> <li>■ Representing an in-depth picture of the intended fields of interest</li> </ul>

### 2.6. Scoping Literature Review

Scoping literature reviews are generally used to present a primary indication of the size and nature of the literature in specific fields of interest [62]. The integral objective of scoping reviews is to inspect the range and essence of research activities and particularly, verify the valuation of conducting systematic reviews and determining the research niches [63]. To better understand the nature of scoping reviews, it has been defined as exploratory research which systematically outlines the available literature on a topic, searches for key concepts, theories, and the origin of evidence, and more importantly addresses the existing gaps in research [64]. Scoping literature reviews have become increasingly trendy in healthcare research domains. Interestingly, from 2012 until the current time, the number of conducted scoping reviews has been accelerated, it has been argued that such an upsurging advancement in scoping review is attributed to its high potential in assisting research agendas and policymakers [62].

Additionally, the strength of scoping reviews is in their ability to illustrate 'analysis of the evidence, breadth, and broad scope in a field', and powerful tools in outlining sundry topics which can inform future studies [65]. Taking into account the extensive use and beneficial role of scoping reviews, there are no apparent criteria for assessing and guiding this type of literature review. Making a bridge, scholars found that in systematic reviews and clinical practices reporting guidelines have been provided. However, no quality criteria have been established about scoping reviews [66].

In scoping reviews, researchers need to define (redefine) the research questions, find strategies and criteria iteratively, and consequently, a great deal of time and resources should be sacrificed. One more pitfall that puts scoping reviews at risk and makes them become out of date is that researchers could not succinctly report the results and difficulty in publishing the scoping reviews in journal word counts [67]. Table 6 illustrates a summary of scoping review characteristics.



**Table 6.** Summary of Scoping Review Characteristics.

Review Type	Questions Scope	Applicability Scope	Weakness	Strength
Scoping	Broad	Healthcare research	<ul style="list-style-type: none"> <li>■ No apparent criteria in assessing and guiding this type of literature review</li> <li>■ A great deal of time and resources devoted</li> <li>■ Difficulty in publishing the scoping reviews in journal word counts</li> <li>■ Risk of becoming out of date</li> </ul>	<ul style="list-style-type: none"> <li>■ Analysis of the evidence</li> <li>■ Breadth, and broad scope in a field'</li> <li>■ Powerful tools in outlining sundry topic which can inform future studies</li> </ul>

*2.7. Critical Literature Review*

Due to the extensive horizons of connection to other works and researchers across different fields of studies, critical literature reviews have allocated a great deal of research value in the larger academic milieu [68]. In the literature review domain, critical reviews have targeted the appraisal of information and synthesis particularly by magnifying observations and drawing wind-ups [69]. In a general view, critical reviews are objective and comprehensive rundowns and critical analyses of the related literature with all foibles, controversies, and inconsonances on the matter being examined [70]. The applicability scope of reviews of this type includes ecological studies [71], clinical and particularly nursing [71,72]. Delving into the deep layers, critical reviews collect information about sundry sources and encompass all pertinent to the topic being studied namely historical records, books, government reports, journal articles, theses, and dissertations.

Accordingly, they have a high potential in making a more robust basis for the improvement of knowledge and expediting theory development [73]. What makes critical reviews distinct from other types is that contrary to reviews that synthesize the existing studies, critical reviews do not certainly compare the included studies together [21]. It has been demonstrated that they examine each study against a criterion and evaluates it as more or less acceptable [21,74].

The strength of critical reviews is attributed to their high potential in playing up niches, inconsistencies, or even domains in which there is a paucity of attention to the existing knowledge [75]. From this respect, critical reviews could effectively assist researchers and step-up the advancement of knowledge by providing guidance and direction to studies for future development. The two pitfalls that address the critical reviews are, first, they rarely encompass a thorough search for all the related literature. Second, they could scarcely evaluate the quality of the selected studies specifically the qualitative research that lacks a hierarchy of designs [75]. Table 7 presented a summary of critical review characteristics.

