

USER GUIDE



Helping People To Grow Better Through Research

OUR PLATFORM



COSTAQDA is specially designed for analyzing and synthesizing literature and large volumes of text-based data, using both apriori and posteriori conventions, leading to high-level evidence crucial for decision making.



It is highly recommended for those involved in literature-based research, or those dealing with Big Qualitative Data.

WHO IS COSTAQDA FOR?

- Postgraduate Research Students
- Postgraduate Research Supervisors, Coaches and Mentors
- Qualitative and Mixed Methods Data Analysts
- Business Researchers
- Market Research Professionals
- Economists and
- Leaders and Managers

CONTACT US

OUR VALUES



- Respect
- Integrity
- Innovation
- Excellence

OUR VISION



To be a catalytic leader in research and development

OUR MISSION



Creating formidable partnerships with industry leaders across all economic sectors to enhance the practical learning experience for our learners



TABLE OF CONTENTS

1. COSTAQDA INFORMATION AND FEATURES.....	5
BASIC FEATURES: BUILDING BLOCKS OF RIGOROUS ANALYSIS.....	5
ADVANCED FEATURES: ELEVATING YOUR RESEARCH TO NEW HEIGHTS.....	5
WHY COSTAQDA IS ESSENTIAL FOR YOUR RESEARCH.....	6
EXPERIENCE THE FUTURE OF QUALITATIVE RESEARCH WITH COSTAQDA.....	7
2. USER GUIDES	8
3. REGISTERING TO BE A SOFTWARE USER.....	9
RESPONSES FROM ACTIVITIES 1,2,3	10
4. PROJECTS CLASIFICATIONS.....	12
Primary Research.....	12
Document Analysis.....	13
Systematic Review	14
5. LIST OF PROJECTS	15
6. PROJECT VISUALISATIONS.....	15
Create Categories	15
Upload Articles.....	15
7. THE CODING PROCESS	16
Iterative Principle of Coding.....	16
Line-by-Line Coding.....	17
Principle of Reduction.....	17
Reduction in COSTAQDA.....	17
8. MULTIPLE CODERS OR COLLABORATORS	18
9. EXTRACTING CODES FROM ARTICLES.....	23
10. CODE INPUTS.....	23
11. SEARCHING FOR THEMES IN CATEGORIES.....	25
12. CATEGORIES REPORT	27
13. APPRAISING LITERATURE FOR LITERATURE REVIEW.....	28
The Importance of CASP in Appraising Literature.....	28
CASP Guidelines.....	29
Local Citation Network in COSTAQDA	31

Key Features of the Local Citation Network	31
Importance in Literature Review	32

TABLE OF FIGURES

Figure 1: COSTAQDA Home Page Features - 1	8
Figure 2: COSTAQDA Home Page Features 2	8
Figure 3: Sign-up screen	9
Figure 4: Profile Page	10
Figure 5: Subscriptions Page.....	10
Figure 6: Dashboard Access on Subscriptions Page.....	11
Figure 7: Creating a Data Analysis Project.....	11
Figure 8: Selection of Project type.....	11
Figure 9: Projects Taxonomy	12
Figure 10: List of Data Analysis Projects on Dashboard.....	15
Figure 11: Uploaded articles for analysis	16
Figure 12: The Coding Process 1	18
Figure 13: The Coding Process 2	18
Figure 14: Invitation as Collaborator	19
Figure 15: Collaborator options to participate.....	20
Figure 16: Collaborator Access	20
Figure 17: Collaborator Project Participation	21
Figure 18: Project Visualizations 1.....	21
Figure 19: Project Visualizations 2.....	22
Figure 20: Project Visualizations 3.....	22
Figure 21: Extracting Codes	23
Figure 22: Code Inputs	24
Figure 23: Development of Themes.....	26
Figure 24: Activities within Categories	26
Figure 25: Categories Page Interface.....	27
Figure 26: Sub-themes and their code frequencies.....	27
Figure 27: Further subthemes visualizations	28
Figure 28: CASP Input Screen.....	30
Figure 29: CASP Output Screen.....	30
Figure 30: CASP Output Screen.....	31
Figure 31: Literature Assessment.....	32
Figure 32: Impact of Literature Sources 1.....	33
Figure 33: Impact of Literature Sources 2.....	33

1. COSTAQDA INFORMATION AND FEATURES

UNLOCK THE FULL POTENTIAL OF YOUR QUALITATIVE RESEARCH WITH COSTAQDA

In the dynamic world of qualitative research, having a powerful and versatile tool is essential for delivering impactful and credible results. COSTAQDA is that tool—a cutting-edge, cloud-based qualitative data analysis software designed to meet the diverse needs of researchers across disciplines. Whether you're analyzing interview transcripts, reports, or literature sources, COSTAQDA equips you with the capabilities to uncover deep insights, provide evidence for interventions, and contribute to theory development—critical elements of any qualitative research project.

BASIC FEATURES: BUILDING BLOCKS OF RIGOROUS ANALYSIS

COSTAQDA offers a comprehensive set of foundational tools that streamline and enhance your qualitative analysis:

- **Coding:** Effortlessly categorize and label your data with both inductive and deductive coding options. COSTAQDA makes it easy to apply and organize codes whether you're working with interview transcripts, reports, or literature sources, ensuring that your data is systematically analyzed.
- **Ordering/Organizing:** Bring order to your data by organizing codes into meaningful categories. This feature helps you identify patterns and relationships within your data, providing a structured approach to analysis that is essential for drawing meaningful conclusions.
- **Searching for Themes:** Move beyond basic coding to discover the complex narratives within your data. COSTAQDA's theme searching capability enables you to identify sub-themes and patterns across different data sources, offering a richer understanding of the underlying issues and dynamics.
- **Testing Analysis:** Ensure the reliability of your research with COSTAQDA's unique Testing Analysis feature. By utilizing Cohen's Kappa for inter-coder reliability, COSTAQDA guarantees that your coding is consistent and dependable, reducing bias and strengthening the credibility of your research findings.

ADVANCED FEATURES: ELEVATING YOUR RESEARCH TO NEW HEIGHTS

COSTAQDA goes beyond the basics, offering advanced features that make it indispensable for scholars and researchers who demand more from their qualitative analysis tools:

- **Inter-Coder Reliability with Cohen's Kappa:** This advanced feature ensures that your analysis is rigorous and reliable. COSTAQDA's integration of Cohen's Kappa allows you to measure the agreement between different coders, ensuring that your research methods are consistent and your findings credible.
- **Automated CASP (Critical Assessment Skills Programme):** Gone are the days of selecting literature sources based on a hunch. COSTAQDA's automated CASP feature allows you to critically appraise literature sources, ensuring that only the most relevant and high-quality articles are included in your research. This feature helps you make informed decisions and reduces the risk of selection bias.
- **Local Citation Network Integration:** Understand and demonstrate the impact of each article you analyze with COSTAQDA's Local Citation Network feature. This tool allows you to visualize citation and impact maps, helping you to assess the influence of key studies and track their relevance to your research field. This capability is crucial for theory development and for providing robust evidence in support of interventions.
- **Sentiment Analysis with Emotion Coding: Discover** the emotional undertones within your qualitative data using COSTAQDA's sentiment analysis feature. By employing emotion coding, COSTAQDA enables you to analyze the sentiments expressed in interviews, reports, or literature, offering insights that go beyond surface-level analysis and helping you to understand the deeper motivations and feelings driving behaviors and opinions.

WHY COSTAQDA IS ESSENTIAL FOR YOUR RESEARCH

COSTAQDA is not just another tool in your research arsenal—it's a critical component for conducting high-quality, impactful qualitative research. Here's why COSTAQDA should be your go-to software:

- **Comprehensive Analysis:** COSTAQDA is designed to handle a wide range of data sources, including interview transcripts, reports, and literature. This versatility ensures that you can analyze all relevant data within a single platform, making your research process more efficient and cohesive.
- **Evidence for Interventions:** Whether you're providing evidence for policy changes, educational programs, or healthcare interventions, COSTAQDA's rigorous analysis tools help you gather and present the evidence needed to support your recommendations.
- **Theory Development:** With COSTAQDA, you're not just analyzing data—you're contributing to the development of theories that can shape future research and practice. The software's advanced features, such as the Local Citation Network and Automated CASP, provide you with the tools to critically appraise and synthesize literature, laying the groundwork for robust theoretical contributions.
- **Critical Appraisal and Impact Assessment:** COSTAQDA empowers you to select literature sources based on critical appraisal rather than intuition. The automated CASP feature, combined with the Local Citation Network, allows you to demonstrate the impact and

relevance of each article, ensuring that your literature review is both comprehensive and strategically focused.

EXPERIENCE THE FUTURE OF QUALITATIVE RESEARCH WITH COSTAQDA

COSTAQDA is more than just a software tool—it's a game-changer in the field of qualitative research. With its powerful combination of basic and advanced features, COSTAQDA enables you to conduct research that is not only rigorous and reliable but also deeply insightful and highly impactful.

Don't leave your research to chance. Choose COSTAQDA today and unlock the full potential of your qualitative analysis. Whether you're supporting interventions, developing new theories, or critically appraising the literature, COSTAQDA provides the tools you need to succeed.

Visit <https://app.costaqda.com/> to learn more, sign up for a demo, or start using COSTAQDA today. If you want to get a trial license, register and use the code "CDA100" after your surname. Transform your research—transform the world. Start by familiarizing yourself with user guides below.

2. USER GUIDES

WELCOME TO COSTA QDA SOFTWARE

1

If you are a user, please type your email and password here

If you want to open a new account, please register here

2

Please enter Username or Email

Password

Forgot password?

[Log in](#)

Not a member? [Register](#)

LOGIN AS: **Collaborator** | **Sponsor**

FEATURES OF COSTA QDA

1. Intuitive cloud-based capabilities
2. Enhancing collaboration across different regions and continents
3. Rigorous and taking Qualitative Research beyond the norms
4. Ability to test coding methods through ICR and Cohen's Kappa statistic
5. Ability to provide a more rigorous approach to literature review and evidence synthesis
6. Provision of platforms for critically appraising data and science mapping through CASP and Bibliometric Analytic approaches



Helping People To Grow Better Through Research

OUR PLATFORM

COSTA QDA is specially designed for analyzing and synthesizing literature and large volumes of text based data, using both manual and automatic approaches, leading to high level evidence needed for decision making.

