Innovation and Entrepreneurship: A Colour Economy Glance

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Abstract. This article introduces the topic of the Colour Economy as a set of new economic paradigms that seek to respond to global challenges such as sustainability, technological transformation and social inclusion. It is a first comprehensive study that analyses eight colour economies, namely blue, yellow, orange, red, green, silver, purple, and grey with a focus on innovation and entrepreneurship. The researchers started from a bibliographic search that yielded varied results in terms of the volume of literature produced on the colour palette and opted for an exploratory and critical study of the concepts and relationships with innovation and entrepreneurship. We found that each colour economy addresses specific issues but converges on themes such as sustainability, technological transformation and social equity. Our review revealed that colour economies are not mere theoretical constructs but practical frameworks that focus on the sustainable use of marine resources, in the case of the Blue Economy, the Yellow Economy emphasizes technological efficiency, while the Orange Economy emphasizes creative and cultural industries, the Red Economy, on the other hand, comes from the evolution of consumption towards sustainable practices, and in the Green Economy, the priority is on environmental sustainability, while the Silver Economy focuses on the challenges of an aging population, as opposed to the Purple Economy, which promotes cultural and social diversity, and the Grey economy is embedded in the informal sector. In terms of their relationship to innovation and entrepreneurship, each colour economy presents unique paths to innovation and entrepreneurship opportunities. In all economies of colour, cross-sector collaboration between government, business and academia is key to driving innovation. Our study presents a novel framework for analysing economic transformation through the lens of the colour economy where the colour family does not compete for theoretical or practical supremacy but rather opts for a complementary effect to address the enormous global challenges we face. Thus, the framework developed offers important and valuable insights for policy makers, businessmen and entrepreneurs as well as scholars to develop a holistic and integrated approach to economic development.

1 Introduction

Colours reflect the spirit of the times. In Economics, colours have shaped discourse. In several subdisciplines, colours proportionate experiences and feelings. Idioms like the black market, white collar, greenwashed, and golden retirement reflect that the Economy coevolved with the changes in mood over time. Nowadays, colours reflect civilisation crises and challenges around capitalism, globalisation, technical change, sustainability, health, and equity, to name a few.

In the last decades, the world has experienced economic, political, and social transformations, raising questions about the predominant economic model based on profit and seeking economic growth at any cost. Various concepts and terms related to the Social Economy and its approaches have emerged. These concepts include collaborative Economy, Circular Economy, corporate social responsibility, social innovation, common welfare economy, social enterprises, and solidarity economy [1]. This group of concepts generate a domain focused on confronting contemporary challenges such as climate change and inequality and refocusing the Economy towards inclusiveness and respect for the environment.

The Economy of colours manifests itself as a novel concept oriented in the same direction. It contends with the traditional paradigm of the Economy, which focuses on maximising economic growth and financial rents [2]. In contrast, it promotes a holistic approach that integrates social, environmental, and ethical aspects in economic decision-making.

What exactly are the colours? We see colour patterns as a result of the various light reflections on the objects. Colour perception corresponds to wavelengths ranging from 380 nm to 740 nm [3]. Colours in the Colour Economy symbolically represent several economic sectors and their unique challenges. Each "colour" represents a certain area,

such as green for environmental sustainability, blue for ocean industries, or orange for cultural and creative sectors. Using scientific principles of light and perception, the Colour Economy establishes a powerful focus to organise, communicate, and align various economic practices with global goals.

The "colour economy" concept has been developed as an adaptive framework that uses the metaphor of different colours to represent various economic activities, strategies and objectives. Özdemir [4] colours production processes, while Liu [5] uses metaphorical association to simplify and contextualise complex systems. Buheji and Ahmed [6] emphasise its innovative role in addressing societal, cultural, and environmental needs, while Benna [2] categorises urban economies into natural resource-based, human-capital-driven, and technology-oriented models. Segrè [7] and Sala-i-Martin [8] highlight its ethical and human dimensions, where colours embody values, processes, and aspirations. As Asobancaria [9] noted, thematic bonds and sustainability efforts described by Tapia [10] integrate financial and environmental objectives. Venegas Álvarez [11] and Velasquez and Vrant [12] stress its ability to clarify fiscal trends and visualise relationships. Boyacıoğlu et al. [13] and Torres Aguilar [14] agree in situating the colour economy as a contesting framework to global challenges that embrace traditional and innovative approaches. Carosini Ruiz-Díaz [15] proposes a synthesis where the colour economy represents a holistic paradigm of sustainable development that interconnects the triple bottom line of sustainability, linking the social, environmental and economic dimensions.

Building on these theoretical foundations, we propose an integrated definition of the colour economy: The 'colour economy' is a conceptual framework that uses symbolic colours to represent and differentiate economic activities, objectives and strategies. Each colour refers to pre-eminent social, environmental or technological situations that bring clarity, simplicity and accessibility to complex economic systems. This approach integrates ethical, cultural, and practical dimensions, aligning financial and economic behaviour with global challenges such as climate change, social justice, and technological advancement. It also adds a value dimension: collaboration, inclusion, and ethical economic development. It is a holistic, practical and flexible way of orienting economic strategies towards sustainability and resilience in a rapidly changing world.

So, in diverse Economics subdisciplines, the colour idiom has emerged to rethink economic activities based on the input nature or the impacts and outcomes delivered from its production and consumption. Several researchers have addressed this notion in various contexts and explored it in urban planning, urban and industrial growth policies, and even as a response to the COVID-19 pandemic [6]. Nevertheless, the Economy of Colours conception requires a deeply theoretical and empirical effort to achieve a solid and comprehensive conceptual framework [4].

The Economy of Colours is linked to organisations and Economies' transformations, the reorientation of objectives towards wider and sustainable goals, and new forms to understand entrepreneurship and innovation [16]. The Economy of Colours is also closely associated with the newest manifestations of entrepreneurship and innovation in this transformation setting. According to Andrews et al. [17], Neumann [18], and Szirmai et al. [19], entrepreneurship and innovation play a crucial role in impulse economic growth and creating new opportunities to impact socially and environmentally the Economies. Understanding the phenomenon of innovation and entrepreneurship in the Economy of Colour can help us drive sustainable development and develop the capabilities to tackle significant worldwide issues such as climate change, resource scarcity, and social inequity.

This contribution aims to advance research in the Economy of Colours by exploring its origins, evolution, main ideas, and theoretical approaches developed until now. In general terms, the bibliography on Colour Economies grants valuable insights into how several economic activities may promote innovation and entrepreneurship and the importance of strategies and policies deployed to achieve sustainable and inclusive economic growth.

The economics of colour have historically been examined as separate areas of study. This review aims to methodically examine the theoretical foundations and possible interactions within the economics of colour. An earlier version served as a preamble to the 15th RIDI Conference; the current remake serves as a background for selecting post-proceeding articles from that conference. The articles selected aim to show practical applications of these economic paradigms, especially in the Latin American context, where their analysis can reveal unexpected patterns.

2 Methodology

Our research employed a systematic literature review approach to understand how different colour economies conceptualise and implement innovation and entrepreneurship. Given the emerging nature of colour economy concepts, we developed a comprehensive methodology that combined systematic search strategies with rigorous analysis procedures.

2.1 Search Strategy and Document Selection

The review covered publications from 1989, marking the first formal discussion of the Green Economy through 2022. Initial exploratory searches in Scopus and Web of Science using the general term "colour economy" yielded limited results, leading us to develop specific search equations for each colour economy (Table 1).

Table 1. Search Equations and Results by Colour Economy

Colour Economy	Search Equation	Number of Results
Blue Economy	((TITLE(""blue econom*"") OR TITLE(""ocea econom*""))) AND (((TITLE-ABS-KEY(innovation*) OR TITLE-ABS KEY(entrepreneur*)))) AND (LIMIT-TO (SUBJAREA, ""BUSI"") OR LIMIT-TO (SUBJAREA, ""ECON""))	16
Yellow Economy	((TITLE(""yellow econom*"") OR TITLE(""sta up econom*"") OR TITLE(""entrepreneu* econom*"") OR TITLE(""digital econom*"")) AND ((TITLE(innovation*)) OR (TITLE(entrepreneur*))) AND PUBYEAR > 2018 AND PUBYEAR < 2024 AND (LIMIT-TO (SUBJAREA, ""BUSI""))	65
Orange Economy	(((TITLE(""Orange Economy"")) OR (TITLE(""cultural industr*"")) OR (TITLE(""creative economy"") AND ((TITLE(innovation*)) OR (TITLE(entrepreneur*))) AND PUBYEAR > 2017 AND PUBYEAR < 2024 AND (LIMIT-TO (SUBJAREA, ""BUSI""))	22
Red Economy	((TITLE(""red econom*"") OR TITLE(""health econom*"") OR TITLE(""food econom*"") OR TITLE(""consum* econom*""))) AND (((TITLE-ABS-KEY(innovation*) OR TITLE-ABS-KEY(entrepreneur*)))) AND (LIMIT-TO (SUBJAREA, ""ECON"") OR LIMIT-TO (SUBJAREA, ""BUSI""))	20
Green Economy	((TITLE(""green economy"")) AND ((TITLE-ABS-KEY(innovation*) AND TITLE-ABS-KEY(entrepreneur*)) AND PUBYEAR > 2015 AND PUBYEAR < 2024	13
Silver Economy	(((TITLE(""Silver Economy"")) OR (TITLE(""Silver Generation"")) OR (TITLE(""Silver Market"")) OR (TITLE (""Senior Economy"")) OR (TITLE("& quot;Senior Marketing"")))) AND ((TITLE-ABS-KEY(innovation*) OR TITLE-ABS-KEY(entrepreneur*)))	30
Purple Economy	((TITLE(""purple econom*"") OR TITLE(""soc econom*"") OR TITLE(""solidarity econom*"" AND (((TITLE-ABS-KEY(innovation*) AND TITLE-ABS-KEY(entrepreneur*))))	39
Grey Economy	((TITLE(""grey econom*"") OR TITLE(""infor econom*"") OR TITLE(""shadow econom*""))) AND (((TITLE-ABS-KEY(innovation*) AND TITLE-ABS-KEY (entrepreneur*))))) AND PUBYEAR > 2018 AND PUBYEAR < 2024 AND (LIMIT-TO (SUBJAREA, ""BUSI" "))	20

Document selection followed a structured process (Figure 1), beginning with title and abstract screening and ending with full-text review against inclusion criteria. We included peer-reviewed articles, institutional reports, and policy documents that addressed innovation or entrepreneurship within their respective colour economies. Documents focusing solely on technical aspects without economic implications were excluded.

