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# Reimagining innovation pathways: exnovation and Buen Vivir as Global North–South dialogues

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## ABSTRACT

With growing awareness of limits to growth, debates around sufficiency and new directions of innovation rise to prominence. At the same time, we witness a great divide between the Global North and South, and innovation is often seen as a decisive factor. We juxtapose two alternative approaches to innovation that place equality and sustainability centre stage. From a Global North perspective, exnovation has gained prominence. From a Global South perspective, particularly in South America, Buen Vivir calls for responsibility and nature-inclusiveness. To what extent are these perspectives changing the direction of innovation? This study is based on a systematic literature review of recent discourses on these concepts. We identified their main characteristics in four dimensions within each concept (a) technological, (b) environmental, (c) economic, and (d) social. We contextualise this analysis within theoretical debates with the aim of contributing to a better understanding of alternative concepts of innovation.

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## Introduction

With growing awareness of limits to growth, debates around sufficiency and new directions of innovation rise to prominence. It is well-accepted that business-as-usual is unsustainable and may well lead to environmental tipping points (Lenton et al. 2019; Armstrong et al. 2022), as ‘much innovation tends to develop in an unsustainable direction and public regulation falls far short of the challenge’ (Röpke 2012, 1631). As a result, the directionality of innovation (directionality is here defined as ‘the need for more open academic and policy attention to the fact of there being alternative possible orientations for progress’ (Stirling 2009, 5)) has gained increasing interest among scholars of innovation and science and technology, raising questions about ethics, plurality of innovation (Stirling 2024), and modernity without coloniality (Ciarli et al. 2022).

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Similarly, Responsible Research and Innovation (RRI) has gained contemporary relevance, especially in Europe, where this concept refers to ‘a view to the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products’ (Von Schomberg and Von Schomberg 2023, 401), with a strong element of mutual responsibility of societal actors in innovation processes.

Global responsibility for climate change and environmental degradation is both historically and currently unequally distributed, with countries representing the Global North being responsible for the majority of global greenhouse gas emissions and natural resource extraction (Matthews et al. 2014; Schaffartzik et al. 2014; Schaffartzik, Duro, and Krausmann 2019).

At the same time, the advocacy of a concept of innovation with lasting positive impacts, popularised in the Global South as a way out of poverty, reaffirms the logic of coloniality (Jimenez et al. 2022; Morales et al. 2019). It imposes a development paradigm through discourses of modernisation and *cultural coloniality* (Guijano 2007), based on a rhetoric in favour of established pathways of innovation (Stirling 2024).

Current understanding of innovation reinforces the argument that the Global South faces poverty and low levels of development due to a lack of innovation (following this logic), as a vicious circle of why the Global South remains poor (Jimenez et al. 2022).

Nevertheless, both the Global North and the Global South have to cope with the consequences of human-made climate change and the paradigm of modernity, which has become global. Modernity’s paradigm has predominantly been a strong driver of growth in the Global North, recognised as global infrastructures of modernity (e.g. production, trade, extraction) where many of the dynamics of modernity are the result of processes of coloniality (Stirling 2020). These dynamics of modernity are also subject to reflection and critique in the Global South (Jimenez et al. 2022).

‘Innovations’ have taken a prominent position in modernity. According to Rosa (2021), *dynamic stability* is one of the key characteristics of a capitalist modernity based on acceleration. ‘This means, that they [modern societies] can only uphold their structure in a mode of increase, that they are dependent on continuous (economic) growth, (technological) acceleration and (cultural) innovation concentration, (...)’ (Rosa 2021, 185). However, if a growth-based paradigm is dependent on innovation, the question arises as to what role (directionality of) innovation can play in a paradigm based on principles of social and environmental sustainability.

In this sense, the dimensions of RRI help us to understand the forms of responsibility of social actors within innovation processes. For example, four key dimensions of RRI arising from the science and technology gap (Von Schomberg and Von Schomberg 2023) help us to contribute to the debate on new innovation pathways: (1) RRI addresses societal challenges and is not limited to new technologies. (2) It is based on principles of ethics and co-responsibility. (3) It aims to involve societal actors in innovation processes. Finally, (4) it addresses market failures to deliver the socially desirable outcomes of innovation processes.

It is not our intention to open a debate on sustainability and its guiding values based on ideas of de-growth, green growth, sufficiency or just transitions. Instead, we aim to open up a discussion on alternative approaches, alternative pathways of innovation to the dominant perception that ‘science, technology and innovation policies are based

on the assumption that innovation is a force for creating a better world' (Schot and Steinmueller 2018, 1561).

Under headers such as 'sustainable innovation' or 'green innovation' a technology-optimist approach is oftentimes upheld based on the beliefs that renewable energy technologies or circular economy approaches can foster a transition to a sustainable future. In recent years, a plethora of alternatives to the largely Schumpeterian understanding of predominantly technological innovations for economic growth have emerged though. For example, we can see an increasing attention to social innovations, which not only emphasises that innovation does not necessarily have to be primarily technology-based, but also tends to emphasise issues of equality (Maldonado-Mariscal 2023a), social justice and inclusion (Howaldt et al. 2021; Ziegler 2017).

At the same time, the innovation debate deepens the discussion on the positive and dark sides of innovation (e.g. Dziurski 2021; Maldonado-Mariscal and Alijew 2023). This debate offers different approaches and perspectives for reflection. Some of these approaches focus on system transformation, i.e. transformative innovation (e.g. Schot and Steinmueller 2018; Ghosh, et al. 2021), mission-oriented innovation systems (e.g. Hekkert et al. 2020; Mazzucato 2018), or dedicated innovation systems (e.g. Pyka 2017; Schlaile et al. 2022). These approaches share a questioning of the pro-innovation bias of the current modern capitalist systems (Godin and Vinck 2017; Rogers 2003). But, at the heart of this debate remains the question of how to best use innovations to create a better and more equal world.

In this contribution, we focus instead on two pertinent concepts that go against this logic of innovation as necessary force for progress. We do so in particular by juxtaposing one emerging concept predominantly present in the Global North, namely *exnovation*, and one concept emerging from the Global South, more precisely Latin America, namely *Buen Vivir*. Although these concepts operate at different levels, exnovation is more linked to specific technologies or practices, while *Buen Vivir* refers to a worldview in which both humans and nature have equal rights. So while one refers to the termination of practices or technologies, the other refers to a paradigm shift that requires giving rights to nature, for example within a constitution. Both concepts suggest a new logic of direction, suggesting to start interpreting innovation from its complexity and diversity and to question the rhetoric in favour of established innovation pathways. We ask: *to what extent are critical perspectives on (social) development changing the direction of innovation in the Global South and North?* To do so, we aim to analyse recent academic discourses on the concepts of exnovation and *Buen Vivir* and their relation to innovation.

