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Achieving sustainable development goals through a sharing economy: Empirical evidence from developing economies



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ABSTRACT

Achieving sustainable development goals (SDGs) through a sharing economy is a global concern which requires policymakers and researchers' attention. The improvement of sharing economy activities may increase sustainable development in developing economies. Thus, this study empirically examines the impact of sharing economy activities such as corporate social responsibilities (CSR), eco-design, supplier green management (SGM), internal green management (IGM), and customer green management (CGM) in achieving SDGs using data from the Emerging Seven (E7) countries. This study uses a questionnaire method to gather data from respondents and Amos software to test the validity and reliability of the data, and the relationships among the variables. The results show that SGM, eco-design, CSR, CGM, and IGM play positive roles in achieving SDGs in E7 economies. The present research provides guidelines for regulators and policymakers devising rules associated with SDGs attainment using sharing economy platforms.

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Introduction

The rapidly increasing population is putting pressure on natural resources, land, and economic activities. This has created a slew of social and environmental issues for countries, jeopardizing future survival and growth. Although individuals and organizations play an active role in addressing the social and environmental issues and eliminating roadblocks to future development, all efforts have proved insufficient to change the situation. Many reformers and academics are attentive to social and environmental development for long-term benefit (Galkina & Sorokin, 2020; Sadiq et al., 2021). With wide awareness of social and environmental issues, state owners are forming policies or engaging in programs or campaigns with the purpose of promoting the environmental and social welfare of people while paying attention to financial growth (Apostoaie & Bilan, 2020;

Dabbous & Tarhini, 2021; Tan et al., 2021). The formulation of the 17 Sustainable Development Goals (SDGs) is the result of environmental and social awareness among people across the globe and government attention and initiatives.

The SDGs form a most ambitious plan on the part of humanity for a better future. At the UN General Assembly of September 2015, 193 nations agreed on the 17 SDGs and 169 sub-goals. The 2030 Agenda indicates that the goals must be met by 2030 (Al Mamun et al., 2021; Vasylieva et al., 2019; Zhao et al., 2021). The SDGs provide global guidelines to address the global concerns the international community faces. They preserve opportunities for people to live in full dignity, peace, and prosperity over generations, by better conserving the natural underpinnings of life on the planet for everyone. The SDGs have the essence of the earth, people, peace, prosperity, and partnership, and are divided into three areas: social, environmental, and financial development (Kutan et al., 2018; Sadiq et al., 2022a). The SDGs are directed at everyone, including policymakers, businesses, civil society, scholars, and each individual. At the political level, the

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17 SDGs provide guidelines for policymakers on how to take action, and it is the duty of government authorities to report to the UN High-Level Political Forum on their progress against the individual SDGs at least once a year. The state-owned sector, private sector and businesses must also be seen to be active in accomplishing the SDGs (Al-Omouh et al., 2020; Gryshova et al., 2019; Sadiq et al., 2022b).

The SDGs need to be achieved by every country to secure their survival and sustainable economic development. The sharing economy has several economic, social, and environmental benefits, and can serve the three pillars of the 2030 Agenda for sustainable development. The sharing economy is a business concept that refers to the activity of acquiring, providing, or sharing access to goods and services, and includes the sharing of processes, ideas, techniques, and information with other individuals or firms (Bierwaczon et al., 2020; Çiftçiöğlü & Sokhanvar, 2021; Moslehpour et al., 2021). The main objective of incorporating a sharing economy is to reduce the use of resources and services for performing business activities and producing maximum outcomes. The performance of sharing economy practices improves social and environmental wellbeing along with corporate business development (Bilan et al., 2020; Ma et al., 2018; Moslehpour et al., 2022b). As the 17 SDGs are based in the three areas of social, environmental, and economic development, and all the goals are interlinked, the incorporation of sharing economy practices, such as the achievement of green supplier management (SGM), eco-design, corporate social responsibilities (CSR), customer green management (CGM), and internal green management (IGM) on a sharing economy platform, assists in achieving the SDGs and sustaining a country's development. SGM (the undertaking of green practices with the collaboration of suppliers), eco-design (producing products or services with eco-logical friendly features), CSR (self-regulations for attaining social welfare with principles of accountability, fair dealing, and transparency), CGM (green practices with the cooperation of the customer), and IGM (internal regulations for green purposes) on the sharing economy platform help users improve social, economic and environmental performance and thus achieve SDGs (Cheba et al., 2020; Dabbous & Tarhini, 2021; Leung et al., 2019; Moslehpour et al., 2022a).