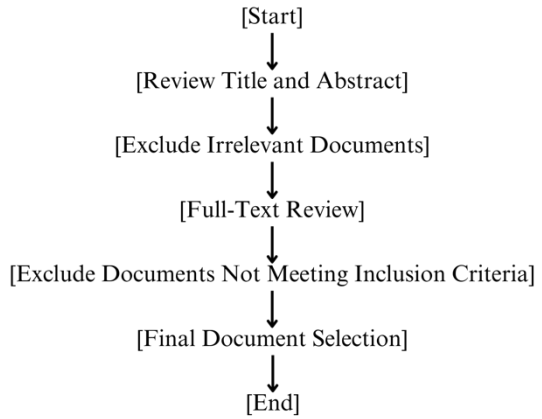

Figure 1. Document Selection Process Flow [Flow diagram showing selection stages]

2.2 Quality Assessment and Analysis

Document quality assessment employed different criteria for academic and institutional sources. When available, we evaluated methodological rigour, theoretical contribution, and citation impact for academic papers. Institutional documents underwent assessment based on the organisation's authority in the field and the document's influence on policy or practice development.

The analysis proceeded through three distinct phases. First, researchers conducted initial readings to identify emerging themes and concepts related to innovation and entrepreneurship within each colour economy. Second, we developed analytical categories based on recurring patterns in how different colour economies approached these topics. Finally, we performed a detailed content analysis examining how authors conceptualised and described innovation processes within their respective domains.

2.3 Data Extraction and Synthesis

We developed a standardised data extraction template to ensure consistent information gathering across all documents. The template captured key information, including:

Theoretical frameworks employed
Innovation patterns identified
Entrepreneurship approaches described
Policy recommendations proposed
Evidence of practical implementation
Reported outcomes and impacts

This systematic extraction process enabled comprehensive cross-comparison between different colour economies while maintaining analytical rigour.

2.4 Quality Control Procedures

To maintain the reliability of our analysis, we implemented rigorous quality control steps. Two independent researchers examined each document, comparing findings and resolving discrepancies through group discussions. Domain experts in specific areas of the colour economy were consulted for issues requiring further clarification.

2.5 Analysis Framework

The study's framework revealed how different economies of colour conceptualise and apply innovation along with entrepreneurial efforts. This development required an in-depth exploration of several dimensions, most importantly the theoretical foundations and underlying assumptions, the roles and contributions of key players, innovation processes and recurrent patterns, business strategies and their deployment, policies and institutional structures supporting these efforts, and evaluations of impact and measurable outcomes.

2.6 Methodological Limitations

The present review must start with the recognition of several limitations:

In reviewing the different concepts of colour economics, we found different maturity levels, posing several difficulties in maintaining a uniform analytical depth across areas.

Notably, some colour economy concepts were identified mainly in policy documents and not in academic publications, which made a thorough assessment of the quality of the evidence more than necessary.

In categorising innovation and entrepreneurship practices, the intersection of colour economies made the analysis more complex.

We sought to prioritise transparency and reproducibility. Our approach considered systematic precision with the adaptability necessary to examine emerging economic concepts.

Thus, this study adopts an exploratory approach, considering the evolving concepts of colour economics and their different levels of theoretical advancement. The analysis recognises that:

Different colour economies show varying levels of theoretical maturity

Regional contexts may influence their manifestation

Implementation patterns may differ from theoretical constructs

These factors will be examined through the conference proceedings.

3 Literature review

Exploration of the literature reveals that the various economies of colour focus on different sectors and yet coincide in strategies to address global challenges. These similarities become recurrent in addressing sustainability, deploying innovation patterns and addressing social inclusion. While each Economy of colour maintains its approach, exploring these commonalities gives way to a more robust and comprehensive framework for pursuing economic transformation.

Although these colour economies have developed as separate theoretical constructs, their practical implementation may reveal interesting patterns of interaction. How these frameworks operate in different regional and cultural contexts, particularly in resource-constrained environments, remains an open question for empirical investigation.

3.1 Blue Economy

The Blue Economy is an emerging notion that has gained attention recently. It refers to the sustainable use of marine resources for economic development, improved livelihoods and healthy ocean ecosystems [20]. It combines the biocentric and anthropocentric views and incorporates various industries such as fisheries, aquaculture, tourism, transport, energy and biotechnology [20]. The climate crisis, resource exhaustion, and global food security have ejected the conception of the Blue Economy, which is centred on the sustainable use of maritime resources for economic growth and welfare, preserving ocean health. Pauli [21] emphasises that mimicking nature is a fair way to guide the Blue Economy. Nevertheless, as a response to environmental challenges, a mix of Blue and Green Economies is proposed [22].

The Blue Economy is renowned as a fast-growing sector with economic and social benefits, but it also overlooks defiance, such as pollution and overexploitation [23]. Marine electrification upsurges are a promising strategy to reduce greenhouse gases in oceanic activities [24]. Forecasting studies indicate that the North Ocean region is awaiting solutions such as marine renewable energies, smart transportation, and sustainable aquaculture [25].

The evolving Blue Economy has undergone significant changes across our planet. For example, in New Zealand, there has been clear support for the Blue Economy, pointing to this Oceania economy as a leader in sustainable development [22]. According to Rout et al. [26], this country has a holistic view of the oceanic resource integrating both scientific knowledge and traditional Māori approaches, emphasising community empowerment including co-governance and collaborative management practices [27, 28], highlighting not only restorative or conservative efforts but also innovative ones, searching for a balance between economic growth and environmental sustainability [28]. In Brazil, the blue Economy includes fishing, tourism, and gas and oil extraction, and it faces challenges such as keeping vital and traditional activities coexisting with significant economic activities such as climate change and pollution [29].

African nations in the Blue Economy look upon opportunities in fishing, tourism, and renewable energy sectors with the potential to produce employment and nurture development [30]. The importance of indigenous innovation in solving Blue Economy challenges is recognised [31].

Innovation and entrepreneurship can be major drivers of change in envisioning a sustainable future. Such is the case of Small Island Developing States (SIDS) [32], which are searching for new and sustainable uses for their marine resources, including their cultural and technological industries. In the Eastern Caribbean Islands, the transition toward a Blue Economy has been backed up with World Bank aid, enabling the sustainable financing of the management capacities to use marine resources, empowering local communities to develop innovative projects not only to protect the environment but to generate jobs and economic welfare [33].

Science and technology are capitalising on areas like marine resources' sustainable exploitation, environmental protection, and the deployment of brand-new industries [34]. In Portugal, collaboration on research and innovation is propelling the Blue Economy and generating employment and more sustainable opportunities [35, 36].

Innovation and entrepreneurship promotion have been the capstone of developing a sustainable Blue Economy. Innovation is fundamental in this task, driving the upswing of new technologies and business models to input marine resources in more environmentally friendly ways [22]. For example, new technologies are being created to realise sustainable fishing. Entrepreneurs play a vital role as they take risks and establish businesses based on sustainable principles, such as New Zealand startups innovating on marine algae usage to create eco-friendly products [22].

Collaboration between the private and public sectors and with other actors is essential to supporting innovation and entrepreneurship in the Blue Economy. The joint efforts of governments at different latitudes can play an irreplaceable role in fostering innovation and entrepreneurship, as they provide the basis for regulations to promote innovative activity, guarantee access to expanded markets and scale the public funds available for R&D [29].

Public awareness of the Blue Economy and its potential benefits is key to attracting sectorial investment and accelerating its development. Innovation and entrepreneurship are also important for ocean electrification, where new technologies and business models are necessary for the electric transformation of maritime transportation (Spaniol & Hansen, 2021) [24].

Financial instruments such as "Blue Bonds" are emerging innovations to support marine conservation and the Sustainable Ocean Economy (Thompson, 2022) [37]. In Blue Bonds, innovation and entrepreneurship are vital to developing efficient and productive new technologies and business models by decreasing costs and attracting investment (Thompson, 2022) [37].

A key to driving the growth and sustainable development of the Blue Economy is startups. This kind of enterprise impulses innovation and technology, developing new business models in the marine realm. (Zhu et al., 2023) [38]. Blue Economy startups are developing technologies to exploit sustainable marine resources, as in the case of Incubazul, where I4.0 technologies embedded in startups allow monitoring of marine ecosystems and efficient resource management, contributing to sustainability (Herrera, 2023) [39]. Blue Economy startups are implementing business models that promote waste valorisation, as reflected in the macroalgae collected at the beach to produce packages (Herrera, 2023) [39]. It is worth mentioning that Blue Economy startups impulse employment and social development, especially in coastal communities (Inter-American Development Bank [IADB], 2018) [40].

To promote this impulse, national governments and financial institutions may facilitate financial access to startups in the Blue Economy (Zhu et al., 2023) [38]. Project financing may be daunting in the Blue Economy due to its high risk and long-range nature. Nevertheless, innovation and entrepreneurship have given pace to innovative financial mechanisms, such as the Blue Bonds, used to finance marine conservation and a sustainable ocean economy (Thompson, 2022) [37]. Also, some collaborative measures have already been implemented to finance innovation and entrepreneurship in the Blue Economy. Quadruple helix has created a favourable environment and impulse financing for new startups (Spaniol & Rowland, 2022; Sousa et al., 2020) [25, 35]. To surpass Blue Economy startups' financial constraints, investors and other ecosystem players must be aware of them and work together to overcome these hurdles (Zhu et al., 2023) [38].

Blue Economy shows examples where intersectoral and intercultural collaboration most likely promote innovation. A central strategy to diversify the traditional fishing and tourism industries is seeking complementary opportunities in the digital and creative industries [32]. Furthermore, collaboration between Indigenous people and other stakeholders is highly important to guide decisions affecting the Blue Economy, warranting that Indigenous knowledge is respected and considered in the sector's development [31].

Innovation and entrepreneurship have been crafted in several areas of the Blue Economy with concrete examples. New technologies like acoustic sensors were developed in sustainable fishing to reduce incidental capture and improve fishing practices [22, 29]. Renewable marine energy is also an innovative field, with rising interest in sources such as wage and tide energy to proportionate a sustainable and clean source of energy [22, 29]. Furthermore, algae aquaculture is overstated as an opportunity to create sustainable jobs and businesses [22]. The electrification of seas is another example of the innovation of battery technologies and more efficient propulsion technologies that can stimulate the feasibility of power-supply ships [24]. Research is addressed toward sustainable aquaculture, marine sustainable energy, pollution prevention and control, and education on ocean importance [42]. In addition, food innovation for aquiculture and marine energy technologies are stressed as ways to improve efficiency and sustainability [30].

