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SOCIO-ECONOMIC AND ENVIRONMENTAL IMPACT OF CIRCULAR ECONOMY IN THE CONSTRUCTION INDUSTRY-ISSUE RELATED TO COMPARATIVE COST BENEFITS

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Abstract - **The purpose of this research is to analyze the socio-economic and environmental impact of circular economy in the construction industry with focus on the issues related to the comparative cost benefits. Three objectives and research questions were raised to solve this research problem. The research method adopted is a qualitative technique with the use of empirical analysis to elicit the findings. Finding also revealed that these processes have significant potential to deliver economic, environmental and social benefits. Since some industries are particularly important for national and local economies, it is important to provide clarity about the expected net impact on employment across different sectors. This would also help policy-makers design well-targeted transitional policy measures to manage the negative impacts in some sectors as well as in national and local economies. There is also a need to understand the indirect effects on the economy (e.g., impacts on the value chain and/or changes in consumption spending patterns) in order to estimate the overall impacts at the national level. Additionally, some findings provide information on the employment potential of the circular economy in terms of the number of jobs it might create; much less emphasis has been placed in the literature on other social and employment impacts such as gender, skills, occupational and welfare effects, poverty and inequalities. This indicates that there is a need for more research that would address these aspects and also help policy-makers anticipate effects in different social groups.**

Keywords- **Circular economy, Socio-economy, Cost benefit, Environmental impact and Construction Industry**

I. INTRODUCTION

Issues related to comparative cost benefits in construction industry has been getting more and more significant, and is basically aimed at addressing environmental, and socioeconomic issues of the present and future generations (Witjes & Lozano, 2016). It is considered as a way to understand the world as a complex interaction between socio-economic, environmental, and political systems (Sachs, 2015; Scheel, 2016).

Certainly, due to progressive resource scarcity, there is a global and increasing concern of the construction industry about environmental and socio-economic issues. Also, a series of challenges related to the environment, are affecting not only the current development of construction but also the future of the entrepreneurial activity. Generally, the exponential growth of certain key indicators is noticeable. The concentration of CO2 in the atmosphere, as well as energy, water, minerals, and natural resources demand (Reh, 2013), are those parameters that should worry the most. There is indisputable evidence for the environmental impact of the human activity, found in, still, huge consumption of non-renewable resources and in a generation of contaminant residues. The most visible proof of human's activity on the planet is the construction industry. Along with all accompanying outcomes (buildings, infrastructure etc.), it becomes one of the most significant traces of our existence on earth (Stephan & Athanassiadis, 2017). Unfortunately, it usually means consuming unrenewable resources, generating waste and emitting harmful gases (Esa, Halog, & Rigamonti, 2017). Conventional building construction manifests small recycling rate of used resources (Wadel, Avellaneda, Cuchí, & Cuchí, 2010). All these problems are pressing the sector to look for assessment (Ritzen, Haagen, Rovers, Vroon, & Geurts, 2016) and reducing the socio-economic and environmental impact (Lieder & Rashid, 2016). It seems that there is no other way than the urgent implementation of increased efficiency strategies that would help in maintaining or increasing the economic values and at the same time could reduce the socio-economic and environmental impact (Braungart, McDonough, & Bollinger, 2007).

It is expected that environmentally friendly technologies for erecting buildings, such as Contour Crafting Technology, will gain popularity in the future. The CC-technology-based automatic building is considered as a solution to bring rational benefits such as hardworking reduction, cost decrease, architectural flexibility improvement, and environmental positive effects (Khorramshahi & Mokhtari, 2017).

Consequently, it is obvious that the circular economy can be treated as the solution to issues related to comparative cost benefits, especially relevant for the construction industry. The concept of the circular economy has its roots in several schools of thought and theories that challenge the prevailing economic system based on overconsumption of natural resources. In recent years the circular economy has received increasing attention worldwide due to, inter alia, the recognition that security of supply of resources and resource efficiency are crucial for the prosperity of economies and businesses. The concept has been taken up by several governments and businesses around the world that consider the circular economy as a solution for reconciling what at first sight seem to be the conflicting objectives of economic growth and environmental sustainability (Lieder & Rashid, 2016; Preston, 2012; Ghisellini et al., 2016).