**Table 7.** Summary of Critical Review Characteristics.

Review Type	Questions Scope	Applicability Scope	Weakness	Strength
Critical	Broad	Ecological and clinical studies particularly nursing	<ul style="list-style-type: none"> <li>■ Rarely encompass a thorough search for all the related literature A great deal of time and resources devotion</li> <li>■ Low potential in evaluating the quality of the selected studies specifically the qualitative research</li> </ul>	<ul style="list-style-type: none"> <li>■ High potential in playing up niches, inconsistencies, or even novel domains</li> <li>■ Help researchers and step up advancement of knowledge through providing guidance and direction to studies for future development</li> </ul>

Table 8 demonstrates the number of distinct types of literature reviews from 2012 to 2022 (28 December 2022). Due to the scope of this analysis, the terms “Management Information System”, “Computer Science”, “Computer Engineering”, and “Information Technology” are searched in the Scopus database. It might be assumed that systematic literature reviews are more prevalent in this scope.

**Table 8.** The Number of Different Kinds of Literature Reviews from 2012 to 2022.

Literature Review Type	Management Information System	Computer Science	Computer Engineering	Information Technology
Narrative	2	0	0	8
Systematic	16	30	11	211
Meta-analysis	0	3	1	41
Umbrella	0	0	0	0
Descriptive	0	0	0	1
Scoping	1	2	0	39
Critical	0	4	1	18

For every sort of literature review paper, Table 9 provides two examples between 2020 and 2022. The title of a literature review paper determines its type.

**Table 9.** Examples of Each Type of Literature Review Paper—2020 to 2022.

	Sample Paper	Published Year	Reference
Narrative	A narrative review of health education approaches, conceptual frameworks, and the significance of communication and information technologies in relation to child abuse.	2022	[76]
	A narrative review of the use of communication and information technologies in family support across Europe	2022	[77]
Systematic	Insights from a systematic literature analysis on increasing participation in engineering and computer science about the assessment cycle	2021	[78]
	A Systematic Analysis of Virtual Reality in Computer Science Instruction	2020	[79]
Meta-analysis	A meta-analysis of artificial intelligence in environmental computing at this time	2021	[80]
	Adoption of information technology by small and medium-sized businesses: a meta-analysis	2022	[81]

**Table 9.** *Cont.*

	Sample Paper	Published Year	Reference
Umbrella	Implementing a national electronic health record successfully: a rapid umbrella review	2020	[82]
	An umbrella review of sustainable business model innovation	2021	[83]
Descriptive	A descriptive review and categorization of information security awareness research in organizations	2020	[84]
	A literature study on the conceptual framework of strategic management—descriptive	2020	[85]
Scoping	A scope review of English language learners in computer science instruction	2022	[86]
	Selection of computer science students? A scoping review and a reform of the national entrance exam	2021	[87]
Critical	A critical literature review on the role of information technology innovation in fighting corruption in small and medium-sized enterprises in developing nations	2020	[88]
	A critical literature review of “unplugged” pedagogies for computational thinking education and K-12 computer science	2021	[89]

For each form of the literature review article, Table 10 offers an overview of the merits and limitations of each style of literature review.

