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Connection between circular and creative economy in the production of recycled art: an assessment of Brazilian actions using urban solid waste in craftwork creation

Marcela Barbosa de Moraes[1, CDMR], Luiz Eduardo Souza Evangelista[2, CDMR], André Luiz Freitas Guimarães[3, DFM], Paulo César Corrêa Lindgren[4, DFM], Eduardo Hidenori Enari[5, DM]

[1,2,3,4,5]*University of Taubaté (UNITAU),* São Paulo, Brazil, e-mail: marcelabmoraes@gmail.com (*corresponding author*), https://orcid.org/0000-0001-8043-1270; [2]e-mail: luiz.esevangelista@unitau.br, [2]https://orcid.org/0009-0006-2206-7320; [3]e-mail: andre.guimaraes@unitau.br, [3]https://orcid.org/0009-0008-6941-9535; [4]e-mail: paulo.lindgren@unitau.br, [4]https://orcid.org/0000-0001-9643-218X; [5]e-mail: enari@unitau.br, [5] https://orcid.org/0009-0009-0424-8613

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Abstract. This paper aims to present some initiatives that combine sustainability and creativity by using urban waste in craftwork production. For this purpose, the research used a qualitative approach with multiple case studies. The data presented herein were collected through in-depth semi-structured interviews with four Brazilian artists. The analysis was conducted through within-case and cross-case analyses, which sought to identify both commonalities and divergences, thereby yielding valid results for the cases selected during the sampling procedure. The analysis of the artistic production of Vik Muniz, Beatriz Nascimento, Carlos de Oliveira and Ana Clara e Silva demonstrates that contemporary recycled art, particularly within the Brazilian context, has emerged as a remarkable medium for aesthetic experimentation and social critique. The creative processes of the artists, which include the use of waste as a raw material, reflect on the paradigms of consumerist production and social exclusion. The works of the artists invite the viewer to rethink the complex relationship between capital, waste and cultural identities.

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1. Introduction

Reflection on the matter of waste management entails, in the first instance, acknowledgement of the mounting environmental predicament confronting urban centers. As urban areas undergo expansion and the generation of solid waste increases, the need to identify effective solutions to mitigate environmental and social impacts is becoming paramount (Gates, 2021; Moraes, 2022). This urgency is further compounded by the pressure on natural resources and by inequality in the occupation of urban spaces, which gives rise to different realities in terms of access to, disposal of and reuse of materials (Santos, 2002; Harvey, 2012).

Urban geography demonstrates a clear correlation between waste management and the organization of city space. The dynamics of waste flows, collection, segregation and reuse are influenced by socio-spatial dynamics and urban lifestyles (Lynch & Phelan, 2025). It is precisely in these territories, marked by contrasts between centers of consumption and peripheries of disposal, that creative reuse practices emerge.

In this sense, the reconfiguration of production and consumption models, aligned with the Sustainable Development Goals (United Nations, 2015) and the logic of the circular economy, emerges as a central alternative. The paradigm shift in the end-of-life product management paradigm has emerged, recognizing these products no longer as waste but as a potential resource for reintegration into the production chain (Mendes, 2018; Iacovidou, Haladakis & Purnell, 2021).

Concurrently, the creative economy establishes a connection to this process by transforming waste into artistic expression and cultural innovation. Urban space, with its material and symbolic density, offers both discarded resources and audiences receptive to these practices (Zukin, 1995; Lefebvre, 2001). The incorporation of recycled art into urban environments has been demonstrated to elicit environmental awareness and to redefine spaces, thereby transforming streets, squares and galleries into sites of discourse among the domains of waste, aesthetics and society (Girard, 2021; Chen, 2022).

The integration of urban geography, circular economy and creative economy is particularly evident in Brazilian recycled art projects that emerge from local contexts. These projects demonstrate how artists appropriate urban solid waste to create craftwork practices that engage with the territories in which they are situated (Silva & Custódio, 2020).

The present article aims to analyze Brazilian initiatives that combine sustainability and creativity through the use of solid urban waste in craftwork production. The investigation will explore how such practices can strengthen the integration between the circular economy, the creative economy and urban geography.

The fundamental research question that serves as the guiding principle for this study is as follows: How can the use of solid urban waste in craftwork production articulate the principles of the circular economy and the creative economy, considering artistic practices in urban spaces?

By proposing this reflection, the study contributes to broadening the understanding of how waste management can go beyond the environmental dimension and consolidate itself as an engine of cultural, social and economic innovation.

2. Literature review

2.1. Circular economy: fundamentals and principles

The circular economy challenges the linear model of "extract–produce–discard", offering a regenerative framework for sustainability across environmental, social and economic dimensions (Figge et al., 2023). Originating in China in the late 1990s and later institutionalized as a development strategy (MacArthur, 2013; Webster, 2021), the model addresses tensions between economic growth and resource scarcity.

At its core, the circular economy seeks to minimize resource inputs, waste and energy leakage by

slowing and closing material cycles through design, repair, reuse, remanufacturing, refurbishment and recycling (Geissdoerfer et al., 2017; Morseletto, 2020). This transition emphasizes renewable energy, safe materials and business models that extend product lifespans while generating innovation, jobs and economic growth (Michelini et al., 2017; Parreira & Guimarães, 2024).

A key feature is the transformation of waste into "secondary" resources, supported by efficient collection, sorting and reintroduction into production chains. Such practices preserve or increase the value of materials while reducing dependence on virgin resources (Velenturf & Purnell, 2021; Lin et al., 2024). Investments in closed-loop systems, especially within supply chains, contribute to more resilient and sustainable economies (Tseng et al., 2020).

For urban geography, the circular economy offers crucial implications. Cities, being major hubs of consumption, waste generation and resource flows, are central arenas where circular practices unfold (Zhang et al., 2023). Urban strategies such as zero-waste policies, localized recycling industries and the repurposing of vacant or underused spaces into hubs for repair, remanufacturing or cultural production illustrate how circularity reshapes spatial and economic dynamics (Bourdin & Torre, 2025). By reconfiguring flows of energy, water and materials, the circular economy fosters sustainable urban metabolism and strengthens the resilience of metropolitan regions.

Unlike linear systems, which often result in downcycling and degraded outputs, circular design strives to maintain material quality through cradle-to-cradle approaches (Winans et al., 2017; Weetman, 2019). This requires collaboration between industries, governments and consumers, alongside educational shifts in consumption and production behaviors.

Aligned with the UN Sustainable Development Goals (2015), the circular economy frames end-of-life products as opportunities for reintegration rather than disposal. By merging sustainable production with innovative design, it not only minimizes environmental impact but also enables creative reuses of waste – laying the foundation for connections with the creative economy discussed in the next section.

2.2. Background about creative economy

Celso Furtado (1984) emphasized that culture should not be treated as an accessory to development but as a structural element that guides economic practices and shapes the evolution of productive forces. This perspective underpins the creative economy, in which cultural production acts both as a reflection of economic conditions and as a transformative force capable of generating innovation and new social interactions (Ausat et al., 2023; Pacheco & Benini, 2024).

The creative economy is characterized by sectors in which value creation depends on creativity, knowledge and talent, individually or collectively mobilized. These assets – intellectual property, design and digital technologies – constitute strategic resources for wealth generation, employment and competitiveness in the global economy (Howkins, 2002; UNCTAD, 2010). Its logic contrasts with industrial paradigms based on scarcity, privileging instead collaboration, cultural inclusion and sustainable practices (Leitão, 2015).