It is highly recommended for those involved in literature based research, or those dealing with big Qualitative Data.

WHO IS COSTA QDA FOR?

- Postgraduate Research Students
- Postgraduate Research Supervisors, Coaches and Mentors
- Qualitative and Mixed Methods Data Analysts
- Academic Researchers
- Market Research Professionals
- Economists and
- Leaders and Managers

OUR VALUES

- Integrity
- Innovation
- Excellence

OUR VISION

To be a leading leader in research and development

OUR MISSION

Creating accessible, user friendly and evidence based evidence for evidence based research and development

CONTACT US

www.costaqda.com | costaqda@researchglobal.net | UK: 01 875 6476

Figure 1: COSTA QDA Home Page Features - 1

WELCOME TO COSTA QDA SOFTWARE

3

If you are invited as a Collaborator or a Sponsor, click on the appropriate text.

Please enter Username or Email

Password

Forgot password?

[Log in](#)

Not a member? [Register](#)

LOGIN AS: **Collaborator** | **Sponsor**

FEATURES OF COSTA QDA

1. Intuitive cloud-based capabilities
2. Enhancing collaboration across different regions and continents
3. Rigorous and taking Qualitative Research beyond the norms
4. Ability to test coding methods through ICR and Cohen's Kappa statistic
5. Ability to provide a more rigorous approach to literature review and evidence synthesis
6. Provision of platforms for critically appraising data and science mapping through CASP and Bibliometric Analytic approaches



Helping People To Grow Better Through Research

OUR PLATFORM

COSTA QDA is specially designed for analyzing and synthesizing literature and large volumes of text based data, using both manual and automatic approaches, leading to high level evidence needed for decision making.

It is highly recommended for those involved in literature based research, or those dealing with big Qualitative Data.

WHO IS COSTA QDA FOR?

- Postgraduate Research Students
- Postgraduate Research Supervisors, Coaches and Mentors
- Qualitative and Mixed Methods Data Analysts
- Academic Researchers
- Market Research Professionals
- Economists and
- Leaders and Managers

OUR VALUES

- Integrity
- Innovation
- Excellence

OUR VISION

To be a leading leader in research and development

OUR MISSION

Creating accessible, user friendly and evidence based evidence for evidence based research and development

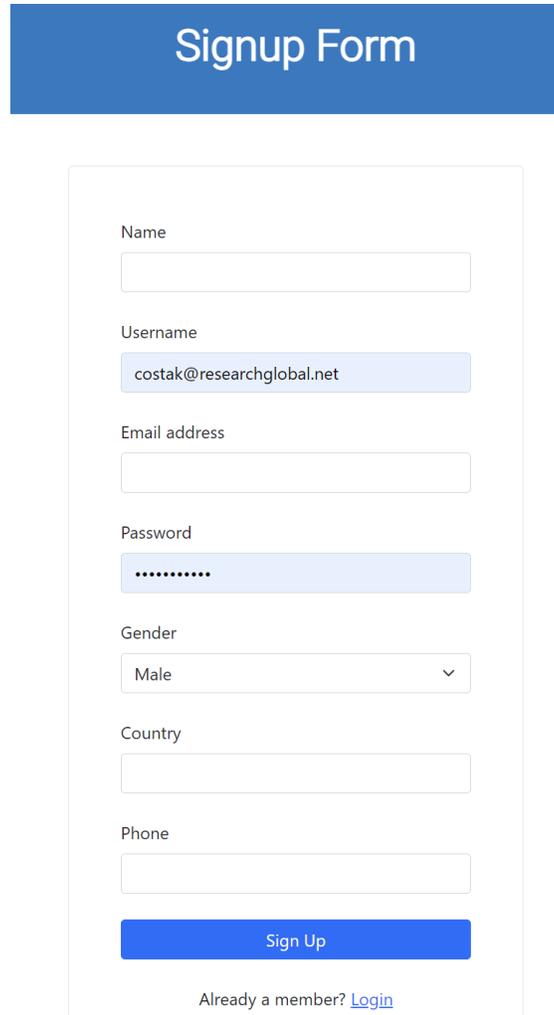
CONTACT US

www.costaqda.com | costaqda@researchglobal.net | UK: 01 875 6476

Figure 2: COSTA QDA Home Page Features - 2

3. REGISTERING TO BE A SOFTWARE USER

After clicking on the system as a user (as per Activity 1 above), the following screen will appear, allowing you to register.



The image shows a 'Signup Form' with the following fields and elements:

- Name:** An empty text input field.
- Username:** A text input field containing the value 'costak@researchglobal.net'.
- Email address:** An empty text input field.
- Password:** A text input field containing a series of dots (password masked).
- Gender:** A dropdown menu with 'Male' selected and a downward arrow.
- Country:** An empty text input field.
- Phone:** An empty text input field.
- Sign Up:** A blue button with the text 'Sign Up'.
- Footer:** The text 'Already a member? [Login](#)'.

Figure 3: Sign-up screen

After registering, you can then check your profile, or edit it as you wish. You may also update your details such as email and username, as demonstrated on Figure 4 below.

Profile Page

Gavin Moshesh Profile

Gavin Moshesh

Username: havardgcargroup@researchglobal.net
Email: havardgcargroup@researchglobal.net
Gender: male
Country: South Africa
Phone: 0815735676

[Edit Profile](#)

Figure 4: Profile Page

RESPONSES FROM ACTIVITIES 1,2,3

1. If you are already a user, you will gain access to the Dashboard page. This is where you access your projects which you already work on.
2. If you are not a user as yet, you will be directed to subscription Plans page. If you got a code for trial license you have to immediately click the dashboard and you will be taken to a screen where you can create a Data Analysis Project (on the system it appears as Create Project).

Dashboard Gavin Moshesh

Subscription Plans

Choose plans

60 Days	Quarterly	Biannually
R2500/2 month	R3500/3 month	R4500/6 month
3 Projects Unlimited Articles Unlimited Categories Unlimited Code Inputs	6 Projects Unlimited Articles Unlimited Categories Unlimited Code Inputs	9 Projects Unlimited Articles Unlimited Categories Unlimited Code Inputs
Get Started	Get started	Get started

Figure 5: Subscriptions Page

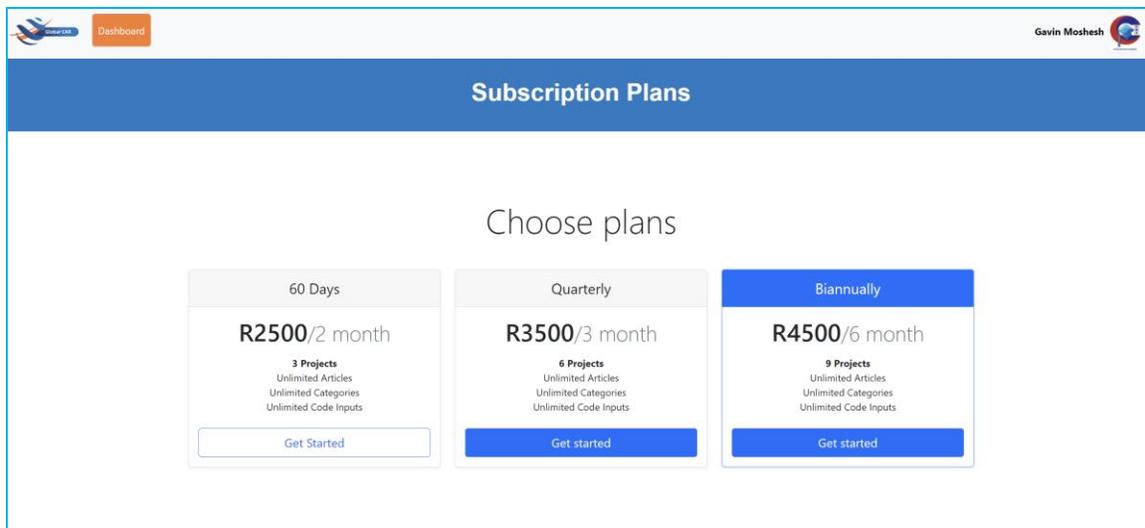


Figure 6: Dashboard Access on Subscriptions Page

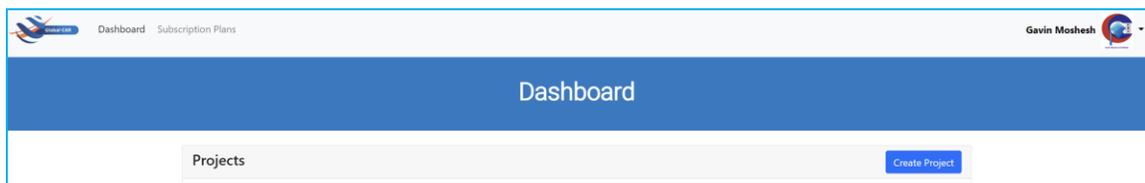


Figure 7: Creating a Data Analysis Project

To create a Project, you have to decide what you name it. Avoid using long sentences, give it a short name as per those on the screen on Figure 10 below.

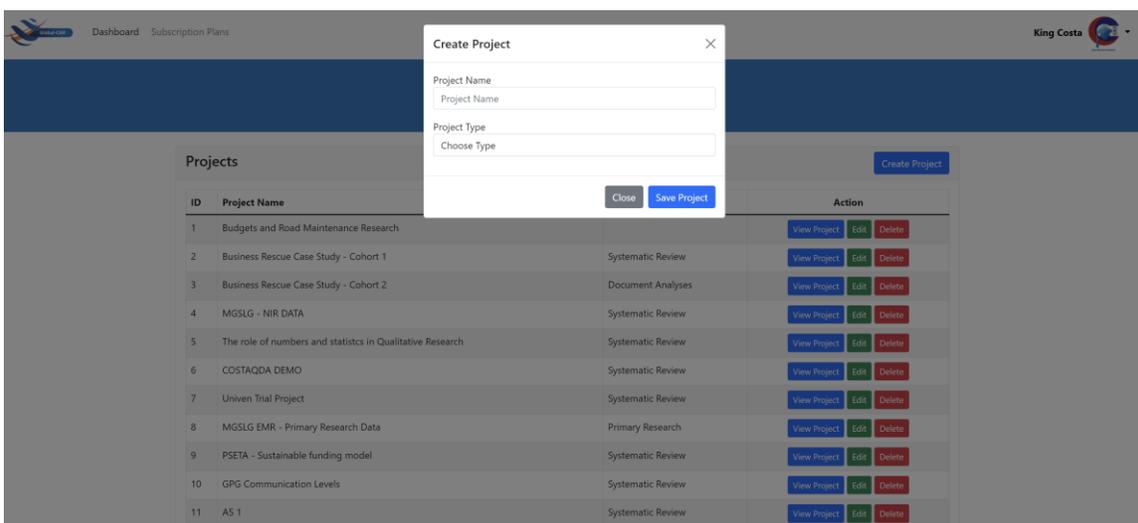


Figure 8: Selection of Project type

4. PROJECTS CLASIFICATIONS

There are a few types of projects the system can take. The first one is Primary Research, the second is Document Analysis and the third is Systematic Review. These are explained below and depicted on Figure 9.