**Table 10.** The Strengths and Weaknesses Summary of the Literature Review Different Types.

Literature Review	Advantages	Disadvantages
Narrative	<ul style="list-style-type: none"> <li>■ A complete viewpoint may be provided on certain subjects.</li> <li>■ More susceptible to mistakes and prejudice</li> <li>■ Potential for combining studies with diverse research topics, techniques, and procedures.</li> <li>■ The advantages of narrative reviews surpass those of several other forms of literature review.</li> </ul>	<ul style="list-style-type: none"> <li>■ Not the following procedure while looking for proof</li> <li>■ No indications of how choices and conclusions were reached about the relevance of investigations.</li> <li>■ No indications of the validity of the included studies</li> </ul>
Systematic	<ul style="list-style-type: none"> <li>■ Provision of a more objective evidence evaluation</li> <li>■ exhibiting less prejudice and inaccuracy</li> <li>■ Highly precise and dependable evaluations</li> <li>■ Evaluating the reliability of evidence</li> <li>■ Data synthesis based on quantitative analysis</li> <li>■ Aiding in the identification of areas requiring more rigorous evidence</li> <li>■ Innovation of research concepts and/or questions</li> </ul>	<ul style="list-style-type: none"> <li>■ Overemphasis on tiny biases and genuine effects</li> <li>■ Not exhaustive coverage</li> <li>■ contradiction with the new experimental data</li> <li>■ Loss of knowledge regarding major consequences</li> <li>■ Inadequate subgroup analyses</li> </ul>
Meta-analysis	<ul style="list-style-type: none"> <li>■ Effects of providing more precise estimations of a phenomena</li> <li>■ Drawing pertinent assumptions based on existing disputes</li> <li>■ Pattern recognition in research with disordered results</li> <li>■ Potential for combining studies with diverse research topics, techniques, and procedures.</li> <li>■ Providing a complete view of the state-of-the-art</li> </ul>	<ul style="list-style-type: none"> <li>■ Low chance of reversing sample bias</li> <li>■ Low sensitivity to the likely influence of relevant moderators and mediators</li> <li>■ Exaggerated emphasis on heterogeneity and variety</li> </ul>

Table 10. Cont.

Literature Review	Advantages	Disadvantages
Umbrella	<ul style="list-style-type: none"> <li>■ Significant potential for resembling a synthesis of evidence</li> <li>■ Identifying biases</li> <li>■ Providing rich/detailed information regarding the methods and results part of the research being referenced.</li> </ul>	<ul style="list-style-type: none"> <li>■ Limited report scope</li> <li>■ Requiring more time and effort</li> </ul>
Descriptive	<ul style="list-style-type: none"> <li>■ Contributing to the generation of novel ideas and research topics based on cause-and-effect correlations</li> <li>■ Providing a comprehensive depiction of the targeted areas of focus</li> </ul>	<ul style="list-style-type: none"> <li>■ There is no evidence of cause-and-effect relationships.</li> </ul>
Scoping	<ul style="list-style-type: none"> <li>■ Examination of the evidence</li> <li>■ Extensiveness and breadth in a field.</li> <li>■ Effective techniques for describing diverse topics that might inform future research.</li> </ul>	<ul style="list-style-type: none"> <li>■ There are no evident assessment and guiding criteria for this form of a literature evaluation.</li> <li>■ Significant time and resources investment</li> <li>■ Difficulty in submitting scoping reviews in journals with sufficient word limits</li> <li>■ Possibility of becoming obsolete</li> </ul>
Critical	<ul style="list-style-type: none"> <li>■ Strong potential for exploiting niches, inconsistencies, and even new areas.</li> <li>■ Assist researchers and enhance knowledge by offering future development studies with advice and direction.</li> </ul>	<ul style="list-style-type: none"> <li>■ Rarely include a comprehensive search for all relevant literature.</li> <li>■ Significant investment of time and resources</li> <li>■ Low possibility for assessing the quality of the chosen studies, particularly qualitative research</li> </ul>

The disadvantages of literature review methods could be corrected fairly easily with a few key steps, some of which do not require too much skill, time, or money. Carefully establishing and publishing an a priori procedure that includes strategies for searching, screening, data extraction, evaluation, and synthesis.

The advantages of one method can overcome the disadvantages of another. It may be inferred that combining approaches may mitigate certain disadvantages. Despite all indicated potential answers, each approach has inherent limits, and the researcher should select the most appropriate method for the literature review based on the review scope.

### 3. Discussion

The goal of the current study was to provide a typology of review literature in nuts and bolts. The first category of literature reviews in the context of the current study was narrative reviews, which is the traditional method of a literature review. Narrative reviews can be distinguished from other types in several aspects, they are typically 'selective' in nature, meaning that they do not involve a systematic and all-inclusive search of the whole related literature [67]. Narrative reviews usually fulfill the aspect of surveying the literature and also groups of evidence that are accessible to the researcher, from this respect they are opportunistic [90]. In contrast to other types of literature reviews, narrative reviews are more likely to be subjective, so they do not explain how the whole process of reviewing literature was carried out. In contrast to systematic, meta-analysis, scoping, and umbrella reviews, they employ informal ways to combine prior data, including commentary or interpretation. [91,92].