Research indicates specific areas where innovation and entrepreneurship are influencing the Blue Economy. Catedrilla et al. [20] highlight the importance of information technologies for improving sustainable fisheries and aquaculture in the Pacific. Information systems are used for resource management, controlling illegal fishing and improving supply chain efficiency. Establishing marine protected areas (MPAs) presents multiple opportunities for sustainable economic development [43]. Entrepreneurs can use these areas for ecotourism, sustainable fishing practices and cultivation of marine resources such as seaweed, thus contributing to conservation and economic development.

Thanks to the innovative and entrepreneurial efforts together with the collaboration of the fourth helix, namely Government, Industry, Academia and Society, the availability of innovations in the financial sector and the incipient regulatory framework, the Blue Economy has been established. These collaborative endeavours are irreplaceable in accelerating the development of the Blue Economy and have given room to consider the global economic and social impacts as our common frontier is our oceans. Innovation and entrepreneurship are pushing the creation of more sustainable technologies and practices in the Blue Economy, ranging from fishing and aquiculture to energy generation and education. Those examples emphasise how collaboration between government, business, and Civil Society drives creative and beneficial solutions toward sustainable economic and environmental development. Through the creation of innovative technology and business models and with government backup and intersectoral collaboration, Blue Economy may progress and face the environmental and societal challenges ahead.

Hendarman et al. [44] argue that the obstacles standing in the way of innovation must be removed to realise the full potential of the blue economy. Small businesses and the self-employed face various challenges, including limited marketing options, technological limitations and financial restrictions. In economically disadvantaged regions, these difficulties are much more severe. Overcoming these challenges is necessary to enable an inclusive and effective Blue Economy. This overcoming can be accomplished through particular legislation, rigorous capacity-building efforts, or intensive work to foster collaboration among stakeholders.

3.2 Yellow Economy

The Digital Economy and the Yellow Economy are concepts emerging in the context of technological transformation and societal advancement. The Yellow Economy refers to several approaches in the literature, such as the intensive production of technology, the ecological movement and the yellow circular Economy [4].

Understanding the Yellow Economy requires a broader perspective than focusing on the specific term. We must consider related ideas to truly grasp their implications. For example, works discussing the knowledge economy [45, 46], sustainable development [47, 48], and ethical business practices [49, 50] are crucial. These help us see how economic models have changed over time, the growing role of technology in shaping industries, and the increasing importance of sustainability.

The Yellow Economy has evolved to cover many ideas and experiences. It is rooted in the idea that technology may create a more sustainable and equitable Economy. For example, the technology may reduce power consumption, create more efficient products and recycle materials. In an entrepreneurial and innovative context, this Economy underlines the need to produce and live intensively in technology, capitalising on digitalisation and automation to improve efficiency and life quality [4]. The application of the Internet of Things (IoT) and artificial intelligence (AI) across different economic activities are clear indicators of this shift [51].

To understand the Yellow Economy, it is important to examine certain technologies in detail, such as nanotechnology and information, as well as communication and computing technology (ICT). Even if these sites do not mention the term 'yellow economy' by name, they provide useful information. For example, Aithal and Aithal [47, 52] show how these technologies can better use resources, make production more environmentally friendly and encourage new ideas. This outcome is exactly the kind of technological progress on which the Yellow Economy is based.

Innovation and entrepreneurship in the Yellow Economy have distinctive features. First, they are focused on creating and applying forefront technologies to incite efficiency and sustainability. Technological innovation, as noted in the digital supply chain approach [53], is the key engine of this Economy. Collaboration among enterprises and value co-creation are essential elements in the Yellow Economy, focusing on service management [54].

In second place, financing and collaboration are top priorities to ignite innovation and entrepreneurship in the Yellow Economy. Mechanisms like investment fund access and interdisciplinary collaboration allow startups and incumbent firms to develop and apply technologies effectively [55]. The Yellow Economy also profited from collaborative models among universities, businesses, and the State to foster entrepreneurship education [56].

In the Yellow Economy, the government and public policies play a fundamental role in promoting innovation and entrepreneurship, creating the right social and technological development environment. Sorescu and Schreier [57] suggest that the government may influence strategically through regulations and policies devoted to digital technology adoption and Research and Development expenditures. Similarly, Wang and Cen [58] emphasise that regional policies and investments in technology infrastructure are needed to make innovation more efficient in the Digital Economy. For example, in the digital supply chain, public policies play the role of facilitators of the adoption and efficient use of technological innovations by encouraging innovative and efficient practices in each link [53]. These innovation use and adoption policies are accompanied by educational policies that focus on developing technological and entrepreneurial skills [59, 51, 56].

Collaboration between companies, governments, and other actors is a central point highlighted by Sultana et al. [60] and Herrera González and Hidalgo-Nuchera [54], who stress the promotion of co-creation and interdisciplinary collaboration for innovation. Within this collaboration, it is most important to help and accompany the growth of startups through investment funds and technology incubators [55].

Our literature review points to the essential role of government and public policy in encouraging innovation and entrepreneurship in the Yellow Economy. Although with diverse approaches, the writings show the need for regulation and actions to induce investment in technological innovation, entrepreneurial education, collaboration and strategic spending, all of which are capital elements to achieve progress in this Economy. An environment favouring the convergence of all these aspects will result in developing and adopting technologies oriented towards economic growth, social development, and environmental welfare.

Several concrete illustrations of innovation and entrepreneurship in the Yellow Economy include creating technological solutions for environmental challenges, renewable energy development, and sustainable resource management [51]. Moreover, there are also efforts to design Smart cities and technological applications to improve Society's quality of life [4]. As an example, the adoption of technologies such as the 5G and the Artificial Intelligence impulse innovation efficiency in several regions [58].

The Yellow Economy has been deployed as a concept that integrates the intensive production of technology with social and environmental aspects. Innovation and entrepreneurship in this Economy are characterised by advanced technology applications, collaboration among several actors, and the search for integral solutions to contemporary defiance. Understanding and exploring the ideas and experiences from the discussion on innovation and entrepreneurship in the realm of the Digital Economy gives a more comprehensive and sustainable focus on social and economic transformation.

3.3 Orange Economy

The Orange Economy is a term used to describe the creative Economy, which includes industries such as the arts, culture, media, and technology [61]. These industries are all driven by creativity, innovation, and the use of intellectual property [62].

In 1994, the Australian Cultural Department introduced a political structure that noted the importance of culture for the national identity and involved the film industry, radio, bookstores, the arts and other cultural activities. These policies have been considered the initial sketches of the current Creative Economy [63]. At the end of this same decade, the United Kingdom prompted the word "creative industries" to define that convergence among the Media and Information Industries and the Cultural or Arts Industry to modify the expressions of the debate on value representing those industries [64, 65]. This new concept has been spreading so much that in 1998, the UK Department for Culture, Media and Sport began to embrace those sectors that, through the creation and use of intellectual property, achieve profit and job creation [66]. In 2005, the Creative Economy was found in the United Nations Conference on Trade and Development (UNCTAD) and the British Council documents [67, 68, 69].

In the case of Latin America and the Caribbean, the Creative Economy is also known as the Orange Economy; this term was coined by the Inter-American Development Bank (IDB) [70].

Regardless of the name, this class of Economy congregates the Cultural Economy, the creative and conventional cultural industries, and other sectors that foster creativity [71]. Among these industries, it is worth clear the denominated creative industry that refers to those businesses in which economic activity is addressed toward the creation and profit of cultural symbolic or information products and services in several sectors such as advertisement, marketing, design, architecture, software, television, music, hospitality, videogames, among others [72, 73, 67]. An industry of this type, which encompasses several sectors, goes into complex detail in determining the efforts in which it operates [74]. During the recent crises experienced in the 21st century, the set of these diverse activities has been important to trigger creativity and innovation, be a source of employment, maintain a positive growth rate, incite diversification and inclusion as a manifestation of resilience [75, 76, 62].

The Orange Economy is still relatively new but gaining traction worldwide. In Latin America, the term has been used to describe a variety of initiatives that are aimed at promoting the creative industries [77-79, 76, 61, 80]. In Africa, the Orange Economy has been used to promote the film industry, known as Nollywood [81]. In Asia, the Orange Economy has been used to promote the development of business digitisation[82], the permanence of small business units [83], and the sustainability of intangible cultural heritage [84].

In recent years, the Orange Economy has been recognised as an ally in meeting the Sustainable Development Goals (SDGs) because it emphasises working towards sustainable development by building innovative capacities in local economies [76, 85, 32]. This Economy can generate disruptive solutions facing global challenges, generating quality jobs and sustainable economic opportunities [61, 86]. Namely, it has an ample spectre of action, allowing cultural and economic development [87, 88].

The expansion of the Orange Economy offers numerous possibilities for innovation, not least because it is closely linked to technical advances that can improve the production, dissemination, and utilisation of creative content [81]. These possibilities can lead to the development of new business models and revenue streams in creative industries. The Orange Economy can also drive cultural innovation, creating new art forms, cultural expressions, and heritage experiences, which helps preserve and promote cultural identity in a rapidly changing world [84]. The Orange Economy can function as a platform for social entrepreneurship as it fosters creativity and innovation to address social and environmental challenges while promoting inclusive and sustainable solutions that benefit communities and society [61].

This kind of Economy has a close nexus with entrepreneurship, being a powerful energiser of business competitiveness (Boix et al., 2016) [89], as it impulses toward this sector the creative project formulation generating a differentiated value in the sale process of products and services [90, 91]. Entrepreneurs are key, as they can generate unconventional results confronting the status quo, providing inputs for the creative destruction of jobs and opportunities [61, 86].

The Orange Economy relies on innovation, talent, and human [87]. In this economy, individuals drive innovation and entrepreneurship. It is necessary to identify and foster talent to achieve a sustainable and equitable framework [78]. Therefore, education, training, and support policies are essential for improving human resources [84].

The global influence of the Orange Economy offers entrepreneurs the possibility to launch products and services to international audiences [92] as digital technologies adoption advance the technological innovation frontiers [93, 94]. This situation intervenes as a source of inspiration for other sectors, propelling the change and favouring interdisciplinary and interinstitutional collaboration [95, 96]. Consequently, the Creative Economy fosters innovation and entrepreneurship and profits from them.