At the same time, changing the linear economic model that has remained dominant since the onset of the Industrial Revolution is by no means an easy task and would entail a transformation of our current production and consumption patterns. Innovative transformational technologies such as digital and engineering technologies, in combination with creative thinking about the circular economy, will drive fundamental changes across entire value chains that are not restricted to specific sectors or materials (Vanner et al., 2014; Acsinte & Verbeek, 2015; Accenture, 2014). Such a major transformation would in turn entail significant impacts for the economy, the environment and the society. Understanding those impacts is crucial for researchers as well as for policy-makers for designing future policies in the field. This requires developing a good knowledge of the concept, the different circular economy processes and their expected effects on sectors and value chains. However, research on the circular economy appears to be fragmented across various disciplines and there are often different perspectives about the interpretation of the concept and the related aspects that need to be assessed. A practical implementation of the circular economy idea requires an interest of potential buyers of used or processed elements in particular phases of the building life cycle. Therefore, it is required to invite them to the communication system of the construction industry, where communication is managed by channels in all the organizations and their departments or sections. They are responsible for disseminating the related information to formulate a complete communication system (Gamil & Rahman, 2017).

A. Statement of the Problem

All over the world, an increasing research effort has been devoted to the evaluation of the issues related to the comparative cost benefits of the construction sector especially in urban systems, due to its huge socio-economic and environmental impact and generation of a large amount of waste materials (Bowea and Powell 2016).

However, circular economy proposes to replace wasteful and inefficient linear and open-ended cycles of production (input-output-waste) for a closed-loop where waste is minimized or transformed into inputs and value is created in the process (Blomsma and Brennan, 2017; Homrich et al., 2018). The circular economy contributes to raising productivity, optimizing the use of natural and human resources (Missemer, 2018) and increasing efficiency in resource management (Linder and Williander, 2017; EEA, 2016). Circular economy ideas have been gaining traction in the past decade in policy formulation, advocacy, consulting and natural sciences (Reike et al., 2018). However, despite some successful examples, scalability remains a major issue and circular economy practices are still far from being widespread in the industry (Ghisellini et al., 2016).

However, Korhonen et al. (2018) shows that the concept of circular economy and its practices have almost exclusively been developed and led by practitioners, i.e., policymakers, businesses, business consultants, business associations, business foundations, etc. (EMAF, 2013; CIRAIG, 2015).

Our opaque understanding of interventions and conditions needed to scale-up circular economy is, perhaps, influenced by the limited discussion of socio-economic and environmental impact of circular economy in mainstream management literature, hence the need for this study.

B. Aim and Objectives

The aim of this research is to analyze the socio-economic and environmental impact of circular economy in the construction industry with focus on the issues related to the comparative cost benefits.
The following are the specific objectives:

- i To examine the social impact of circular economy in the construction industry with focus on the issues related to the comparative cost benefits.
- ii To evaluate the economic impact of circular economy in the construction industry with focus on the issues related to the comparative cost benefits.
- iii To assess the environmental impact of circular economy in the construction industry with focus on the issues related to the comparative cost benefits.

II. CONCEPT OF CIRCULAR ECONOMY

The term circular economy appears to be formally used in an economic model for the first time by Pearce & Turner (1990). Drawing on the principle that ‘’everything is an input to everything else’’, the authors took a critical look at the traditional linear economic system and developed a new economic model, named the circular economy, which applies the principles of the first and second laws of thermodynamics. The relationship between the economy and the environment is prominent in this model, which incorporates three economic functions of the environment: resource supplier, waste assimilator and source of utility. Their work and line of thought were inspired by the work of Kenneth Boulding and others who discussed a few decades earlier the biophysical limits of the present economic system built on overconsumption and a growing ecological deficit. Boulding (1966) introduced the concept of closed systems and envisaged a future economy that would operate by reproducing the limited stock of inputs and recycling waste outputs. Such a ’closed’ economy would seek to maintain the total capital stock and would stand in stark contrast with the ’open’ materials-reliant industrial economy of the past.

Over the last several decades, a growing body of literature from various disciplines has emerged that has influenced our present understanding and interpretation of the circular economy (Lieder & Rashid, 2016). Industrial ecology is a research discipline underpinned by a system approach and involving a holistic perspective when dealing with human economic activity and sustainability (Garner & Keoleian, 1995). Central to this discipline is the notion that the natural ecosystem and man-made industrial system operate in a similar way and are characterised by flows of materials, energy and information (Erkman, 1997; Ehrenfeld, 2007). The shift towards a sustainable industrial economy would require structural and technological changes combined with economic and cultural evolution in order to achieve energy and materials optimisation (Graedel & Allenby, 1995). In this context, Frosch & Gallopoulos (1989) argued that optimizing the entire system requires improved manufacturing processes “that minimize the generation of unrecyclable wastes (including waste heat) as well as minimize the permanent consumption of scarce material and energy resources’’. In their view, innovation in the manufacturing and design of products and processes is required to effectively direct materials back to the production process that were previously thought of as waste. Industrial symbiosis applies the industrial ecology principles at the company level and foresees the development of synergistic collaboration between companies involving the exchange of resources and by-products (Chertow, 2000). This collaboration is not necessarily restricted by geographical proximity and can lead to the development of networks that share knowledge and promote eco-innovation (Lombardi & Laybourn, 2012).