One step higher, meta-analyses reviews are considered a robust technique for synthesizing the prior study findings. Compared to systematic reviews (they only synthesize the available evidence), meta-analyses reviews can probe and establish associations among sundry studies [45]. In some research situations, conducting meta-analyses is not reasonable nor apropos in pooling strings of studies together, the reason is attributed to the

existence of broad heterogeneity among the reviewed studies, or variation among tools or concluded outcomes [93]. In such dilemmas, systematic reviews enact a remedial role in unwinding the tie through synthesis approaches namely content analysis, tabulations, and categorization schemes.

Systematic reviews open up new chambers for more goal-based evaluation than narrative reviews. Evidence from empirical studies investigating the underlying reasons why an intervention was effective or not and in what conditions enact a significant role, are all feasible through conducting systematic reviews [94]. Systematic reviews that yield contrariant findings would conduce to an overwhelming condition in interpreting and making decisions from the review-level evidence [95]. To effectively address this issue, there is a growing need for assessment and synthesis of past systematic studies to ensure that interpretation and decision-making are based on accumulated evidence. Umbrella reviews can resolve the difficulty of synthesizing discordant findings, they are overviews of systematic reviews aiming to compare and contrast the synthesized findings from a multitude of systematic and meta-analyses reviews [96,97]. It should be pinpointed that umbrella reviews use a similar set of guidelines and principles as systematic reviews. However, the basis of analysis in umbrella reviews is a systematic review, not a primary study [96,98]. Despite the similarities, umbrella reviews are different from systematic reviews in that the scope of inquiry in umbrella reviews is broader than systematic ones [99].

On the other hand, scoping reviews are a type of method whose main goal is to map the evidence from a variety of study designs in a certain area of study [62]. They have their concentrate on the breadth of the literature coverage rather than the depth. Contrary to narrative and descriptive reviews, the target of scoping reviews is much more comprehensive [59]. Researchers are approximately free to apply a variety of approaches to search, singling out, and selecting pertinent scientific research papers. In addition, they may freely describe arbitrary qualities, how one research relates to others, and eventually, make conclusions [3]. Some are exploratory, such as scoping reviews, while others, such as descriptive reviews, look for patterns [40,66]. Researchers are advised to choose the most appropriate form of literature review before starting a review project to effectively cover all the issues in one chapter.

#### 4. Common Errors in Conducting Literature Review

Since minority individuals are provided with explicit instruction on how to carry out a literature review, many attempted to learn it mostly through the trial-and-error process. The first and utmost error is associated with the state/quality of purpose, it is of great significance to know the aim of the literature review. Many authors mistakenly suppose that the major objective of the literature review is to summarize the previous studies on a specific topic. However, a summarized capsule of past findings does not merely formulate a unified whole. Ideally, a clear goal enacts a beneficial role in advancing the field's theoretical perception and could lead to introducing new theories that connect a sundry of findings. It has been demonstrated that a mature topic would broach a novel enhanced understanding of a theory by testing it against the previously published works [69].

The second mistake is associated with the mechanical components. An ambiguous introduction and weak organization would deviate readers to find the precise findings. Some authors do not follow a logical plan in formulating their literature review, that is they provide a brief introduction about the significance and niches of the study. Following that, the research findings are discussed, and once all of the content is covered, they initiate presenting their theoretical perspectives from the resulting themes and conclusions [100]. The researchers could not expect readers to hold a multitude of research findings in mind prior to finding out how they tie all together. In this meandering realm, the reader would lose the track of the main points and mislead them by mistakenly claiming that authors mentioned the theories in advance.