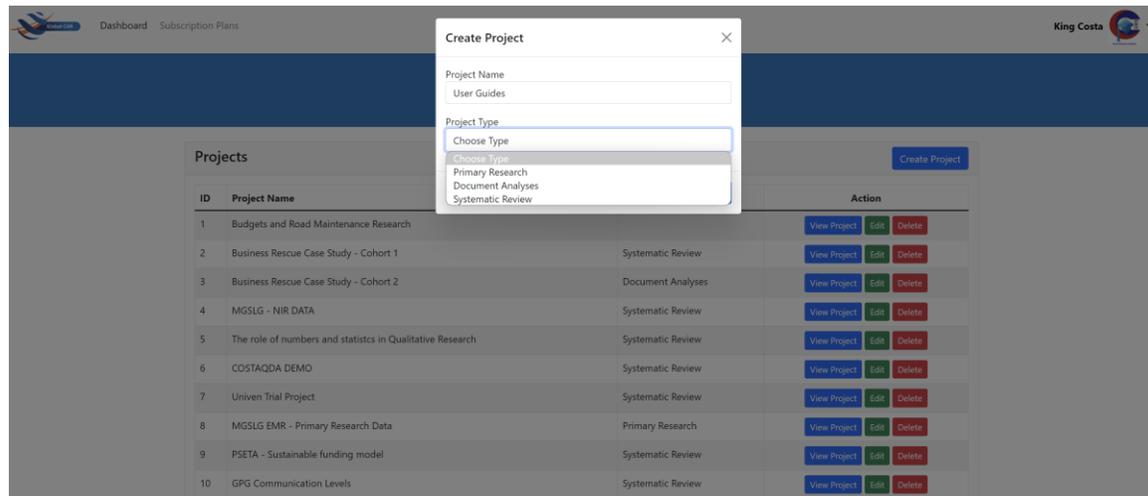


Figure 9: Projects Taxonomy

Primary Research

This classification refers to analysis of primary research. Primary research is the process of collecting original data directly from sources rather than relying on existing literature or secondary data. This can involve various methods such as interviews, surveys, observations, and content analysis of social media or other platforms. The intent is to gather firsthand information that can provide insights into specific research questions or phenomena.

In the context of qualitative data analysis, primary research often focuses on understanding the meanings, experiences, and perspectives of participants. Qualitative researchers aim to explore the complexity of human behavior and social phenomena, capturing the richness of participants' narratives and context. For example, through in-depth interviews, researchers can delve into participants' thoughts, feelings, and motivations regarding a particular issue, allowing for a nuanced understanding of their experiences (Creswell & Poth, 2018).

When analyzing qualitative data from primary research, various coding techniques are typically employed to identify themes, patterns, and insights. Researchers may use methods such as thematic analysis, grounded theory, or narrative analysis to interpret the data collected. This involves a systematic process of coding and categorizing the data to make sense of the information and draw meaningful conclusions.

Ethical considerations are paramount in primary research, especially in qualitative studies. Researchers must ensure that they obtain informed consent from participants, respect confidentiality, and be transparent about the purpose of the study and how the data will be used. Additionally, ethical guidelines emphasize the need to avoid harm to participants and to ensure that their voices and perspectives are accurately represented (Ess & the AoIR Ethics Working Committee, 2002).

For example, analyzing social media content can provide valuable insights into public sentiments or community discussions. However, you need to consider the ethical implications of using this data, such as the context in which the information was shared and the potential impact on individuals or groups involved.

Document Analysis

Document analysis is a qualitative research method that involves systematically evaluating and interpreting various types of documents to extract meaningful insights. This can include analyzing texts such as reports, policy documents, grey literature (e.g., unpublished research, white papers), and print media products (e.g., newspapers, magazines). Document analysis helps researchers understand the context, content, and implications of the materials being studied, providing a rich source of data for qualitative inquiry.

The process typically involves several steps: identifying relevant documents, reviewing the content, coding significant themes or patterns, and interpreting the findings within the broader research context (Bowen, 2009). Document analysis is especially valuable in qualitative research as it allows for triangulation of data, enriching the overall analysis by incorporating multiple sources of information.

COSTAQDA Software: COSTAQDA (Computer-Assisted Qualitative Data Analysis) software can significantly enhance the process of document analysis. This type of software assists researchers in organizing, coding, and analyzing qualitative data more efficiently. Here's how COSTAQDA can be particularly useful for analyzing reports, grey literature, and print media products:

Data Organization: COSTAQDA allows researchers to import various document formats, making it easier to manage large volumes of data. Researchers can categorize documents based on type, relevance, or themes, facilitating streamlined access to the materials (Friese, 2019).

- **Coding and Retrieval:** The software enables researchers to code text segments effectively, allowing for easy retrieval of related data across different documents. For instance, if a researcher is analyzing reports on public health and identifies themes related to "access to care," they can quickly compile all relevant segments coded under this theme across multiple documents (Bazeley & Jackson, 2013).
- **Visual Analysis Tools:** COSTAQDA often provides visual tools like concept maps and charts, which can help researchers visualize relationships between themes and concepts.

This is especially useful in document analysis, where complex interconnections may exist between different pieces of literature.

- **Collaboration and Sharing:** For research teams, COSTAQDA facilitates collaboration by allowing multiple users to work on the same project, share codes, and contribute to the analysis process, ensuring a more comprehensive examination of the documents (Friese, 2019).
- **Enhanced Reporting:** The software can assist in generating reports based on coded data, making it easier to present findings in a structured manner. Researchers can export visualizations and summaries that highlight key insights from their document analysis.

Systematic Review

A systematic review is a structured, methodical approach to synthesizing research evidence on a specific topic or question. It involves clearly defined methodologies to search for, evaluate, and synthesize all relevant studies, thereby minimizing bias and providing reliable conclusions. Systematic reviews are essential for evidence-based practice, as they enable researchers and practitioners to make informed decisions grounded in a comprehensive analysis of existing literature (Higgins & Green, 2011).

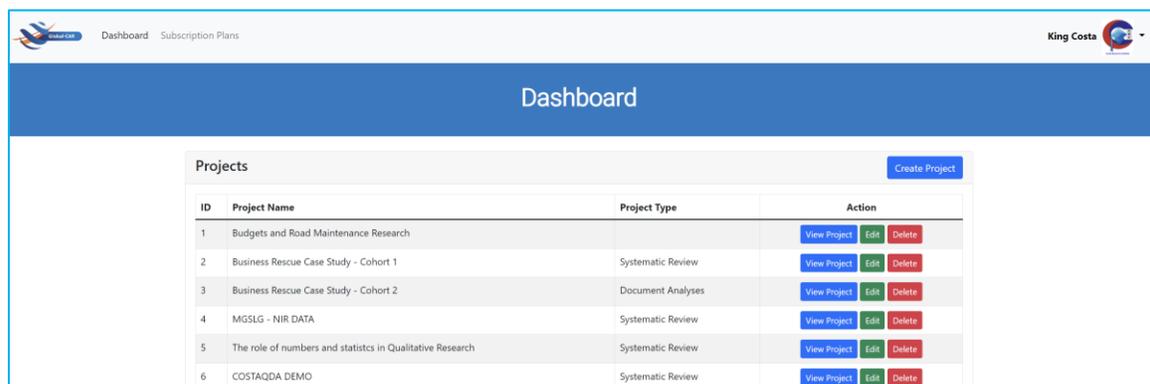
The COSTAQDA software author recommends 12 systematic review methods that researchers can employ to ensure a rigorous analysis of qualitative and quantitative data. These methods emphasize the importance of adhering to robust review principles, ensuring that even academic reviews are conducted with a level of rigor that aligns with systematic review standards. The recommended methods, framed on the authors mnemonic – the **CURLMOQSMSMS** include:

- **C = Critical Review:** A deep evaluation of the literature, aimed at understanding theoretical frameworks and key concepts.
- **U = Umbrella Review:** A synthesis of evidence from multiple systematic reviews, providing a high-level overview of research on a topic.
- **R = Rapid Review:** A quick synthesis of evidence, often in response to urgent inquiries, while still maintaining some methodological rigor.
- **L = Literature Review:** A summary of existing research, though it may not follow the systematic review methodology strictly.
- **M = Mapping Review:** A visual representation of the existing literature, identifying key concepts and research gaps.
- **O = Overview:** A synthesis that combines various types of reviews, providing a broader perspective on the topic.
- **Q = Qualitative Evidence Synthesis:** A method that focuses on synthesizing qualitative studies to identify common themes and insights.
- **S= Systematic Review:** The traditional approach to systematically evaluate the effectiveness of interventions or specific research questions.
- **M = Mixed Methods Review:** A synthesis that integrates both qualitative and quantitative findings for a comprehensive understanding.

- **S = Scoping Review:** An exploration of the breadth of research on a topic, mapping key concepts and evidence without exhaustive quality assessment.
- **M = Meta-Analysis:** A quantitative approach that combines results from multiple studies to provide a statistical summary of findings.
- **S = State of the Art Review:** A comprehensive overview that highlights the current advancements and future directions in a particular field.

By employing these methods, researchers ensure that their academic reviews are not only thorough but also aligned with the principles of systematic reviews. This alignment enhances the credibility and reliability of the findings, contributing significantly to the body of knowledge in a given field (Grant & Booth, 2009).