Our motivation for using exnovation and *Buen Vivir* lies in the need to better understand notions and directions of innovation in current academic discourse in the Global North and South. We are aware of the great variety of concepts (e.g. de-growth in the Global North, and pachamama in the Global South). However, we have identified exnovation and *Buen Vivir* as two that are of growing interest in the academic literature. Furthermore, both offer us the opportunity to explore four dimensions of the concepts, which are explained in more detail in the following section (technological, environmental, economic, and social). Exnovation, for example, represents a growing debate about phasing out practices that are no longer desirable. This concept gives us the opportunity to assess which practices are desirable and which practices should be abandoned

for responsible development. Buen Vivir, on the other hand, represents a southern perspective which has become increasingly important in the academic literature in recent years, for instance through the constitutional rights of nature, and which has started to diffuse beyond the Global South. Buen Vivir seems to be very similar to other words in different indigenous languages, however, we use Buen Vivir because it is more widely represented in academic discourses.

We understand exnovation as ‘purposive termination of existing (infra)structures, technologies, products and practices’ (Heyen, Hermwille, and Wehnert 2017, 326). As such, exnovation is occasionally described as the opposite of innovation. Rather than focusing on new or more, exnovation thus emphasises, on the one hand, that more is not always needed and, on the other hand, that certain technologies, products or practices need to be actively removed from the system. The origin of the concept of exnovation is generally attributed to Kimberly (1981), who described exnovation in organisational studies as disinvestment in an innovation in which the organisation had previously invested. In his literature review, David (2015) notes that the term was initially used primarily in the context of medical research. More recently, it has been adopted more broadly in the context of sustainability, as ‘the discarding of materials and practices that have become problematic or are now recognised as problematic’ (Ziegler 2020, 47). As such, exnovation can be found both in relation to innovation, in the sense that the introduction of something new (innovation) may require the abolition of something old (exnovation), and as an independent process related to ideas of post-growth or sufficiency (Arnold et al. 2015).<sup>1</sup>

In this sense, there is also a perspective of social exnovation, as ‘the deliberate termination of social practices, and the change in goals and relations as well as in materials and techniques required for this.’ (Ziegler 2023, 56). This is reflected in targets to end fossil fuel consumption and unsustainable lifestyles, e.g. the frequent use of fossil fuel-based mobility, excessive use of plastic in packaging or clothing produced from animal fur. Exnovation therefore includes a focus on destabilisation, discontinuation, and termination (Kivimaa and Kern 2016; Ziegler 2023) as well as unlearning of habitualised practices (van Oers et al. 2021).

Buen Vivir, literally the good living, is a ‘paradigm [that] advocates for renewing social and economic relations based on reciprocity, solidarity, and respect for non-humans as subjects of rights.’ (Jimenez et al. 2022, 1634). The principles of Buen Vivir may lead innovation as it may encourage change towards an alternative economic model and/or towards harmony between human and non-human nature. As such, it has strong notions of solidarity economy/social economy. It is inspired by indigenous beliefs and has a strong orientation towards decolonial approaches to development and socio-ecological models (Jimenez et al. 2022).

Some authors suggest that the origins of the concept of Buen Vivir can be tracked back to indigenous social movements for nature conservation in Latin America, particularly in Ecuador (Altmann 2020). According to them, the concept of Buen Vivir can be understood as an ‘ethical paradigm, in which nature is understood as belonging to the indigenous people and their respective nations’ (Weber and Tascón 2020, 851).

The concept of Buen Vivir has different names, as it comes from indigenous languages, as a response to the sustainability discourse of the Global North. For example, it can be found as *Sumak Kawsay* (in Ecuador and Peru), *Suma Qamaña* or

*Vivir Bien* (in Bolivia), *Ñande Reko* (in Paraguay) (Weber and Tascón 2020, 850; Altmann 2020, 167); and as *Lekil Kuxlejal* (in Mexico) (Giovannini 2015).

Buen Vivir has become part of the national constitutions of some countries, such as Ecuador in 2008 and Bolivia in 2009 (Barranquero-Carretero and Sáez-Baeza 2014; Caria and Domínguez 2016; Giovannini 2015; Hidalgo- Capitán et al. 2019). It can be located within the discourses of post-development and alternative development (Giovannini 2015). Some of the first encounters with this concept are related to the indigenous movements in Ecuador in the 1930s and 1940s as a reference to materialise a different and more just future (Altmann 2020). A first document in which Buen Vivir was included was in the Amazanga Plan (in 1992), a plan elaborated by the Organisation of Indigenous People of Pastaza, which aimed at a better management of natural resources in the Amazon (Ecuador) (Hidalgo- Capitán et al. 2019).

The principles of Buen Vivir are: reciprocity; plurality; cyclical movement of life; and the future as a principle of equilibrium (Weber and Tascón 2020, 851). Some authors suggest that the diffusion of the concept required not only the idea of indigenous collectives and organisations, but also international actors, such as international cooperation, activists and environmentalists, intellectuals and policy makers (Beling 2019). Buen Vivir is often recognised as a mobilising utopia for social cohesion and the identity of the collective (Caria and Domínguez 2016, 27).

Exnovation and Buen Vivir share a critical stance towards the dominant paradigms of modernity based on development/growth and innovation. They both provide alternative pathways aiming for a more sustainable future that is not locked in a pro-innovation paradigm. On the other hand, there are important differences between these concepts. Whereas exnovation is oftentimes linked to very concrete phasing-out or discontinuation of specific technologies or practices, Buen Vivir can best be described as a worldview or philosophy. The fact that exnovation and Buen Vivir both share a critique of established innovation discourses, but originate from totally different contexts, warrants a worthwhile juxtaposition of the concepts in search for a (potential) North–South dialog regarding the role of innovation in a more just and sustainable future.