The next common mistake is the lack of providing adequate information about the intended literature review. Presenting superfluous or too few details about some works

put constraints on the overall understanding. Generally, a literature review has centralized its integral aim in summing up particular research methods and findings from the studies it cited. Any pieces of empirical study contribute to the authentic data and have its reliance on how well they could justify the findings. Illustrating the essence of evidence is of great importance [101].

### 5. Thumb Rules in Writing Literature Review

Regardless of what type of literature review is going to be conducted, if researchers intend to formulate a thorough literature review, they need to strive to be as comprehensive as possible. At the seedling stages, the most integral and delicate rule to highlight is to ring in the need and goal of writing the literature review. The need for conducting a literature review can be grounded on an out-of-date notion of a topic, recent development and variegation of the literature, particularly on a novel and emerging topic [102]. In detail, debating can be carried out on a topic that has been already demystified by entrant theories or operationalized in various ways and it could be the extended version of the literature. It should be pinpointed that researchers can present the literature review as a composition of more than one theory. Researchers might demonstrate their success with the data and, by extension, the body of ideas, in this respect, by offering tenable explanations based on evidence.

As the literature on a new subject of interest initiates to accumulate and becomes the pillar of the literature body, researchers can assist in the literature review to tie each single study string together and analyze them to detect different viewpoints and insights. Moreover, shortcomings, imprecision, and any further problems. From this respect, selecting an apropos topic would make the study review distinct from the pertinent topics, support the concentration of the study, and set out boundaries to lay out the literature. Establishing boundaries for the topic would become the crux in developing the criteria to keep or discard the literature retrieved in the scope of the literature search later in the study [10].

One step above the topic of literature is the discussion of methods in the conducted literature. For all types of reviews and particularly for new topics in which the confirmed model/framework has not been thoroughly built up, the discussion is required to involve the means exerted to certify the validity or dependability of the resulting themes [102]. Similar to all research reports, the employed methods should be delineated in an adequate brass track so that readers could easily verify whether the literature on the topic has been injected into the study and so that researchers can replicate the study based on the research method. Once the methods of literature are elucidated, it is the repined time to critically analyze each study in the literature [103]. Through reviewing the multitude of articles, researchers have gained a broad perception of the literature quality, and therefore the basis for critical analysis is prepared. Critical analysis helps in determining the advantage, disadvantage, and inconsistencies in the literature and evaluates how well the literature manifests the topic [4]. Academically speaking, an impactful critique provides an equalized appraisal of strengths and ways to ameliorate the quality of the literature body. It equips the prerequisites for literature-review synthesis. As a rule of thumb in writing the literature review, authors' viewpoints should be considered, and all the taken hidden perspectives have to be expounded for readers (e.g., neutral representations and biases) [4]. One neglected rule should be pinpointed and that is the authors' assumptions should be demonstrated in the light of the viewpoints. Therefore, in line with justifying the perspectives in the light of the evidence, motley paragraphs on each previous study seem plausible to vindicate the findings.

Using the general arrangement and composition of literature as a guide, scholars are encouraged to create a harmonic flow of concepts and ideas so that readers can discern the entire (e.g., conceptual, methodological, and temporal structures). In some types of literature such as mapping and umbrella reviews, the organization of literature includes diagrams and visual representations. In this regard, the systematic structure and order

of representations would highly enhance readers' understanding of the addressed matter on hand. The literature evaluation should include traces of future subjects in the targeted discipline, as well as the aforementioned niceties. The traces include factors that have shaped the future of the topic, dissertate the pending advancements in the field of interest, and further assess the probable arrays for future trends [27,102].

## 6. Conclusions

Literature review is an essential method of any research project so there is a momentous need to conduct more robust literature reviews. The major objective of the current study was to study various literature reviews which are integral to the continuous advancement of knowledge. A handful of review types scrutinized the objective, significance, scope of applicability, strengths, and weaknesses in each review. The typology presented in the context of the current study acknowledged that there is a sense of void in some groups of the review classification. The addressed weaknesses and strengths need to be revived and become more robust. Accordingly, further empirical studies are required to deeply perceive and fill the existing gap.

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