

Content analysis using NVivo software

Ticiano De Vincenzi
(ticivin@usp.br)
2022

Presentation summary

- Content analysis: theoretical aspects;
- NVivo software - introduction;
- NVivo software - coding;
- NVivo software - outputs;
- References.

Content Analysis: theoretical aspects

Content Analysis: theoretical aspects

Content analysis is a text analysis method developed within the empirical social sciences. Although many content analyzes culminate in numerical descriptions of some features of the text corpus, considerable attention is being paid to types, qualities and distinctions in the text before any quantification is made.

In this way, text analysis makes a bridge between a statistical formalism and the qualitative analysis of data. In the quantity/quality divide of the social sciences, content analysis is a hybrid technique that can mediate this unproductive discussion about virtues and methods.

Content Analysis: theoretical aspects

Qualitative method of data analysis

Helps synthesize data through encoding

Systematic methodology, following a sequence of steps

It is flexible, combining deductive and inductive coding, as some codes come from the literature and others emerge from the data

Content Analysis: theoretical aspects

Coding is a way of indexing or categorizing the text in order to establish a structure of thematic ideas in relation to it (Gibbs, 2009).

Codes should be:

- comprehensive - permit all the material to be classified;
- homogeneous - attend a principle;
- exclusionary - belong to only one code;
- relevant - be related to the topic under study;
- productive - allow inferences; and
- objective - ensure the same result can be obtained by different people (Bardin, 2011).

Content Analysis: theoretical aspects

From the theoretical framework, a coding frame is elaborated to analyze the material (deductive)

During coding, new themes/codes may emerge (inductive)

After the coding is complete, it is possible to analyze and interpret the results

Examples:

Journal of Cleaner Production 256 (2020) 120260



Contents lists available at ScienceDirect

Journal of Cleaner Production

journal homepage: www.elsevier.com/locate/jclepro



Review

The governance of collaboration for sustainable development:
Exploring the “black box”

Diego Vazquez-Brust ^{a, c}, Roberta Souza Piao ^{b, *}, Mary Fernanda de Sousa de Melo ^b,
Rodrigo Trotta Yaryd ^b, Marly M. Carvalho ^b

^a Portsmouth Business School, Richmond Building, Portland Street, Portsmouth, PO1 3DE, UK

^b Department of Production Engineering Polytechnic School, University of São Paulo, Av. Prof. Luciano Gualberto, n.1380, São Paulo, SP, 05508-010, Brazil

^c Department of Production Engineering, Federal University of Santa Catarina (UFSC), Florianópolis, Brazil



Examples:

Journal of Cleaner Production 297 (2021) 126688



ELSEVIER

Contents lists available at ScienceDirect

Journal of Cleaner Production

journal homepage: www.elsevier.com/locate/jclepro



Comer

Shaping the sustainable supply chain of organic milk in Brazil

Roberta Souza Piao ^{a,*}, Maria Sylvia Macchione Saes ^b, Vivian Lara Silva ^c,
Fernanda Bassetto Bronzatto ^c

^a Department of Production Engineering Polytechnic School, University of São Paulo, Av. Prof. Luciano Gualberto, n.1380, São Paulo, SP, 05508-010, Brazil

^b Department of Business, University of Sao Paulo, Av. Prof. Luciano Gualberto, 908, São Paulo, 05508900, Brazil

^c Department of Food Engineering, University of Sao Paulo, Av. Duque de Caxias, 225 Pirassununga, 13635900, Brazil



Content Analysis: theoretical aspects

The use of qualitative data analysis software to aid content analysis:

- a) speeds up the process;
- b) enhances the rigor;
- c) provides more flexible data analysis from different perspectives;
- d) facilitates the exchange and reproduction of data; and
- e) allows the researcher to reflect in greater depth by reducing the operational activities
(Bardin, 2011)

Content Analysis: theoretical aspects

The software does not replace the researcher in the tasks of creating the codes, deciding the association of a given code to a specific piece of data, and in deciding which codes should be grouped in a certain category

Examples:



Review

Defining the Sharing Economy for Sustainability

Steven Kane Curtis * and Matthias Lehner

The International Institute for Industrial Environmental Economics (IIIEE), Lund University, Tegnérsgatan 4,
223-50 Lund, Sweden; matthias.lehner@iiiee.lu.se

* Correspondence: steven.curtis@iiiee.lu.se; Tel.: +46-046-222-0216

Received: 10 December 2018; Accepted: 18 January 2019; Published: 22 January 2019



Examples:

Journal of Cleaner Production 247 (2020) 119131



ELSEVIER

Contents lists available at [ScienceDirect](#)

Journal of Cleaner Production

journal homepage: www.elsevier.com/locate/jclepro



Review

A systematic review on green human resource management:
Implications for social sustainability

V.N. Amrutha*, S.N. Geetha

Department of Management Studies, Anna University, Sardar Patel Road, Guindy, Chennai, Tamilnadu, 600025, India



Examples:

Individual competences for sustainable purchasing and supply management (SPSM)

A literature and practice perspective

Heike Schulze

*Mainz University of Applied Sciences, Mainz, Germany and
London South Bank University, London, UK*

Lydia Bals

*Mainz University of Applied Sciences, Mainz, Germany and
Copenhagen Business School, Frederiksberg, Denmark, and*

Thomas E. Johnsen

Audencia Nantes, Nantes, France

Sustainable
purchasing
and supply
management

287

Received 29 January 2018
Revised 13 June 2018
21 September 2018
20 October 2018
10 November 2018
Accepted 11 November 2018

Examples:

Journal of Cleaner Production 280 (2021) 124214



ELSEVIER

Contents lists available at [ScienceDirect](#)

Journal of Cleaner Production

journal homepage: www.elsevier.com/locate/jclepro



Social sustainability management in the apparel supply chains

Marta Elisa Bubicz^{*}, Ana Paula Ferreira Dias Barbosa-Póvoa, Ana Carvalho

Instituto Superior Técnico, Centre for Management Studies (CEG-IST), University of Lisbon, Av. Rovisco Pais, N.1. PC 1049-001, Portugal



Examples:





sustainability



Article

Exploring Themes of Sustainable Practices in Manufacturing Industry: Using Thematic Networks Approach

Noor Ullah Khan ^{1,2}, Haoqiang Wei ^{3,*}, Guiling Yue ⁴, Nabila Nazir ⁵ and Noor Raihani Zainol ¹

¹ Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan (UMK), Kota Bharu 16100, Malaysia; noorullah@umk.edu.my (N.U.K.); raihani@umk.edu.my (N.R.Z.)

² Department of HRM, NUST Business School, National University of Sciences and Technology, Islamabad 44000, Pakistan

³ Department of Audit, Shanghai National Accounting Institute, Shanghai 201702, China

⁴ School of Human Resource Development & Psychology, Universiti Teknologi Malaysia, Johor Bahru 81310, Malaysia; guiling-1994@graduate.utm.my

⁵ Department of Management Sciences, Comsats University, Islamabad 44000, Pakistan; nabila@comsats.edu.pk

* Correspondence: weihaoqiang@snai.edu

NVivo software - introduction

NVivo software - introduction

NVivo is a qualitative data analysis (QDA) computer software package

NVivo helps qualitative researchers to organize, analyze and find insights in unstructured or qualitative data like interviews, open-ended survey responses, journal articles, social media and web content, where deep levels of analysis on small or large volumes of data are required

NVivo software - introduction

Nvivo allows users to classify, sort and arrange information; examine relationships in the data; and combine analysis with linking, shaping, searching and modeling

NVivo speeds up data analysis, provides more robustness and reliability to the analysis, helps the validation of relationships between variables and allows the analysis of large amounts of documents

NVivo supports data formats such as audio files, videos, pictures, documents, PDFs, spreadsheets, and web and social media data

NVivo software - introduction

Start a new project

NVivo 12 Plus

Arquivo

NVivo 12 Plus

Projetos recentes

- RBV_Transcrições_2020_2021
C:\Backup Arquivos Sony Vaio\Documents\Pessoal\USP\Pol\Projeto...
- RBV_Transcrições_2020_2021
C:\Backup Arquivos Sony Vaio\Documents\Pessoal\USP\Pol\Projeto...
- RSL Economia Circular e Inclusão Social
C:\Backup Arquivos Sony Vaio\Documents\Pessoal\USP\Pol\RSL CE a...
- Circular Economy and Social inclusion (all files)
C:\Backup Arquivos Sony Vaio\Documents\Pessoal\USP\Pol\RSL CE a...
- Waste Management - barriers
C:\Backup Arquivos Sony Vaio\Documents\Pessoal\USP\Pol\Social e...

Abrir outro projeto

Ajuda

Tutoriais

Projeto em branco

Projeto de exemplo

Projeto de exemplo com insights automatizados

Aprender e Conectar

Research Ready

Prepare sua pesquisa para o NVivo

Iniciar

Tutorial de etapas rápidas do NVivo

Customer Hub

Cursos, recursos e apoio

Nvivo Academy

Aprofunde seu aprendizado com cursos e workshops online

NVivo Transcription

Seu assistente de transcrição automatizado - rápido, fácil, preciso.