The consolidation of this field owes much to institutional milestones. The UNCTAD Creative Economy Report (2009) established an international framework for analyzing creative industries, highlighting their role in development policies and global trade. UNESCO (2013) reinforced this perspective by underscoring the cultural dimensions of the creative economy, particularly symbolism, diversity and social cohesion. Together, these initiatives shaped a theoretical and policy discourse that legitimized creativity as a driver of endogenous development (Reis, 2012; Pacheco & Benini, 2018).

Contemporary scholarship stresses that creative industries – encompassing media, fashion, design, crafts and the arts – form a dynamic system linking cultural capital to innovation and sustainable development (Florida, 2014; Pratt, 2022; Throsby, 2024). Beyond economic growth, they contribute to identity building, social inclusion and environmental awareness, positioning creativity as a catalyst for cultural and ecological transformation (Kagan, 2018; Adom, 2024).

In this sense, the creative economy emerges as a paradigm of development grounded in knowledge and culture – one that promotes innovation, diversity and sustainability. It offers not only economic opportunities but also a reconfiguration of the relationship between culture and production, creating fertile ground for practices such as recycled art, which is discussed in the following section.

2.3. Recycled art: cultural expression and sustainability

The origins of recycled art lie in early-20th-century avant-garde practices, but it was only in the 2000s that the field acquired theoretical depth. Scholars such as Gomez (1999) and Sampah (2024)

emphasized the disruptive potential of reusing discarded materials, a theme later developed into critiques of traditional aesthetic conventions (Nunes, 2022; Çebi, 2025). By integrating aesthetics, sociology and ecology, research has framed recycled art as a practice that interrogates consumption, industrial production and waste (Huo, 2013; Mears, 2018).

Since the 2010s, studies have highlighted recycled art as a form of social intervention, linking creative reuse with community engagement and sustainability movements (Whiteley, 2010; Alexander & Reno, 2012). This perspective situates recycled art not only as an artistic practice but also as a political and environmental discourse that is particularly relevant to urban contexts where waste management and spatial regeneration are pressing concerns.

Recycled art can thus be defined as the transformation of discarded materials into works endowed with aesthetic, social and political meaning (Asamoah et al., 2022; Haralambous, 2024). Beyond sustainability, such practices expose the contradictions of modern urban consumption and disposal systems, positioning waste as both a medium of critique and a resource for innovation.

From an urban geography perspective, recycled art operates within the material and symbolic circuits of the city. In Latin America, it has been associated with community-led initiatives that revalue local identities while promoting environmental awareness (Adom et al., 2023). In Europe and North America, scholars have framed it as a form of resistance to industrialization and consumerism (Mears, 2018; Osita & Adiele, 2020). In emerging cities, recycled art intersects with the regeneration of public spaces, producing new cultural geographies that blend sustainability with urban identity (Adeyemi, 2023; Akinrujomu, 2024).

Three main trends can be identified:

- Aesthetic-experimental: revalorization of materiality – texture, color, history – through creative reuse (Nunes, 2022)
- Social-critical: engagement with waste and consumption as drivers of public debate and political awareness (Bona, 2021)
- Interdisciplinary: integration with design, architecture and ecology, expanding the role of recycled art in shaping sustainable urban practices (Avila et al., 2023)

Recent scholarship proposes the development of environmental impact metrics to assess recycled art in urban contexts (Szymańska et al., 2016; Lucietti et al., 2018; Mallabadi, 2021). These include indicators such as landfill reduction, energy savings, avoided CO_2 emissions, and contributions to the creative economy through job creation and sustainable production chains (Del Serrone et al., 2025). Such metrics link recycled art directly to urban policy, underscoring its potential to contribute to ecological transition strategies and cultural resilience.

In this way, recycled art is not merely an aesthetic practice but an urban cultural geography of transformation. By re-signifying waste, it produces new forms of spatial identity, strengthens community participation and aligns artistic innovation with the imperatives of sustainability and inclusive urban development.

2.4. Integrated conceptual framework: circular economy, creative economy and recycled art

The intensifying ecological crisis, coupled with the imperative for cultural innovation and social engagement, underscores the epistemological value of constructing a conceptual map that integrates distinct yet complementary domains, as shown in Figure 1. Mapping the Circular Economy (CE), Creative Economy (CrE) and Recycled Art (RA) within a single framework provides a methodological tool for theorizing the convergence of material systems, cultural production and symbolic practices.

This integration does not merely juxtapose themes but produces a meta-structure through which sustainability can be understood as both a systemic and cultural phenomenon. By situating ecological, economic and artistic dimensions within a shared conceptual space, the framework advances interdisciplinary knowledge production and deepens theoretical insight into the mechanisms of transformation toward sustainability.

The integration of the CE, CrE and RA acquires its greatest analytical clarity when examined through the points of intersection between these domains. Each dyadic relationship discloses distinct yet complementary mechanisms of value creation, while their triangular convergence (Fig. 1) produces a comprehensive model that articulates sustainability and innovation as mutually reinforcing phenomena.

The intersection of CE and CrE is grounded in the capacity of the circular model to generate sustainable material flow through resource recovery and closed-loop processes. These flows serve as inputs for the CrE, which transforms them into cultural and economic products through design, media and other creative industries. This coupling creates sustainable innovation ecosystems, where ecological efficiency and cultural creativity reinforce one another. Eco-design, sustainable fashion and cir-