In this paper, we review the existing literature on the concepts of exnovation and Buen Vivir in search of differences and already existing North–South dialogues. The aim is to juxtapose the two concepts, in order to draw lessons for both approaches to reinforce each other as alternatives to current growth-based paradigms. This dialogue between these concepts is specifically presented in [Potential dialogue and research agenda](#) section of this paper. In the following section, we present the methods we used for this work. The final section shows the results of the systematic review.

## Methods

In order to select relevant literature, searches were carried out in academic databases. Papers were extracted from Web of Science, Scopus and Scielo. Web of Science and Scopus are known as trustworthy, high-quality and comprehensive databases for scientific literature. An important downside of reliance solely on these repositories is that they may be prone to having a bias towards publications in the English language and consequently be biased towards perspectives of the Global North. They were therefore supplemented with Scielo. Scielo.org is, likewise, a multidisciplinary international

repository for scientific work, which includes specifically a large set of Latin American journals in Spanish and Portuguese.

As *Buen Vivir* is a Latin American concept, and it is the explicit goal of this paper to establish a dialogue between predominantly English-language Northern research and relevant debates in predominantly Spanish (and to a lesser degree Portuguese) speaking parts of the world, English, Spanish, and Portuguese search terms were used. The literature search focused on our two main keywords, ‘exnovation’ and ‘buen vivir’, plus ‘innovation’. The search term ‘innovation’ was included to narrow down the search and to ensure hits that specifically address exnovation and/or *Buen Vivir* in combination with concerns or deliberations on innovation (policy or management). We used an advanced Boolean search, build up in generic terms as: ‘Keyword’ + innovation\* [in English, Spanish, and Portuguese] (the asterisk allows inclusion of words beginning with ‘innovation’ but that may end differently; in this case included specifically to also include articles that refer to innovations<sup>2</sup>).

The database searches took place on February 8th, 2023. As the number of hits proved manageable and most of the publications found in the databases were relatively recent, it was not necessary to limit the period. To include English, Spanish and Portuguese, the Boolean search in Web of Science looked as follows:

[ALL = (exnovation\*) AND (ALL = (innovation\*) OR ALL = (innovacion\*) OR ALL = (inovação) OR ALL = (inovacao) OR ALL = (inovações) OR ALL = (inovacoes))]

As well as [ALL = (“buen vivir”) AND (ALL = (innovation\*) OR ALL = (innovacion\*) OR ALL = (inovação) OR ALL = (inovacao) OR ALL = (inovações) OR ALL = (inovacoes))]

This resulted in 20 (exnovation) and 29 (*Buen Vivir*) hits respectively.

The same search in Scopus, using all fields, produced too many hits for an in-depth review (178 and 956 hits respectively). The search was therefore narrowed down by including only title, abstract, and keywords:

[TITLE-ABS-KEY(exnovation\*) AND (ALL(innovation\*) OR ALL(innovacion\*) OR ALL(inovação) OR ALL(inovacao) OR ALL(inovações) OR ALL(inovacoes))]

And

[TITLE-ABS-KEY(“buen vivir”) AND (ALL(innovation\*) OR ALL(innovacion\*) OR ALL(inovação) OR ALL(inovacao) OR ALL(inovações) OR ALL(inovacoes))]

This resulted in 39 and 73 hits respectively.

Scielo, finally, did not allow to include an ‘OR’ condition in the search. Separate searches in the different languages therefore had to be undertaken. Interestingly, this predominantly Latin America-based depository did not yield any results for the search term ‘exnovation’. ‘*Buen Vivir*’ in combination with ‘innovation\*’ (in the respective languages) yielded a total of 17 hits, but this included many doubles as Latin American journals tend to include English and Spanish (and occasionally Portuguese) abstracts. In total eight unique publications could be found using Scielo.org.

The database searches therefore resulted in a total of 59 publications on exnovation and 110 on *Buen Vivir*. After checking for doubles, excluding generic conference proceedings and one interview, that did not refer to a specific text, we ended up with 40 unique publications on exnovation and 95 publications on *Buen Vivir* (all languages).

To narrow down the corpus of relevant publications further, the abstracts of the remaining 135 papers were read in order to check for relevance for the review. Publications were considered relevant if at least one of the four key dimensions of the research (technological, environmental, economic, and social) were addressed in combination with a debate on innovation.

The abstracts were divided among the two authors of this paper and were marked as 'relevant', 'irrelevant' or 'unclear'. Abstracts for which one of the authors was undecided, i.e. those labelled 'unclear' were read by the second author and were discussed. If doubts remained, papers were included for the full-text review. It is important to stress at this point that one of the authors is native Spanish speaker who also understands Portuguese and French. For the first sighting of the abstracts, language barriers did not play any role though as all papers included also English abstracts.

Finally, based on the abstracts, a total of 66 papers (23 papers on innovation and 43 papers on Buen Vivir) were selected for in-depth review. The papers were divided equally and randomly among the two authors of this paper. Only eight Spanish language papers and one French language paper were designated to the author able to read the papers in their original language. As a basis for the review, [Tables 1](#) and [2](#) below were used to summarise the main findings of each article according to the mentioned categories: (a) technology, (b) environment, (c) economy, and (d) social.

The use of four categories: technological, environmental, economic, and social is due to the need to better capture the different pathways, processes, principles, and values of innovation, going beyond the technological or market focus of dominant innovation discourses. These categories embrace the social and environmental concerns underlined by the necessary transition to a just and sustainable future. From our perspective, these dimensions reflect the pillars underpinning the construction of a new directionality of innovation.

- *Technology*: principles in the use and creation or destruction of (un)sustainable technology.
- *Environment*: the main values and principles relating to nature, the use of resources and the balance between the use and protection of natural resources.
- *Economy*: forms of production and economic activities, as well as levels of sufficiency for production or recognised types of market value.
- *Social*: the main values for social groups, types of public goods and priorities, or the nature of the desired balance between environment, economy and technology.

Our literature review focuses on the emerging academic debates on both concepts. A first limitation of this study is, of course, that the majority of published literature is in English. To address this limitation, we expanded the usual databases with a search in Scielo.org and included literature in other languages (Spanish and Portuguese), that reflect relevant regional perspectives on the concepts. Beyond the language divide, it must also be recognised that especially the concept of Buen Vivir has a rather rich oral tradition. However, as our aim is to study the impacts of both concepts on emerging academic discourses related to the directionality of innovation, we consider that the lack of oral sources should not be a major limitation for this analysis. In the following section, we present the main results.