Solicite um recurso

Solicitar e votar para novos recursos do NVivo

Connect with us

NVivo software - introduction

Arquivo

NVivo 12 Plus

Novo

Projeto em branco

Projeto de exemplo

Projeto de exemplo com insights automatizados

Novo projeto

Título: Revisão Sist

Descrição

Nome do arquivo: C:\Backup Arquivos Sony Vaio\Documents\Pessoal\USP\Poli\RSL

Gravar ações do usuário no registro de eventos do projeto

OK Cancelar

Nvivo Academy

NVivo Transcription

Solicite um recurso

Aprofunde seu aprendizado com cursos e workshops online

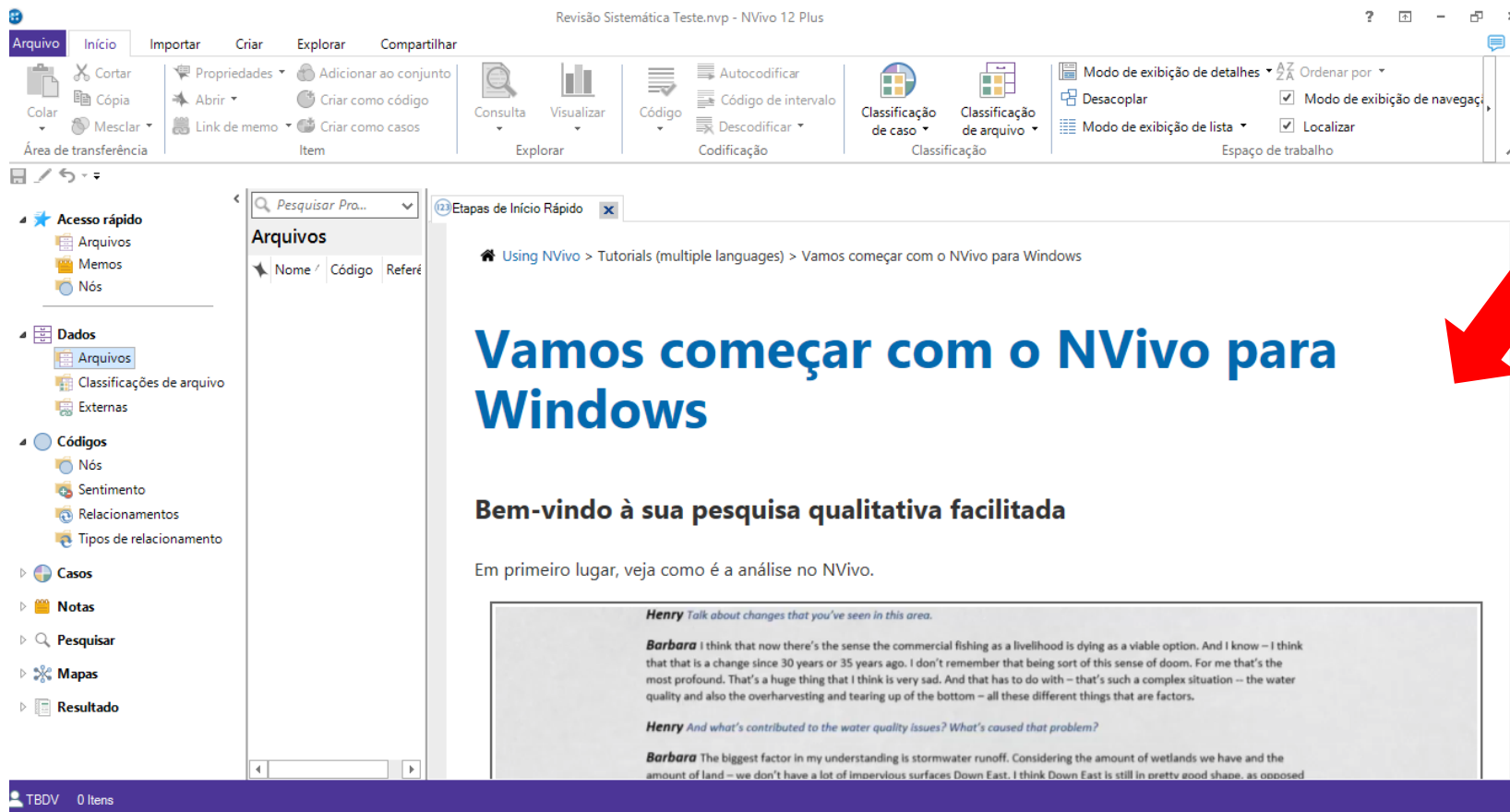
Seu assistente de transcrição automatizado - rápido, fácil, preciso.

Solicitar e votar para novos recursos do NVivo

Connect with us

Insert the title and description of your project, and choose where the file will be stored

NVivo software - introduction



The screenshot displays the NVivo 12 Plus software interface. The title bar reads "Revisão Sistemática Teste.nvp - NVivo 12 Plus". The ribbon menu includes "Arquivo", "Início", "Importar", "Criar", "Explorar", and "Compartilhar". The "Início" ribbon is active, showing options like "Propriedades", "Adicionar ao conjunto", "Criar como código", "Criar como casos", "Link de memo", and "Item". The "Explorar" ribbon shows "Consulta", "Visualizar", and "Código". The "Codificação" ribbon includes "Autocodificar", "Código de intervalo", and "Descodificar". The "Classificação" ribbon has "Classificação de caso" and "Classificação de arquivo". The "Espaço de trabalho" ribbon includes "Modo de exibição de detalhes", "Desacoplar", "Modo de exibição de lista", and "Localizar".

The main content area shows a tutorial page titled "Vamos começar com o NVivo para Windows". The page content includes:

- Breadcrumbs: Using NVivo > Tutorials (multiple languages) > Vamos começar com o NVivo para Windows
- Section: **Vamos começar com o NVivo para Windows**
- Text: Bem-vindo à sua pesquisa qualitativa facilitada
- Text: Em primeiro lugar, veja como é a análise no NVivo.
- Text: Henry Talk about changes that you've seen in this area.
- Text: Barbara I think that now there's the sense the commercial fishing as a livelihood is dying as a viable option. And I know -- I think that that is a change since 30 years or 35 years ago. I don't remember that being sort of this sense of doom. For me that's the most profound. That's a huge thing that I think is very sad. And that has to do with -- that's such a complex situation -- the water quality and also the overharvesting and tearing up of the bottom -- all these different things that are factors.
- Text: Henry And what's contributed to the water quality issues? What's caused that problem?
- Text: Barbara The biggest factor in my understanding is stormwater runoff. Considering the amount of wetlands we have and the amount of land -- we don't have a lot of impervious surfaces Down East. I think Down East is still in pretty good shape, as opposed

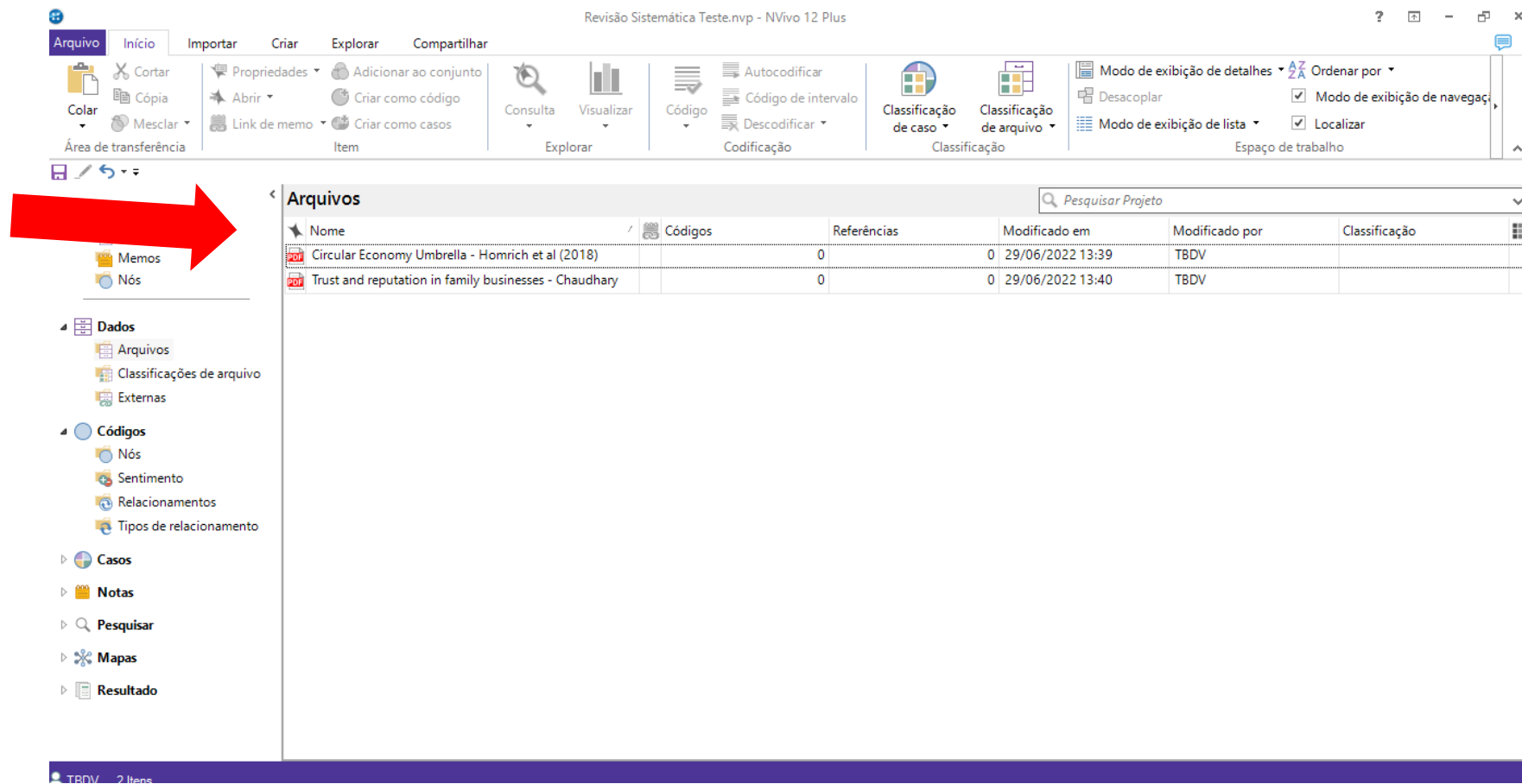
A red arrow points to the tutorial page content.

Explore the tutorial and watch the videos

NVivo software - coding

NVivo software - coding

Drag or import in “files” the articles (or interviews, or other materials) you want to analyze



Revisão Sistemática Teste.nvp - NVivo 12 Plus

Arquivo Início Importar Criar Explorar Compartilhar

Propriedades Adicionar ao conjunto
 Abrir Criar como código
 Link de memo Criar como casos
 Item

Consulta Visualizar Código
 Explorar Codificação

Autocodificar Código de intervalo
 Descodificar Codificação

Classificação de caso Classificação de arquivo
 Classificação

Modo de exibição de detalhes Ordenar por
 Desacoplar Modo de exibição de navegação
 Modo de exibição de lista Localizar
 Espaço de trabalho

Arquivos

Nome	Códigos	Referências	Modificado em	Modificado por	Classificação
Circular Economy Umbrella - Homrich et al (2018)		0	29/06/2022 13:39	TBDV	
Trust and reputation in family businesses - Chaudhary		0	29/06/2022 13:40	TBDV	