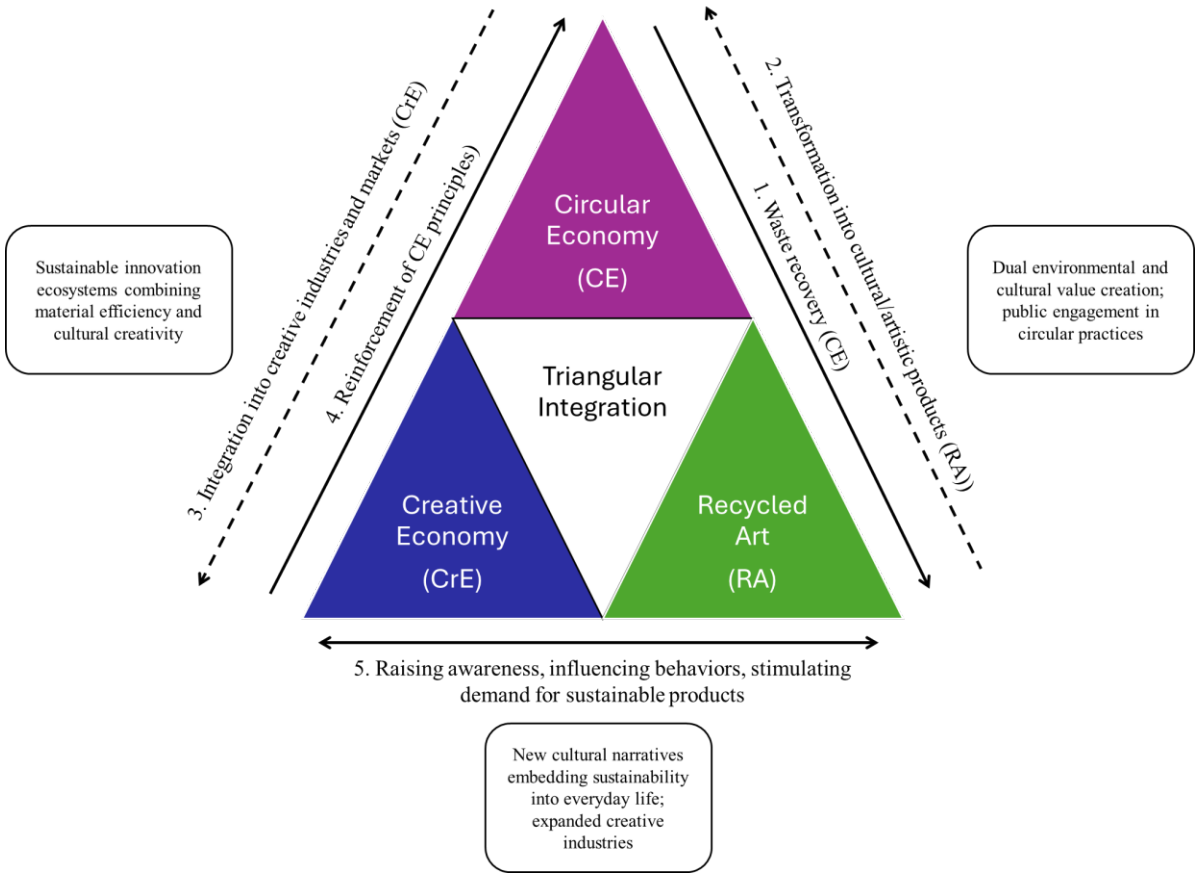

Fig. 1. Integrated conceptual framework
Source: own elaboration

cular product design exemplify how CE's systemic efficiencies become cultural and economic drivers when mediated through the CrE.

The nexus between CE and CrE is anchored in the capacity of circular systems to generate sustainable material flows through processes of recovery, reuse and closed-loop production. These flows are subsequently recontextualized within the CrE, where they are transformed into cultural and economic outputs across design, fashion, media and other creative industries. This coupling engenders what may be described as sustainable innovation ecosystems, wherein ecological efficiency becomes inseparable from cultural creativity. Illustrative cases such as eco-design and sustainable fashion demonstrate how the systemic efficiencies of CE, when mediated by the CrE, transcend technical optimization and assume the status of cultural and economic drivers.

The articulation between CrE and RA, by contrast, foregrounds creativity not only as a factor of production but also as a catalyst for cultural re-signification. Whereas the CrE emphasizes the monetization and dissemination of creativity within diverse industries, RA contributes by transmuting discarded materials into cultural capital. Through its aesthetic and symbolic registers, RA interrogates the logics of consumerism while simultaneously generating inputs for creative industries. In this sense, RA facilitates the emergence of new cultural narratives and market opportunities that reconcile aesthetic value with ecological responsibility, embedding sustainability more profoundly within the circuits of cultural production and collective imaginaries.

A parallel dynamic can be observed in the relation between CE and RA, which highlights the convergence of systemic processes with symbolic practices. CE provides structural and material preconditions for circularity through waste recovery and resource recirculation. RA, however, operationalizes these principles in dual fashion: practically, through the reconstitution of materials, and symbolically, by transforming waste into cultural and artistic expression. This articulation achieves dual value creation: tangible ecological outcomes such as waste reduction and energy savings, and intangible cultural outcomes such as heightened aware-

ness, critical reflection and public engagement with sustainability discourses.

When considered in totality, these intersections culminate in a triangular integration that establishes what can be conceptualized as a sustainability–innovation nexus. Within this configuration, CE ensures environmental sustainability by maintaining resource loops, CrE advances economic and cultural innovation through the commodification and diffusion of creativity, and RA cultivates symbolic and social engagement by embedding ecological concerns in cultural practices and everyday life.

Crucially, this integration is not linear but cyclical, operating through a recursive feedback mechanism: waste recovered through CE is revalorized in RA as material for artistic transformation; these artefacts are subsequently incorporated into creative industries within the CrE, where they circulate as design objects, media content and cultural commodities; once disseminated, these products influence consumer behavior, elevate ecological awareness and generate demand for sustainable alternatives; this demand, in turn, consolidates and extends the principles of the CE, thereby reinforcing the cycle.

This recursive loop underscores the interdependence of material, cultural and symbolic processes, revealing a multidimensional ecosystem of sustainability. In conceptual terms, the triangular integration of CE, CrE and RA demonstrates both the epistemological necessity of addressing sustainability as a phenomenon that is simultaneously ecological, economic, cultural and social, and the methodological utility of mapping these interconnections. Rather than being treated as discrete domains, their convergence substantiates a holistic paradigm through which sustainability can be theorized, operationalized and communicated across disciplinary, institutional and societal boundaries.

3. Methodological procedure

In conducting this research, a decision was taken to undertake a study on the production of recycled art by Brazilian artists who have gained international recognition. To this end, the present research adopted a qualitative approach and, in terms of purpose, opted for exploratory-descriptive research and a multiple-case study.

According to Günther (2006: 1), qualitative studies encompass, in addition to observation, "records of behavior and subjective states, such as documents, diaries, films, recordings, which constitute observable human manifestations". The selection of this approach was predicated on its alignment with the stipulated research objective, in addition to its capacity to facilitate a comprehensive analysis of the context in its entirety from an integrated perspective. In this manner, the researcher enters the field to elucidate the phenomenon under study from the perspective of the individuals involved in the process.

According to Selltiz, Jahoda and Deutsch (1959: 62), the objective of exploratory research is to formulate a problem for more precise investigation. The authors further posit that this paradigm of research serves the following functions: to enhance the researcher's familiarity with the phenomenon under investigation, to elucidate concepts, and to procure information regarding the practical viability of conducting research in real-life environments.

Descriptive research, as posited by Silva and Menezes (2005), aims to describe the characteristics of a given population or phenomenon or to establish relationships between variables.

Adhering to Eisenhardt's (1989) recommendations, the selection of stakeholders was intentional, based on their potential contributions to the study, thereby ensuring a theoretically informed and purposeful sample. The participants consisted of four Brazilian artists from four states whose urban and cultural trajectories hold particular significance for understanding Brazil's human geography.

São Paulo, represented by Vik Muniz, constitutes the country's largest metropolis and a globalized urban center, where processes of migration, industrialization and cultural production converge to shape Brazil's economic and artistic vanguard. In contrast, Bahia, represented by Beatriz Nascimento, occupies a central place in the cultural imagination of Brazil through its Afro-Brazilian heritage, urban religiosity and vibrant artistic expressions, with Salvador often regarded as a cradle of cultural resistance and identity formation. Minas Gerais, represented by Carlos de Oliveira, is historically tied to Brazil's colonial mining economy, but its urban landscape is equally marked by baroque heritage towns and contemporary transformations that link historical memory to present-day socio-spatial dynamics.

Finally, Rio de Janeiro, represented by Ana Clara e Silva, has long served as a national and international cultural reference point, combining the legacy of its past as Brazil's capital with its ongoing role as a symbolic urban space of modernity, tourism and popular culture. Together, these cases highlight how diverse regional and urban contexts within Brazil foster distinct cultural identities while revealing broader processes of spatial differentiation, urbanization and cultural production that are central to the study of urban geography.

The data collection procedure took the form of a semi-structured, individual, in-depth interview. The interview script was constructed based on a literature review related to the subject of this scientific investigation and was divided into three stages: general information about the artist, the technique and methodology used in the process of creating recycled art, and artistic influence.