5. LIST OF PROJECTS



ID	Project Name	Project Type	Action
1	Budgets and Road Maintenance Research		View Project Edit Delete
2	Business Rescue Case Study - Cohort 1	Systematic Review	View Project Edit Delete
3	Business Rescue Case Study - Cohort 2	Document Analyses	View Project Edit Delete
4	MGLSG - NIR DATA	Systematic Review	View Project Edit Delete
5	The role of numbers and statistics in Qualitative Research	Systematic Review	View Project Edit Delete
6	COSTAQDA DEMO	Systematic Review	View Project Edit Delete

Figure 10: List of Data Analysis Projects on Dashboard

6. PROJECT VISUALISATIONS

Create Categories

Upon creating a Project, the researcher needs to click on the “View Project” tab so that you can start working on your analysis. The first thing you will be able to do is to create Categories first. These could be key variables of your in your research topic, also linked to your theoretical framework.

Upload Articles

Articles could be interview transcripts, literature pieces like articles or even reports that you are analyzing. The system is configured to the naming convention of A1,A2,A3 etc, as the names of your articles (whether these are actual literature articles or interview

transcripts). These should be uploaded in a Microsoft Word version. To upload articles, you need to click the “Add Article” tab on the top right hand corner of the Articles Page.

ID	Article Link	Article Name	Action
1	A1	A1	View Edit Delete
2	A2	A2	View Edit Delete
3	A3	A3	View Edit Delete
4	A4	A4	View Edit Delete
5	A5	A5	View Edit Delete
6	A6	A6	View Edit Delete
7	A7	A7	View Edit Delete
8	A8	A8	View Edit Delete
9	A9	A9	View Edit Delete
10	A10	A10	View Edit Delete
11	A11	A11	View Edit Delete
12	A12	A12	View Edit Delete
13	A13	A13	View Edit Delete
14	A14	A14	View Edit Delete

Figure 11: Uploaded articles for analysis

7. THE CODING PROCESS

Once articles are uploaded, the next stage is to conduct the actual coding. Coding is a fundamental process in qualitative data analysis that involves categorizing and organizing data to identify patterns, themes, and insights. It transforms raw qualitative data (such as interview transcripts, field notes, or open-ended survey responses) into a structured format that facilitates deeper analysis and interpretation.

Iterative Principle of Coding

One effective approach to coding is the iterative principle, which emphasizes a detailed examination of the text through line-by-line and word-by-word readings. This method allows researchers to engage deeply with the data, ensuring that the nuances and meanings embedded in the text are captured comprehensively.

Line-by-Line Coding

- **Definition:** Line-by-line coding involves systematically reviewing the text one line at a time. This approach encourages researchers to focus on individual statements or phrases, allowing them to identify specific ideas, concepts, or emotions expressed by participants.
- **Process:** As researchers read through the data, they assign codes to meaningful segments of text. A code is typically a short phrase or label that succinctly captures the essence of the content. For example, if a participant describes feeling overwhelmed at work, a researcher might code this segment as "work stress" or "overwhelm."
- **Benefits:** This method promotes thorough engagement with the data, enabling researchers to uncover subtle themes that might otherwise be overlooked. It encourages a granular approach, ensuring a rich and nuanced understanding of participants' perspectives (Saldana, 2016).

Principle of Reduction

The purpose of line-by-line coding enhances the ability for researchers/coders to pick significant statements or phrases (even sentences) from the document corpus during this analytical process. Reduction is a crucial aspect of qualitative data analysis that involves distilling large volumes of textual data into more manageable and meaningful representations. This process allows researchers to identify key themes, patterns, and insights from complex data sets, facilitating a clearer understanding of the underlying meanings and relationships present in the data. Reduction can take various forms, including summarization, categorization, and abstraction of data, ultimately aiming to create a coherent narrative that reflects the essence of the participants' experiences (Smith, 2015).

Reduction is often achieved through coding, where researchers assign labels to specific segments of data, thereby organizing and simplifying the information for further analysis. This iterative process allows for continuous refinement of codes and categories as researchers engage deeply with the data, ensuring that significant themes are highlighted while extraneous information is set aside (Miles & Huberman, 1994). By emphasizing core elements of the data, reduction enables researchers to focus on the most relevant findings that contribute to the research question, enhancing the overall analytic rigor.

Reduction in COSTAQDA

In the context of the COSTAQDA (Computer-Assisted Qualitative Data Analysis) software, the function of reduction is facilitated through its robust coding capabilities. COSTAQDA not only allows for systematic coding of qualitative data but also supports collaborative efforts among multiple coders. This feature is particularly valuable in research teams where insights and perspectives from different individuals can enhance the richness of the analysis.

8. MULTIPLE CODERS OR COLLABORATORS

One of the most interesting features of COSTAQDA is its capability to enable collaboration among two or three coders. The software employs color coding to create distinct identities for each collaborator, which significantly aids in tracking contributions throughout the analytic process. This color-coded system provides an easy-to-follow audit trail, allowing researchers to see who coded which segments of data and when. Such transparency is vital for maintaining the integrity of the analysis and ensuring accountability among team members (Bazeley, 2013). Figures

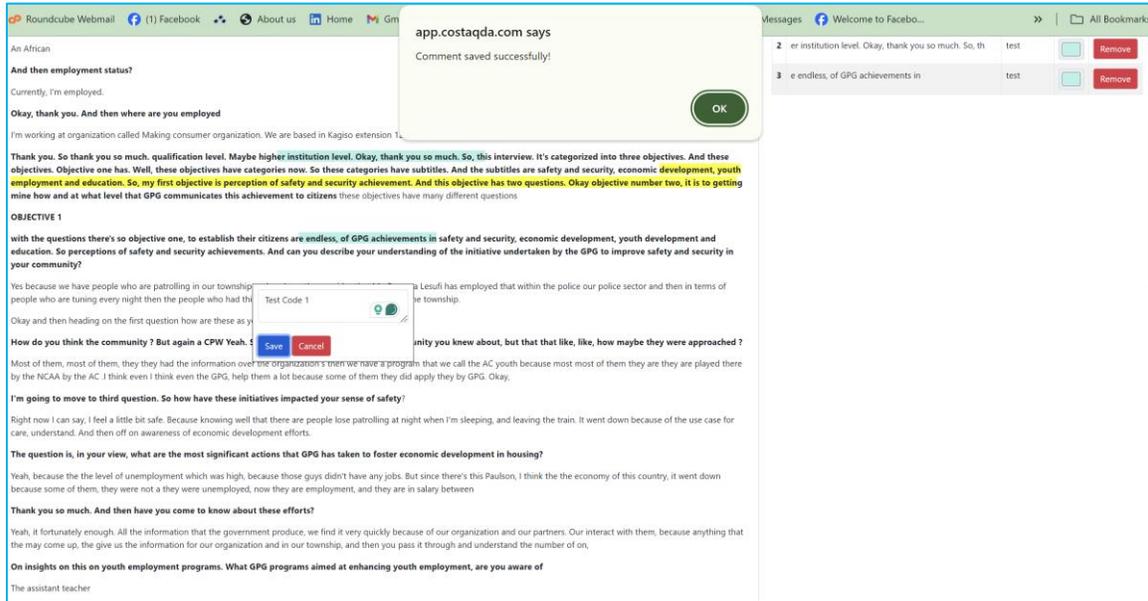


Figure 12: The Coding Process 1

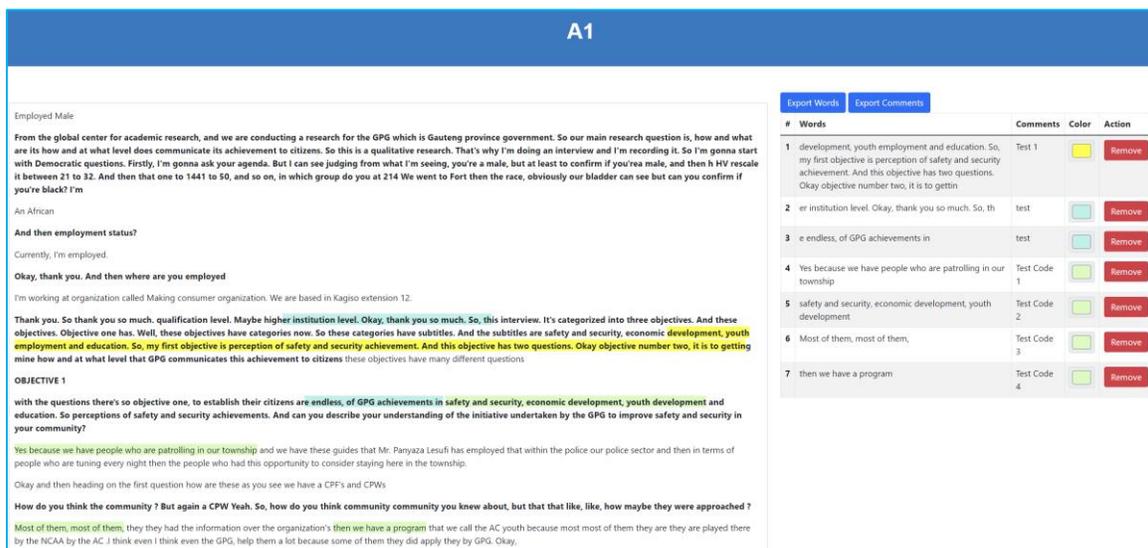


Figure 13: The Coding Process 2

By facilitating both individual and collaborative coding efforts, COSTAQDA enhances the reduction process, allowing for comprehensive insights to emerge from the data while maintaining a clear record of the analytic journey. This not only streamlines the workflow but also fosters a collaborative environment that enriches the overall analysis. The process of invitation of Collaborators and Sponsors is shown in Figure 1 and 2 above. While collaborators are actual analysts in the project, Sponsors are only those who have a function of viewing and keeping in pace with the project. Figure 14 depicts the email the Collaborator receives upon inviting them as demonstrated in Figure 2 above.