**Table 1.** Summary of the key findings of the literature review on Buen Vivir (BV).

Analytical dimension	Key findings and main sources
Technology	<ul style="list-style-type: none"> <li>- (Modern) technology generally does not play a role (e.g. Leguizamón et al. 2021); as materiality in general does not (Beling et al. 2018; Fisher and Nading 2022)</li> <li>- Future technology should be developed in line with BV principles, therefore Ochoa-duarte and Pena-Reyes (2020) and Pesántez Avilés, Sabina, and Bojorque Chasi (2015) put emphasis on BV in engineering education and education in general</li> <li>- Technological development should bring collective benefits rather than individual gains (Jimenez and Roberts 2019)</li> <li>- BV rejects the use of technology in hegemonic ways. It suggests open knowledge for common good 'free and open access movement'(Martens 2017)</li> </ul>
Environment	<ul style="list-style-type: none"> <li>- Human beings are considered equal to every other natural being (González Tanco and Arcila Calderón 2022)</li> <li>- BV as alternative to 'northern' SDGs (Hidalgo- Capitán et al. 2019; Ochoa-duarte and Pena-Reyes 2020)</li> <li>- Environmentally just and harmonious, in balance between nature and social justice (Jimenez and Roberts 2019; Paño Yáñez 2021); aiming at 'collective well-being' (Fisher and Nading 2022)</li> <li>- Non-objectification of nature (Paño Yáñez 2021) or environment as a subject of rights (e.g. Constitution of Ecuador) (Giovannini 2015).</li> <li>- BV has three pillars: personal, collective and nature. These pillars focus on three strategies: (1) plurinationality and decoloniality, (2) equity and (3) sustainability (Villalba-Eguiluz et al. 2020, 4; Villalba-Eguiluz and Pérez de Mendiguren 2019; Caria and Domínguez 2016)</li> </ul>
Economy	<ul style="list-style-type: none"> <li>- BV does not seek progress and growth, but plenitude in balance and sufficiency, thus criticising capitalism (Lang 2022; González Tanco and Arcila Calderón 2022; Contreras Baspineiro 2021; Jimenez and Roberts 2019; Fisher and Nading 2022; Beling 2019; Ochoa-duarte, León rojas, and Reina-rozo 2021, Caria et al. 2016); de-growth may be a consequence of repairing damages done by capitalism and modernity (González Tanco and Arcila Calderón 2022). BV rejects an individualistic approach of modernity (Stromquist 2019, 40)</li> <li>- BV as one way of thinking about 'creating alternatives to the economic model that has been imposed on our region and at the global level for the past century' (Mejía 2015, 208) and as alternative economy that embraces new forms of work, gender, collectivity, and understanding of nature, e.g. circular economy (Paño Yáñez 2021; Villalba-Eguiluz and Pérez de Mendiguren 2019)</li> <li>- No conception of 'development' (as known in the Global North) therefore also not of economic progress (Altmann 2015)</li> <li>- Accumulation of material wealth is rather seen as threat to the community (Lang 2022)</li> <li>- Collective as the basis for all economic and innovation activities (Jimenez and Roberts 2019, Fisher and Nading 2022, 4)</li> <li>- New directions of social and productive innovation of communities (Barkin 2012)</li> </ul>
Social	<ul style="list-style-type: none"> <li>- Decisions are taken in assembly; accumulation of individual power is seen as threat to the community (Lang 2022); community based on unity, harmony, and reciprocity (Contreras Baspineiro 2021; González Tanco and Arcila Calderón 2022) communal society (Campos Navarrete and Zohar 2021)</li> <li>- Fundamental transformation of cultures (civilisation crisis) and a cultural and political restructuring that suggests a new social contract (Beling et al. 2018; Beling 2019)</li> <li>- A pedagogical concept for social transformation (Ochoa-duarte, León rojas, and Reina-rozo 2021; Weber and Tascón 2020)</li> <li>- BV as a public good, formulated in national constitutions (Villalba-Eguiluz et al. 2020)</li> <li>- BV as a social and ecological movement (Altmann 2020)</li> </ul>

## Results

The results proposed in this section have been drawn following the summary of key findings in Tables 1 and 2. Table 1 summarises the main findings from our review on Buen Vivir and innovation, depicted along the four dimensions of our analysis (technology, environment, economy and social). Table 2 presents a similar picture for the review on exnovation and innovation, also along the four dimensions of our analysis.

**Table 2.** Summary of the key findings of the literature review on exnovation.

Analytical dimension	Key findings and main sources
Technology	<ul style="list-style-type: none"> <li>- Technological innovation alongside exnovation of practices and structures (Pichler et al. 2021; Ziegler 2020; David 2017)</li> <li>- Innovation and exnovation go hand in hand (Heyen 2019); innovation needs exnovation in the sense that the old technologies and infrastructures needs to make space for the new technology (Davidson 2019);</li> <li>- Exnovation as removal of old (unsustainable) technologies (Heyen, Hermwille, and Wehnert 2017); as technology elimination, through a transition phase (or phase-out) (David 2018)</li> </ul>
Environment	<ul style="list-style-type: none"> <li>- The starting point is the ecological crisis and the unsustainability of current practices or technologies (Davidson 2019; Heyen, Hermwille, and Wehnert 2017; Klerkx and Begemann 2020; Krüger and Pellicer-Sifres 2020; Ziegler 2020)</li> <li>- 'Both innovation and decline' are necessary to remove unsustainable practices (Pichler et al. 2021, 142). With regard to a sustainable transition policy.</li> <li>- Exnovation as a logical consequence of too large existing ecological footprint (David 2017)</li> </ul>
Economy	<ul style="list-style-type: none"> <li>- Exnovation may question prevalent economic paradigms (Klerkx and Begemann 2020)</li> <li>- Costs (often in the form of sunk investments in existing structures) can be a barrier to exnovation (Davidson 2019)</li> <li>- Innovation needs exnovation in the sense that the old needs to make space for the new (Davidson 2019; Khandwalla 2006)</li> <li>- Exnovation as the removal of no longer beneficial innovation from an organisation (November 2018); economics may therefore also be a driver of exnovation (Heyen, Hermwille, and Wehnert 2017)</li> <li>- Phase-out policies require regional, national and supranational strategies to prevent large-scale job loss (Pichler et al. 2021, 148); regional policies on exnovation strongly influence specific markets (van Oers et al. 2021)</li> <li>- Exnovation as discontinuation of market industries (David 2018)</li> </ul>
Social	<ul style="list-style-type: none"> <li>- Exnovation of social practices, i.e. social exnovation (David 2017; Ziegler 2020) 'societally framed as obsolete and undesirable' (David 2017, 2)</li> <li>- Exnovation of social practices to make space for new (better) practices (Bynum et al. 2019)</li> <li>- Exnovation creates the perception of removal and loss (David 2018)</li> <li>- Exnovation and exit practices as a result of social movements (van Oers et al. 2021)</li> </ul>