The interviews were conducted between July and August 2024 with the four participating artists, each lasting approximately one hour and forty minutes. In full compliance with recognized ethical research standards, all participants provided written informed consent prior to the interviews and expressly authorized the disclosure of their names within the study.

The procedures adhered to the principles outlined in established ethical guidelines for social research, ensuring respect for autonomy, confidentiality and transparency. To safeguard the integrity and reliability of the data, all interviews were audio-recorded, subsequently transcribed verbatim and systematically analyzed. Throughout the research process, interaction between researchers and participants was sustained, with the aim of producing an accurate and ethically responsible account of the lived experiences shared by the artists.

The analysis procedure was conducted in two stages: within-case and cross-case. Within-case analysis is defined as the description, understanding and explanation of what happens in a single, limited context, i.e. a single case (Miles & Huberman, 1994). Conversely, cross-case analysis strives to describe, understand, explain and cross-reference the conceptual content, processes and results of a given phenomenon in a context of multiple cases, thereby developing more detailed descriptions of all the cases in the sample (Miles & Huberman, 1994).

The cross-case analysis was operationalized by first transcribing and segmenting the qualitative data from artist interviews, project descriptions and secondary sources. Following Bardin's (2016) three-stage process, pre-analysis, material exploration, and treatment of results, the data were coded into thematic categories. Codes were defined inductively, reflecting the recurrent dimensions observed across the four artists' practices. The codes were described below:

- Ecology and Sustainability: this code captures the deliberate incorporation of recycled materials and environmental awareness in artistic production. It encompasses both the selection of waste as a medium and the broader critique of consumption and urban disposal practices. For example, Muniz's use of urban waste and Oliveira's industrial by-products highlight ecological concerns, aligning material reuse with aesthetic innovation.
- Urban Space and Human Geography: this category refers to the interaction between artistic practice and the urban environment, including the socio-spatial contexts from which materials are sourced and the representation of urban landscapes. Muniz's reflections on city dynamics and Ana Clara's multisensory interventions in Rio de Janeiro exemplify the interrelation of urban space and artistic expression.
- Cultural Identity and Memory: this code addresses the use of recycled materials to engage with heritage, ancestry and socio-cultural memory. Nascimento's installations that reframe Afro-Brazilian traditions, as well as Ana Clara's performative engagement with local narratives, illustrate how recycled art functions as a medium for cultural recognition and preservation.
- Artistic Process and Transformation: this code encompasses the methodological and technical processes involved in material manipulation, assemblage and aesthetic composition. All four artists exhibit rigorous, systematic approaches to transforming discarded objects into visual or multisensory narratives, highlighting both material innovation and conceptual depth.
- Critical and Political Dimension: this category reflects the capacity of artistic practices to criticize socio-economic, political and cultural structures. Through their works, the artists challenge conventional notions of consumption, obsolescence and cultural marginalization, positioning recycled art as both a reflective and subversive medium.

By mapping these codes across the four cases, the analysis not only highlighted shared thematic concerns but also revealed distinct regional and disciplinary emphases. For instance, while Muniz and Oliveira prioritize visual composition and industrial/urban materiality, Nascimento and Ana Clara foreground cultural memory and performative interventions. This comparative approach underscores the multiplicity of perspectives and the potential of recycled art to operate at the intersection of aesthetics, culture and environmental discourse.

4. Research results

The concept of recycled art, which can be defined as the practice of reusing discarded materials in order to create artistic works, can be understood as a response to the pressing need to rethink the current production and consumption models that are in force in contemporary society. Within this paradigm, four Brazilian artists emerge as notable exemplars, distinguished not only by their aesthetic excellence, but also by their capacity to transform waste into instruments for reflection and social critique.

This analysis provides an in-depth examination of the creative processes employed by these artists, of their innovative methodologies, and of the artistic references that underpin their work. The analysis also establishes connections with current artistic movements, highlighting the dialog between sustainability and contemporary art.

The analysis of the results is structured in four central sections, representing the within-case analyses, dedicated individually to the artists' trajectories and working methods, followed by a comparative analysis, a cross-case analysis (which dialogues with established theories in the field of sustainable art) and, finally, a conclusion that summarizes the points covered and highlights future prospects for the practice of recycled art in Brazil.

4.1. Vik Muniz: Turning waste into visual narratives

Vik Muniz, the artistic name of Vicente José de Oliveira Muniz, was born in São Paulo in 1961. He is considered to be one of Brazil's most internationally renowned artists and a central figure in the discussion about recycled art.

While he is widely recognized for his photographs and installations, his practice has been established, especially in the last decade, by the use of waste and discarded materials to compose images that refer to a profound aesthetic and social critique. Muniz's creative process is characterized by a meticulous approach to material selection, encompassing the collection and subsequent organization of materials derived from urban waste. Through a deliberate and methodical process of manipulation, these materials are arranged and composed with a high degree of precision, ultimately resulting in the formation of visual networks that engage and interact with the viewer.

Muniz's methodology is predicated on meticulous research in the domain of sustainability, amalgamated with a comprehensive understanding of art history and contemporary theories concerning the value of materials. In his recent works, the artist utilizes industrial waste and by-products of urban garbage generation, creating compositions that, at first glance, may be interpreted as abstractions. However, upon closer inspection, these compositions unveil intricate narratives that address themes such as consumption, social exclusion and the ephemerality of objects in contemporary society.

In the context of contemporary artistic movements, Muniz's oeuvre engages with the "readymade" aesthetic and the deconstruction of artistic conventions, evoking the legacy of Marcel Duchamp. However, the proposal transcends the realms of mere collage or assemblage, incorporating a ritualistic and meditative dimension. In this dimension, the process of transforming waste is presented as a metaphor for the possibility of renewal and transfiguration. Hal Foster's research on the ambivalence of the art object in the contemporary era finds a practical application in Muniz's work, demonstrating that aesthetic value can emerge from the practices of reuse and the symbolic reuse of waste.

Vik Muniz has an extensive catalog of works that engage with the concept of recycling and re-signification. The following two projects are emblematic of his creative process and the use of recyclable materials.

The first project examined was Eco Silhouettes (in Portuguese: "Eco-Silhuetas"), which was initiated in 2012. Muniz's "Eco Silhouettes" project showcased the integration of recycled materials, thereby expanding the scope of his innovative technique. In this work,

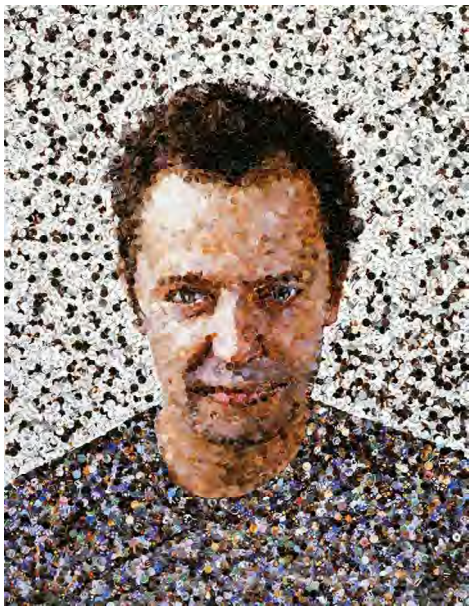

Fig. 2. Vik Muniz, Self-portrait
Source: The image was derived from the artist's personal collection (2012)

the artist composed images of iconic silhouettes using recycled paper cut-outs, newspaper scraps and discarded graphic waste. This project underscores the artist's capacity to metamorphose discarded materials into visual fragments, which, when assembled, coalesce to form a critical narrative concerning media consumption and waste. The materials utilized in this project were recycled paper, newspaper clippings and graphic waste, as exemplified in Figure 2, which shows Vik Muniz's self-portrait.