Cradle-to-cradle design is an adjacent systems approach aimed at transforming the industrial material flows. In contrast to traditional sustainability concepts that focus on reducing or eliminating the negative environmental impact of human activity, cradle-to-cradle design seeks to maintain and even enhance the value, quality and productivity of material resources in order to have a net positive environmental effect (Braungart et al., 2006; Ankrah et al., 2015). A basic tenet of cradle-to cradle is that there are two types of materials that can be optimized through the design of products, manufacturing processes and supply chains: biological materials and technical materials. The former is biodegradable and can be safely returned to the environment after their use, while the latter are durable materials that can be reprocessed after their use and continue flowing within a closed-loop system. The utilization of knowledge produced by networks of information flows amongst the actors in the value chain would be a key driver to maintaining or enhancing the value and productivity of these materials (Braungart et al., 2006). Beyond the material aspects, additional key principles of cradle-to-cradle are the use of renewable energy sources and the promotion of biodiversity as well as cultural and social diversity (McDonough & Braungart, 2002).

Based on the argument that a shift towards business models that focus on the result delivered rather than the product sold can improve competitiveness and deliver environmental benefits, product-service systems (PSS) is a research field that emerged in the mid-1990s (Tukker, 2015). According to Tukker & Tischner (2006), PSS "consist of a mix of tangible products and intangible services designed and combined so that they jointly are capable of fulfilling final customer needs''. Such systems prioritize the "final functionality or satisfaction that the user wants to realize as a starting point of business development''. Although PSS theoretically have a great potential to enhance competitiveness and sustainability, their net impact depends crucially on several factors that need to be carefully assessed in all cases (Tukker, 2015; Tukker & Tischner, 2006). The 'blue economy' is another relevant concept that addresses the business case for sustainability and resource efficiency. In this context, innovation is considered to be a fundamental lever in guiding businesses towards a transformation of practices influenced by the design and functions of natural ecosystems. One example is the use of waste from one product as an input in another production process, thereby generating a cash flow (Pauli, 2010).

Since the first formal use of the circular economy term by Pearce & Turner (1990), there have been various attempts to define the circular economy influenced by several concepts, including the ones described above. A number of authors have provided resource-oriented definitions and/or interpretations, emphasizing the need to create closed loops of material flows and reduce the consumption of virgin resources and its attendant harmful environmental impacts. For instance, Sauvé et al. (2016), suggest that the circular economy refers to the "production and consumption of goods through closed loop material flows that internalize environmental externalities linked to virgin resource extraction and the generation of waste (including pollution)''. In their view, the primary focus of the circular economy is the reduction of resource consumption, pollution and waste in each step of the life cycle of the product.

According to Preston (2012), "circular economy is an approach that would transform the function of resources in the economy. Waste from factories would become a valuable input to another process – and products could be repaired, reused or upgraded instead of thrown away''. In a similar vein, EEA (2014) claims that the circular economy "refers mainly to physical and material resource aspects of the economy – it focuses on recycling, limiting and re-using the physical inputs to the economy, and using waste as a resource leading to reduced primary resource consumption''.8 Mitchell (2015) goes further and emphasizes the importance in a circular economy of keeping resources in use for as long as possible as well as extracting the maximum value from products and materials through using them for as long as possible and then recovering and reusing them.

In the available literature there are also several interpretations of the concept that attempt to move beyond the notion of management of material resources and incorporate additional dimensions. For example, Heck (2006) claims that in the circular economy debate the use of sustainable energy has not yet managed to gain an equal standing compared to recycling and waste management. To this end, he suggests that the transition to a circular economy would require addressing the challenge of establishing a sustainable energy supply as well as decisive action in several other areas such as agriculture, water, soil and biodiversity. In view of the policy discussions in China, Su et al. (2013) point out that the focus of the circular economy gradually extends beyond issues related to material management and covers other aspects such as energy efficiency and conservation, land management, soil protection and water.