3.4 Red Economy

Since World War II, consumption has played an essential role in economic growth, and it is recognised in the field of Red Economy. This concept has moved from characterising a political ideology [97] to a strand of global capitalism, standing out as a diverse concept in constant flux. Red Economy has moved from being a system driven by consumerism to an approach that considers purchasing vehemently and sometimes unnecessarily, but now about its impacts on the environment and society [4, 16]. This Economy is upsurging in a world characterised by high consumption rates and has converted into a capstone research field to tackle current challenges on sustainability.

Innovation is vital in transforming the Red Economy towards more sustainable practices. Adopting advanced technologies such as ICT and renewables is crucial to minimise the environmental impact. Several examples can be shown [98]. In the healthcare sector, technologies

such as AI and IoT enable sustainable resource management by reducing waste and helping to improve patient care. Agricultural practices are becoming increasingly sustainable in the food sector thanks to the spread and use of advanced technologies, which means avoiding or reducing the use of chemicals [99]. In other consumer sectors, sustainable practices are promoted by offering circular economy solutions, real-time monitoring and even smart packaging [100, 101]. In addition, the increasing incorporation of renewable energy sources allows for more efficient energy consumption and the generation of a lower carbon footprint [102].

Furthermore, open innovation stimulates organisations from the food industry to improve their competitiveness through stakeholder collaboration [103]. Throughout the value chain, businesses cooperate and integrate customers' opinions as alliances with research organisations to create more healthy and sustainable food products. This collaboration along the chain improves the innovation process using a wider range of resources and knowledge than one sole firm may reach or even lack; furthermore, the alliances help to mitigate risks and fold the market success probabilities of new products, particularly in sectors shaped by limited live-shelf of products and raw materials variability [103].

Recent studies offer new insights into how entrepreneurship and innovation drive the Red Economy [104-105]. Technology fosters sustainable consumption as companies seek to reduce environmental impact through blockchain, IoT and artificial intelligence [104]. Even 'green entrepreneurship' growth reflects this emphasis on technological innovation as companies actively produce and use creative goods and services to solve environmental problems [105].

Durrie and Gahlot [106] investigate the characteristics that drive and enable long-term entrepreneurship. Their findings highlight individual motivation, helpful government policies and a favourable entrepreneurial climate. Therefore, promoting a sustainable culture and implementing specific policies can boost entrepreneurial activity in the Red Economy.

Anilkumar and Sridharan [107] and Elroi et al. [108] provide concrete examples of innovation driving sustainable business performance. In their sustainable supply chain management study, Anilkumar and Sridharan [107] show how creativity can optimise resource use throughout the value chain and reduce environmental impact. Elroi et al. [108] support accepting circular economy models, as they also help reduce waste and resource savings.

Examples from Italy show how ICT-enabled cooperation among producers and consumers may transform the food economy. Cooperation focus is vital because it fosters resilience and sustainability in the agri-food sector. Stakeholders may improve traceability and optimise resource usage through the blockchain, Internet of Things, and precision agriculture [109]. Through digital platforms, these technologies increase supply chain efficiency and promote transparency, diminishing waste and negative effects on the environment, and, at the same time, contribute to strengthening the link between farmers and [110]. In rural populations, smart agriculture has shown its benefits because its application has positively affected local economies and quality of life through its effect on decreasing costs and facilitating sustainable practices [110-111].

The Red Economy signals changing times for public policies and the government itself. Formulating public policies to promote energy efficiency and encourage research and development expenditures on sustainable technologies is critical [112]. In addition, a regulatory approach that equilibrates economic growth with environmental and social sustainability is required [16].

Innovation and entrepreneurship in a consumer-driven Economy (or Red Economy) require effective financing and collaboration [113]. The availability of cash and risk diversification management tools to keep pace with the rapid changes in consumer demand are necessary for businesses to experiment and develop new products. R&D expenditures affect quality and operational efficiency, so upgrading firms enhance and update infrastructure and processes, diminishing resource consumption and cutting operational costs while still accomplishing customer satisfaction. The collaboration between companies, financial institutions and public entities helps reduce the risks associated with innovation in contested consumer-driven markets.

Policy must induce incentives that generate changes in demand and thus drive sustainable practices. Public policies such as tax incentives, subsidies or grants can help change customer behaviour in favour of green technologies and thus encourage companies to adopt sustainable practices, reducing environmental impact. They favour and reinforce customer preferences towards more sustainable goods and services, pursuing long-term environmental and economic objectives [113].

Concrete examples illustrate the application of the Red Economy to a diverse array of sectors. In the Health sector, several strategies are implemented to downsize costs, such as risk-sharing agreements to equilibrate health costs with egalitarian access to expensive treatments [114]. In the food sector, to address the guidelines to support sustainable customer demand, SMEs collaborate to produce local and eco-friendly foods in such creative ways: they employ local sourcing, community-supported agriculture, ethnic and fusion culinary innovation, collaborative marketing, and zero-waste programs [115]. One-way economic gaps between rural and urban regions are being bridged is through collaboration, where rural producers seek partners in urban markets to tap into knowledge and resources to improve their sustainable food offerings [116].

The Red Economy has transmuted from consumerism as the basis for economic growth to responsible consumption that overlaps with sustainable development. Innovation and entrepreneurship play a key part in promoting the adoption of sustainable technologies and collaboration among lead participants. Public policies, adequate financing, and intersectoral collaboration are indispensable to reach a red economy that benefits Society and the environment. As the Red Economy evolves, its capability to influence decision-making and a sustainable economic transformation becomes the sharpest, and its continuous study is paramount for directing efforts towards a more sustainable and equitable future.

3.5 Green Economy

In 1989, the term Green Economy appeared for the first time in a United Kingdom government report named "Blueprint for a Green Economy", where some economic and environmental progress recommendations were issued [117]. In 2008, in the frame of the incumbent economic turndown, the United Nations launched the *Environment Programme-led Green Economy Initiative* urging several governments to consider environmental tax incentives to energise their economies, meaning a turning point for the Green Economy, which was defined as "the one that results in greater human well-being and social equity, while significantly reducing environmental risks and ecological" [118]. A few years later, in 2012, at the Rio+Conference, the Green Economy was considered a change of course for all governments and organisations towards mitigating Climate Change effects, saving natural resources and efficient technologies [119].

Nowadays, the Green Economy must be considered a change of mentality to warrant the welfare and well-being of Society and the environment [120]. That is why it can interact with economic and environmental issues to provide equitable access to resources to eradicate poverty and impact progress and environmental security [121,122]. However, this is a complex task and requires a prudential time of action, so the Green Economy must be treated as a long-range development strategy [122]. In this ample spectrum, the Green Economy is related to policies, international trade and domestic rivalry [119, 123].

Any Green Economy-related plan must foster innovation, technology adoption and entrepreneurship [124, 120]. The literature consistently emphasises these ideas in achieving Sustainable Development Goals and improving economic and environmental outcomes; as evidence, we have varied examples:

1. Renewable energies, smart grids, or environmentally friendly practices can be integrated as innovative technologies, helping economies to become more efficient, reduce their emission burden, and sustain cleaner production processes [120].
2. The development and adoption of advanced technologies are primary to driving efficiency, reducing environmental effects, such as greenhouse gas emissions and pollution, and improving resilience to climate change [120].
3. The digitisation of business processes in the supply chain enables firms, even smaller ones, to operate more efficiently, reducing waste, decreasing energy consumption, and saving resources through digital platforms [125].
4. In agriculture, digital platforms facilitate water and energy savings by better monitoring and controlling agricultural processes and crop management, reducing environmental impacts [126].
5. In urban planning, innovation helps to create sustainable cities through sustainable transportation systems and mobility solutions, energy-efficient buildings, smart waste collection systems, automation of sorting recyclable materials, technology development to convert non-recyclable materials into electricity, heat or fuel, use of the Internet of Things technologies to collect data on traffic, energy usage, air quality, and public transportation to improve urban

infrastructure and services, furthermore, the usage of digital platforms promotes citizen participation, transparency and accountability [127, 124, 118, 120].

6. Urban agriculture initiatives, such as community plots and vertical agriculture, such as hydroponics, aquaponics, and substrate systems, can be developed to increase food security and generate business opportunities [128].
7. Forestry and agriculture can potentially reduce carbon emissions, improve biodiversity and promote the use of renewable resources. For this aim, rural areas must adopt sustainable practices such as agroforestry, organic farming or eco-certification to improve soil health, reduce deforestation and improve carbon sequestration. Additionally, they can contribute to creating new markets for green products that are organic, eco-certified, and environmentally friendly, as well as opportunities for entrepreneurship in bioenergy, wind farms, or eco-tourism. Despite these favourable situations, rural areas face poor transportation networks, scarce investment in infrastructure, deprived access to renewable energy grids, and limited digital connectivity, but also low knowledge of sustainable agricultural practices, renewable energy systems and market access strategies such as capacity building and education that constrain their distribution channels to urban markets, access to clean technologies, eco-certification process implementation, entrepreneurship initiatives in brief, their compromise to align with Green Economy principles and contribute to economic growth preserving the environment [129].
8. Green entrepreneurs promote innovation through the development of environmentally friendly goods and services. They look for efficient resources and solutions in a socially responsible way and mitigate climate change [124, 130].
9. Integrating new technology, such as the Metaverse [131], has great potential to increase the effectiveness of corporate environmental education. Especially in companies located in metropolitan regions, it has helped to comply with environmental standards and promote the application of sustainable methods and processes. Higher education institutions contribute complementary to increasing environmental awareness and sustainable behaviours by fostering green entrepreneurship among students and providing them with basic information and tools [132].

The Green Economy not only benefits from innovation and technology but also promotes their development. Through green policies stating the reduction of environmental impacts and pleas to attain resource inefficiencies, a market demand is created for renewable energy, energy efficiency and waste reduction so businesses are motivated to invest time, money and resources for technology, products and services development to meet consumer needs and regulatory requirements [120]. There is also an active component of public policies to induce research and development through grants and subsidies for renewable energy projects, tax breaks for eco-friendly businesses and carbon pricing mechanisms to encourage companies' efforts to innovate and develop technologies [118]. Also, global trends for healthier food, cleaner energy, circular economy initiatives, and a deep general awareness of sustainability and social responsibility are opening greater opportunities for entrepreneurship in sustainable agriculture, eco-friendly packaging, renewable energy solutions, eco-friendly technologies, products and services [124]. Additionally, policies nurture an ecosystem solution to face environmental challenges, which several stockholders are involved in, as in the innovation process; for example, greening the Economy through technology development compromises networks of collaboration between public institutions, businesses, research institutions, educational organisations, customers, and financial entities to drive innovation [125].