Muniz's technique involves the selection, separation and grouping of materials according to tones and textures. This process results in the creation of a composition that, upon initial observation, evokes the perception of a recognizable figure. However, the presence of the recycled elements introduces a secondary layer of meaning, wherein the process of discarding and reusing becomes an integral component of the artistic work.

The second project, titled in Portuguese Reflexos da Cidade (Reflections of the City), was created in 2017. This project reflects urban dynamics and demonstrates how quotidian waste can be transformed into art. Muniz employed plastic waste collected from urban areas, in conjunction with organic materials, to create panels that allude to distorted and multifaceted urban landscapes. This technique underscores the transient nature of urban environments and underscores the necessity of ongoing reevaluation of consumption and disposal patterns. The materials utilized in the construction of the structure included plastic waste, organic materials, and environmentally friendly paints, as shown in Figure 3.

In this work, Muniz underscores the significance of recycled materials not only as visual components but also as protagonists in a discourse on the environmental impact of modernity. Each stratum of plastic and biomass has been meticulously positioned to reflect the complexity of the urban landscape and the necessity of a deliberate approach to waste management.

It is evident that Muniz has been recognized for his body of work, having received numerous accolades within the domain of sustainable art. This has served to further solidify his standing as a transformative figure within his field. In the past decade, his work has been the focus of studies in specialized journals. These studies have highlighted the ability of his works to transcend their decorative function and elevate themselves to a critical narrative. This narrative gives new meaning to modern consumption practices.

Fig. 3. Wastepickers at Jardim Gramacho dump, Duque de Caxias, Rio de Janeiro, Brazil
Source: The image was derived from the artist's personal collection

4.2. Beatriz Nascimento: Reframing Afro-Brazilian culture through recycling

Beatriz Nascimento, an artist hailing from Bahia, has emerged as a seminal figure in the nexus between art, sustainability and Afro-Brazilian culture. Her work has garnered international acclaim, not only for its aesthetic originality, but also for its innovative use of recycled materials in the recovery of ancestral narratives.

By incorporating elements that draw upon the African diaspora, such as fabrics, ceramic remnants, and fragments of cultural objects, Beatriz Nascimento proposes a reinterpretation of Afro-Brazilian symbols and rituals. In doing so, she reframes these symbols and rituals within a contemporary and sustainable context.

Beatriz Nascimento's creative process involves detailed ethnographic research, in which the waste collected, primarily from urban waste in peripheral contexts, is transformed into components of immersive installations and public interventions. Her work represents an extension of the theoretical framework developed by Homi K. Bhabha and the cultural hybridization proposed by Stuart Hall, emphasizing the intricate interplay between tradition and modernity.

Fig. 4. Sculpture celebrating Afro-Brazilian culture of black women
Source: The image was derived from Nascimento's personal collection (2020).

Beatriz's recent works are distinguished by their incorporation of mixed techniques, which integrate collage and assemblage with innovative artistic processes, as exemplified in Figure 4. These techniques culminate in the creation of sensory spaces that are capable of engaging with the viewer in an interactive and immersive manner. Through her intervention, the artist underscores the significance of recognizing and valuing ancestral knowledge, while concurrently issuing a forthright critique of the discarding and neglect of marginalized cultural contexts.

A recipient of prestigious international sustainable art awards, Beatriz Nascimento has contributed to the expansion of the discourse on the relationship between cultural identity and sustainability. Her works have been included in exhibitions and contemporary art shows around the world, thereby highlighting the importance of recycling not only as an economic act, but primarily as a cultural and political practice that reinvigorates the memory and knowledge of historically marginalized communities.

4.3. Carlos de Oliveira: The sculpture of the recycled in the industrial context of Minas Gerais

Carlos de Oliveira, a native of Minas Gerais, employs the medium of sculpture to metamorphose discarded industrial materials into artistic creations. His critical and technical approach is consolidated by the transformation of electronic waste and obsolete industrial parts into sculptures and installations that question production models and the environmental impact of industrialization. Oliveira's creative process is characterized by a multifaceted integration of engineering and aesthetic principles. This process is marked by a meticulous approach to experimentation, wherein each waste material is meticulously selected, thoroughly cleaned, and methodically reconfigured. Through this process, the materials are imbued with novel meanings and forms, transforming them into artistic expressions.

The artist's oeuvre is situated within a discipline that demands both technical rigor and aesthetic sensitivity, wherein the artist elevates recycled materials to the status of contemporary masterpieces. The artist's methodology draws inspiration from the concept of "creative transformation," a notion advanced by theorists such as Benjamin and Adorno. These theorists emphasize art's capacity to transform and subvert the conventional narrative associated with everyday objects. By selecting waste from industrial and technological processes, Oliveira establishes a critique of linear economic paradigms, proposing a worldview that values circularity and sustainability.

In his artistic endeavors, Carlos de Oliveira delves into the realm of aesthetics, encompassing the themes of imperfection and disorder, as shown in Figure 5. His artistic oeuvre bears the imprint of postmodern sensibilities, evoking profound reflections on the notion of material reuse and the revaluation of objects that, at first glance, are perceived as merely utilitarian. His work has garnered significant recognition in international exhibitions, and he has become a prominent figure in academic discourse and exhibitions that traditionally venerate innovation in the domain of sustainable art.

Furthermore, Oliveira's artistic practice is characterized by a commitment to experimentation, engaging with contemporary artistic currents such as “Arte Povera” and “Merchandise Fetishism”. By

Fig. 5. Work name - Male human facial harmony
Source: The image was derived from Oliveira's personal collection.

Fig. 6. Work name - Think about consumerism
Source: The image was derived from Silva's personal collection.

emphasizing the potential for transformation in an aesthetic and critical manner, Oliveira underscores the notion that the value of an object can be substantially amplified. His oeuvre exemplifies the potential of art to serve as a catalyst in the ecological discourse, thereby redefining the boundaries between discarded objects and works of art elevated to the status of manifesto.

4.4. Ana Clara e Silva: Multisensory interventions with urban waste in Rio de Janeiro

Ana Clara e Silva, a contemporary artist hailing from Rio de Janeiro, has gained recognition for her multi-sensory interventions, which involve the utilization of urban waste and discarded plastic materials. Her artistic practice is characterized by the creation of immersive installations that explore the possibilities of transformation and re-signification of urban waste. By emphasizing the materiality and color of urban debris, she creates works that transgress the boundaries of traditional aesthetics, incorporating performative and interactive elements.

Ana Clara e Silva's approach is rooted in a meticulous examination of degradation processes and the waste economy, drawing inspiration from socio-environmental studies by prominent scholars such as Saskia Sassen and Bruno Latour. Her artistic process is characterized by a meticulous collection, sorting, and reinvention of materials, incorporating assemblage techniques, color and texture interventions, and the integration of lighting and sound systems that enhance the viewer's sensory experience, as exemplified in Figure 6.