Bastein et al. (2013) emphasize the economic dimensions of the circular economy and suggest that this transition "is an essential condition for a resilient industrial system that facilitates new kinds of economic activity, strengthens competitiveness and generates employment''. According to Ghisellini et al. (2016), the radical reshaping of all processes across the life cycle of products conducted by innovative actors has the potential to not only achieve material or energy recovery but also to improve the entire living and economic model. The French Environment and Energy Management Agency stresses that the objective of the circular economy is to reduce the environmental impact of resource consumption and improve social well-being (ADEME, 2014).

One of the most-frequently cited definitions that incorporate elements from various different disciplines has been provided by the Ellen MacArthur Foundation (2013) which describes the circular economy as "an industrial system that is restorative or regenerative by intention and design. It replaces the 'end-of-life' concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models''. Drawing on cradle-to-cradle principles and systems thinking, this interpretation of the concept involves the distinction of two different types of materials: materials of biological origin that can return to the biosphere as feedstock (e.g. forest products) and technical materials, which cannot biodegrade and enter the biosphere (e.g. plastics and metals). Under this framework, the circular economy aims to keep both types of these materials at their highest utility and value at all times through careful design, management and technological innovation (Ellen MacArthur Foundation, 2013a; 2015a). The overall objective is to "enable effective flows of materials, energy, labour and information so that natural and social capital can be rebuilt'' (Ellen MacArthur Foundation, 2013b, p. 26).

Circular economy is a popular concept (Kirchherr et al., 2018) promoted by several national governments and many businesses worldwide. However, the scientific and research content of this new concept is superficial and unorganized (Korhonen et al., 2018). There is no clear evidence of the real origin of the circular economy concept, but contributors include US professor John Lyle, his student William McDonough, the German chemist Michael Braungart, and architect and economist Walter Stahel (Ellen MacArthur Foundation, 2013).

However, the three thematic categories normally used to organize the circular economy's literature review include:

- Policy instruments and approaches (Verger, 2017; Martins, 2016);
- Value chains, material flows and product-specific applications (Figge et al., 2018); and
- Technological, organizational and social innovation (Winans et al., 2017).

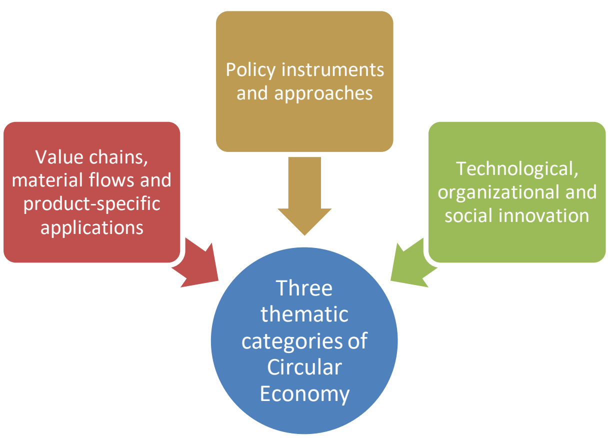

Fig.1: Three Thematic Categories of Circular Economy

For all these categories, the circular economy aims to increase the efficiency of resource use (Cracolici et al., 2018) with a special focus on urban and industrial waste, on capability approaches (Martins, 2018) and on renewable resources (Oubraham and Zaccour, 2018) to achieve a better balance and harmony between economy, environment and society (Ghisellini et al., 2016). In the circular economy, the economic and environmental values of the materials are preserved for the longest possible time through a couple of approaches. They are retained in the economic system either by lengthening the life of products or by returning products and material leftovers in the system to be reused (Huang et al., 2018; Hueso-González et al., 2018; De Jesus and Mendonça, 2018). Design for multiple cycles (Papanek, 1975; Bakker et al., 2014; Moreno et al., 2016) refers to the design of processes and products aimed at enabling the longer circulation of materials and resources in multiple cycles. In turn, design for long-life use of products (Bakker et al., 2014; Chapman, 2005;
Lacy and Rutqvist, 2015; Moreno et al., 2016) aims to extend the useful life of a product with increased material durability, enhanced relationships between products and users (emotionally durable design), and availability of services for reuse, repair, maintenance and upgrade. On the other hand, a recent study considers the dematerialization, decoupling and productivity change that is the study of Kemp-Benedict (2018).