3.6 Silver Economy

The Silver Economy, as a noun representing a specific dimension of economic activity related to ageing, arises due to the demographic ageing of the population in almost all countries of the developed world. A mix of factors has driven this phenomenon as natality rate drop-off and an increase in life expectancy, among others [133-138].

Economists and experts in senior-oriented markets accept the Silver Economy concept, which has been incorporated into public agendas as a new growth device responding to the increasing needs and changing preferences of an ageing population, taking into consideration the potential to capitalise on their acquisition power [136, 139, 140].

This trend presents a considerable market opportunity that may positively impact senior

adults' quality of life. In addition, up to a point, it may contribute to facing challenges related to ageing, such as the sustainability of social security systems [134, 141, 135, 136; 139].

A significant part of the literature on the economics of older age is focused on the economic and trading activities addressed to this population, including a wide variety of sectors, including medical care, tourism, assistive technology, adapted dwelling, entertainment and recreation for aged people, among others [142]. This idea focuses the study of the Silver Economy primarily on the needs and desires of the senior-oriented market, such as the gaps organisations face in designing affordable, easy-to-use products and services that solve specific problems for seniors [143, 134, 142].

In studies on the economics of Senior people, innovation stands out as a prominent trend observed in research studies, mainly in European Union countries and Japan. Innovation comes into play by identifying opportunities, devising inclusive products and developing highly effective communication strategies to communicate with the older population segment. [143, 135, 137, 140, 144]. According to Lange and Velamuri [141], in retailing, it is imperative to concentrate on aspects such as physical environment design, customer support, and the supply or adapted products to seniors' needs. These actions improve the value proposal, strengthen client relationships, and significantly expand the earnings.

The spotlight on Information and Communication Technologies (ICTs) is a prominent feature of the Elder People's Economy. The research with this approach is centred on developing strategies for improving aged people's quality of life, especially through the ideation of services based on ICTs and innovation. Challenges faced are in health, well-being, social inclusion and autonomy. Within the Silver Economy, literature pinpoints specific innovation areas. Bibliometric research conducted by Aranibar Ramos [145] and the discussion founded by Barković Bojanić et al. [146] highlights emerging technologies such as artificial intelligence and machine learning seeking to develop elderly care innovative solutions as personalised healthcare, remote monitoring and assistive technology. These advances undoubtedly improve older adults' quality of life while creating new market opportunities for entrepreneurs.

However, it is important to recognise that only some technical projects are apt to address many massive markets. The main obstacle is still a lack of sales that support innovative technology development and effective business models suited for the well-being of older people [137, 139]. Addressing digital literacy among older people and guaranteeing equitable access is essential. In addition, other similar issues deserve our consideration, such as the moral implications of data privacy, the continued expansion of the digital divide, and the associated risk of exacerbating socioeconomic disparities [147].

It is the capstone to understate the importance of customising the initiatives according to each region's demographic, socioeconomic and cultural factors. Keeping this in mind enables the strategies, policies and program formulation to improve the ageing process [134, 135, 138, 140].

3.7 Purple Economy

This colour is also called the social and solidarity economy (SSE) or the care economy. It represents a sophisticated economic system prioritising economic progress and social and environmental well-being. This rapidly developing concept has attracted considerable interest in recent years, particularly within the discourse of sustainable development and gender equality. It strongly aligns with the United Nations Sustainable Development Goals (SDGs), particularly Goal 5 on gender equality [148]. The concept was first introduced in 2013 by Ipek İlkkaracan, a Turkish economist, to challenge traditional economic models that often undervalue the importance of care work and the contributions of women in the workforce [149, 150].

Characterised by several key principles, the Purple Economy places a high value on care work in all its forms [148, 151. 152] promoting gender equality in the workplace and beyond [148, 153], and fostering a caring and inclusive workplace culture [148, 153, 154]. Furthermore, it seeks to integrate the care and market economies, challenging traditional profit-centric models [148]. The Purple Economy is committed to resource efficiency, environmental sustainability, and promoting sustainable practices. This global strategy promotes a fairer, more sustainable and more equitable world by recognising social, environmental and economic interdependence. It emphasises social justice, the fair distribution of resources and the integration of diverse perspectives to foster innovation and flexibility [155-156].

Born out in multiple crisis contexts—financial, political, environmental, and social—the business power boost by the free market emerges as the main responsible force. These series of crises have begun to question the legitimacy of the State and the

legality of the globally dominant economic model as the levellers of society's development [157-159].

The overexploitation of all kinds of resources by the national enterprises searching for profit maximisation and the gradual decline of the Welfare State caused the risk of democratisation and uncertainty in all endeavours, mainly on those that stimulate social exclusion as gender and race inequity, unemployment, underemployment and the poverty, as the precariousness of health, safety, and education [160-162].

In this scenario, where the comprehensive development of an individual and his or her human rights result threaten, it upsurges several models that propel new forms of development -fair trade, solidarity economy, Collaborative Economy, Corporate Social Responsibility, sustainable entrepreneurship, the Circular Economy, Social Enterprise, social innovation, among others- all of them based on significant changes on culture, organisational forms and values. These models appear to be searching for more fair and effective responses to the problems that conventional firms and the State cannot meet [157, 163].

In response to such conceptual diversity, the Purple Economy has been proposed to cover all these kinds of development models and seek to provide a space to acknowledge social diversity and cultural pluralism, pressing for the greatest balance in the current power relationships [164, 162, 165].

Hence, the Purple Economy seek the transformation of the social fabric in its many facets -education, finance, production, work, governance, and consumption, among others- and uses as its main mechanism the citizen's community and empowerment [164, 166] or as it stated by Chaves Ávila and Monzón Campos [157] through the "comunitarización" (been collective and community at the same time). Citizenship is the one that organises itself to answer its own social needs, reducing the gap and harmonising the environment.

The Purple Economy face different challenges, including citizen problems, needs, and expectations diversification issues related to welfare, advancement, and comprehensive development [167, 168]

Furthermore, Weerawardena et al. [165] point out that non-profit organisations, historically, have been a core element in serving citizenship needs; nowadays, they deal with a more competitive environment, getting grants and addressing philanthropic sources of funding, restraining its access to earnings, and forcing them to approach to innovation and entrepreneurship processes. Here, concepts such as social entrepreneurship and social innovation will emerge and become popular in the Purple Economy as a vehicle that seeks to develop new and sustainable solutions to increasingly complex problems of contemporary society through collaborative dynamics, systemic models, community empowerment actions and open platforms [160, 157, 169].

Although these concepts were popular in the first two decades of the 21st century, it is also true that today, they suffer from important criticism. For example, Chalmers [160] states that the effectiveness of social innovation seems to be depleted by different barriers, among them financing access and a culture of risk aversion, but, mostly, haphazard use of concepts, difficulty in the precise measurement of the actual impact of these initiatives. Notwithstanding, it also underscored the success of social innovation within microfinance, including from a gender perspective [170, 171].

Moreover, the inclusive and collaborative view of the Purple Economy suggests that implementing innovation processes in the community environment may be more effective if it follows the open innovation paradigm. This paradigm enables knowledge flows among all stakeholders, including the user community [160], migrating from a traditional conception of technological innovation to a more open concept and less technological determinant.

In this way, the Purple Economy is proposed as an analytic framework that allows the study of initiatives like innovation and entrepreneurship centred on a set of values such as diversity, equity, solidarity, cooperation and social welfare above the personal enrichment and monopolisation of human rights, where the acknowledge of historical, institutional and cultural context may be converted in the leveller tool in the objective and goals' definition and fulfilment.

3.8 Grey Economy

The Grey Economy is a significant sector of economic activity that operates outside formal regulations and registration. While prevalent in developing countries, it is also a notable segment in developed economies, including those in the European Union [172]. Emerged in the 1970s, it was coined to describe economic activities outside the urban formal economy [173]. Found in developing countries' studies, it has traditionally represented a significant share of these nations' economic activity. However, the concept has since been extended to developed economies, where it

has become an important area of research and policy debate.

The informal sector comprises a series of activities ranging from family production to complex technological activities that share the characteristic of not being under government supervision or paying taxes. In this sector, inventive and entrepreneurial activities are common, almost always derived from necessity and restricted access to formal financial and non-financial resources. Whereas informal networks and social capital substitute those resources, Grey Economy's entrepreneurs rely on diverse strategies based on their relationships to overcome challenges and exploit opportunities [174].

Concerning its theoretical foundations, the literature on the Grey Economy draws on diverse frameworks, including neo-liberal, political economy, and institutional approaches. These offer different perspectives on the drivers of informality, the role of institutions, and the relationship between the grey and formal economies [175].

Innovation in the grey economy is characterised by adaptability, resilience, and cleverness. It often involves bricolage, which creatively uses available resources to invent and develop new products and services [176].

Entrepreneurship in the grey economy can be based on necessity and environmental opportunities. Engagement in entrepreneurship within this economy may arise from both necessity and the potential presented by environmental opportunities. Due to necessity, it is inherently a focal point of entrepreneurship, as unemployment or poverty can serve as a primary catalyst. In the prevailing economic landscape, indications of potential can emerge within informal market niches or regulatory gaps that may be leveraged through informal channels [177].

Policy recommendations for addressing the Grey Economy include strengthening institutions, improving governance, promoting formalisation, and investing in education and skills development. Some studies have suggested designing and implementing public policies adapted to the context where the specific needs and issues relating to microfinance, business support, and development services are expressed [178].

Substantial evidence supports implementing policies targeting the Grey Economy in various contexts. Some studies have reported positive impacts on formalisation, employment, and income. However, other studies have found limited or mixed impacts, highlighting the capital challenges of addressing the Grey Economy [179]. Reported outcomes and impacts of policies targeting the Grey Economy include increased formalisation, improved working conditions, reduced poverty, and enhanced economic growth. However, the literature also highlights the need for more rigorous evaluations of these policies to understand their effectiveness better and identify best practices [178].

Examples of initiatives targeting the Grey Economy include microfinance programs, business development services, and skills training programs. Some governments have also implemented policies to facilitate the formalisation of informal businesses, such as tax incentives and simplified registration procedures [172].