In her proposals, the artist puts forth a novel perspective on the nexus between urban development and sustainability. She challenges the conventional perception that waste is solely synonymous with disposal. Ana Clara's artistic practice involves the reallocation of urban waste materials, thereby interrogating the prevailing paradigms of consumerism and programmed obsolescence. Her artistic intervention underscores the significance of cultivating a culture of reuse and creativity, thereby challenging the conventional notions of waste management and sustainability. Her interventions have been exhibited at prominent international art festivals and are frequently accompanied by theoretical analyses that underscore the intersection between aesthetics, science and environmental activism.

Ana Clara e Silva's professional trajectory is exemplified by accolades in the domain of sustainable art, and her oeuvre serves as a conduit between the visual and sensory dimensions of the urban landscape. Her work underscores the imperative to reimagine methods of interaction with spatial and

material environments, thereby engendering a novel visual idiom that is both critical and optimistic in the face of pressing contemporary ecological challenges.

5. Cross-case analysis

The present study employs a comparative analysis of the artistic practices of Vik Muniz, Beatriz Nascimento, Carlos de Oliveira, and Ana Clara e Silva to identify both intersections and particularities in the approach to recycled art in the contemporary Brazilian context. The analysis was guided by Bardin's (2011) content analysis methodology, employing coding to systematically identify recurring themes and categories across the artists' practices. The main codes identified report to ecology and sustainability, urban space and human geography, cultural identity and memory, artistic process and material transformation, and critical and political commentary. These codes were subsequently organized into a categorical matrix (Table 1) to facilitate comparative interpretation.

Vik Muniz is distinguished by his profound reframing of discarded materials, utilizing them as a medium for visual narratives that interrogate the ephemerality of objects in consumer society. His oeuvre, characterized by references to the ready-made and the deconstruction of classical paradigms, engages with Hal Foster's theories on the ambivalence of the art object. Muniz's work exemplifies the codes Artistic Process and Material Transformation and Critical and Political Commentary, particularly through projects like Eco Silhouettes and Reflexos da Cidade, where urban waste is transformed into aesthetic forms that carry socio-environmental critique.

In contrast, Beatriz Nascimento's approach reconnects with Afro-Brazilian ancestral traditions while integrating innovative recycling techniques to create installations that resonate with cultural memory. Her work highlights the codes Cultural Identity and Memory and Ecology and Sustainability, as she incorporates fabrics, ceramic remnants and urban waste to reconstruct narratives that challenge the neglect of marginalized cultural contexts.

Carlos de Oliveira's practice focuses on the materiality of industrial and technological waste. His sculptures and installations demonstrate Artistic Process and Material Transformation, Urban Space and Human Geography, and Critical and Political Commentary, reflecting the dialectic between industrial progress and aesthetic reinvention, as theorized by Benjamin and Adorno. Oliveira's meticulous selection, cleaning and assembly of discarded industrial components underscore both technical rigor and environmental awareness.

Ana Clara e Silva employs multisensory techniques and performative interventions to create immersive installations that reconfigure perceptions of

Table 1. Categorical matrix of codes in the analysis of Brazilian recycled art

Category	Main Codes	Sub-Codes / Dimensions	Illustrative Examples / Artists
Ecology and Sustainability	Recycling & Sustainability	Reuse of materials; Circular economy; Environmental awareness	Muniz: *Eco Silhouettes*; Ana Clara: multisensory urban waste interventions
Urban Space and Human Geography	Urban Material Context	Urban waste; City dynamics; Consumer culture; Spatial transformation	Oliveira: industrial waste in Minas Gerais; Muniz: *Reflexos da Cidade*; Ana Clara: urban multisensory installations
Cultural Identity and Memory	Ancestral / Cultural Significance	Afro-Brazilian heritage; Rituals; Hybrid identities; Cultural narratives	Nascimento: fabrics, ceramics, cultural objects; Ana Clara: performative sensory experiences
Artistic Process and Material Transformation	Creative and Technical Process	Selection, sorting, assemblage; Methodical transformation; Experimentation; Aesthetic re-signification	Muniz: meticulous arrangement of urban waste; Oliveira: electronic/ industrial waste reconfigured; Ana Clara: lighting, color, and sound interventions

Source: own authors' data

urban space and circulating waste. Her practice embodies the codes Urban Space and Human Geography, Artistic Process and Material Transformation, and Critical and Political Commentary, highlighting sensory engagement, consumer culture critique, and sustainability advocacy through participatory and interactive installations.

Across these four cases, a convergence emerges in the use of urban and industrial waste as raw material for artistic experimentation. Muniz and Oliveira prioritize visual composition and assemblage techniques, producing critical aesthetic narratives, whereas Nascimento and Ana Clara emphasize the reinterpretation of cultural and performative meanings associated with waste, reinforcing notions of memory, ritual and sensory experience. From a theoretical perspective, these practices illustrate that recycling as an artistic modus operandi transcends material reuse, functioning as a subversive mechanism that challenges linear models of production and consumption, resonating with contemporary sustainability and circular design paradigms (Bauman, Bratton).

Geographical diversity further informs the analysis: São Paulo, Bahia, Minas Gerais, and Rio de Janeiro each offer unique historical and cultural contexts that shape the materials, techniques and thematic concerns of the respective artists. Despite these regional distinctions, the intersection of sustainability and creativity emerges as a common denominator, highlighting the individual and collective potential of recycled art in Brazil.

6. Conclusions

The present study demonstrated that the utilization of solid urban waste in craftwork production effectively articulates the principles of the circular economy and the creative economy by transforming discarded materials into culturally meaningful and socially impactful artworks. An examination of contemporary Brazilian practices reveals that recycled art not only extends the material life of urban waste, thereby promoting resource circularity, but also generates new aesthetic, symbolic and economic value through innovation, narrative construction and cultural expression.

The creative engagement with waste enables artists to transform ordinary materials into works that communicate complex social, environmental and historical messages, thus bridging the gap between ecological sustainability and artistic practice.

The analysis indicates that sustainability in artistic practice encompasses more than mere material reuse, but rather, it is characterized by its symbolic, conceptual and social dimensions. Artists working with urban waste construct narratives that critically engage with environmental degradation, consumerist practices and social inequities, offering a form of cultural critique that resonates in both local and global contexts.

This approach also contributes to urban geography scholarship by demonstrating how creative practices can reshape the organization and perception of urban spaces, foster community engagement, and challenge conventional understandings of waste, value and public space.

Through a thorough examination of these processes, this research provides a comprehensive answer to the study's central question. Specifically, it demonstrates that recycled art integrates ecological responsibility with aesthetic and cultural innovation, thereby serving as a practical model of circularity in urban contexts while concurrently fostering the creative economy.

These findings contribute to academic discussions on sustainable urban development, the valorization of urban waste, and the intersection of art, environment and society. The results of this study underscore the transformative potential of craftwork as both a cultural and ecological practice.

This study underscores the pivotal function of recycled art as a catalyst for social reflection, urban revitalization and the formulation of alternative sustainability imaginaries. It demonstrates that creative practices are instrumental in reimagining the interactions among cities, communities and ecosystems in the context of contemporary environmental and cultural challenges.

References

Adeyemi, F. (2023). *Waste recycling in Lagos: an artistic strategy*. PhD Thesis, Loughborough University. Available at: 10.26174/thesis.lboro.24582576.v1.

Adom, D. (2024). Transforming Solid Waste into Artistic Marvels for Environmental Sustainability: Ghanaian Artists' Upcycling and Creative Reuse of Plastic Waste. In: *Solid Waste Management: Advances and Trends to Tackle the SDGs*. Cham: Springer Nature Switzerland. DOI: 10.1007/978-3-031-60684-7_8.