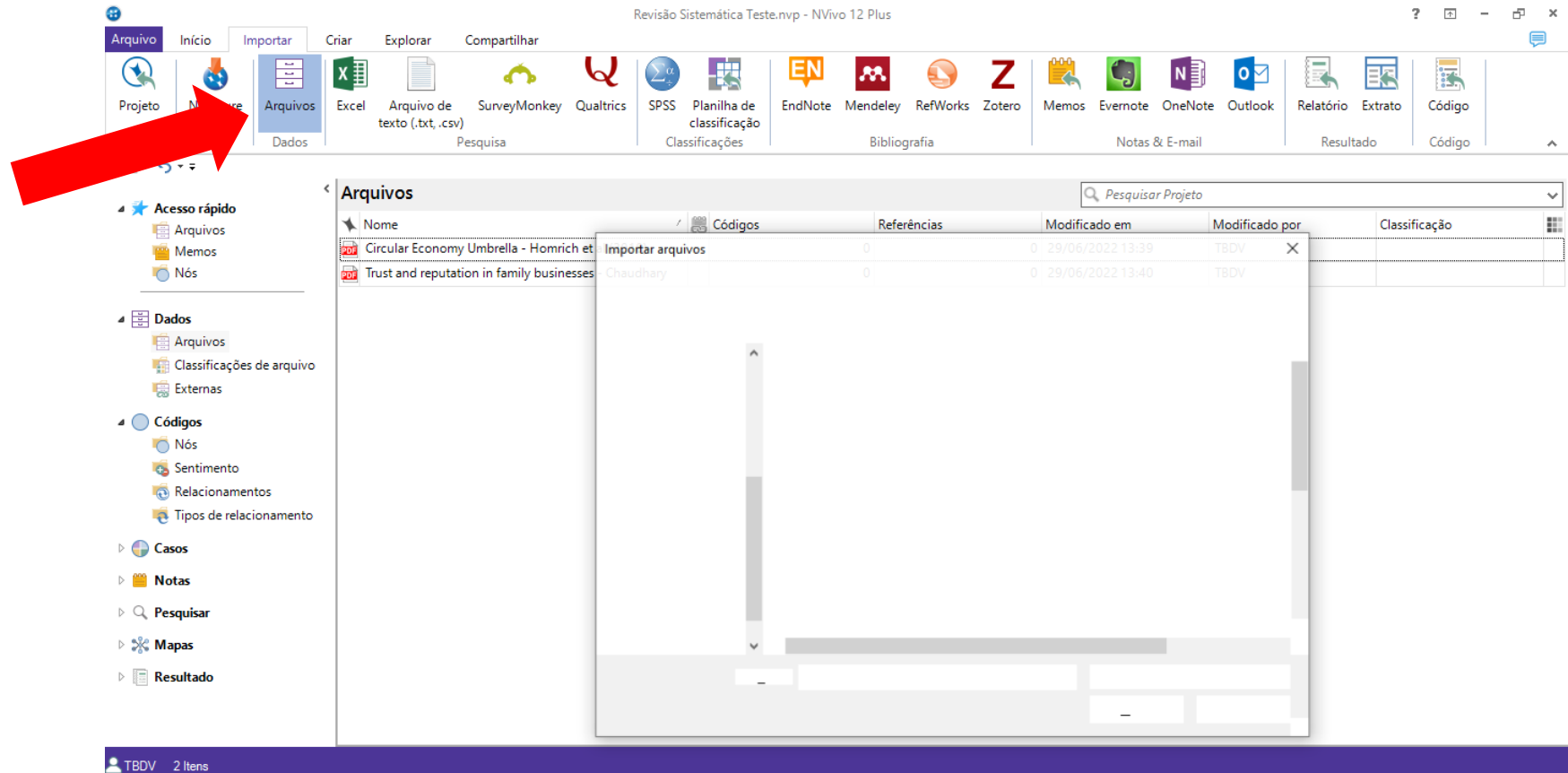
Dados
 Arquivos
 Classificações de arquivo
 Externas

Códigos
 Nós
 Sentimento
 Relacionamentos
 Tipos de relacionamento

Casos
 Notas
 Pesquisar
 Mapas
 Resultado

NVivo software - coding

Drag or import in “files” the articles (or interviews, or other materials) you want to analyze



The screenshot shows the NVivo 12 Plus interface. The 'Arquivos' (Files) section is highlighted in the left sidebar, and a red arrow points to the 'Arquivos' button in the top ribbon. An 'Importar arquivos' (Import files) dialog box is open, showing a list of files to be imported. The dialog box has a search bar and a table with the following columns: Nome, Códigos, Referências, Modificado em, Modificado por, and Classificação.

Nome	Códigos	Referências	Modificado em	Modificado por	Classificação
Circular Economy Umbrella - Homrich et	0	0	29/06/2022 13:39	TBDV	
Trust and reputation in family businesses	0	0	29/06/2022 13:40	TBDV	

NVivo software - coding

After importing the materials, open one and start choosing the passages (or quotations) of the text you want to code

The screenshot shows the NVivo 12 Plus interface with the following elements:

- Top Menu:** Arquivo, Início, Importar, Criar, Explorar, Compartilhar, Ferramentas do PDF.
- Toolbar:** Includes options for Links (Link de memo, Link Veja também), Zoom, Codificação rápida, Favoritos, Anotações, Veja também Links, Relacionamentos, Listras de Codificação, Realçar, Texto, Região, Código, Codificar In Vivo, Descodificar, Nova anotação, Nuvem de palavras, Comparar com, Explorar diagrama, Consultar este PDF, Localizar.
- Left Panel:** Acesso rápido, Arquivos, Dados (Arquivos, Classificações de arquivo, Externas), Códigos (Nós, Sentimento, Relacionamentos, Tipos de relacionamento), Casos, Notas, Pesquisar, Mapas, Resultado.
- Main Document:** A document titled "Circular Economy Umbrella - Ho" is open. A red arrow points from the text on the left to a highlighted passage in the document:

The sample core papers were identified from the citation and co-citation analysis, a quantitative technique applied to capture the impact and relevance of either an author or an article (Garfield and Merton, 1979). However, this evaluation should also consider the journal impact, in addition to counting the total citation or yearly average citation, because it "can change the position of one paper in the ranking of citations" (Carvalho et al., 2013), as shown in Equation (1).
- Equation (1):**

$$\text{AIF} = \text{Yearly average citation} * (1 + \text{JCRIF}) \quad (1)$$
- Right Panel:** Shows a search for "Nós" and a list of results. The first result is highlighted.
- Bottom Status Bar:** Em Nós, Codificar em, Digite o nome do nó (CTRL+Q), Página: 6, Seleção de texto: 29273 - 29750, 100% zoom.

NVivo software - coding

Press the right mouse button or drag the passage to the “Nodes” window and define the code that will be associated with the passage

The screenshot shows the NVivo 12 Plus interface. The main window displays a document titled 'Circular Economy Umbrella - Ho...'. A text block is selected, and a context menu is open over it. The menu options include: Código... (Ctrl+F2), Codificar para nós recentes, Codificar In Vivo (Ctrl+F8), Descodificar... (Ctrl+Shift+F2), Descodificar a partir de nós recentes, Nova anotação (Ctrl+Shift+A), Exportar PDF... (Ctrl+Shift+E), Imprimir (Ctrl+P), Cópia (Ctrl+C), Colar como link Veja também, Modo de seleção, Selecionar tudo (Ctrl+A), Links, and Propriedades do PDF... (Ctrl+Shift+P). On the left, the 'Nodes' window is visible, with a red arrow pointing from the selected text in the main window to this window. The status bar at the bottom indicates 'Em Nós', 'Codificar em Digite o nome da nó (CTRL+Q)', and 'Página: 6, Seleção de texto: 29273 - 29750'.



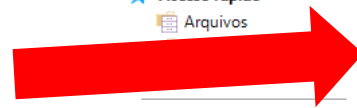
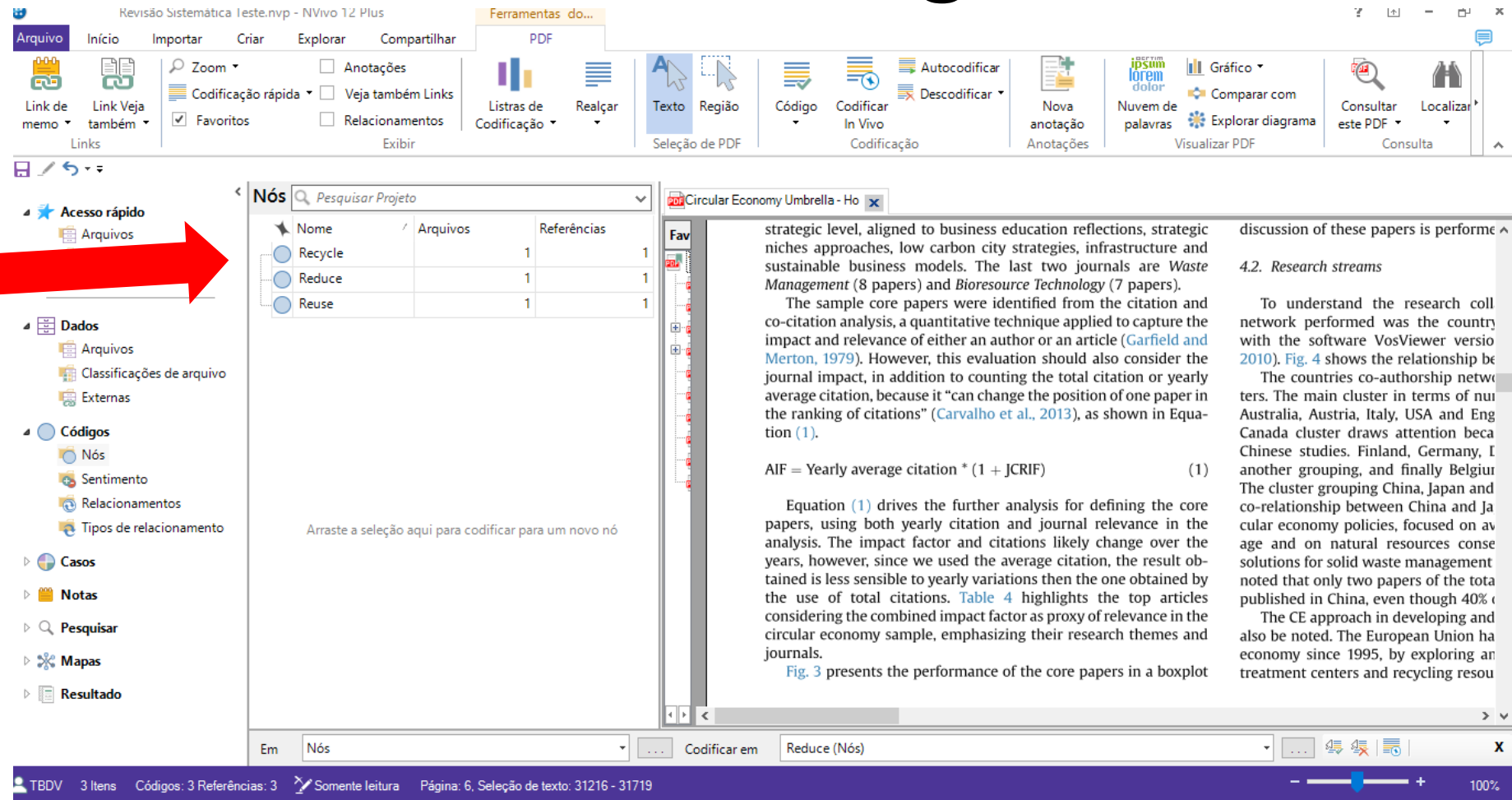
NVivo software - coding

Press “new node” and insert the node’s name

The screenshot displays the NVivo 12 Plus software interface. The main window shows a search bar with the text 'Pesquisar Projeto' and a list of nodes under 'Códigos'. The 'Novo Nó' button is highlighted. A dialog box titled 'Selecionar Itens do Código' is open, showing a search bar and a list of nodes: 'Nós', 'Reuse', 'Sentimento', 'Relacionamentos', and 'Casos'. The 'Reuse' option is selected. A red arrow points from the 'Novo Nó' button to the 'Reuse' option, and another red arrow points from the 'Novo Nó' button to the 'Novo Nó' input field. The background shows the NVivo interface with a search bar and a list of nodes.