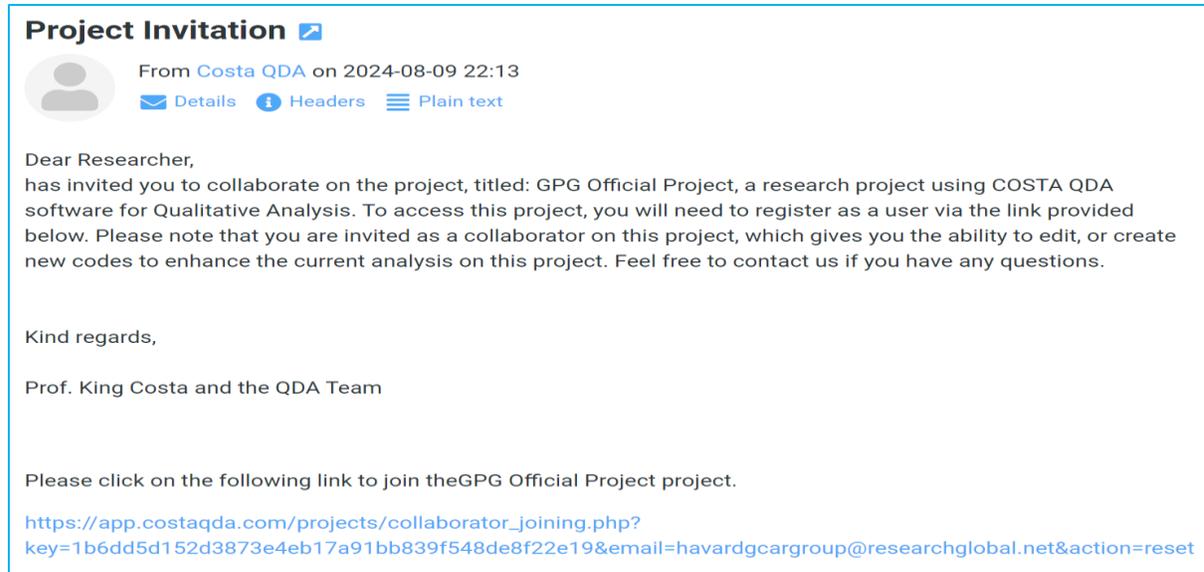


Figure 14: Invitation as Collaborator

Upon receipt of the email, the invited Collaborator can decide to accept the invitation to collaborate as an analyst or simple decline such invitation.

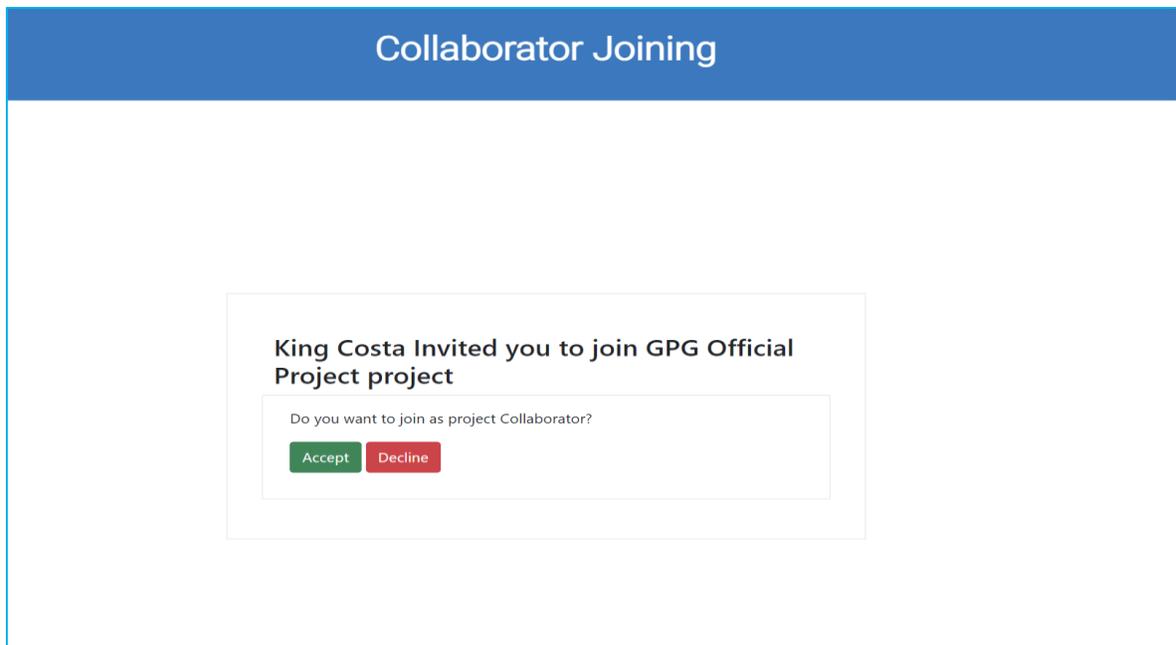


Figure 15: Collaborator options to participate

If the collaborator accepts the invitation. This screen will immediately appear. The collaborator needs to click on the underlined text to join, NOT the text with blue font.

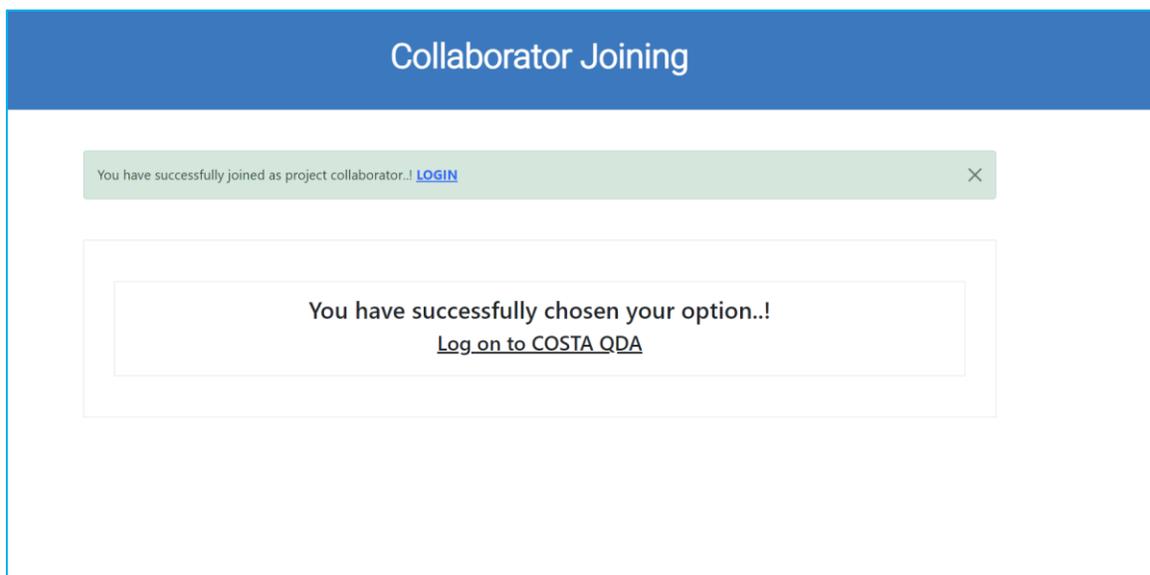


Figure 16: Collaborator Access

Upon logging in, using the appropriate email (the email to which the invitation to participate was sent to), you will see the new dashboard with the project which you are invited to participate. The next step you need to do is click “View Project”.

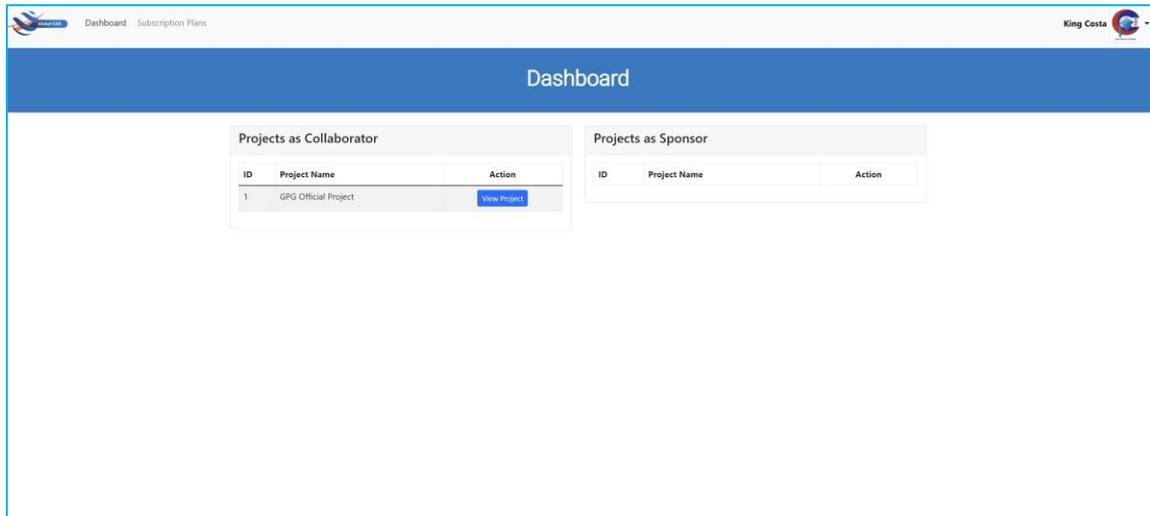


Figure 17: Collaborator Project Participation

Upon clicking on “View Project”, the screens depicted in Figures 18, 19 and 20 will appear.

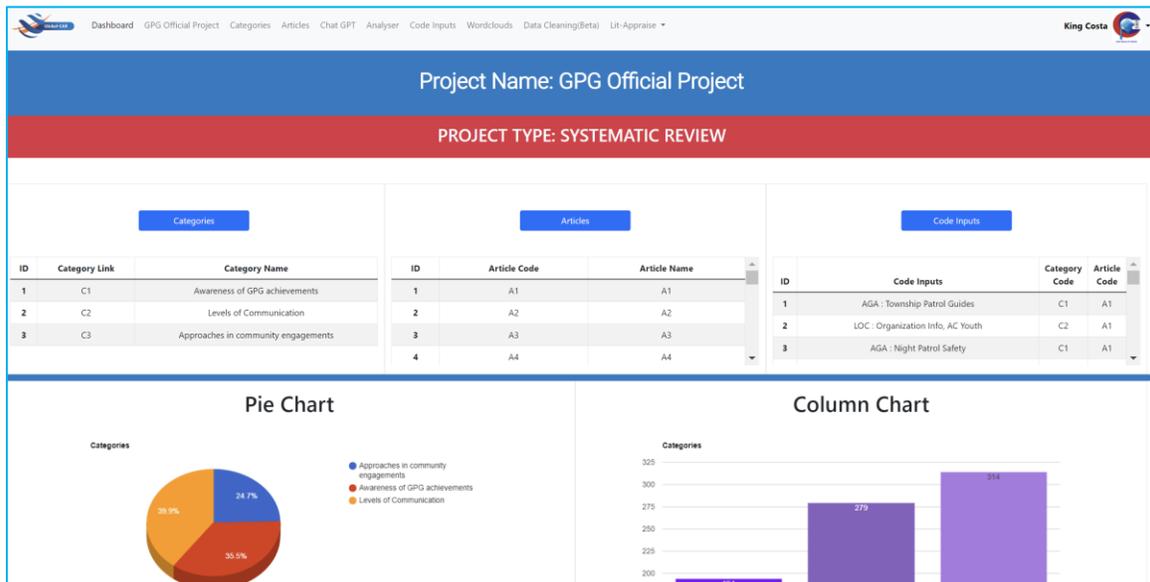


Figure 18: Project Visualizations 1



Figure 19: Project Visualizations 2

Dashboard GPG Official Project Categories Articles Chat GPT Analyser Code Inputs Wordclouds Data Cleaning(Beta) Lit-Appraise King Costa