### Summary of results

For the case of Buen Vivir, we found that the *dimension of technology* does not play a crucial role in the application of this concept (e.g. Leguizamón et al. 2021). Buen Vivir rejects the use of technology in a hegemonic way and instead of pursuing technological development for the sake of (economic) progress (as is the prevailing, Schumpeterian, view on technological innovation in a capitalist approach), it at most recognises the use of current technology or planning of future technology, in relation to pursuing a common good for the collective (Jimenez and Roberts 2019; Martens 2017).

In contrast to the technological dimension, the environment does play an important role in Buen Vivir. Within the *environment dimension*, Buen Vivir makes a strong call for a balance between nature and social justice (Paño Yáñez 2021; Jimenez and Roberts 2019). This emphasis is linked to the treatment of nature as a subject of rights and the non-objectification and capitalisation of nature (Giovannini 2015; Paño Yáñez 2021). An essential element in these dimensions is the objective of collective well-being. This objective has been structured within Buen Vivir as pillars that pursue a balance between the personal sphere, the collective, and nature. These pillars pursue at the same time a decolonial perspective that seeks social and ecological equity, and

sustainability as the ultimate goal (Villalba-Eguiluz et al. 2020; Villalba-Eguiluz and Pérez de Mendiguren 2019; Caria and Domínguez 2016).

The *economic dimension*, however, is no less important. This dimension within Buen Vivir criticises infinite growth and the lack of balance in the use and production of resources (Lang 2022; González Tanco and Arcila Calderón 2022; Contreras Baspineiro 2021; Jimenez and Roberts 2019; Fisher and Nading 2022). Buen Vivir introduces an alternative perspective to the dominant development paradigm (Altmann 2015; Ochoa-duarte, León rojas, and Reina-rozo 2021; Caria and Domínguez 2016; Mejía 2015). Once again, the collective is a relevant concept within Buen Vivir, as it is seen as the basis for innovation and economic activity (Jimenez and Roberts 2019). In this sense, Buen Vivir proposes new ways of working and using nature, for example, circular economy appears as a concrete alternative (Paño Yáñez 2021; Villalba-Eguiluz and Pérez de Mendiguren 2019).

The *social dimension* includes different aspects. Some of the most important ones within Buen Vivir are harmony, reciprocity and building a collective imaginary and a community (Contreras Baspineiro 2021; González Tanco and Arcila Calderón 2022). Buen Vivir proposes a culture away from individualistic Eurocentric capitalist modernity towards ‘circularity, relationality, biocentrism, holism, and an ‘environmental rationality’’ (Beling et al. 2018, 5), implementing this concept as a kind of pedagogical tool for the transformation of societies (Ochoa-duarte, León rojas, and Reina-rozo 2021; Weber and Tascón 2020). Concrete forms of transformation are presented within Buen Vivir as experimental practices, for example through constitutional reforms (Villalba-Eguiluz et al. 2020), or as a social and ecological movement (Altmann 2020, Beling 2019), looking for plurality of perspectives as alternative orientations for progress (Stirling 2009).

For exnovation, we find that the *technology dimension* is very relevant and that there is a strong link between innovation and exnovation (Heyen 2019). Some authors propose exnovation specifically as technology removal (David 2018), which requires a transition phase, i.e. a technology phase-out phase, which at the same time requires innovation along the way. While other authors suggest that exnovation is not only about technology remobilisation, but also about the removal of practices and structures (Heyen, Hermwille, and Wehnert 2017; Pichler et al. 2021; Ziegler 2020).

Although in its first use (see Kimberly 1981), exnovation was associated mainly with economic considerations, the *environmental dimension* has gained prominence in the recent discourse. The main idea is that exnovation is a logical step to reduce the ecological footprint (David 2017) and similar to the technology dimension, both innovation and exnovation are needed to interrupt unsustainable practices (Pichler et al. 2021). In this sense, several authors agree on the need for exnovation to respond to the current ecological crisis and to the need to ‘exnovate’ both unsustainable technologies and practices (Davidson 2019; Heyen, Hermwille, and Wehnert 2017; Klerkx and Begemann 2020; Krüger and Pellicer-Sifres 2020; Ziegler 2020).

The *economic dimension* still plays an important role in exnovation, as it challenges the economic paradigm (Klerkx and Begemann 2020). From this perspective, exnovation gives rise to a new innovation cycle in general or in a specific organisation (November 2018); by creating something new and eliminating the old (Klerkx and Begemann 2020). Some authors agree that policy within exnovation is highly relevant, as it can

influence specific markets (van Oers et al. 2021) or even disrupt entire industries (David 2018). Therefore, exnovation requires regional or national policies that smooth the transition phases of phasing out, as exnovation of specific markets or entire market industries can lead to job losses or high costs of dismantling infrastructure and processes (Pichler et al. 2021). Or, in a more disruptive direction, it can be a deliberate exnovation, that points to a new direction of innovation through the destruction of markets (Fuchs and Ziegler 2024), or the discontinuation of market industries (David 2018).

We found out that the *social dimension* of exnovation has not yet been studied in depth. However, there are strong elements in this dimension that call into question the directionality of innovation (Stirling 2024) and the development paradigm. Some authors point to the importance of exnovating social practices (David 2017; Ziegler 2020), as such practices are outdated and undesirable (David 2017). In this sense, exnovation can also be understood as *social exnovation*, referring to old practices that are no longer needed or socially desired, such as unsustainable consumption practices (i.e. eating whale meat or wearing fur coats).

### ***Juxtaposition of the concepts***

The results described above summarise the findings of the literature review for each of the concepts Buen Vivir and exnovation, respectively. Here, the concepts are juxtaposed in search of fruitful entry points for a North–South dialogue aimed at drawing lessons from each other’s perspectives. This analytical process includes a conceptual discussion reflecting on the positive and negative aspects of the concepts and some of the main theoretical perspectives identified.