NVivo software - coding

You can also pre-create the node list from the literature

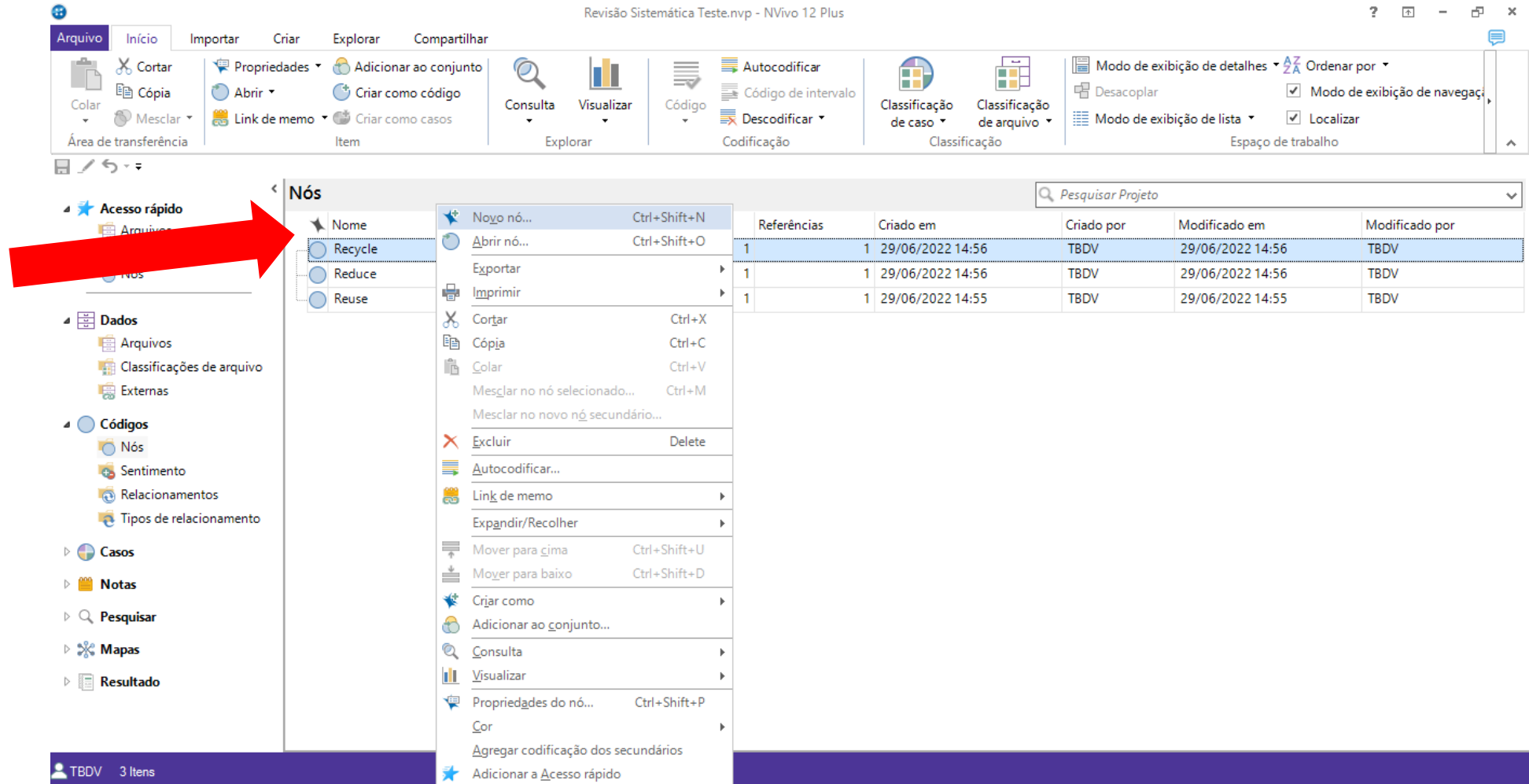



The screenshot shows the NVivo 12 Plus software interface. The top menu bar includes 'Arquivo', 'Início', 'Importar', 'Criar', 'Explorar', 'Compartilhar', and 'Ferramentas do...'. The ribbon contains various tools for document management, coding, and analysis. On the left, a navigation pane shows a pre-created node list under 'Nós' with three nodes: 'Recycle', 'Reduce', and 'Reuse'. A red arrow points from the text 'You can also pre-create the node list from the literature' to this list. The main window displays a document titled 'Circular Economy Umbrella - Ho' with text about strategic level, business education reflections, and citation analysis. The status bar at the bottom indicates 'Em Nós' and 'Codificar em Reduce (Nós)'.

Nome	Arquivos	Referências
Recycle	1	1
Reduce	1	1
Reuse	1	1

NVivo software - coding

You can create a sub-node:
 press the right mouse
 button on the node and
 click "new node"



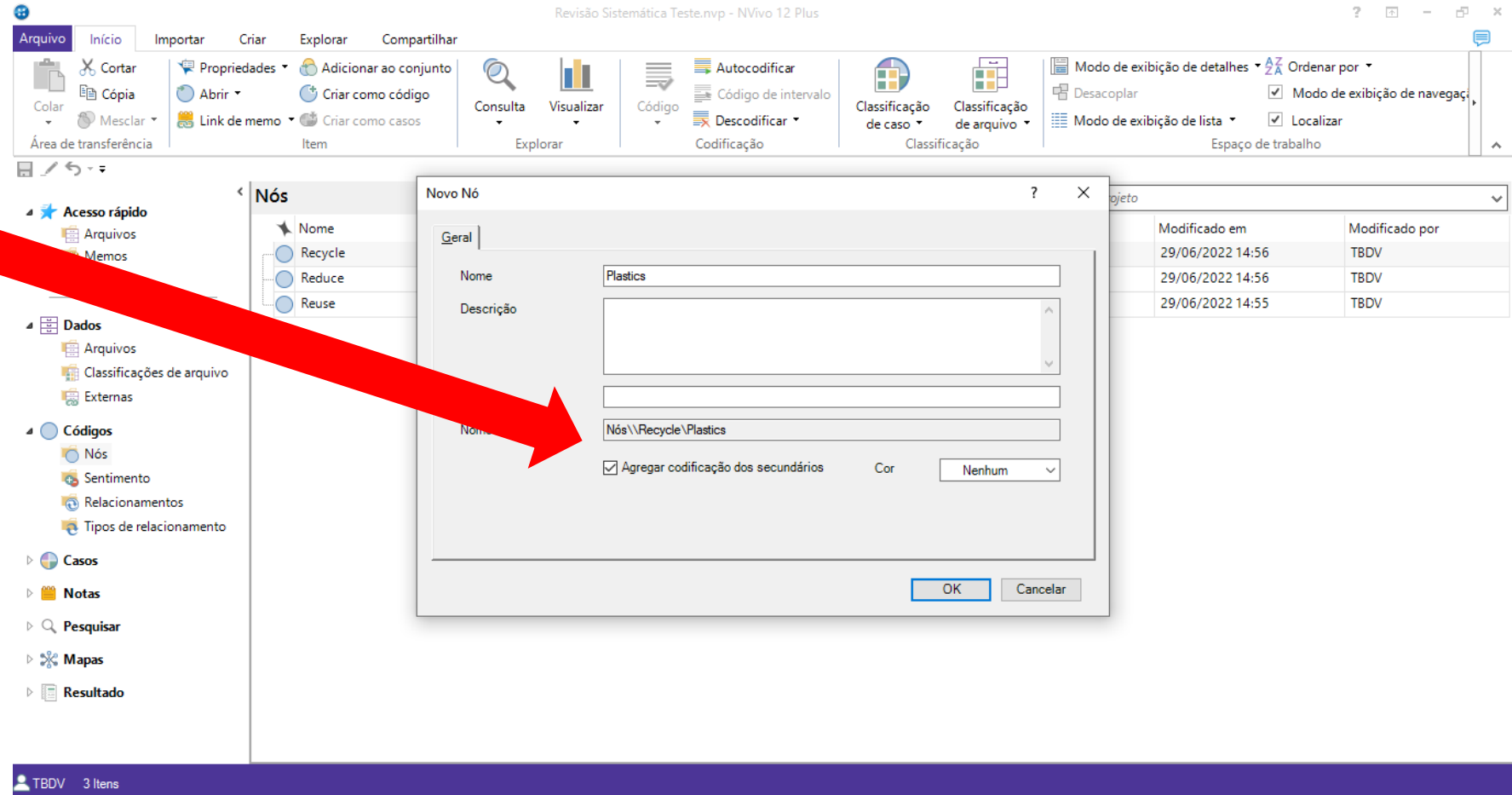
The screenshot shows the NVivo 12 Plus interface with a context menu open over a node named 'Recycle'. A red arrow points from the text on the left to the 'Novo nó...' option in the menu. The menu includes options like 'Abrir nó...', 'Exportar', 'Imprimir', 'Excluir', and 'Adicionar ao conjunto...'. The background shows a project tree on the left and a table of references on the right.