Articles Page

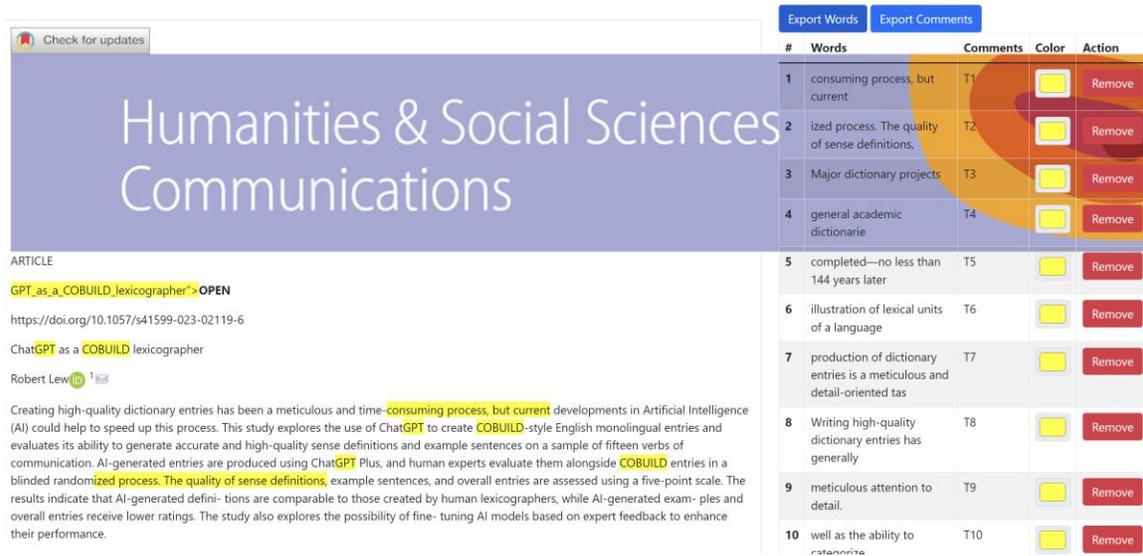
Project Name: GPG Official Project [Add Article](#)

ID	Article Link	Article Name	Action
1	A1	A1	View Edit Delete
2	A2	A2	View Edit Delete
3	A3	A3	View Edit Delete
4	A4	A4	View Edit Delete
5	A5	A5	View Edit Delete
6	A6	A6	View Edit Delete
7	A7	A7	View Edit Delete
8	A8	A8	View Edit Delete
9	A9	A9	View Edit Delete
10	A10	A10	View Edit Delete
11	A11	A11	View Edit Delete
12	A12	A12	View Edit Delete
13	A13	A13	View Edit Delete
14	A14	A14	View Edit Delete

Figure 20: Project Visualizations 3

9. EXTRACTING CODES FROM ARTICLES

Once the article is fully coded, by one or more coders, then you must now export the codes by clicking the “Export Words” or “Export Comments” tab. Data will be exported in a TXT file.



The screenshot displays a web interface for extracting codes from an article. On the left, the article title is "Humanities & Social Sciences Communications". Below the title, the article text is visible, with some words highlighted in yellow. On the right, there is a table with 10 rows, each representing a word and its corresponding comment. The table has columns for "#", "Words", "Comments", "Color", and "Action". The "Color" column contains yellow squares, and the "Action" column contains "Remove" buttons. The table is partially obscured by a large orange and red graphic.

#	Words	Comments	Color	Action
1	consuming process, but current	T1	Yellow	Remove
2	ized process. The quality of sense definitions,	T2	Yellow	Remove
3	Major dictionary projects	T3	Yellow	Remove
4	general academic dictionarie	T4	Yellow	Remove
5	completed—no less than 144 years later	T5	Yellow	Remove
6	illustration of lexical units of a language	T6	Yellow	Remove
7	production of dictionary entries is a meticulous and detail-oriented tas	T7	Yellow	Remove
8	Writing high-quality dictionary entries has generally	T8	Yellow	Remove
9	meticulous attention to detail.	T9	Yellow	Remove
10	well as the ability to	T10	Yellow	Remove

Figure 21: Extracting Codes

10. CODE INPUTS

After exporting the codes, save them on your dedicated file on your computer. The file will be in a TXT file. Once you have saved the file then you click on the Code Inputs tab and the Code Inputs Page will appear. On this page you are able to link your codes to the articles they are derived from, e.g. A1 etc, while simultaneously linking these to the deductive/anchor code selected before the start of the coding process as explained above.

Code Inputs Page

AI in Research 's Categories

ID	Category Link	Category Name
1	C1	Challenges
2	C2	Opportunities
3	C3	Recommendations

AI in Research 's Codes

[Bulk Link Strategy](#)
[Get Strategy Report](#)
[Export Data](#)
[Import Data](#)
[Add Codeinput](#)

ID	Codeinput Name	Category Code	Article Code	Strategy Type	Code strategies	Action
1	Difficulty in distinguishing between text generated by the model and by a student (PAGE16)	C1	A2	In Vivo Coding	Descriptive Remove	Edit Delete
2	Ability of ChatGPT to generate text that cannot be identified by plagiarism software (PAGE16)	C1	A2	In Vivo Coding	Remove	Edit Delete
3	Lack of understanding and expertise (PAGE16)	C1	A2	In Vivo Coding	Descriptive Remove	Edit Delete
4	Copyright issues (PAGE16)	C1	A2	In Vivo Coding	Remove	Edit Delete
5	Lack of ethics, originality, and transparency (PAGE16)	C1	A2	In Vivo Coding	Remove	Edit Delete

Figure 22: Code Inputs

The software uses 10 coding descriptors from Saldanha's 32 Coding strategies, as per Onwuegbuzie, et al. (2016). The 10 coding descriptors selected in this software are:

1. **Descriptive Coding:** This method involves assigning labels to segments of data based on the content. For instance, if a participant discusses their experience with online education, a descriptive code might be "online learning experience." This initial coding helps in organizing the data for further analysis (Saldaña, 2016).
2. **Emotion Coding:** Emotion coding captures the feelings expressed by participants in their narratives. If a participant describes feeling "overwhelmed" during a stressful project, the code could be "overwhelm." This method is useful for understanding the emotional landscape of the data (Saldaña, 2016).
3. **In Vivo Coding:** This coding method uses the exact words of participants as codes to honor their voice. Same applies to literature, the objective is to use same expresses ions/quotations from articles reviewed. For example, if a participant says, "I felt lost in the process," you might code this segment as "felt lost." In vivo coding can add depth and authenticity to analysis (Saldaña, 2016).
4. **Narrative Coding:** Narrative coding focuses on analyzing the stories shared by participants. For instance, if a participant recounts a personal journey of recovery from illness, the codes might reflect key moments in that narrative, such as "diagnosis," "treatment," and "recovery." This method helps researchers understand the structure and meaning of personal stories (Riessman, 2008).
5. **Values Coding:** This method identifies the values and beliefs that shape participants' narratives. For example, if a participant emphasizes the importance of community

- support, you might code this as "community value." Values coding helps researchers uncover the underlying motivations of participants (Saldaña, 2016).
6. **Theme Coding:** Theme coding involves identifying broader themes that emerge from the data. If multiple participants discuss challenges related to remote work, you might create a theme code such as "challenges of remote work." This method is particularly effective for synthesizing findings across different interviews or focus groups (Braun & Clarke, 2006).
 7. **Theoretical Coding:** This coding is used to develop a theoretical framework from the data. In grounded theory research, if a participant discusses barriers to accessing healthcare, you might use a theoretical code like "access barriers" to connect this with other categories of data (Charmaz, 2006).
 8. **Structural Coding:** Structural coding applies codes based on specific research questions or theoretical frameworks. For example, if your research questions focus on barriers to education, you might code segments of data as "financial barriers," "geographical barriers," or "social stigma" (Saldaña, 2016).
 9. **Magnitude Coding:** This coding assesses the significance of themes or ideas. For example, if several participants mention "stress" as a major concern, you might use magnitude coding to denote the frequency and impact of this theme, labeling it as "high stress levels" (Saldaña, 2016).
 10. **Causation Coding:** Causation coding identifies relationships between variables in participants' narratives. For instance, if a participant describes how "lack of resources" led to "poor performance," you might code this segment as "resource impact." This method helps in understanding causal relationships in qualitative data (Maxwell, 2013).

11. SEARCHING FOR THEMES IN CATEGORIES

Once codes are created and linked to articles and coding strategies, the next step is to observe the relationships between the codes within the categories, what researchers call second cycle coding. Second cycle coding is a stage in qualitative data analysis that follows initial coding (also known as first cycle coding). In this phase, researchers focus on refining and consolidating the codes generated during the first cycle. The aim is to identify patterns, themes, and relationships among the codes, allowing for a deeper understanding of the data. Second cycle coding often involves grouping similar codes into broader categories or themes, which helps in developing more abstract concepts or theoretical insights from the data.

For example, if initial codes include "stress," "overwhelm," and "burnout," during second cycle coding, these can be grouped under a broader theme such as "mental health challenges." This process enhances the interpretive power of the analysis and aids in developing a coherent narrative or framework based on the qualitative data.

According to Saldaña (2016), "second cycle coding serves to consolidate and refine the initial codes to develop more abstract constructs, themes, or patterns."

To achieve this, you have to click on the Categories tab and the Categories Page will appear on your screen. Then you can now select each Category to start your process of refining codes and searching for themes. You need to open the Themes page and start creating themes and assign color codes to your themes so that sub-themes throughout the analytic process (even of other categories) can easily link to your major themes.