### ***Conceptual discussion***

The review reveals that exnovation refers to at least two meanings: (1) exnovation as the removal of the old and no longer beneficial, such as old technologies and unsustainable practices (Heyen, Hermwille, and Wehnert 2017), and (2) exnovation as removal to make space for the new, like production processes that are replaced by more efficient ones, or the removal of (cheaper) fossil-based electricity production in favour of clean alternatives (Davidson 2019).

Unlike exnovation, which is generally described as a process of discontinuity, termination or removal of specific technologies or practices, Buen Vivir is mostly described as a kind of worldview or philosophy. As such, Buen Vivir is less directly linked with innovation, but rather tends to be contrasted with notions and direction of development. Although innovation is a central element of modernity from a northern perspective, the concept of innovation almost becomes meaningless if development or growth is not a goal or even driving force of society. As such, Buen Vivir is not based on the concepts of innovation and ex-innovation in the Schumpeterian sense, but adopts another perspective on innovation based on resilience, new collective practices and solidarity economy models. This means that Buen Vivir is not always change-oriented in all aspects, as it is based on a conservationist view of nature consistent with traditional thinking. It does, however, offer elements of social change.

Both concepts have their origins in a critical view of modern development and innovation, which involve rapid change and high resource consumption.

The epistemology of these concepts shows that, on the one hand, exnovation has multiple meanings, constantly questioning the sufficiency and growth of our contemporary societies, while, on the other hand, Buen Vivir goes back to indigenous movements and knowledge, questioning above all nature as only a source (an object to be used).

From a normative point of view, we observe that Buen Vivir has been translated into norms in the Constitutions of different countries in the Global South, in an attempt to institutionalise this concept. While exnovation can be related to specific phase-out policies, which include loss and searching comfort with new practices.

Each concept offers a different angle of analysis. They are different, especially in the social dimension, where Buen Vivir seems to offer an alternative worldview, while exnovation mainly seems to be oriented towards the removal of unsustainable practices.

### ***Positive or negative? Different perceptions associated with each concept***

A noteworthy difference between the appropriation and acceptance of exnovation and Buen Vivir is the ‘feelings’ the concepts seem to generate. Buen Vivir, the *good living*, is generally seen as positive, something worthwhile to (aim to) achieve. Although the concept is occasionally depicted slightly negatively as eco-socialism, there are also authors who have linked Buen Vivir to eco-socialism through a positive lens as a key element of its application. Therefore, this aspect may need further research. Leguizamón et al. (2021), for instance, call for a need to open up to modern scientific knowledge. Buen Vivir is nonetheless usually described in such favourable terminology as ‘harmony’ and ‘community’, whereas Jimenez et al. (2022, 1634) present it as ‘reciprocity’, ‘solidarity’, and ‘resilience’. Exnovation, on the other hand, is often described as being associated with more negative connotations (see Pel et al. 2022), destabilisation of previously stable configurations (David 2017) or transitional (social) pain, where phasing-out policies are implemented (Bogner et al. 2024).

Even in cases where the costs of change (either in terms of financial costs, or in terms of the physical and cognitive effort required to change practices) is low, exnovation proved difficult. For example, Bynum et al. (2019) illustrate how outdated practices in medical care have been hard to exnovate. They found that ‘the presumption that better clinical evidence and guidelines alone will lead to significant reduction in use of potentially low-value care may be overly optimistic’ (Bynum et al. 2019, 34). They further conclude that ‘when guidelines recommend discontinuing a service, the response may be slower than when adding or increasing use is recommended’ (Bynum et al. 2019, 34); suggesting that exnovation or discontinuity is generally considered undesirable and may take a long time to be accepted.

### ***Lack of a solid dialogue between these concepts and their scholars***

A noteworthy finding emerging from the review is the lack of integration of both concepts. A North-South dialogue cannot be found in the literature. Based on the Boolean searches in the three databases, no papers were found that appeared both in the search for exnovation and in the search for Buen Vivir, providing first indications that authors do not include both perspectives in their analysis. As a matter of fact, the search in the Latin American database Scielo.org did not yield any hits for the search on exnovation (in combination with innovation) at all. The in-depth reading confirms the lack of dialogue. The discourses on exnovation and Buen Vivir occur in relative

isolation from each other. Only Krüger and Pellicer-Sifres (2020) mention both exnovation and Buen Vivir in their editorial for a special issue on *Analysing the Ecological Crisis: Conflicts, (De-)Politicization, and Power Relations* pointing towards a potential starting point for a dialogue on the directionality of innovation involving both concepts (in their case focused specifically on the role of social innovation in de-growth). However, as our review revealed, this debate has not developed in later publications.

The review of the Buen Vivir literature illustrates how the discussion is generally not taken beyond the Latin American borders. Especially several southern publications show citations of the same authors without reflecting on a broader perspective. Northern literature is hardly ever cited by these authors.

The concept of Buen Vivir is sporadically mentioned by scholars from the Global North, but in these cases, it is usually not worked out in much detail. In their typology of circular economy discourses, Calisto Friant, Vermeulen, and Salomone (2020), for instance, include Buen Vivir as one among many concepts related to circularity discourses, but the only time they mention Buen Vivir in the main text, it is to note that 'there is also little work on indigenous discourses on circularity and alternative concepts from the Global South' (Calisto Friant, Vermeulen, and Salomone 2020, 6). Likewise, Krüger and Pellicer-Sifres (2020) conclude that Buen Vivir might be more suitable to study de-growth than the social innovation approach they originally followed.

### *Perspective on growth/development*

In the literature on exnovation, different perspectives on the need for exnovation can be identified. On the basis of our review, we can distinguish between authors who address exnovation for the sake of exnovation, i.e. with the sole aim of discontinuing or abandoning of the old, and those who address exnovation, in order to make room for (new) innovation. In the first group, we find mainly ecological/environmental concerns at the root of the exnovation process. David (2018, 519), for instance, emphasises that 'energy transition is not just about the new' and studies the necessary exnovation of coal and lignite in the German energy transition. Similarly, Heyen, Hermwille, and Wehnert (2017) describe the governance of exnovation processes predominantly focused on the termination of unsustainable practices and technologies. These authors also address concepts such as 'transition', and emphasise the need for replacement with new, more sustainable technologies and practices, but their main concern is not the new, but the removal of the old.