Adom, D., Donkor, E.K., & Asante, D.B. (2023). Why Innovations in Art and Culture Matters in the Quest for Solutions to the Global Environmental

and Biodiversity Crises: Introducing the Journal of Innovations in Art and Culture for Nature Conservation and Environmental Sustainability. *Journal of Innovations in Art and Culture for Nature Conservation and Environmental Sustainability*, 1(1): 1-7. Available at: https://journals.adompublication.com/index.php/jinces/article/view/3 (Accessed: 23 April 2025).

Akinrujomu, O.S. (2024). Recycling Art and the Nigerian Economy. *Review of Artistic Education*, 28: 380-393.

Alexander, C., & Reno, J. (ed.). (2012). *Economies of recycling: The global transformation of materials, values and social relations*. New York: Bloomsbury Publishing.

Asamoah, S.P., Adom, D., Kquofi, S., & Nyadu-Addo, R. (2022). Recycled art from plastic waste for environmental sustainability and aesthetics in Ghana. *Research Journal in Advanced Humanities*, 3(3): 29-58.

Ausat, A.M.A., Al Bana, T., & Gadzali, S.S. (2023). Basic capital of creative economy: The role of intellectual, social, cultural, and institutional capital. *Apollo: Journal of Tourism and Business*, 1(2): 42-54. DOI: 10.58905/apollo.v1i2.21.

Avila, A.P.S.D., Maciel, D.M.H., Silveira, I., & Rech, S.R. (2018). Os resíduos têxteis sólidos no contexto de abordagens sustentáveis: ciclo de vida, economia circular e upcycling (Solid textile waste in the context of sustainable approaches: life cycle design, circular economy and upcycling – in Portuguese). *Mix Sustentável*, 4(3): 17-24. DOI: 10.29183/2447-3073.MIX2018.v4.3.

Bardin, L. (2016). *Análise de conteúdo* (Content analysis – in Portuguese). Lisboa: Edições 70.

Bona, E.R. (2021). *Design Com Bio-Resíduos: Uma Proposta de Design Circular Através da Ressignificação e Upcycling de Cascas de Fruta* (Design With Bio-Waste: A Proposal for Circular Design through the Resignification and Upcycling of Fruit Peels – in Portuguese) (Master's thesis, Universidade do Porto).

Bourdin, S., & Torre, A. (2025). Economic geography's contribution to understanding the circular economy. *Journal of Economic Geography*, 25(2): 293-308. DOI: 10.1093/jeg/lbae040.

Çebi, S. (2025). From Waste to Art: A Study on Student Creativity and Creative Expression through Recycled Materials in Art Education. *Art Vision*, 31(54): 59-70. DOI: 10.32547/artvision.1542477.

Chen, C.W. (2022). Approaching sustainable development goals: Inspirations from the Arts and Crafts movement to reshape production and consumption patterns. *Sustainable Development*, 30(6): 1671-1681. DOI: 10.1002/sd.2334.

Del Serrone, G., Riccio, G., & Moretti, L. (2025). Cradle-to-cradle life cycle assessment of railway prestressed concrete sleepers: A state-of-the-art review and strategies for reducing environmental impacts. *Resources, Conservation and Recycling*, 214: 108020. DOI: 10.1016/j.resconrec.2024.108020.

Eisenhardt, K.M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4): 532-550. DOI: 10.5465/amr.1989.4308385.

Figge, F., Thorpe, A.S., & Gutberlet, M. (2023). Definitions of the circular economy: Circularity matters. *Ecological Economics*, 208: 107823. DOI: 10.1016/j.ecolecon.2023.107823.

Florida, R. (2014). The creative class and economic development. *Economic Development Quarterly*, 28(3): 196-205. DOI: 10.1177/0891242414541693.

Furtado, C. (1984). Crise e transformação na economia mundial (Crisis and transformation in the world economy – in Portuguese). *Estudos Econômicos (São Paulo)*, 14(1): 177-190. DOI: 10.11606/1980-535714111cf.

Gates, B. (2021). *How to avoid a climate disaster: the solutions we have and the breakthroughs we need*. Vintage, New York, Toronto.

Geissdoerfer, M., Savaget, P., Bocken, N.M., & Hultink, E.J. (2017). The Circular Economy–A new sustainability paradigm?. *Journal of Cleaner Production*, 143: 757-768. DOI: 10.1016/j.jclepro.2016.12.048.

Girard, L.F. (2021). The evolutionary circular and human centered city: Towards an ecological and humanistic "re-generation" of the current city governance. *Human Systems Management*, 40(6): 753-775. DOI: 10.3233/HSM-211218.

Gomez, A. (1999). American Art of Conspicuous Recycling. *Art Education*, 52(3): 25–40. DOI: 10.1080/00043125.1999.11652870.

Günther, H. (2006). Qualitative research versus quantitative research: is that really the question?. *Psicologia: Teoria e Pesquisa*, 22: 201-209. DOI: 10.1590/S0102-37722006000200010.

Haralambous, H. (n.d.). The Language of Recycled Art: Theories and Frameworks. Available at: https://d1wqtxts1xzle7.cloudfront.net/116936294/The_Language_of_Recycled_Art-libre.pdf (Accessed: 23 April 2025).

Howkins, J. (2002). *The creative economy: how people make money from ideas*. Penguin UK.

Huo, M.L. (2013). Research on recycled materials in public art. *Applied Mechanics and Materials*, 329: 71-74. DOI: 10.4028/www.scientific.net/AMM.329.71.

Iacovidou, E., Hahladakis, J.N., & Purnell, P. (2021). A systems thinking approach to understanding the challenges of achieving the circular economy. *Environmental Science and Pollution Research*, 28: 24785-24806. DOI: 10.1007/s11356-020-11725-9.

Kagan, S. (2018). Culture and the arts in sustainable development: Rethinking sustainability research. In: Meireis, T., Rippl, G. (eds.), *Cultural Sustainability* Routledge.

Leitão, C.S. (2015). Indústrias criativas x economia criativa: compreendendo a disputa entre modelos de desenvolvimento com base em Celso Furtado (Creative industries vs. creative economy: understanding the dispute between development models based on Celso Furtado – in Portuguese). In: P. de Souza (ed.), *Brasil, Sociedade em Movimento* (1ª ed.). São Paulo: Paz e Terra.

Lin, T.F.T., Chen, P.H., Chiang, K.H., Chen, J.S., Chiu, C.Y., & Cian, J.S. (2025). Exploring the Drivers and Barriers of Plastic Reduction Actions Under the Circular Economy: A PEST Analysis-Based Study. In: R. Zimmermann, J.C. Rodrigues, A. Simoes, & G. Dalmarco (eds.), *Human-Centred Technology Management for a Sustainable Future* Springer Proceedings in Business and Economics. Cham: Springer. DOI: 10.1007/978-3-031-72490-9_6.

López, C. (2021). Arte Reciclada como Intervenção Urbana (Recycled Art as Urban Intervention – in Portuguese). *Enfoques Interculturais*, 13(2): 90-113.

Lucietti, T.J., Trierweiller, A.C., Ramos, M.S., Soratto, R.B., Maciel, C.E., & Vefago, Y. (2018). O upcycling como alternativa para uma moda sustentável (Upcycling as an alternative for sustainable fashion – in Portuguese). In: *International Workshop-Advances In Cleaner Production Network-Academic Work*, 7.