Referências	Criado em	Criado por	Modificado em	Modificado por
1	29/06/2022 14:56	TBDV	29/06/2022 14:56	TBDV
1	29/06/2022 14:56	TBDV	29/06/2022 14:56	TBDV
1	29/06/2022 14:55	TBDV	29/06/2022 14:55	TBDV

NVivo software - coding

Name the sub-node and click “aggregate secondary coding” so that the node consolidates the sub-nodes

Do the same for the nodes



Revisão Sistemática Teste.nvp - NVivo 12 Plus

Arquivo Início Importar Criar Explorar Compartilhar

Cortar Cópia Colar Mesclar

Propriedades Adicionar ao conjunto

Abrir Criar como código

Link de memo Criar como casos

Área de transferência Item

Consulta Visualizar

Código

Autocodificar

Código de intervalo

Descodificar

Codificação

Classificação de caso

Classificação de arquivo

Classificação

Modo de exibição de detalhes Ordenar por

Desacoplar

Modo de exibição de navegação

Modo de exibição de lista

Localizar

Espaço de trabalho

Nós

- Nome
- Recycle
- Reduce
- Reuse

Dados

- Arquivos
- Classificações de arquivo
- Externas

Códigos

- Nós
- Sentimento
- Relacionamentos
- Tipos de relacionamento

Casos

Notas

Pesquisar

Mapas

Resultado

Novo Nó

Nome: Plastics

Descrição:

Nome completo: Nós\\Recycle\\Plastics

Agregar codificação dos secundários

Cor: Nenhum

OK Cancelar

Objeto	Modificado em	Modificado por
	29/06/2022 14:56	TBDV
	29/06/2022 14:56	TBDV
	29/06/2022 14:55	TBDV

TBDV 3 Itens



NVivo software - coding

Revisão Sistemática Teste.nvp - NVivo 12 Plus

Arquivo Início Importar Criar Explorar Compartilhar

Cortar, Colar, Área de transferência, Propriedades, Abrir, Link de memo, Adicionar ao conjunto, Criar como código, Criar como casos, Item, Consulta, Visualizar, Código, Autocodificar, Código de intervalo, Descodificar, Codificação, Classificação de caso, Classificação de arquivo, Classificação, Modo de exibição de detalhes, Ordenar por, Desacoplar, Modo de exibição de navegação, Modo de exibição de lista, Localizar, Espaço de trabalho

Acesso rápido

- Arquivos
- Dados
 - Arquivos
 - Classificações de arquivo
 - Externas
- Códigos
 - Nós
 - Sentimento
 - Relacionamentos
 - Tipos de relacionamento
- Casos
- Notas
- Pesquisar
- Mapas
- Resultado

Sub-node

Nós

Nome	Arquivos	Referências	Criado em	Criado por	Modificado em	Modificado por
Recycle		1	29/06/2022 14:56	TBDV	29/06/2022 14:56	TBDV
Plastics		0	29/06/2022 18:05	TBDV	29/06/2022 18:05	TBDV
Reduce		1	29/06/2022 14:56	TBDV	29/06/2022 14:56	TBDV
Reuse		1	29/06/2022 14:55	TBDV	29/06/2022 14:55	TBDV

TBDV 4 Itens

NVivo software - coding

You can see the number of files and references of each node or sub-node

After you finish coding, your list of nodes and sub-nodes will look like this

Revisão Sistemática Teste.nvp - NVivo 12 Plus

Arquivo Início Importar Criar Explorar Compartilhar

Arquivos

Dados

Códigos

Casos

Notas

Pesquisar

Nós

Nome	Arquivos	Referências	Criado em	Criado por	Modificado em	Modificado por
Recycle		5	29/06/2022 14:56	TBDV	29/06/2022 18:29	TBDV
Glass	1	1	29/06/2022 18:08	TBDV	29/06/2022 18:12	TBDV
Metal	3	3	29/06/2022 18:06	TBDV	29/06/2022 18:15	TBDV
Paper	2	3	29/06/2022 18:07	TBDV	29/06/2022 18:16	TBDV
Plastics	1	1	29/06/2022 18:05	TBDV	29/06/2022 18:13	TBDV
Reduce		5	29/06/2022 14:56	TBDV	29/06/2022 18:29	TBDV
Energy	2	3	29/06/2022 18:10	TBDV	29/06/2022 18:13	TBDV
Supplies and	1	1	29/06/2022 18:10	TBDV	29/06/2022 18:12	TBDV
Water	4	7	29/06/2022 18:10	TBDV	29/06/2022 18:16	TBDV
Reuse		5	29/06/2022 14:55	TBDV	29/06/2022 18:29	TBDV
Clothes	3	3	29/06/2022 18:09	TBDV	29/06/2022 18:15	TBDV
Electronics	2	4	29/06/2022 18:09	TBDV	29/06/2022 18:16	TBDV
Packaging	2	2	29/06/2022 18:09	TBDV	29/06/2022 18:15	TBDV

TBDV 13 Itens

NVivo software - coding

After you finish coding, your list of files will look like this

Nome	Códigos	Referências	Modificado em	Modificado por	Classificação
Biomass and organic waste potentials - Ranjbari et al.(2022)	7	12	29/06/2022 18:14	TBDV	
Circular Economy Umbrella - Homrich et al (2018)	7	11	29/06/2022 13:39	TBDV	
Open innovation in the manufacturing industry - Obradovic et al. (2021)	7	12	29/06/2022 13:46	TBDV	
Systematic literature review on sustainable HRM - Macke e Genari (2019)	6	12	29/06/2022 18:14	TBDV	
Trust and reputation in family businesses - Chaudhary et al (2021)	9	12	29/06/2022 13:40	TBDV	

You can see the number of codes and references of each file

NVivo software - outputs

NVivo software - outputs

PDFs, Word files

Matrices and Tables in Excel

Conceptual networks in graphic format

Word cloud

NVivo software - outputs

To help with the analysis, you can export the quotations of each node

The screenshot shows the NVivo 12 Plus interface with a project named 'Revisão Sistemática Teste.nvp'. The 'Nós' (Nodes) list is visible, and the 'Exportar' (Export) menu is open, highlighting the 'Exportar nó...' option. A red arrow points from the text on the left to this menu option.

Nome	Arquivos	Criado por	Modificado em	Modificado por
		TBDV	29/06/2022 18:29	TBDV
		4:56	29/06/2022 18:12	TBDV
			29/06/2022 18:15	TBDV
			29/06/2022 18:16	TBDV
		8:05	29/06/2022 18:13	TBDV
		4:56	29/06/2022 18:29	TBDV
		8:10	29/06/2022 18:13	TBDV
		8:10	29/06/2022 18:12	TBDV
		8:10	29/06/2022 18:16	TBDV
		4:55	29/06/2022 18:29	TBDV
		8:09	29/06/2022 18:15	TBDV
		8:09	29/06/2022 18:16	TBDV
		8:09	29/06/2022 18:15	TBDV

NVivo software - outputs

Include “name” and
 “paragraph
 number”; this
 information is useful

Revisão Sistemática Teste.nvp - NVivo 12 Plus

Opções de exportação

Exportar

Todo o conteúdo (.html)

Modo de exibição de referência (.doc .docx .rtf .txt .pdf)

Modo de exibição de resumo (.xls .xlsx .doc .docx .rtf .txt .pdf)

Salvar como
 ants\Pessoal\USP\Poli\VRSL CE and social inclusion\Water.docx Procurar...

Incluir

Propriedades

Nome Descrição

Apenas nome

Outras propriedades

Conteúdo relacionado

Anotações Relacionamentos

Links Veja também Links de memos

Outras opções

Números do parágrafo

Classificação Atributos

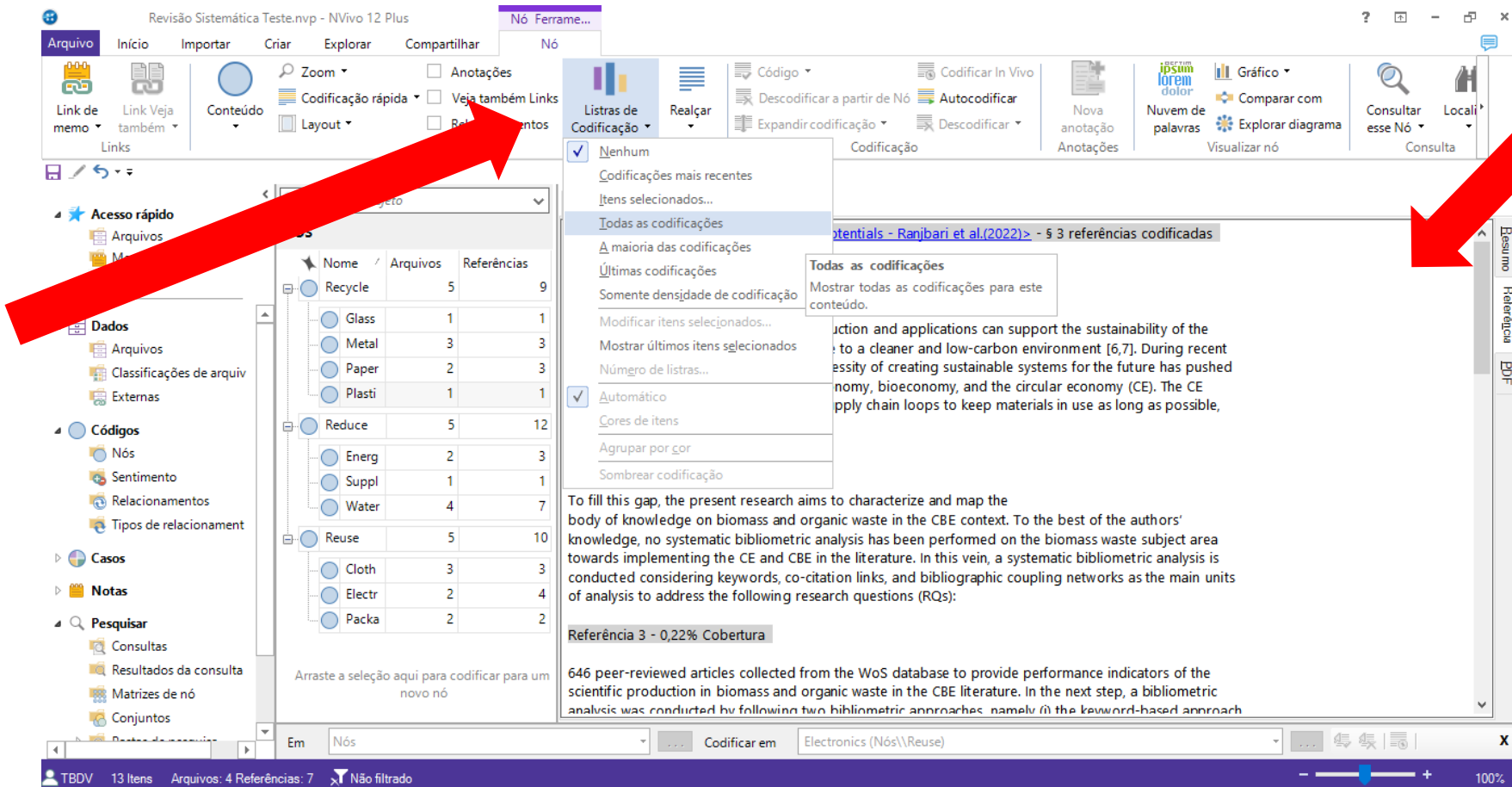
Abrir ao exportar

OK Cancelar

Modificado em	Modificado por
29/06/2022 18:29	TBDV
29/06/2022 18:12	TBDV
29/06/2022 18:15	TBDV
29/06/2022 18:16	TBDV
29/06/2022 18:13	TBDV
29/06/2022 18:29	TBDV
29/06/2022 18:13	TBDV
29/06/2022 18:12	TBDV
29/06/2022 18:16	TBDV
29/06/2022 18:29	TBDV
29/06/2022 18:15	TBDV
29/06/2022 18:16	TBDV
29/06/2022 18:15	TBDV

NVivo software - outputs

To see all the codes the quotations received, select "coding stripes"



The screenshot shows the NVivo 12 Plus interface. A red arrow points from the text 'To see all the codes the quotations received, select "coding stripes"' to the 'Listras de Codificação' (Coding Stripes) menu item in the top toolbar. Another red arrow points from the text 'You can also double click the node to open the report on the screen' to a node in the coding matrix.