ID	Theme Name	Color	Action
1	Aware of GPG achievements	Green	Edit Delete
2	Crime Prevention Initiative making impact	Cyan	Edit Delete
3	Youth employment through CPW creating sense of safety	Magenta	Edit Delete
4	Teacher Assistants playing a crucial role in schools	Yellow	Edit Delete
5	Economic development initiative changing lives	Red	Edit Delete
6	Limited or not aware of any GPG achievements	Blue	Edit Delete

Figure 23: Development of Themes

The process of searching for themes starts with development of sub-themes (sub-categories) within each of the selected category. On this interface, you can view each Category’s report or you can edit or even delete, depending on what you want to do. You also have an option to add a new category, should you wish to do so.

Click view report to start viewing the structure of each category.

ID	Category Link	Category Name	Action
1	C1	Business Rescue	View Report Edit Delete
2	C2	Liquidation	View Report Edit Delete
3	C3	Management	View Report Edit Delete

Figure 24: Activities within Categories

Subthemes with Number of Subcodes

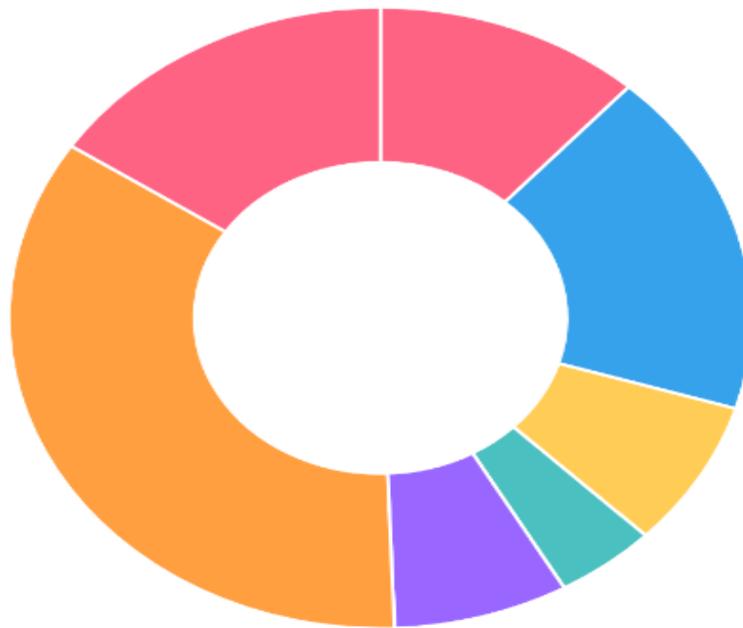
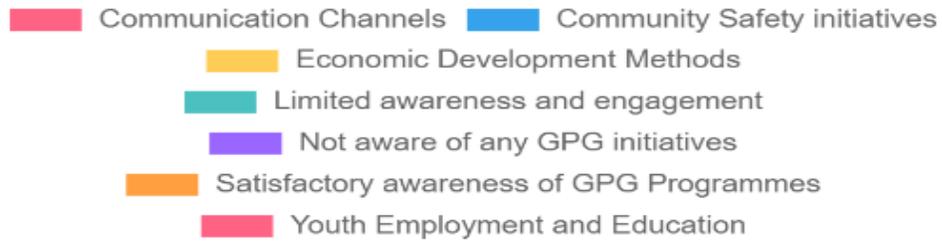


Figure 27: Further subthemes visualizations

13. APPRAISING LITERATURE FOR LITERATURE REVIEW

COSTAQDA has two key features beneficial for those conducting literature review. These are CASP (Critical Appraisal Skills Programme) and Local Citation Network for mapping one’s chosen references. The following section explains these concepts and demonstrates how they are integrated in the COSTAQDA.

The Importance of CASP in Appraising Literature

One of the standout features of the COSTAQDA Software is its ability to facilitate the appraisal of literature, a function that is particularly beneficial for those conducting literature reviews. The selection of literature sources should not be driven by selection bias; rather, it should be grounded

in a thorough and critical appraisal of the available articles to ensure the integrity and reliability of the review process (Bettany-Saltikov, 2012).

CASP Guidelines

The Critical Appraisal Skills Programme (CASP) provides a framework for assessing the quality and relevance of research studies. The CASP guidelines consist of a series of checklists designed for different types of research, including qualitative studies, randomized controlled trials, systematic reviews, and cohort studies. Each checklist outlines key criteria that researchers should consider when evaluating literature, such as the clarity of the research question, the appropriateness of the study design, the rigor of the data collection methods, and the relevance of the findings to the specific context (CASP, 2018).

The importance of using CASP in literature appraisal lies in several key areas:

- **Enhancing Rigor:** By adhering to CASP guidelines, researchers can systematically evaluate the methodological quality of studies, ensuring that only robust and credible sources are included in their literature review. This enhances the overall rigor of the review process (Higgins & Green, 2011).
- **Reducing Bias:** The structured approach of CASP helps mitigate selection bias by providing clear criteria for inclusion and exclusion of studies. Researchers are encouraged to critically assess each source against these criteria, rather than relying on subjective judgments (Bettany-Saltikov, 2012).
- **Improving Transparency:** Utilizing the CASP framework promotes transparency in the literature appraisal process. Researchers can document their evaluations and justifications for including or excluding studies, which enhances the reproducibility and credibility of their findings (Moher et al., 2009).
- **Informing Practice:** By critically appraising literature through CASP, researchers can identify gaps in the existing body of knowledge, highlight areas for future research, and ultimately inform evidence-based practice in their field (Pope et al., 2007).

The inclusion of CASP guidelines as a built-in feature in COSTAQDA further streamlines the appraisal process, allowing users to efficiently assess the quality of literature sources. This integration not only supports rigorous literature reviews but also fosters a culture of critical inquiry among researchers.

Global CAS Dashboard GPG Official Project Categories Articles Chat GPT Analyser COSTA-GPT Code Inputs Wordclouds Data Cleaning(Beta) Lit-Appraise King Costa

CASP

ENABLE HINTS

Article	Was there a clear statement of the aims of the research?	Is a qualitative methodology appropriate?	Was the research design appropriate to address the aims of the research?	Was the recruitment strategy appropriate to the aims of the research?	Was the data collected in a way that addressed the research issue?	Has the relationship between researcher and participants been adequately considered?	Have ethical issues been taken into consideration?	Was the data analysis sufficiently rigorous?	Is there a clear statement of findings?	How valuable is the research?	Action
	Show Hint	Show Hint	Show Hint	Show Hint	Show Hint	Show Hint	Show Hint	Show Hint	Show Hint	Show Hint	
	Select	Select	Select	Select	Select	Select	Select	Select	Select	Select	Save

Figure 28: CASP Input Screen

CASP Decision

[Convert to PDF](#)

Article	Was there a clear statement of the aims of the research?	Is a qualitative methodology appropriate?	Was the research design appropriate to address the aims of the research?	Was the recruitment strategy appropriate to the aims of the research?	Was the data collected in a way that addressed the research issue?	Has the relationship between researcher and participants been adequately considered?	Have ethical issues been taken into consideration?	Was the data analysis sufficiently rigorous?	Is there a clear statement of findings?	How valuable is the research?	Rating	Decision	Action
Article 1	2	2	1	2	2	0	2	2	0	1	6	Included	Edit Remove
Article 2	2	2	0	1	1	2	2	2	0	2	6	Included	Edit Remove
Article 3	2	2	1	2	2	2	2	2	0	2	8	Included	Edit Remove
Article 4	2	2	2	2	2	1	2	2	2	2	9	Included	Edit Remove
Article 5	2	2	1	0	1	2	0	2	2	2	6	Included	Edit Remove
Article 6	2	1	2	1	1	2	1	1	0	2	4	Excluded	Edit Remove
Article 7	2	2	1	2	2	0	2	2	2	2	8	Included	Edit Remove

Figure 29: CASP Output Screen

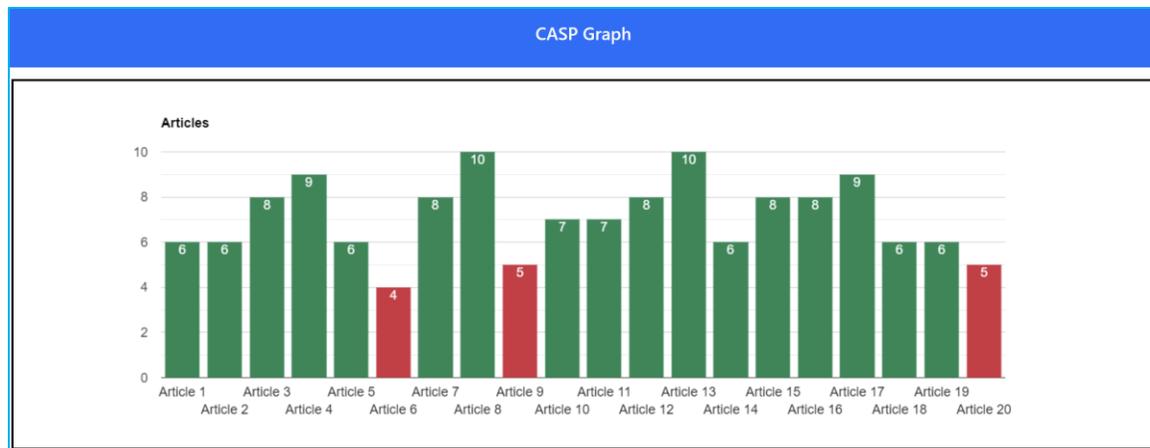


Figure 30: CASP Output Screen

Local Citation Network in COSTAQDA

The Local Citation Network is an innovative feature embedded within the COSTAQDA (Computer-Assisted Qualitative Data Analysis) software. This open-source platform serves as a valuable tool for researchers conducting literature reviews, enabling them to visualize and navigate the relationships between various sources and citations effectively.

Key Features of the Local Citation Network

- **Visualization of Relationships:** The Local Citation Network allows researchers to create visual maps that illustrate how different studies are interconnected through citations. This graphical representation makes it easier to understand the landscape of existing literature and identify key contributors to a particular field or topic.
- **Identification of Influential Works:** By analyzing citation patterns, researchers can pinpoint seminal works that have significantly influenced subsequent studies. This insight is crucial for understanding the development of theories and concepts within a specific domain (Borgman et al., 2015).
- **Facilitating Comprehensive Reviews:** The Local Citation Network supports researchers in conducting more comprehensive literature reviews by highlighting related studies that may not have been initially considered. This feature encourages a thorough exploration of the literature, reducing the likelihood of overlooking important sources (Wolfram, 2015).
- **Support for Thematic Analysis:** As researchers explore the citation network, they can identify clusters of studies that share common themes or methodologies. This thematic analysis aids in synthesizing findings across different research efforts, allowing for more cohesive conclusions (Creswell, 2014).