Socially sound crises like the last global health contingency, the COVID-19 pandemic, have significantly impacted the Grey Economy. As known, the pandemic, even as passed, still disrupts supply chains, reduces demand, and exacerbates existing vulnerabilities [180]. Several social disparities have been accentuated and put into evidence through the pandemic, highlighting the importance of social protection measures for informal workers, who are often excluded from formal social security systems [181].

Digital platforms have been increasing in the Grey Economy, offering new opportunities for entrepreneurship and innovation and presenting new challenges for regulation and taxation [182]. The Grey Economy is a complicated and varied phenomenon that is very difficult to study because it is hard to figure out how to measure and examine. More studies are needed to understand how it works better and develop policies that support formalisation, decent work, and economic growth for everyone, especially in developing countries. Thus, challenges and opportunities for policymakers, civil servants, entrepreneurs, businesspersons, and non-governmental agencies are instigated by the peculiar characteristics of this economy.

3.9 Interactions among Innovation, Sustainability, and Entrepreneurship.

A key part of colour economies is the complex relationship between innovation, sustainability, and business. This relationship creates dynamic feedback loops that move economies and societies forward. These three ideas are examined in terms of how they affect and support each other in colour economies. This theory framework helps us understand their part in changing the economy.

Innovation emerges as a primary driver of sustainable development across colour economies. In the Blue Economy context, innovation facilitates

the development of new products, services, and processes that are both environmentally sustainable and economically viable [183]. The Yellow Economy places technological innovation as a catalyst for resource efficiency and sustainable production [45], while the Green Economy relies on innovation to develop clean technologies and sustainable practices [120].

The Orange Economy shows that innovation is fuelled by technological development and can incorporate creative and cultural issues. This economy creates products, services and experiences that add cultural and creative value while addressing environmental challenges [83]. In the Purple Economy, innovation aims to solve social and environmental issues, especially in the care services sector [184].

Sustainability is both a goal and a guiding principle for innovation and entrepreneurial activities. In the Green Economy, sustainability provides the framework and objectives for innovation, ensuring new developments contribute to environmental protection and social well-being [185]. The Blue Economy emphasises sustainability through resource conservation and environmental protection [186], while the Yellow Economy pursues sustainability through technological efficiency and ethical considerations [49].

The Red Economy demonstrates how sustainability considerations increasingly influence consumer behaviour and business practices. Studies indicate growing consumer preference for eco-friendly options and increasing consideration of social and environmental impacts in purchasing decisions [187]. Even in the Grey Economy, sustainability manifests through resourcefulness and efficient use of limited resources [60].

Entrepreneurship is the key link between innovation and sustainability because it can distinguish between market concepts and viable solutions. Entrepreneurship in the Blue Economy contributes to commercialising new technology, creating jobs, and accelerating economic progress [188]. The Yellow Economy characterises entrepreneurship through intensive technology production, leveraging digitalisation and automation to improve efficiency [45].

Green entrepreneurship is vital in translating innovative ideas into tangible solutions and bringing them to market [130]. The Orange Economy shows how entrepreneurship can create social enterprises facing simultaneously environmental and social issues to be solved through innovative solutions [76]. Even in the Grey Economy, entrepreneurship drives innovation and sustainability by identifying opportunities in underserved markets [177].

The interaction between these three elements creates positive feedback loops that drive economic and social progress. Innovation enables sustainability by providing new solutions to environmental and social challenges, while sustainability creates market opportunities for innovation and entrepreneurship. Entrepreneurship, in turn, commercialises innovations and scales sustainable solutions.

The synergy in the relationship is evident for all colour economies. The Green Economy's broad challenges give rise to innovations, and entrepreneurs seize the needs and opportunities to create and apply green technologies [120]. The Orange Economy demonstrates how entrepreneurship links innovation and sustainability by identifying market opportunities and mobilising resources to commercialise new ideas [83]. The Purple Economy shows how this interaction can address social challenges, particularly in the care sector [153].

George et al. [189] describe 'digital sustainability activities' that greatly improve the efficacy of colour economies in promoting sustainability. These activities, especially prominent in the yellow and orange economies, facilitate innovation development to address problems arising from climate change and the challenges arising from the pursuit of sustainable development. When adopting digital tools, innovation and collaboration are facilitated among entrepreneurs across different colour economy sectors, enabling knowledge exchange, access to capital, and enhanced operational efficiencies [190].

Moreover, each colour economy demonstrates the crucial role of strong institutions in promoting sustainable entrepreneurship [191]. Robust institutional frameworks offer the regulatory backing and incentives for sustainable practices to flourish, whether in the Blue Economy's marine resource management or the Green Economy's environmental initiatives.

A good understanding of the colour economy benefits from understanding the association between innovation, sustainability and entrepreneurship. Schaltegger and Wagner [192] argue that sustainable entrepreneurship integrates these three essential pillars (economic, environmental and social) and is aligned with the objectives of the different colour economies. By showing a holistic approach, it is guaranteed that economic growth is achieved without causing environmental degradation or social inequality.

This statement is an essential idea that applies to a variety of economies.

4 Discussion

This section addresses the attributes and motivations that validate the examination of the colour economy, its global resonance and the role played by government, industry, academia and society. Phenomena such as sustainability, inclusion, diversity and innovation recur in the colour economy palette. This analysis will expose their significance and the great potential in integrating the colours to understand an ever-evolving world.

The comparative analysis of colour economies allows for analysing the constituent elements of different economic paradigms, ranging from resource bases to production and consumption methods, the creation and distribution of wealth, and specific opportunities for innovation. We will clear the subtle differences and similarities identified in each kind of colour economy, accenting its implications for entrepreneurship and innovation in a global landscape in constant evolution.

4.1 Resource base:

Although sustainability is a top priority for the blue and green economies, their resource bases differ. The Blue Economy is embedded in the marine ecosystems, focused on ocean conservation and the sustainable use of marine resources [183]. Global marine economic activities are estimated at $1.5 trillion annually [186]. These activities include living resources like fisheries and marine biodiversity and non-living resources like minerals and offshore energy potential. By contrast, the Green Economy makes the case for broader environmental sustainability, including terrestrial ecosystems, renewable energy, sustainable agriculture and ecological footprint reduction [193, 194]. This approach emphasises circular economy principles, with global investment in green technologies reaching over $2 trillion annually [195].

The Yellow, Red, Silver, and Purple Economies hold a unique resource base, such as technology, consumption, demographics, and cultural assets. The Yellow Economy focuses on technological innovation and resource optimisation through ICT and nanotechnology [47]. The Silver Economy harnesses the economic potential of the 50+ demographic, leveraging their financial capacity, experience, and social networks [196]. The Purple Economy uniquely recognises and values previously underappreciated resources like care work and social relations [152].

These sources note resource management's diverse stakes and possibilities in each endeavour. A key overlooked aspect is the increasing interconnectedness of these resource bases, particularly in areas where they overlap, such as blue-green technologies or silver-purple care services. Additionally, the emergence of the Grey Economy [60] represents an important parallel system operating through informal networks and alternative resource utilisation patterns that intersect with multiple colour economies.

4.2 Production and Consumption:

Sustainable production and consumption practices are a categorical imperative for the responsible use of resources in both the Green and Blue Economies, which converge at this point. The Green Economy emphasises cleaner production technologies and life cycle assessment approaches to minimise environmental impact [193, 197]. The Blue Economy focuses on sustainable marine resource utilisation, emphasising practices that prevent resource depletion and environmental harm [186].

The Orange Economy prioritises producing and consuming creative and cultural goods and services, emphasising their economic importance as a source of growth during the Great and other financial and health crises. This sector's production is driven by creativity and innovation, with intellectual property playing a crucial role in value protection [76].

The Red Economy, adapting to sustainable consumption, raises awareness of the need to adopt responsible practices in the Fast-Moving Consumer goods; this may apply to the manufacture of food and beverages, fabrics and clothes, chemicals and cosmetics, pharma, wood and paper, and health and wellness, beauty and personal care, food and accommodation, education and training, delivery and logistics, and technology and communication services. Recent research indicates a growing consumer preference for eco-friendly options and increasing consideration of social and environmental impacts in purchasing decisions [187].

A vast array of goods and services tailored to the particular requirements of the elderly make up the Silver Economy's market. It offers adapted services dealing with their specific consumption needs, healthcare, tourism offerings, entertainment

options, and fashion products tailored to the older demographic's preferences and requirements [146].

Efficiency in technology is the driving force behind production and consumption in the Yellow Economy. Sustainable production practices emphasise using clean energy and modern manufacturing techniques: ethical considerations and understanding environmental impact consumption habits [49].

The Purple Economy introduces another dimension by promoting sustainable production and consumption patterns, prioritising social well-being and environmental considerations [184]. Meanwhile, the Grey Economy operates through informal production and consumption channels, characterised by flexibility and adaptability to local market demands [176].

4.3 Wealth and Distribution Base.

Each economy also shows distinctive patterns in wealth creation and distribution. The Yellow Economy bases wealth creation on technological innovation and efficient resource use, emphasising knowledge as a key economic driver [45]. The Orange Economy generates wealth through creative goods and intellectual property while promoting social development and income diversification [198]. The Silver Economy adds a unique dimension with its focus on the growing purchasing power of older adults [146].

The commitment to sustainable wealth creation while addressing equity is a principle of both the Green and Orange economies. The Green Economy emphasises equitable distribution of benefits across society, particularly through green job creation and poverty reduction initiatives [121]. The Orange Economy generates wealth through creative goods and services while promoting social development and income diversification [67], while the Blue Economy ensures equitable distribution among coastal communities, businesses, and governments [43]. According to Alhazaani [199], the Purple Economy promotes the fair distribution of wealth, seeks social welfare, and contravenes orthodox models of wealth concentration.

On the other hand, the Red Economy emphasises distribution with equity, moving beyond traditional consumerism to focus on inclusive approaches that benefit all stakeholders [200]. In this aspect, the Purple Economy coincides in that it broadens equity towards the cultural and social direction [199], while the Grey Economy reveals the challenges of wealth distribution in informal sectors, often perpetuating disparities and limited access to formal financial services [176]. Moreover, the Yellow and Blue economies emphasise the good life obtained through the efficient and sustainable management of resources.

In these subtle differences, the colour palette moves toward social objectives, showing a complete way to share wealth that includes sustainability, equity, and well-being.

4.4 Cross-cutting Challenges and Approaches in Colour Economies.

Despite their different approaches, economies of colour share significant overlap in addressing key contemporary concerns, especially those related to sustainability and inclusion. While each economy has its strategy, their combined efforts result in a complex tapestry of responses to common challenges. Global challenges demand diverse responses.