In the second group, economic or ecological concerns may lie at the basis for exnovation. In line with the original definition of exnovation as expressed by Kimberly (1981), November (2018), for instance, focuses on exnovation within organisations. Although the economic drive is not made explicit, his work is strongly oriented towards the removal of 'innovations once these are no longer beneficial' (November 2018, 14). Exnovation is then needed to make space for new innovations. Hebinck et al. (2022) similarly put emphasis on the need for exnovation (or phase-out) of existing practices and technologies with the goal of making space for new innovations. Building upon the so-called X-curve framework (Hebinck et al. 2022), they underline the need of phasing-out old practices and technologies that are no longer considered beneficial, but in contrast with November (2018), the main motivation behind the X-curve is not economic growth, but sustainability. Although not made very explicit, both environmental and social drivers seem to guide their work.

### *Illustrative examples of the concepts*

In analysing both concepts, we have found that they provide explicit examples of their application. Therefore, we recognise the added value of experimentation when analysing the implementation of both *Buen Vivir* and *exnovation*. As such, we found examples in both concepts that describe this approach of real-world experimentation (David and Gross 2019). However, David and Gross (2019) also recognise a growing need for an experimental approach in everyday contexts (with regards to *exnovation*). They understand the need for these experiments as practices that may develop, through an evolutionary process, and may contribute to more institutionalised strategies.

In the case of *Buen Vivir*, an example of experimentation refers to the introduction of national constitutions with this concept in Latin American countries (Villalba-Eguiluz et al. 2020), such as the new constitution of Ecuador in 2008. This constitution considers the environment as a subject of rights (Giovannini 2015). It advocates a solidarity-based economic system and builds on the tradition of the social economy. Within this example there is also a specific regulatory framework in Ecuador, the popular and solidarity economy (PSE) (Villalba-Eguiluz et al. 2020). This example shows an economic model based on renewable energy sources and the protection of the environment and social capital, with the aim of ‘redistributing wealth and democratising the means of production’ (Caria et al. 2016). However, there is a tension in the experiments of the countries, in which there is also criticisms. *Buen Vivir* is generally described as something desirable and worth pursuing as a sustainable way of life. González Tanco and Arcila Calderón (2022) therefore describe *Buen Vivir* not as an end goal, but as a process that offers ‘possibilities as an alternative to a global system which is in physical and moral bankruptcy’ (326). However, not all authors are uncritical of the concept. Several authors, for example, criticise the appropriation of *Buen Vivir* in politics, in countries like Ecuador that, despite putting *Buen Vivir* as the central concept of their constitution, still maintain extractive industries (Domínguez, Caria, and León 2017; Lang 2022; Calvo, Syrett, and Morales 2020).

In the case of *exnovation*, some examples of experiments with this concept refer to the phasing-out of certain energy sources (Ziegler 2023), such as nuclear power (David and Gross 2019) or the coal-based energy system (Brauers, Oei, and Walk 2020). Brauers, Oei, and Walk (2020) studied coal phase-out pathways in Germany and the UK. Some of the criticisms of this energy transition include concerns about the security of energy systems, but also that past government subsidies (e.g. for coal in Germany) delay or limit the change of the status quo (Brauers, Oei, and Walk 2020). While nuclear energy *exnovation* in Germany can be perceived as a failed innovation (David and Gross 2019), in the post-war context of a nuclear accident and reluctance to invest, a local anti-nuclear movement was strengthened, making room for experimentation with renewable energy in Germany (David and Gross 2019).

### *Sufficiency and de-growth as a common ground*

The discourse of *de-growth* represents a common point between *Buen Vivir* and the social and environmental uses of *exnovation*. The philosophical backbone of *Buen Vivir* is strongly linked to the idea of sufficiency as argument for *de* or *post-growth*, e.g. as an alternative for *post-extractivism* in the Global South (Acosta 2020). Similarly, various scholars who have taken up the concept of *exnovation*, do so from a perspective of responsible innovation grounded on the idea of sufficiency (or ‘enough innovation’,

see Ziegler 2020). However, whereas Buen Vivir is strongly rooted in the ideas of sufficiency, harmony, and reciprocity, the literature on exnovation can be divided into two groups. One focusing on the abolishment of unsustainable practices and technologies, and the other emphasising on the need for exnovation mainly to make way for new innovation and (often emphasising sustainable) growth and development. In the following section, we provide a discussion of the results.

## Discussion

### *Potential dialogue and research agenda*

Buen Vivir can contribute to exnovation with the positively connotated principles of plurality, decoloniality, equity, and sustainability as a whole (Villalba-Eguiluz et al. 2020; Villalba-Eguiluz and Pérez de Mendiguren 2019; Caria and Domínguez 2016). Especially the principle of *plurality* has been a call to open space for alternative directions of innovation (Andersson, Hellsmark, and Sandén 2021; Stirling 2009). This refers to the recognition and integration of plural perspectives in, and beyond, (northern) conceptions of modernity (Villalba-Eguiluz et al. 2020), as well as to the creation of plurality in the choice of technology (Stirling 2009). This vision suggests more open and equitable patterns of resource appropriation and control, as one of the strong elements of Buen Vivir to overthrow the current structures of control and production in the capitalist sense, and move towards a collective and social form of production, consumption, and self-limitation.

Buen Vivir and social and environmental approaches to exnovation share the vision of sufficiency as a critique of capitalism (Lang 2022; González Tanco and Arcila Calderón 2022; Contreras Baspineiro 2021; Jimenez and Roberts 2019; Fisher and Nading 2022). In this sense, a more intense academic dialogue is needed between exnovation and Buen Vivir, as both have in common ideas of de-growth (González Tanco and Arcila Calderón 2022), but whereas exnovation is strong in targeting specific unsustainable technologies and practices, Buen Vivir presents a worldview within which concrete exnovation processes can be embedded and positively framed. On the other hand, exnovation shows an advantage in the sense of adopting concrete forms of implementation, as seen in examples of experiments in energy systems transitions. This is a point that exnovation can contribute to Buen Vivir, since Buen Vivir lacks a clear debate on innovation and technology and on how to integrate a complex view on the different dimensions of Buen Vivir in a practical way, as it tends to remain as ideal imaginaries.