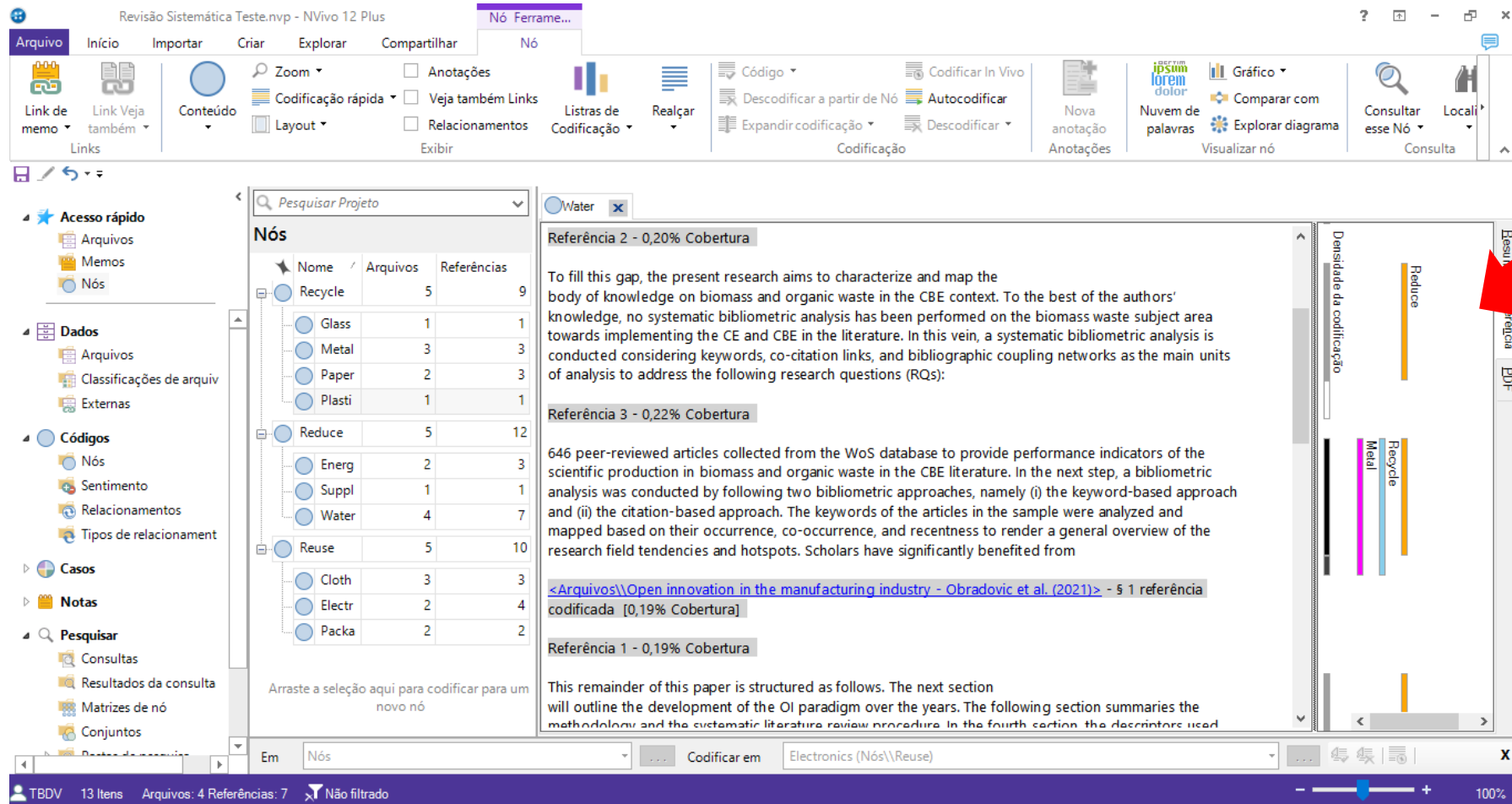
Nome	Arquivos	Referências
Recycle	5	9
Glass	1	1
Metal	3	3
Paper	2	3
Plasti	1	1
Reduce	5	12
Energy	2	3
Suppl	1	1
Water	4	7
Reuse	5	10
Cloth	3	3
Electr	2	4
Packa	2	2

Referência 3 - 0,22% Cobertura

646 peer-reviewed articles collected from the WoS database to provide performance indicators of the scientific production in biomass and organic waste in the CBE literature. In the next step, a bibliometric analysis was conducted by following two bibliometric approaches, namely (i) the keyword-based approach

You can also double click the node to open the report on the screen

NVivo software - outputs



Revisão Sistemática Teste.nvp - NVivo 12 Plus

Nó Ferrame...

Arquivo Início Importar Criar Explorar Compartilhar Nó

Link de memo Link Veja também Conteúdo Zoom Anotações Codificação rápida Veja também Links Layout Relacionamentos Listras de Codificação Realçar Código Descodificar a partir de Nó Expandir codificação Codificar In Vivo Autocodificar Nova anotação Nuvem de palavras Gráfico Comparar com Explorar diagrama Consultar esse Nó Local

Acesso rápido Arquivos Memos Nós

Dados Arquivos Classificações de arquiv Externas

Códigos Nós Sentimento Relacionamentos Tipos de relacionament

Casos

Notas

Pesquisar Consultas Resultados da consulta Matrices de nó Conjuntos

Nome	Arquivos	Referências
Recycle	5	9
Glass	1	1
Metal	3	3
Paper	2	3
Plasti	1	1
Reduce	5	12
Ener	2	3
Suppl	1	1
Water	4	7
Reuse	5	10
Cloth	3	3
Electr	2	4
Packa	2	2

Referência 2 - 0,20% Cobertura

To fill this gap, the present research aims to characterize and map the body of knowledge on biomass and organic waste in the CBE context. To the best of the authors' knowledge, no systematic bibliometric analysis has been performed on the biomass waste subject area towards implementing the CE and CBE in the literature. In this vein, a systematic bibliometric analysis is conducted considering keywords, co-citation links, and bibliographic coupling networks as the main units of analysis to address the following research questions (RQs):

Referência 3 - 0,22% Cobertura

646 peer-reviewed articles collected from the WoS database to provide performance indicators of the scientific production in biomass and organic waste in the CBE literature. In the next step, a bibliometric analysis was conducted by following two bibliometric approaches, namely (i) the keyword-based approach and (ii) the citation-based approach. The keywords of the articles in the sample were analyzed and mapped based on their occurrence, co-occurrence, and recentness to render a general overview of the research field tendencies and hotspots. Scholars have significantly benefited from

<Arquivos\Open innovation in the manufacturing industry - Obradovic et al. (2021)> - 5 1 referência codificada [0,19% Cobertura]

Referência 1 - 0,19% Cobertura

This remainder of this paper is structured as follows. The next section will outline the development of the OI paradigm over the years. The following section summaries the methodology and the systematic literature review procedure. In the fourth section, the descriptors used

Densidade da codificação

Referência

EDF

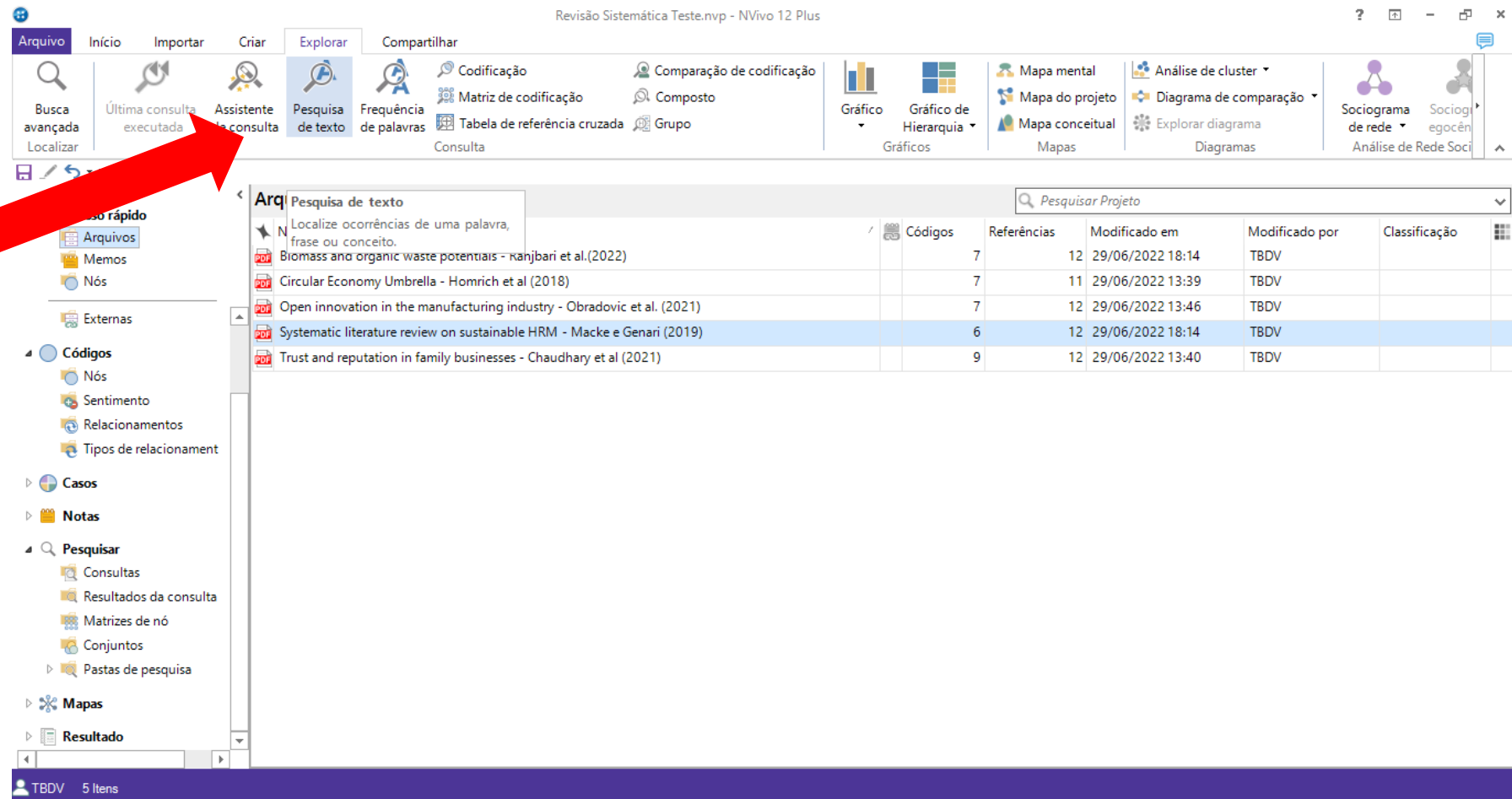
Em Nós Codificar em Electronics (Nós)\Reuse