At the core, all colour economies recognise the fundamental importance of sustainable resource utilisation. Oktavio et al. [183] point out that this shared commitment manifests through efforts to prevent environmental harm and resource depletion. Implementation varies markedly between the different approaches to the colour economy. The Green Economy focuses on protecting nature and efficiently using resources, boosting renewable energies to reduce carbon emissions [47]. Meanwhile, the Blue Economy centre its attention on marine environments: its priorities include the restoration of ocean ecosystems and the development of sustainable industries for coastal populations.

One more recurring theme is the challenge of inclusion. Though each approach is highly different, every colour economy stresses stakeholder involvement and fair benefit allocation. While the Orange Economy aims to give fair cultural access, the Purple Economy addresses inclusion through social justice and diversity projects. The Silver Economy addresses inclusion by meeting the specific needs of older populations, and the Grey Economy contributes by creating opportunities for marginalised communities [176].

The ways these economies approach economic development also show interesting variations. The Red Economy is centred on manufacturing and industry and pursues development through cleaner production technologies and fair labour practices. The Blue Economy creates jobs by developing sustainable fisheries and protecting marine conservation, while the Green Economy creates jobs in the green energy sector [76]. The Orange Economy goes in a different direction, promoting

growth through creative industries and cultural tourism.

What is interesting about these approaches is how they can work together. For example, the Orange Economy can learn from the Green Economy's knowledge of environmentally friendly methods while adding its creative ways of coming up with new ideas. The Blue Economy can teach the Silver Economy how to make workplaces more welcoming, while the Green Economy can show the Silver Economy how to make durable products. The overall effect of economies of colour is greatest when ideas and practices are shared and harnessed, and economies of scope and shared value can be generated through skills and knowledge, fostering the cross-pollination of ideas.

The different ways of solving common problems show how challenging it is to pursue sustainable growth and how important it is to have various solutions. Rather than competing with each other, economies of colour could work together to address global problems by contributing different pieces of the puzzle. Their combined expertise can effectively address the challenges of sustainability and inclusion, which is why economies of colour should work together and integrate into a single discipline called the Colour Economy.

Act as a single discipline towards a future in which the integration of various concepts will determine economic development rather than adherence to a single economic paradigm. In perspective, the opportunity for improving collaboration and education within the shades of the Colour Economy remains largely untapped. As this new discipline evolves, collaboration and knowledge sharing will become increasingly vital in Economics.

4.5 Opportunities for Innovation:

The Blue and Green jointly mediate for sustainability; the first stresses oceanic conservation, and the second adapts a broader environmental perspective. The Blue Economy drives innovation through developing new sustainable technologies, products, and services that create economic growth while protecting marine environments [188]. The Green Economy focuses on innovative green technologies in energy efficiency, waste management, and pollution control while creating new business models prioritising environmental responsibility [120].

The Yellow Economy searches for efficiency and quality of life through technological advances, particularly in developing sustainable solutions and optimising industrial processes to minimise environmental impact [47]. The Orange Economy promotes creativity and diversity through the cultural industries. This latter approach emphasises technological innovation in creative content production and distribution while fostering cultural and social entrepreneurship [79].

In the context of massive consumption, the Red Economy encourages sustainable practices., leveraging technologies like AI, IoT, and blockchain to promote sustainable consumption [104]. The Silver Economy gears innovation to satisfy the unique needs of sênior people, developing new products and services while adapting existing ones to meet better the ageing population's requirements [146], and the Purple Economy diverts from conventional paradigms to approach innovatively cultural and social defiance. , particularly in developing solutions for affordable and accessible care services [151].

A notable addition to this innovation landscape is the Grey Economy, which generates necessity-driven innovation through informal knowledge and skills, often leading to unique solutions despite resource limitations [174, 60].

4.6 Who innovates, and what is the role of individuals and the environment in entrepreneurship?

The people leading innovation in each Colour economy vary widely. The Blue Economy is based on the experience of marine scientists and naval architects, counting on an international collaboration on research to catalyse the change. This innovation ecosystem includes individuals, businesses, and governments working to commercialise new ideas [44]. The Green Economy is led by environmental engineers and sustainable farmers and benefits from governmental incentives promoting eco-friendly practices, with a strong emphasis on green entrepreneurship and social enterprises addressing environmental and social challenges [130, 132].

The innovators in the Yellow Economy are predominately technologists and technology businesses within a prosperous startup ecosystem playing the main characters, supported by access to funding and regulatory frameworks that foster innovation [47]. The Orange Economy thrives in the creative and artistic talent spotlighting creative industries and cultural markets., where individuals' creativity and entrepreneurial spirit are essential drivers of innovation, supported by businesses that provide infrastructure and market access [84, 201].

By contrast, innovators in the Red Economy vary from individual inventors and entrepreneurs to

multinational corporations, small and medium enterprises, startups, and Research institutions. Durrie and Gahlot [106] emphasise the importance of individual motivations and supportive policies in driving sustainable entrepreneurship. The environment signals opportunities through market trends, competition, regulatory frameworks, economic conditions, social factors, environmental concerns, or technological advances, and individuals pursue innovation, new technologies, and new product development as entrepreneurs, intrapreneurs, researchers, designers, or consumers.

In the Silver Economy, innovative agents can be identified among health professionals and assistive technology designers, and the policies centred on medical attention and active ageing prompt innovation activities. These activities include businesses developing new products, entrepreneurs starting new ventures, researchers advancing technologies, and policymakers creating supportive frameworks [146]. In the case of the Purple Economy, its innovative ecosystem comprises social entrepreneurs and cooperatives deeply engaged in addressing non-conventional social and cultural stakes, with particular emphasis on creating an enabling environment that supports innovation in the care sector [154].

The emergence of the Grey Economy as a dynamic hub of innovation shows that entrepreneurs are not just engaged in innovation but actively seek it out, whether driven by necessity or opportunity. For entrepreneurs, having traits like boundless imagination, determination, and social capital are not just assets; they are necessary for success [177].

4.7 Barriers to innovation:

We have highlighted the strengths and diverging capacities for innovation in the various economies of colour, so it is worth underlining that each Economy of Colour faces unique challenges and barriers to promoting innovation. To successfully address these difficulties, recent research on sustainable entrepreneurship [202, 203] suggests that economic, environmental and social factors must be considered simultaneously, which they call 'holistic integration'. This idea is particularly relevant for economies of colour because, as we will see below, each approaches these dimensions from its perspective while facing similar fundamental challenges.

In wrestling with environmental stakes, the Blue Economy requires a collaborative effort of governments, international organisations, and industrial actors to promote sustainable practices and set out an integral regulation for maritime industries and ocean conservation. Key barriers include limited access to finance, technology, and markets [44]. In the Yellow Economy, hurdles to innovation include resistance to change in traditional industries since giving a strong impetus to efficiency and sustainability collides with ingrained practices. Other constraints have been high initial investment prices and technological complexity, requiring highly specialised skills [47]. The encouragement of innovation in these sectors demands a transition period and investments in advanced technologies. The current digital technology revolution opens windows of opportunity as costs are becoming cheaper and knowledge barriers are being lowered.

For its part, the Orange Economy faces stiff competition in creative and cultural industries, which is exacerbated by concerns about intellectual property rights. Major barriers include insufficient access to financing due to intangible creative assets, inadequate infrastructure, and difficulties in protecting intellectual property [82, 80]. Thus, to keep a continuous innovation, ensuring effective property rights protection and the removal of market entrance barriers are necessary. In the Red Economy, there are several barriers to overcome. In the first place, there is resistance to change in the organisation's culture and markets; the second one is the R&D investment, the lack of will to cooperate, and the fierce competition characterised by high dependence on suppliers, limited access to distribution channels, and consumers' price sensitivity. Some strategies to surpass these constraints include training and effective communication programs, collaborative measurement to invest collectively in R & D like strategic alliances or public-private collaboration and involvement of startups and emerging businesses, open innovation initiatives, differentiation and new product and services development strategies. Chakori [204] identifies challenges in overcoming established consumption patterns, while Uribe-Linares et al. [205] highlight financial and regulatory barriers hindering sustainable technology adoption.

The Green Economy also suffers from initial high investments in sustainable technologies that may find some resistance from those sectors that are slow to adopt eco-friendly practices. The creation of solid regulatory frameworks and the offer of financial incentives can mitigate these hurdles. These impediments are portrayed in the work of Zhang et al. [206] and Nik Mahdi et al. [185], who find that green innovation initially

requires significant investment in sustainable technologies and faces financial constraints and complex regulations.

The adaption to the unique needs of the aged population in the Silver Economy presents challenges in terms of resistance to new models and medical assistive Technologies. Key barriers include ageism, lack of awareness about market opportunities, limited access to funding, and insufficient skills and knowledge for developing products for older adults [196]. To address the demands of the ageing population, governments and the health sector must vigorously seek and support creative solutions and modify existing care systems. Given cultural and social norms that become ingrained over time, such as those related to gender issues and respect for diversity, there is also a natural reluctance to change in the field of the Purple Economy. This sector faces budgetary constraints, especially in care, and, no less importantly, struggles against cultural norms that maintain disproportionate care obligations [152, 155]. Several efforts must be made to change social norms and foster acceptance, reducing cultural barriers. In order to create ecosystems that are more inclusive and open to change and innovation, it is necessary to work collaboratively and articulately among the various stakeholders, such as governmental entities, non-governmental organisations and educational institutions.

A significant addition to consider is the Grey Economy's barriers, which include limited access to formal finance and regulatory uncertainty that discourages investment and innovation [207, 172]. The Purple Economy and the broader colour economy spectrum indicate that these barriers can be addressed by altering social norms and promoting acceptance. This approach aims to establish more inclusive and adaptable innovation ecosystems that facilitate collaboration and communication among diverse stakeholders.

4.8 Policies and Strategies to Promote Innovation.

Colour economies have opportunities and distinctive approaches for implementing policies and strategies for innovation.

In the Blue Economy, promoting innovation frequently requires international cooperation and a clear setting of regulatory frameworks, incentives for sustainable practices, R&D investment and expenditures, and the facilitation of technology transfer so that innovation policies can be successfully supported. Governments are crucial in implementing policies supporting research and development, entrepreneurship, and commercialising new ideas [44]

The Yellow Economy takes advantage of a solid startup ecosystem. It may boost innovation by backing R&D activities, fostering business and entrepreneurship education, and advocating public-private collaborations to provide technology solutions to the market. This support includes significant investment in research and development and creating incentives for businesses to adopt sustainable technologies [47]. Meanwhile, the Orange Economy may instigate innovation through policies protecting Intellectual Property Rights, spurring creative education, and reviving artistic development. A complementary and fundamental approach may be the provision of subsidies to creative entrepreneurs and businesses. Key strategies include developing skills through training programs, improving access to finance, and fostering supportive ecosystems for creative entrepreneurship [77, 88].