Circular economy literature differentiates cycles of technical nutrients from cycles of biological nutrients; the technical nutrients cycle involves the management of finite material stocks. Use replaces consumption. Technical nutrients are recovered and for the most part, restored through processes such as reuse, repair and recycle. This requires product design that facilitates its disassembly into parts to be reused at the end of the product life cycle (eco-design). The cycle of biological nutrients refers to flows of renewable materials. Consumption only occurs in the biological cycle. Renewable (biological) nutrients are, for the most part, regenerated in the biological cycle through processes such as composting and anaerobic digestion (Ellen MacArthur Foundation, 2013, 2017; Moreno et al., 2017).

III. METHODOLOGY

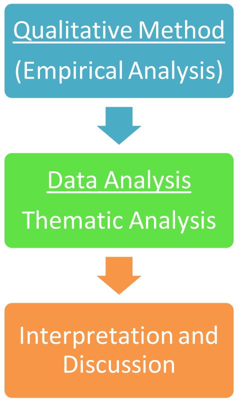

Fig. 2: Tabulation Diagramed of Methodology

This paper is primarily qualitative as it is based on the socio-economic and environmental impact of circular economy in the construction industry with focus on the issues related to the comparative cost benefits. The reason for choosing the qualitative analysis strategy is the exploratory and the qualitative nature of the work. According to Robson (1993), flexibility is always the main strength of the case study strategy in terms of interpretation and getting access to the specified places. The research is a based on secondary data. We used document analysis/content analysis as main method of data collection. Document analysis/content analysis also called "textual analysis" (Travers, 2001) in the study will include all kinds of academic articles, textual and multi-media products, ranging from television programs to web sites on the internet. Secondary sources are materials obtained from universities and public libraries include textbooks, journals and periodicals These sources helped to provide data and information relating to socio-economic and environmental impact of circular economy in the construction industry with focus on the issues related to the comparative cost benefits.

IV. EMPIRICAL FINDINGS

This section presents the qualitative findings on the socio-economic and environmental impact of circular economy in the construction industry with focus on the issues related to the comparative cost benefits.

A. Social impact of circular economy in the construction industry with focus on the issues related to the comparative cost benefits

While the employment impacts of the circular economy in terms of the number of jobs have been analyzed in previous research (Bastein et al., 2013; Wijkman & Skånberg, 2015; EEB, 2014), assessments of other social and employment impacts appear to be less present the literature.

Specifically, there is limited information available on social aspects such as gender, skills, occupational and welfare effects, poverty and inequalities. The study by Morgan & Mitchell (2015) is an example of a research effort that goes beyond assessing the potential of the circular economy in terms of the number of jobs and considers additional aspects related to employment. For instance, they estimate that the circular economy could help offset some job losses that are expected in mid-level skilled positions due to industrial change. Some of their scenarios also foresee a high demand for mid-level skilled employment, which could lead to displacement of mid-level skilled. The study forecasts that the circular economy holds the largest potential to reduce regional unemployment in the areas exhibiting the highest unemployment rates as well as contribute to a reduction in regional unemployment disparities. Some information about distributional impacts is provided by the study by Cambridge Econometrics & BIO Intelligence Service (2014). For example, the study estimates that in the scenario of improving the EU's resource productivity by 2%, the distributional impacts across different income groups would be fairly even.

This is true for several reasons. In the first instance, many process changes will not only affect the directly involved sectors, but they will also have an impact on the complete value chain of the sectors as the new processes might require purchasing from other sectors than the processes they are replacing or the use of different delivery channels. Secondly, the changes can have profound implications for the terms of trade of countries, if the process changes lead to a reduction of imports or to an increase in exports. Thirdly, any changes in consumption spending patterns will have significant impacts on other sectors, if consumers need to balance their books and can either spend more or less on other products and services. Lastly, the changes involved can also lead to consumers using more or less of the product or service (change of usage patterns). All of these changes will have significant economic, environmental and social implications, but we found that these implications have not been discussed in any detail in the literature we found. Therefore, an important aim of the Circular Impacts project is to summarize and collect the emerging evidence on the macroeconomic impacts to be expected.

B. Economic impact of circular economy in the construction industry with focus on the issues related to the comparative cost benefits

Cambridge Econometrics & BIO Intelligence Service (2014) used a macro-econometric model to assess the impact of different resource productivity targets. The study estimates that improving the resource productivity by 2% could help create two million additional jobs in 2030. It is also estimated that improvements of 2-2.5% in resource productivity could also have a small but positive net impact on GDP; however, any further improvements in resource productivity would entail net costs to GDP since abatement options become more expensive. Focusing on recycling and reuse, EEB (2014) built different scenarios around potential targets.