TBDV 13 Itens Arquivos: 4 Referências: 7 Não filtrado 100%

Codes assigned to each quotation

NVivo software - outputs

You can do a text search on your files



Revisão Sistemática Teste.nvp - NVivo 12 Plus

Arquivo Início Importar Criar Explorar Compartilhar

Busca avançada Localizar Última consulta executada Assistente de consulta Pesquisa de texto Frequência de palavras Matrizes de referência cruzada Grupo Codificação Comparação de codificação Composto Gráfico Gráfico de Hierarquia Mapa mental Mapa do projeto Mapa conceitual Análise de cluster Diagrama de comparação Explorar diagrama Sociograma de rede Sociograma egocêntrico

Pesquisar Projeto

	Códigos	Referências	Modificado em	Modificado por	Classificação
Localize ocorrências de uma palavra, frase ou conceito.					
Biomass and organic waste potentials - Kanjbari et al.(2022)		7	29/06/2022 18:14	TBDV	
Circular Economy Umbrella - Homrich et al (2018)		7	29/06/2022 13:39	TBDV	
Open innovation in the manufacturing industry - Obradovic et al. (2021)		7	29/06/2022 13:46	TBDV	
Systematic literature review on sustainable HRM - Macke e Genari (2019)		6	29/06/2022 18:14	TBDV	
Trust and reputation in family businesses - Chaudhary et al (2021)		9	29/06/2022 13:40	TBDV	

TBDV 5 Itens

NVivo software - outputs

You can search all files or just some items, and you can use Boolean operations (AND/OR)

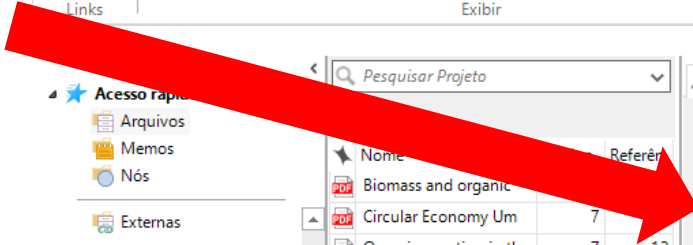
The screenshot shows the NVivo 12 Plus interface. The search criteria are set to "Arquivos e Elementos" (Files and Elements) and the search term is "circular AND economy". The search results table is as follows:

Nome	Referências
Biomass and organic	7
Circular Economy Um	7
Open innovation in th	7
Systematic literature r	6
Trust and reputation in	9

The search options are configured to find:

- Correspondências exatas (por exemplo, "talk")
- Com palavras derivadas (por exemplo, "talking")
- Com sinônimos (por exemplo, "speak")
- Com especializações (por exemplo, "whisper")
- Com generalizações (por exemplo, "communicate")

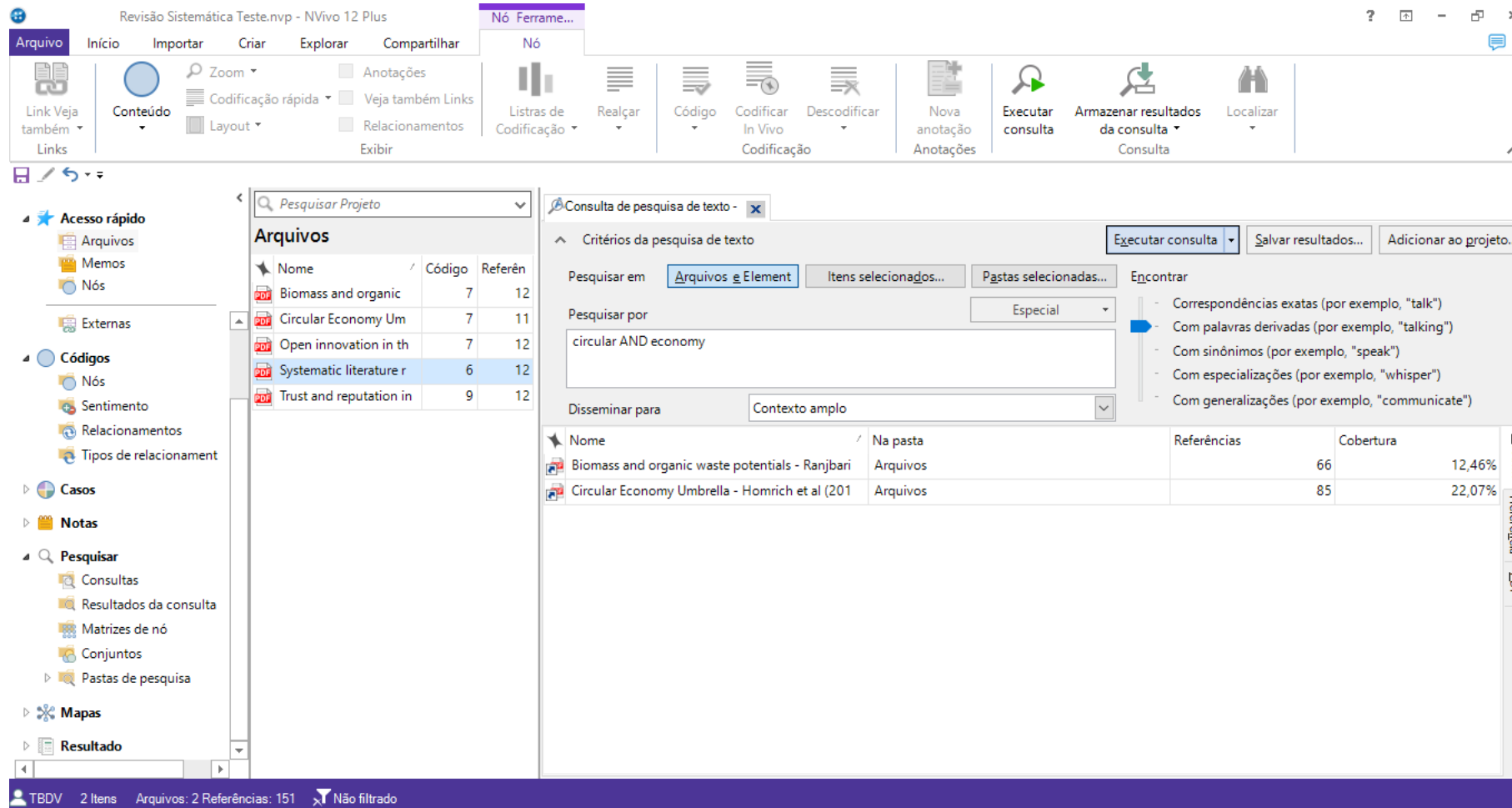
The "Disseminar para" (Disseminate to) dropdown menu is open, showing options: Nenhum, Referência de codificação, Contexto estreito, Contexto amplo (selected), Contexto personalizado, and Arquivo inteiro.



"Broad context" selects the entire quotation of the search term

You can include derived words

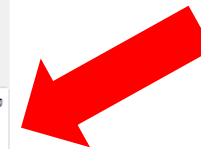
NVivo software - outputs



The screenshot shows the NVivo 12 Plus interface with a search query 'circular AND economy' executed. The search results are displayed in a table with columns for file name, folder, references, and coverage. A red arrow points to the 'Summary' tab of the results table.

Nome	Na pasta	Referências	Cobertura	Resumo
Biomass and organic waste potentials - Ranjbari	Arquivos		66	12,46%
Circular Economy Umbrella - Homrich et al (201	Arquivos		85	22,07%

In the "Summary" tab, NVivo displays the files that contain the search terms



NVivo software - outputs

If you want to analyze one file, double click the file to open it. The selected quotations will be highlighted

The screenshot shows the NVivo 12 Plus interface. On the left, there is a navigation pane with 'Pesquisar' (Search) selected. The main window displays a search result for 'Biomass and organic waste pote'. A red arrow points from the text 'If you want to analyze one file, double click the file to open it. The selected quotations will be highlighted' to a specific quotation in the search results.

Nome	Código	Referên
Biomass and organic	7	12
Circular Economy Um	7	11
Open innovation in th	7	12
Systematic literature r	6	12
Trust and reputation in	9	12

Table 1
 Recent reviews on using biomass and organic waste potentials in implementing a CE.

Reference	Year	Type of review	Database	Timespan	Focus
[21]	2021	Systematic	Scopus	2014-2019	Food waste conversion pathways in the CBE
[22]	2018	Critical	Not specified	Not specified	Adopting biorefinery strategy with an integrated

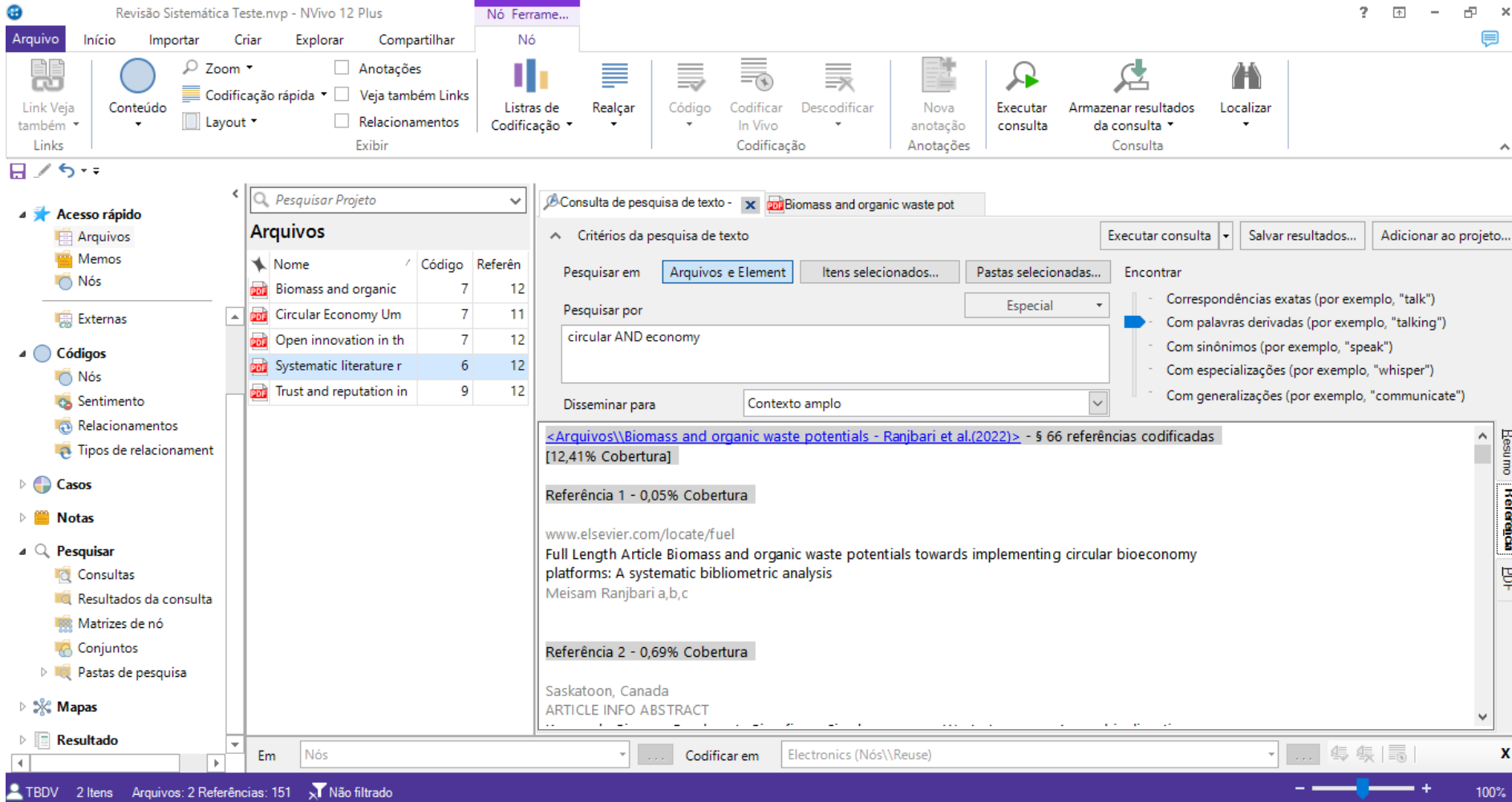
descriptive results: performance indicators (section 4.1), (ii) the keyword-based analysis: research hotspots (section 4.2), (iii) co-citation analysis (section 4.3), and (iv) bibliographic coupling analysis (section 4.4). The implications for research, outlining the potential opportunities and prospects for future developments, are proposed in Section 5.