The Red Economy may benefit from various policies fostering R&D in health and wellness, sustainability and environment, or digital technologies, enabling the availability of sustainable material, clean technologies, energy efficiency and waste reduction processes, data analysis improvements and increasing accessibility in products and services. Collaborative initiatives among governments, research institutions and the private sector may be particularly effective in advancing innovation. Studies emphasise the importance of government intervention in incentivising sustainable practices and creating favourable regulatory environments [200, 187].

In the Green Economy, policies must focus on proportionate financial incentives for sustainable practices, enact clear renewable energy and environment conservation regulations, and ease technology exchange. Public awareness campaigns and educational programs may encourage environmentally conscious consumer behaviour. These measures include providing financial incentives, tax breaks, and research grants [206] while establishing clear regulations and standards [208].

The Silver Economy may require policies to face the medical care of aged people, such as extended access to health services and assistive technologies. Key strategies include providing funding for R&D, creating tax incentives, and implementing education and training programs [196]. Promoting active ageing and medical care infrastructure investments are fundamental pillars of these initiatives. The Purple Economy gains

from policies supporting social entrepreneurship and innovation in social and cultural activities. Financial and technical assistance to social businesses, setting up educational programs for social entrepreneurship, and removing discrimination barriers are key elements in the policy domain. These policies include increased investment in R&D, particularly in the care sector, and international collaboration to foster knowledge sharing [199,153].

An important addition is the Grey Economy's policy needs, which focus on expanding financial inclusion through microfinance and creating supportive regulatory environments that balance flexibility with essential protections [172, 209].

This section aims to elucidate the multifaceted nature of Colour Economies, their diverse paths to innovation, and the challenges and opportunities to cope with them. While differences are identified and the unique dynamics are recognised in each Colour Economy, policymakers, entrepreneurs, and innovators may plan and collaborate effectively across boundaries to undertake complex global defiance and continuously favour innovative solutions in each domain's economic, social, and environmental junctions.

4.9 Recommendations for Stakeholders.

Looking at the lessons from Economies of Colour, we can find several specific initiatives different groups can do to help their long-term economic growth. These suggestions are based on various situations and recognise the importance of working with all parties involved.

4.10 For policymakers.

Policymakers must devise and adopt comprehensive frameworks that encourage innovation while being sustainable and open to all. Hendarman et al. [44] argue that, in the blue economy, this means establishing rules that encourage the long-term use of marine resources and giving businesses reasons to use methods that benefit the environment [44]. For the Yellow Economy, the focus should be on creating national strategies for artificial intelligence development and implementation [210].

The support of creative and cultural industries demands particular attention from policymakers. According to Taboada Álvarez et al. [211], governmental bodies should invest in education and training programs that enhance skills needed for a sustainable Orange Economy. Similarly, policymakers must establish clear environmental regulations in the Green Economy context while investing in public awareness campaigns [208].

Policymakers need specific approaches for ageing populations. Griva et al. [212] suggest creating policies that encourage innovation in the Silver Economy, particularly regarding technologies that can help older adults. The Purple Economy requires regulatory framework reforms to remove innovation barriers, especially in social and environmental entrepreneurship [153].

4.11 For Entrepreneurs

Entrepreneurs face the challenge of balancing innovation with sustainability and social responsibility. In the Blue Economy, this means identifying opportunities to develop sustainable and environmentally friendly products while creating partnerships with other stakeholders [188]. Yellow Economy entrepreneurs should embrace artificial intelligence potential for optimising industrial processes [210].

The Orange Economy offers unique opportunities for entrepreneurs to create innovative products and experiences that meet evolving societal needs. Parameswara et al. [84] emphasise adopting sustainable practices throughout the value chain. Green entrepreneurs must focus on resource efficiency and ethical sourcing while collaborating with researchers and policymakers [131].

Success for entrepreneurs in the Grey Economy depends on leveraging their adaptability and social embeddedness while seeking formalisation opportunities to access broader markets [177]. The Silver Economy demands that entrepreneurs develop innovative products addressing older adults' needs [213].

4.12 For Academics

The academic community is very important for improving knowledge and supporting facts-based decisions. Blue Economy researchers should focus on understanding interactions between innovation, sustainability, and entrepreneurship. In the Yellow Economy context, academics must explore artificial intelligence's transformative potential and related ethical considerations [210].

Research in the Orange Economy should develop frameworks for measuring the impact on environmental sustainability and social inclusion. Green Economy academics must advance their understanding of social, economic, and environmental dimensions while training future sustainability leaders [132]. For the Grey

Economy, research should focus on understanding innovation dynamics in informal settings [60].

Academics working on the Silver Economy must identify opportunities and challenges while developing educational programs for future entrepreneurs [212]. The International Labour Office [153] says that Purple Economy research should focus on learning more about its possible benefits and encouraging people to follow its rules.

These suggestions emphasise the value of coordinated action among different stakeholders. To build sustainable and inclusive economies that work for everyone, lawmakers need to create supportive environments, entrepreneurs need to come up with new solutions, and academics need to provide the knowledge base that helps people make smart decisions. Getting these stakeholder groups to work together is still necessary to solve the complicated problems that modern economies face.

5 Conclusions

In the last few years, the World has witnessed deep social and cultural changes related to globalisation, technological advances, environmental stakes, and financial or sanitary crises. These changes have triggered the quest for innovative approaches to exploring these challenges comprehensively, considering Nature, human beings, and the environment. In this context, the Economy of Colours emerges as a revolutionary analytic framework that considers a view from sustainability and strives to understand and deal with current global defiance.

This study has carefully reviewed the different Economies that comprise the Colour Economies family, identifying their evolution and relationship to innovation, sustainability and entrepreneurship. We have shown that these Economies are not simply an academic concept or an institutional idiom but also have an actual and increasing impact on Society, the University, and the Industry. The Economy of Colour is proving to be a powerful tool for driving equitable and sustainable economic growth, raising people's standard of living and protecting the environment.

We have revealed similarities and differences to demonstrate the peculiarities and discrepancies in each Economy of Colour. Thus, we have shown that each economy has a different resource base, diverse production and consumption perspectives, a wealth and distribution base, and multiple chances for innovation. These distinctions highlight the variety of viewpoints in the Colour Economies and the need for cooperation among the different methods in a constantly evolving world. Sustainability was a significant and vital element emphasised in the range of colours, encouraging effectiveness, equity, inclusiveness, and protection of natural resources. An interesting transition in this regard is what happened in the Red Economy, moving from an unsustainable consumption model to one guided by sustainability in consumption and equity in access to goods and services.

The importance of entrepreneurship and innovation to Colour Economies has also been reviewed. Every economy depends on a diverse group of individuals to drive innovation, ranging from artists and social entrepreneurs to marine scientists and technologists. International cooperation, startup funding, intellectual property protection, and research and development promotion are a few examples of innovation policies and tactics that differ depending on the economic focus. Economic growth is fueled by innovation and entrepreneurship, which also have significant social and environmental effects.

We have also identified the obstacles to innovation that each economy of colour must overcome, ranging from cultural opposition to legislative obstacles. Government, business, academia, and society must work together to get the better of these challenges.

Our analysis highlighted sustainability as critical in all the Colour Economies. Sustainability is the guiding theme that connects all these economies, spurring natural resource conservation, efficiency, equality, and inclusion.

We also discussed the critical role that innovation and entrepreneurship play in the context of Economies of Colour. Each economy relies on various actors, from marine scientists and technologists to artists and social entrepreneurs, to lead innovation. Innovation policies and strategies vary by economic focus, including international cooperation, support for startups, intellectual property protection, and R&D promotion. Innovation and entrepreneurship drive economic growth and have an important social and environmental impact. The different sectors of the Colour Economy adopt innovation policies in unique and different ways.

Furthermore, we have identified the barriers that each colour economy faces in searching for innovation, from regulatory challenges to problems with regulations and cultural resistance to developing new ideas. To effectively overcome these barriers, we must link government, industry, academia, and society to a common task.

Our research has consistently focused on the potential impact of coloured economies on global

economic stability. While there is theoretical support for this notion, empirical evidence is still lacking. To better understand this impact, future studies could quantify how the coloured economy influences economic indicators before and after applying its concepts and methodologies. Another important aspect that needs further research is these countries' technology adoption rate and efficiency. We have highlighted how technology can promote sustainability, but specific obstacles, adoption rates, and socioeconomic effects of these technologies must be addressed. Longitudinal studies that examine these variables could shed light on the practical constraints and benefits of incorporating sophisticated technologies in colour economies.

As we said, the efficacy of intersectoral collaboration is critical for the progress of colour economies. However, rigorous evaluations of how these relationships work and their consequences are limited. We can learn more about the factors that influence results if we record and examine particular intersectoral interactions, such as those presented in case studies in these post-proceedings publications. Additionally, a comprehensive empirical study is necessary to support our hypotheses regarding the potential of policies to enhance colour economies to foster long-term growth. To know which policies promote sustainable economic practices, we need comparative policy analysis to see how different methods work in different settings.

Several questions may arise, which will be introduced in this introductory chapter. However, these questions will be explored throughout the various works selected for this post-proceedings publication to consider the practical application of the Colour Economy Framework. Some of these questions include:

1. How do colour economies manifest in different regional contexts?
2. What roles do institutional and informal actors play in their development?
3. How do resource constraints affect their implementation?
4. What patterns of interaction might emerge in practice?

These areas should be considered in future research. This study recognises the limitations of our current knowledge, underlining the need for continuous study to comprehensively understand and exploit the potential of colour economies to improve global economic, social, and environmental sustainability.

As a preliminary conclusion, the Colour Economies represent a multifaceted approach to tackling current global stakes and promoting sustainability, inclusion and diversity. The collaboration among these Economies is fundamental to guiding a vision for a more sustainable future. This work helps to lay the foundations for future research. It offers a comprehensive view of how innovation and entrepreneurship may contribute to economic, social and environmental advancement in a constantly changing world. The Colour Economy may be a beacon of hope for searching for solutions to urgent and complex problems in the current Society.

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