In an impact assessment of the review of waste management legislation, the European Commission (2015b) has estimated the job creation impacts of different proposals for waste legislation. Scenarios are based on policy options on recycling targets, limitations to landfilling of residual waste and possibilities of landfill bans on plastic/paper/glass/metals by 2025. The study estimated that different scenarios have the potential to create between 136,000 and 178,000 full-time jobs by 2025, with most jobs being created in the recycling industry. The study also noted that the largest job-creation benefit would manifest itself and have the greatest need for improvement in their waste management systems.

Morgan & Mitchell (2015) conducted a study that assesses the job creation potential of the circular economy in the UK. Importantly, their interpretation of the circular economy includes the following activities: reuse, closed looped recycling, open loop recycling, bio-refining, repair and remanufacturing and servitization. It is estimated that at the current development rate the circular economy could create around 200,000 new jobs and provide a net employment growth of around 54,000 jobs by 2030.

According to a more ambitious scenario that involves an extensive proliferation of circular economy practices, the circular economy could create about 520,000 new jobs and achieve a net employment growth of around 100,000 jobs. The study furthermore provides some information about the skill level of the new jobs. For instance, it is estimated that low-skilled workers would represent a significant fraction of employment in reuse and recycling, whereas other activities such as bio-refining and servitization would require more high-skilled labor.

C. Environmental impact of circular economy in the construction industry with focus on the issues related to the comparative cost benefits

There are several studies available in the literature that has assessed the environmental impacts of the circular economy or resource efficiency. As shown below, some studies have focused on specific processes that fall within the scope of the circular economy (e.g., recycling, reduction of waste), while others have adopted a broader approach.

Lawton et al. (2013) estimated environmental benefits of materials savings in the food and drink, manufacturing, fabricated metal products and hospitality and food services sectors. The study estimates that improving resource efficiency in the assessed sectors can result in a reduction of 2-4% of total annual GHG emissions. The results are based on individual company case studies, prompting the authors to note that they may not be representative for an average company.

Wijkman & Skånberg (2015) use an input/output model in order to estimate the effects of the circular economy in terms of reductions of CO2 emissions. There are three steps towards the circular economy and develop scenarios for each step and their overall effects. Depending on the scenario, the steps are estimated to result in reductions of CO2 emissions between 3% and 50% by 2030. However, combining these three strategies ('steps') could lead to a 66% decrease in CO2 emissions in Sweden, 68% in Finland, 67% in the Netherlands, 66% in France and 69% in Spain.

Analysis of environmental benefits at the national level has also been provided by the Ellen MacArthur Foundation (2015b) which provides estimates about Denmark. The study finds that circular economy can reduce Denmark's carbon footprint by 3-7%.57. In addition, the study estimated a 5–50% reduction in virgin resource consumption by 2035.

V. CONCLUSION AND RECOMMENDATIONS

Based on the empirical findings, this paper has provided a reflection on the socio-economic and environmental impacts of circular economy in the construction industry. The extent of interpretation of the circular economy concept at the academic and policy levels and the wide range of aspects and priorities it encompasses are reflected in the diversity of definitions. The circular economy is a complex concept and it is unlikely that in the short term there can be an international consensus on its meaning. Still, at the Nigerian policy level, there is perhaps a need for more clarity about the areas and sectors that can fall within the scope of the circular economy. This can help avoid confusion as well as support the preparation of focused studies and impact assessments that will provide consistent messages about the potential effects.

Finding also revealed that these processes have significant potential to deliver economic, environmental and social benefits. Since some industries are particularly important for national and local economies, it is important to provide clarity about the expected net impact on employment across different sectors. This would also help policy-makers design well-targeted transitional policy measures to manage the negative impacts in some sectors as well as in national and local economies. There is also a need to understand the indirect effects on the economy (e.g. impacts on the value chain and/or changes in consumption spending patterns) in order to estimate the overall impacts at the national level.

Additionally, some findings provide information on the employment potential of the circular economy in terms of the number of jobs it might create, much less emphasis has been placed in the literature on other social and employment impacts such as gender, skills, occupational and welfare effects, poverty and inequalities. This indicates that there is a need for more research that would address these aspects and also help policy-makers anticipate effects in different social groups. Another aspect that has not been covered extensively in the literature and would require more research concerns the impact of circular economy practices adopted in Nigeria.

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