Importance in Literature Review

The Local Citation Network plays a pivotal role in enhancing the literature review process for several reasons:

- **Reducing Selection Bias:** By providing a comprehensive view of citations and their interconnections, the Local Citation Network helps mitigate selection bias. Researchers can make more informed decisions about the inclusion of studies based on their relevance within the broader context of the literature (Bettany-Saltikov, 2012).
- **Streamlining Research Efforts:** The ability to visualize citation relationships streamlines the research process, saving time and effort in identifying relevant literature. Researchers can efficiently navigate through complex data sets to locate pertinent sources, enhancing productivity and focus (Wolfram, 2015).
- **Enhancing Critical Appraisal:** The Local Citation Network encourages critical appraisal by revealing the context in which studies have been cited. Researchers can evaluate the influence of specific works and assess the quality of the studies that reference them, leading to more informed conclusions (Borgman et al., 2015).

Finally, the Local Citation Network within COSTAQDA is a powerful feature that enriches the literature review process by providing a clear and organized way to visualize citation relationships. This tool not only supports the identification of key studies but also fosters a thorough and systematic approach to literature appraisal, ultimately enhancing the quality of research outcomes.

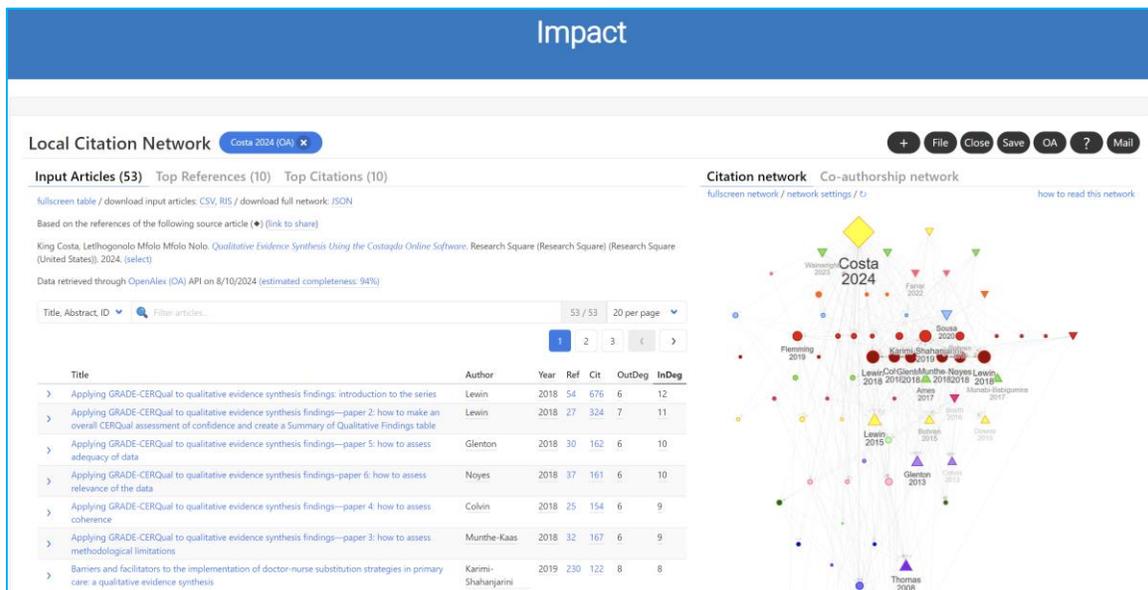


Figure 31: Literature Assessment

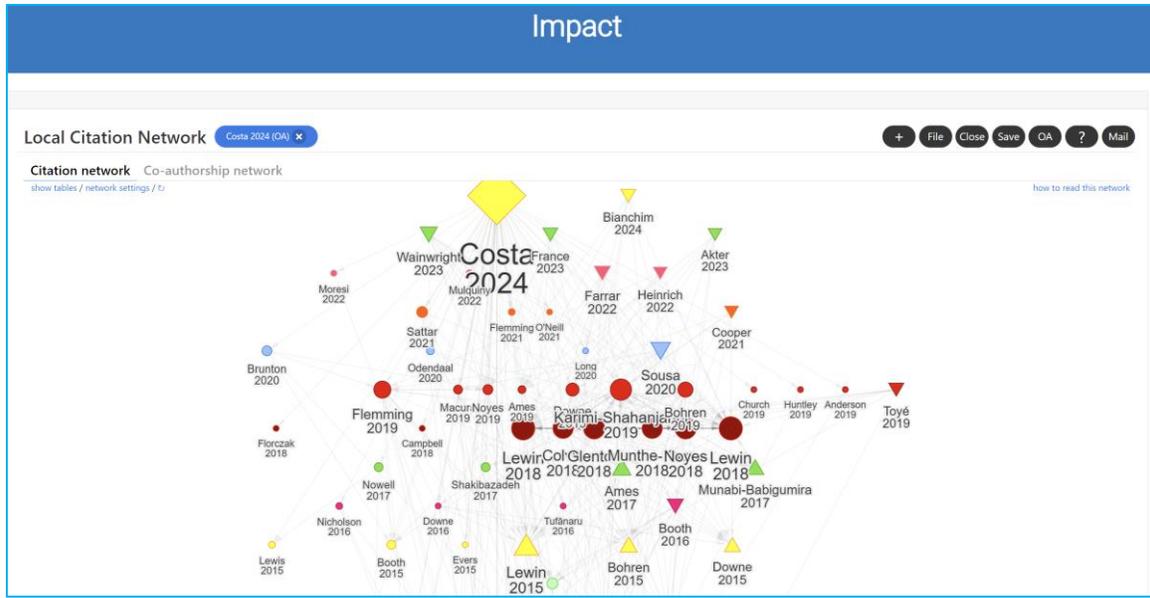


Figure 32: Impact of Literature Sources 1

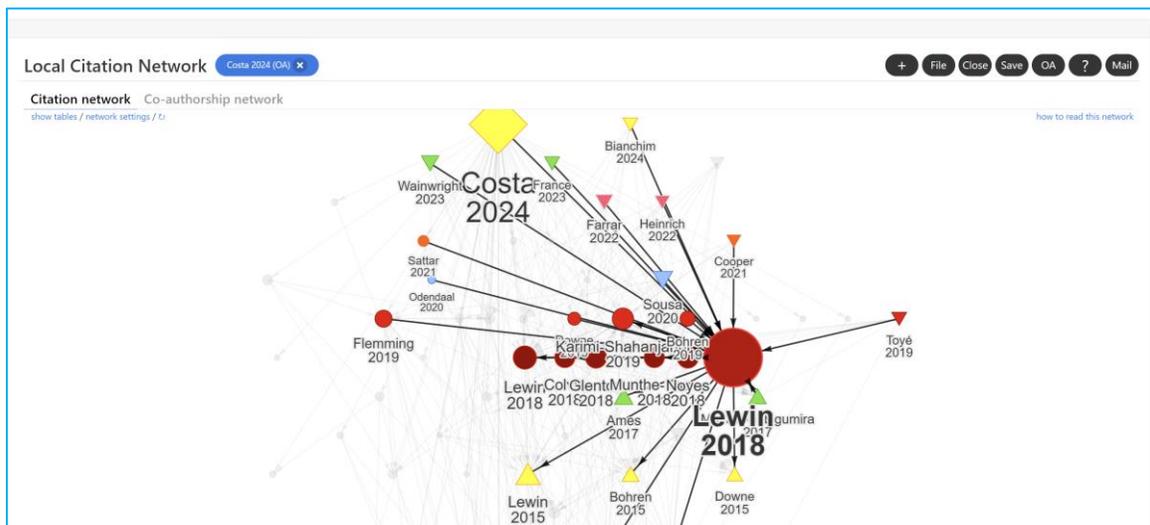


Figure 33: Impact of Literature Sources 2

References

- Bazeley, P. & Jackson, K., 2013. *Qualitative Data Analysis with NVivo*. Thousand Oaks, CA: Sage Publications.
- Bettany-Saltikov, J. (., 2012. *How to Do a Systematic Literature Review in Nursing: A Step-by-Step Guide*, Maidenhead: Open University Press.
- Bowen, G. A., 2009. Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), pp. 27-40. DOI: 10.3316/QRJ0902027.
- Braun, V. & Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), pp. 77-101. [DOI: 10.1191/1478088706qp063oa].
- CASP, 2018. *Critical Appraisal Checklists*. [Online] Available at: <https://casp-uk.net/casp-tools-checklists/> [Accessed 10 August 2024].
- Charmaz, K., 2006. *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. Thousand Oaks: Sage Publications.
- Friese, S., 2019. *Qualitative Data Analysis with ATLAS.ti*. London: Sage Publications.
- Grant, M. J. & Booth, A., 2009. A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal*, 26(2), pp. 91-108. [DOI: 10.1111/j.1471-1842.2009.00848.x].
- Higgins, J. P. T. & Green, S., 2011. *Higgins, J. P. T., & Green, S. (2011). Cochrane Handbook for Systematic Reviews of Interventions. Version 5.1.0.* London: The Cochrane Collaboration.
- Maxwell, J. A., 2013. *Qualitative Research Design: An Interactive Approach*. Thousand Oaks: Sage Publications.
- Moher, D. et al., 2009. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLOS Med*, 6(7), p. e1000097. doi:10.1371/journal.pmed.1000097.
- Onwuegbuzie, A., Frels, R. & Hwang, F., 2016. Mapping Saldaña's Coding Methods onto the Literature Review Process. *Journal of Educational Issues*, 2(1), pp. 130-150.
- Pope, C., Mays, N. & Popay, J., 2007. *Synthesizing Qualitative and Quantitative Health Evidence: A Guide to Methods*. Maidenhead: Open University Press.
- Riessman, C. K., 2008. *Narrative Methods for the Human Sciences*. LA: Sage Publications.
- Saldaña, J., 2016. *The Coding Manual for Qualitative Researchers*. Thousand Oaks: Sage Publications.