The duality (or positive and negative connotation) of Buen Vivir and exnovation, respectively, can also propose a corrective vision of the concepts. Through this perspective, the multidimensional aspects of both concepts can be recognised, and the pros and cons can be contrasted to avoid creating a new bias similar to the pro-innovation bias (Godin and Vinck 2017), but this time within the alternative narratives of innovation, development, and growth.

Buen Vivir focuses on the development paradigm shift and its implementation. In this sense, exnovation, with the contributions of Buen Vivir, can deepen the theoretical debate on when it is possible to exnovate specifically in the Global South, in certain contexts where growth can be crucial for greater equity in societies with high social and environmental inequality. Buen Vivir also brings a decolonial perspective to

development in the Global South. As such, Buen Vivir can contribute to harnessing this debate on the decolonial perspective in the Global North as an alternative discourse within the Global North itself. The aim of which is to integrate more plural, inclusive, egalitarian, and (socially and ecologically) just forms of production and coexistence.

One of the main ways in which both Buen Vivir and exnovation can complement each other is by distinguishing the ideal vision from the pragmatic tools, and integrate them. We can see this, for example, in the case of responsible research and innovation, responsible innovation (RI) remains an ideal as a strong academic concept, while responsible research and innovation (RRI) is a policy-driven discourse that emerged in the European Commission (Owen and Pansera 2019) as an approach to create concrete tools and goal oriented innovation towards societal goals.

We recognise the need for a *research agenda* linked to new directions of innovation, especially related to different decolonial perspectives of development and use of technology and more just forms of production for societies and the environment. This has been done especially in Buen Vivir (Villalba-Eguiluz et al. 2020; Villalba-Eguiluz and Pérez de Mendiguren 2019; Caria and Domínguez 2016), but much remains to be done in exnovation.

In the Buen Vivir literature, we see strong links to concepts of grassroots innovation (cf. Seyfang and Smith 2007), as grassroots innovation has been gaining prominence in the innovation literature, especially in environmental and development studies in recent years. The concept has similarities with Buen Vivir in terms of the pursuit of inclusive innovation, the development of collective consumption and production, and the development of bottom-up solutions (Maldonado-Mariscal 2023b). We therefore see great value in these concepts of Buen Vivir and grassroots innovation to further explore inclusive innovation not only in the Global South, but also in the Global North, and to contribute to new avenues of innovation.

## Conclusions and outlook

The North-South dialogue on alternative innovation pathways is still small, but has great potential for enriching both concepts and for sharing the experiences of implementing these alternatives. Both academic discourses are still very isolated from each other. Some authors have attempted to open up this dialogue, for example by pointing to Buen Vivir as a Southern alternative to Northern conceptions of modernity (Calisto Friant, Vermeulen, and Salomone 2020; Krüger and Pellicer-Sifres 2020; Latouche 2020), but largely they remain limited to stating that Buen Vivir could be interesting for more in-depth consideration.

Both concepts suggest the need for more experimentation, in order to test concepts and gain social acceptance, which is crucial for any paradigm shift. At the same time, unlearning or learning new ways of doing things and new practices is central to achieving global well-being and to better understanding innovation. Therefore, a key issue that needs to be better understood within innovation is the path dependencies and conflicts of the different actors (Graaf et al. 2021) and should be included in future research.

The nature and connotations of both concepts are based on different valuations of the concepts, negative and positive. While Buen Vivir, in its literary meaning, refers to good living, balance in the use of resources and the collective, as a balanced way of coexisting,

exnovation creates the perception of removal and loss (David 2018), giving a different type of connotation and reflecting a negative perception of the concept (Pel et al. 2022).

We recognise a need for critical perspectives on both concepts, which need to be further investigated, such as the negative connotation of exnovation, and an idealistic connotation of Buen Vivir. The aim of the current paper is start an academic debate on the directionality of innovation and in particular the need for more innovation that integrates insights from scholars from the Global North and the Global South. It is in the nature of this kind of initiative, that it comes with quite some limitations. Some methodological limitations (due to language barriers and the oral tradition prevailing in Latin America) were addressed above. However, we also had to restrict the analysis to two emerging concepts, whereas a larger research field is opening up, for instance around de-growth (Goulet and Vinck 2023), (sustainability) transitions and transformations (Fossati et al. 2022), technological destabilisation (Koretsky et al. 2023), and the need for innovation vis-à-vis maintaining (Vinsel and Russel 2020). Furthermore, the current work restricted the ‘Global South’ to Latin America and the concept of Buen Vivir. A true North-South debate requires the integration of other perspectives from other regions.

But both exnovation, Buen Vivir and other critical perspectives on innovation are likely to reach academic maturity, once there is wider academic recognition of the need to rethink innovation as a corrective to the social order and to redefine the direction of innovation. Based on current challenges that test not only the economic, but also the social, environmental, and technological development systems. This dialectical process may be similar to the emergence of the concept of social innovation, initially perceived as subversive or resistant to technological change (Godin and Schubert 2021). As such, a critical point needs to be reached for the academic debate on an emancipatory direction of innovation to address such complex challenges.

In this sense, exnovation still requires innovation or perhaps the re-introduction of older practices (reversion) (Fuchs and Ziegler 2024), but with a different purpose: ‘innovating out’ (Pel et al. 2022) of unsustainable practices or as collective decisions to phase-out specific practices that are no longer desired (Graaf et al. 2021). Therefore, these different perspectives need to be further investigated. Similarly, Buen Vivir promotes principles of collectivity, reciprocity, solidarity, and resilient communities. Part of these proposals will need to include more concrete suggestions and diverse tools for implementation, and promote a more inclusive dialogue between urban and rural needs, as well as between the Global North and the Global South.

## Notes

1. Note that exnovation can also be used as ‘the attempt to foreground what is already present (...) in specific practices, to render explicit what might be implicit in them’ (Mesman 2011, 72). Mesman’s (2011) and Mesman et al. (2019) approach can be seen as excavating hidden or tacit practices and skills and therefore has a completely different connotation.
2. Note that in Portuguese, the plural of *inovação* is *inovações* which means one cannot simply add an asterisk to include the plural. We opted to include both the singular and the plural separately (alternatively, we could have opted for ‘*inovaç\**’ to find hits for both singular and plural; this would have resulted in the same findings). Also, to be absolutely certain all possible spellings were included, i.e. to make sure the ‘ç’ and ‘ã’ were picked up, as well as spelling with standard QWERTY-keyboards (*inovacao*), both possible spellings, in singular and plural, were included in the searches.

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