and development of bio-waste valorization process, and (iii) adopt advanced technologies to generate products with competitive edge; deployment of commercial-scale facilities [25]. In this regard, the role of lifecycle assessment (LCA) methods to increase the sustainability of commercial bio-products and biofuels was outlined by Jain et al. [25].

this research contributes to the existing studies by providing the state-of-the-art of biomass and organic waste potentials in implementing CBE platforms, in particular by (i) presenting the performance indicators of scientific production in the target literature to date, (ii) mapping theoretical and practical developments within the biomass and organic waste research in the context of transitioning from a linear economy to a circular economy (CE), and (iii) identifying the main areas of research, hotspots, and research tendencies in biomass and organic waste applications in the CBE framework.

3. Materials, methods, and research design

NVivo software - outputs



The screenshot displays the NVivo 12 Plus software interface. The main window shows a search results window for the text "circular AND economy". The search criteria are set to "Arquivos e Element" and "Especial". The search results are displayed in a list view, showing the following items:

Nome	Código	Referên
Biomass and organic	7	12
Circular Economy Um	7	11
Open innovation in th	7	12
Systematic literature r	6	12
Trust and reputation in	9	12

The search results window also shows a list of search criteria and a list of search results. The search criteria are:

- Correspondências exatas (por exemplo, "talk")
- Com palavras derivadas (por exemplo, "talking")
- Com sinônimos (por exemplo, "speak")
- Com especializações (por exemplo, "whisper")
- Com generalizações (por exemplo, "communicate")

The search results window shows the following results:

- Referência 1 - 0,05% Cobertura
www.elsevier.com/locate/fuel
Full Length Article Biomass and organic waste potentials towards implementing circular bioeconomy platforms: A systematic bibliometric analysis
Meisam Ranjbari a,b,c
- Referência 2 - 0,69% Cobertura
Saskatoon, Canada
ARTICLE INFO ABSTRACT

The interface also shows a sidebar with navigation options and a bottom status bar indicating "2 Itens", "Arquivos: 2 Referências: 151", and "Não filtrado".

In the "Reference" tab, NVivo shows all the selected quotations

NVivo software - outputs

The screenshot displays the NVivo 12 Plus software interface. The main window shows a search results table with columns for 'Nome', 'Código', and 'Referên'. A search for 'circular AND economy' has been performed. A context menu is open over the selected item, showing options like 'Exportar resultado...' (Ctrl+Shift+E), 'Imprimir', 'Cópia', and 'Selecionar tudo'. A red arrow points to the 'Exportar resultado...' option.

Nome	Código	Referên
Biomass and organic	7	12
Circular Economy Um	7	11
Open innovation in th	7	12
Systematic literature r	6	12
Trust and reputation in	9	12

Consulta de pesquisa de texto - Biomass and organic waste potentials

Arquivos

Nome Código Referên

Biomass and organic 7 12

Circular Economy Um 7 11

Open innovation in th 7 12

Systematic literature r 6 12

Trust and reputation in 9 12

Consultas

Resultados da consulta

Matrizes de nó

Conjuntos

Pastas de pesquisa

Mapas

Resultado

Em Nós

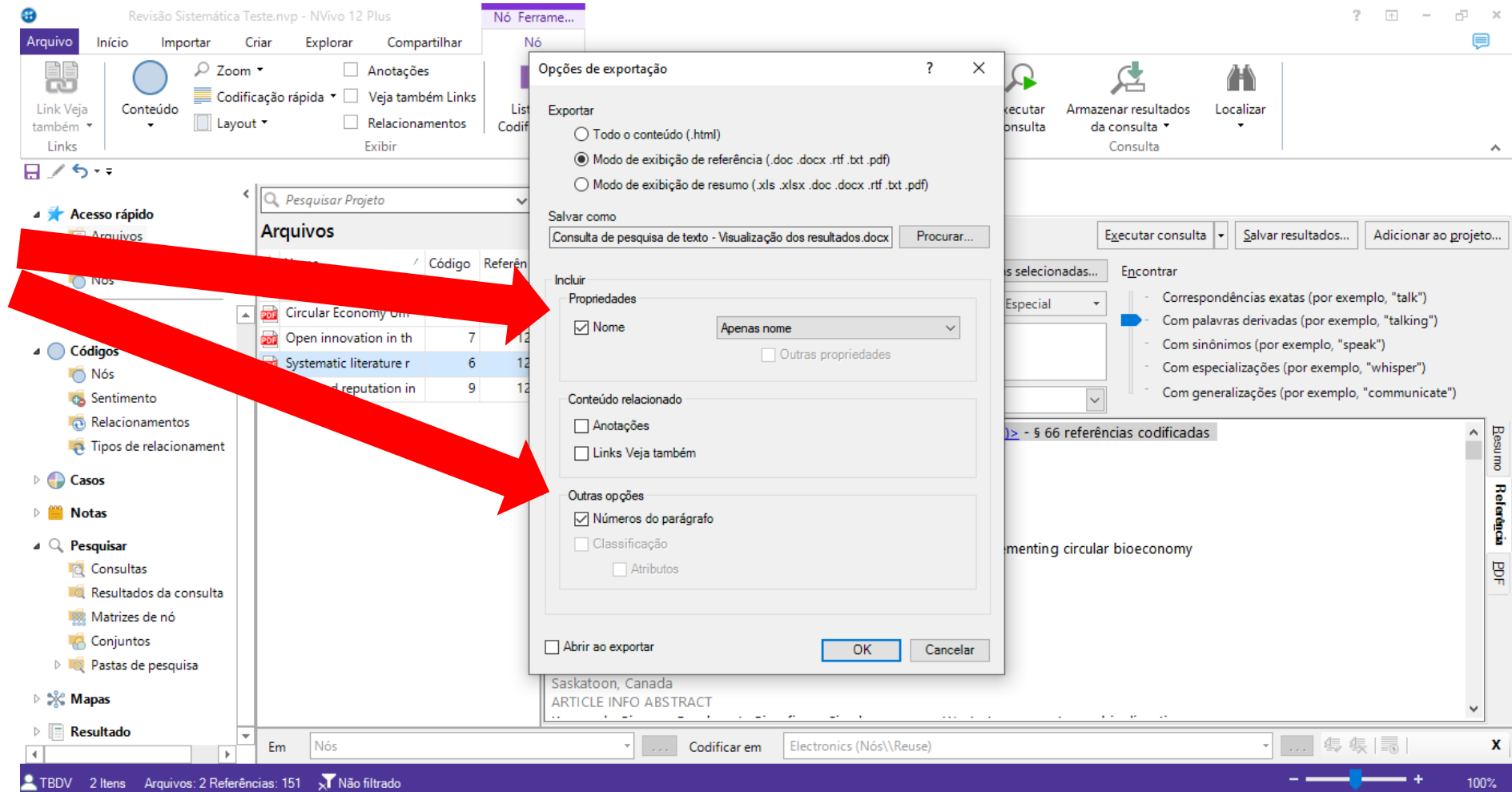
Codificar em Electronics (Nós\\Reuse)

TBDV 2 Itens Arquivos: 2 Referências: 151 Não filtrado

You can export this report. Press the right mouse button on the report

NVivo software - outputs

Include “name” and “paragraph number”; this information is useful



The screenshot shows the NVivo 12 Plus interface with the 'Opções de exportação' dialog box open. The dialog is configured to export 'Modo de exibição de referência' (.doc, .docx, .rtf, .txt, .pdf) format. Under 'Incluir', the 'Propriedades' section has 'Nome' checked and set to 'Apenas nome'. In the 'Outras opções' section, 'Números do parágrafo' is checked. The background shows a project named 'Revisão Sistemática Teste.nvp' with a search for 'Pesquisar Projeto' and a list of files including 'Circular Economy', 'Open innovation in th', and 'Systematic literature r'. The status bar at the bottom indicates '2 Itens', 'Arquivos: 2 Referências: 151', and 'Não filtrado'.

Support videos

Introduction to the encoding process in NVivo 11

<https://youtu.be/Wz9o8jQuSNE>

Meet NVivo 12: the new version of the software for qualitative and mixed analysis

<https://youtu.be/fSyGKAgRNdM>

References

- Bardin, L. (2011). *Análise de conteúdo*. Paris: PUF.
- Bauer, M. W. (2002) *Análise de Conteúdo Clássica: uma revisão*. In: Bauer, M. W. & Gaskell, G. *Pesquisa Qualitativa com Texto, Imagem e Som: um manual prático*. Petrópolis: Ed. Vozes.
- Gibbs, G. (2009). *Análise de dados qualitativos*. Porto Alegre: Bookman.
- McNiff, Kath (2016). What is Qualitative Research? The NVivo Blog. QSR International. Available at: <https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/resources/blog/what-is-qualitative-research>
- Oliveira, M., Bitencourt, C., Teixeira, E., & Santos, A. C. (2013, July). Thematic content analysis: Is there a difference between the support provided by the MAXQDA® and NVivo® software packages. In *Proceedings of the 12th European Conference on Research Methods for Business and Management Studies* (pp. 304-314).
- Woolf, N. H. & Silver, C. (2018). *Qualitative Analysis Using NVivo: the five level QDA method*. New York: Routledge.