Lynch, N., & Phelan, C. (2025). Material communities: urban reuse centres and community-oriented circularity in the building sector. *Urban Research & Practice*, 1-24. DOI: 10.1080/17535069.2025.2469098.

MacArthur, E. (2013). Towards the circular economy. *Journal of Industrial Ecology*, 2(1): 23-44.

Mallabadi, V.D. (2021). Transforming e-waste to eco art by upcycling. In: L. Liu & S. Ramakrishna (eds.), *An Introduction to Circular Economy*. Singapore: Springer Singapore.

Mears, E. (2018). Recycling as creativity: an environmental approach to twentieth-century American art. *American Studies Journal*, 64(5): 64-05. DOI: 10.18422/64-05.

Mendes, M.L., & Gonçalves, D.B. (2022). Desenvolvimento de uma proposta de economia circular para o reuso de resíduos de MDF na indústria moveleira (Development of a circular economy proposal for the reuse of MDF waste in the furniture industry – in Portuguese). *Natural Resources*, 12(1): 141-157. DOI: 10.6008/CBPC2237-9290.2022.001.0014.

Michelini, G., Moraes, R.N., Cunha, R.N., Costa, J.M., & Ometto, A.R. (2017). From linear to circular economy: PSS conducting the transition. *Procedia CIRP*, 64: 2-6. DOI: 10.1016/j.procir.2017.03.012.

Miles, M.B., & Huberman, A.M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Sage.

Moraes, M.B. (2022). Eficiência econômica na prestação de serviço da coleta seletiva municipal na região metropolitana do Vale do Paraíba e litoral norte (Economic efficiency in the provision of municipal selective waste collection services in the Vale do Paraíba and North Coast metropolitan region – in Portuguese). *Revista Tecnologia e Sociedade*, 18(53): 223-236. DOI: 10.3895/rts.v18n53.15793.

Morseletto, P. (2020). Restorative and regenerative: Exploring the concepts in the circular economy. *Journal of Industrial Ecology*, 24(4): 763-773. DOI: 10.1111/jiec.12987.

Nunes, D. (2022). Upcycling sculpture for a socio-ecological practice of contemporary art. *CAP - Public Art Journal*, 4(1): 8-21. DOI: 10.48619/cap.v4i1.669.

Osita, W.A., & Adiele, S. (2020). Visual Arts as Restorative Therapy Using Waste Materials for Sustainable Development. *International Journal of Arts and Humanities*, 8(1): 1-6.

Parreira, L.S.A., & Guimarães, A.Q. (2024). Economia circular como alternativa sustentável: uma revisão narrativa do conceito, da sua trajetória e das suas críticas e barreiras (Circular economy as a sustainable alternative: a narrative review of the concept, its trajectory and its criticisms and barriers – in Portuguese). *RDE-Revista de Desenvolvimento Econômico*, 1(54). Available at: https://revistas.unifacs.br/index.php/rde/article/view/8692 (Accessed: 22 April 2025).

Pratt, A.C. (2022). Toward circular governance in the culture and creative economy: Learning the lessons from the circular economy and environment. *City, Culture and Society*, 29: 100450. DOI: 10.1016/j.ccs.2022.100450.

Reis, A.C.F. (2008). Economia criativa como estratégia de desenvolvimento: uma visão dos países em desenvolvimento (Creative economy as a development strategy: a view from developing countries – in Portuguese). *Economia criativa*

como estratégia de desenvolvimento. São Paulo: Itaú Cultural, 15-49.

Reis, A.C.F. (2012). *Cidades Criativas: análise de um conceito em formação e da pertinência de sua aplicação à cidade de São Paulo* (Creative Cities: analysis of a concept in formation and the relevance of its application to the city of São Paulo – in Portuguese). PhD Thesis, School of Architecture and Urbanism, University of São Paulo. DOI: 10.11606/T.16.2012.tde-08042013-091615.

Sampah, S.N.A., Barfi-Mensah, H.M., Mensah, E.F., Vicku, C., Adja-Koadade, M., & Junior, A.A. (2024). Exploring sustainable aesthetics through repurposed studio waste materials for unorthodox finishes. *Cleaner Waste Systems*, 8: 100147. DOI: 10.1016/j.clwas.2024.100147.

Selltiz, C., Jahoda, M., Deutsch, M., & Cook, S.W. (1959). *Research methods in social relations*. Holt, Rinehart and Winston.

Silva, E.L., & Menezes, E.M. (2005). *Metodologia da pesquisa e elaboração de dissertação* (Research methodology and dissertation preparation – in Portuguese) (4th ed.). Florianópolis: UFSC.

Szymańska, D., Korolko, M., Grzelak-Kostulska, E., & Lewandowska, A. (2016). Ekoinowacje w miastach (Eco-innovations in cities – in Polish), 195, Scientific Publishing House of the Nicolaus Copernicus University in Toruń. URI: http://repozytorium.umk.pl/handle/item/5552.

Throsby, D. (2024). The role of culture in sustainable development: past, present and future. *Economia della Cultura*, 34(2-3): 235-243. DOI: 10.1446/116280.

Tseng, M.L., Chiu, A.S., Liu, G., & Jantaralolica, T. (2020). Circular economy enables sustainable consumption and production in multi-level supply chain system. *Resources, Conservation and Recycling*, 154: 104601. DOI: 10.1016/j.resconrec.2019.104601.

United Nations (UN). (2015). Transforming our world: The 2030 agenda for sustainable development. Resolution adopted by the General Assembly. Available at: https://sustainabledevelopment.un.org/post2015/transformingourworld (Accessed: 10 November 2024).

United Nations Conference on Trade and Development (UNCTAD). (2010). Relatório de Economia criativa: uma opção de desenvolvimento viável (Creative economy report: a viable development option – in Portuguese). São Paulo. Available at: https://unctad.org/system/files/official-document/ditctab20103_pt.pdf (Accessed: 05 January 2025).

United Nations Educational, Scientific and Cultural Organization (UNESCO). (2013). Creative Economy Report. *Special Edition, Widening Local Development Pathways*. Available at: http://www.unesco.org/culture/pdf/creative-economy-report-2013.pdf (Accessed: 20 February 2025).

Velenturf, A.P., & Purnell, P. (2021). Principles for a sustainable circular economy. *Sustainable Production and Consumption*, 27: 1437-1457. DOI: 10.1016/j.spc.2021.02.018.

Webster, K. (2021). A circular economy is about the economy. *Circular Economy and Sustainability*, 1(1): 115-126. DOI: 10.1007/s43615-021-00034-z.

Weetman, C. (2019). *Economia Circular: conceitos e estratégias para fazer negócios de forma mais inteligente, sustentável e lucrativa* (Circular Economy: concepts and strategies for doing business in a smarter, more sustainable and profitable way – in Portuguese). São Paulo: Autêntica Business.

Whiteley, G. (2010). *Junk: art and the politics of trash*. New York: Bloomsbury Publishing.

Winans, K., Kendall, A., & Deng, H. (2017). The history and current applications of the circular economy concept. *Renewable and Sustainable Energy Reviews*, 68: 825-833. DOI: 10.1016/j.rser.2016.09.123.

Zhang, N., Gruhler, K., & Schiller, G. (2023). A review of spatial characteristics influencing circular economy in the built environment. *Environmental Science and Pollution Research*, 30(19): 54280-54302. DOI: 10.1007/s11356-023-26326-5.