The present study examines the role of SGM, eco-design, CSR, CGM, and IGM in SDG attainment, with evidence from the manufacturing sectors of the E7 countries. The E7 includes the emerging economies of China, India, Russia, Brazil, Turkey, Mexico, and Indonesia. Mexico is developing an upper-income economy with a nominal GDP of \$1.19 trillion in 2021. The main manufacturing industries of Mexico are automotive, medical devices, aviation and aerospace, apparel and textiles, and consumer products. The manufacturing sector plays a significant role in creating employment, reducing poverty, driving GDP, and creating exports (García-Sánchez et al., 2021; Lan et al., 2021; Liu et al., 2021). Indonesia is the 15th largest economy in the world in terms of nominal GDP, estimated to be \$1.25 trillion in 2022. The manufacturing sector of Indonesia plays a significant role in the economic development of the country and generates about 20 per cent of GDP. The government plans to boost the economy to be among the top 10 in the world by 2030, with significant improvements in the manufacturing sector. The main areas of manufacturing production are food and beverages, textiles and garments, automotive, electronics, and chemicals, while most manufacturing firms are micro, small, or medium-sized enterprises (Fatimah et al., 2020; Liu et al., 2022a; Méndez-Picazo et al., 2021). India is a lower-middle-income emerging economy with an estimated nominal GDP of \$3.25 trillion in 2022. Manufacturing accounts for 26% of the country's GDP and provides employment for 22% of the total workforce. The country's manufacturing industry has the capacity to reach \$1 trillion by 2025 (Malhotra et al., 2021; Liu et al., 2022b; Piligrimienė et al., 2021; Richterová et al., 2021).

China is an upper-middle-income economy, estimated to have a \$18.46 trillion nominal GDP in 2022. Manufacturing is the major sector of the economy, and includes coal, machinery, armaments, textiles, petroleum, fertilizers, cement, chemicals, food processing, automobiles, and consumer products including footwear, toys, electronics, and ICT. The manufacturing sector of China generates 46.8% of the country's GDP, and manufacturing labour exceeds that of all developing countries (Kapoor et al., 2020; Li et al., 2018; Li et al., 2021). Brazil is the largest supplier of automotive products, while other firms produce electrical machinery, soap, chemicals, steel, medicine, and so on. Brazil has made progress in eradicating poverty and hunger, assuring healthy lives, and improving gender equality. Diversity in energy resources encourages renewable energy consumption and efficiency in the energy sector. It is an essential strategy for addressing the SDGs (Lan et al., 2022; Mascarenhas et al., 2022; Tabeikyna et al., 2021). Russia's manufacturing sector consists of precious metals and stones, aircraft, aerospace, military machinery, electrical engineering, automotive, pulp and paper, transport, road and agricultural machinery. In Russian enterprises, decent work and economic growth are the prioritized SDGs, as indicated by 72% of businesses in 2021, while goals such as fighting climate change, responsible production, and good health and wellbeing are prioritized by 23% of businesses (Kamarudin et al., 2021; Shutaleva et al., 2020; Wei et al., 2021).

All the E7 countries' economies are emerging (as denoted by the letter E), and the manufacturing sector, which comprises the biggest portion of their economies, is making swift progress and taking initiatives for the achievement of SDGs, but this progress is still very limited (Gyamfi et al., 2021; Huang et al., 2021c; Zygmunt, 2020). The present study considers this problem and searches for ways to accelerate the progress towards the SDGs. The objective is to explore the role of SGM, eco-design, CSR, CGM, and IGM within a sharing economy in attaining SDGs. Many studies consider the problem of weak business progress on SDGs, but still there are many literary gaps to be filled by the current study. Firstly, the incorporation of the sharing economy by individuals and business organizations is analysed by past literature. However, scholars pay little attention to sharing economy practices individually, or relate them to SDG attainment. The present study sheds light on sharing economy practices such as SGM, eco-design, CSR, CGM, and IGM and their role in attaining SDGs, thereby addressing this literary gap. Secondly, in the existing literature, the influences of SGM, eco-design, CSR, CGM, and IGM on attaining SDGs are measured, but through separate research surveys. There is a lack of studies combining these factors and their impacts on SDGs achievement. The present study addresses this gap by examining the roles of SGM, eco-design, CSR, CGM, and IGM in attaining SDGs at the same time. Thirdly, there has always been a problem of vulnerability for manufacturing enterprises addressing SDGs in E7 countries, which has not been solved. This study explores the role of the sharing economy practices of SGM, eco-design, CSR, CGM, and IGM in attaining SDGs in the context of manufacturing enterprises in E7 countries.

The paper is comprised of several parts. The literary arguments of authors about the relationships between SGM, eco-design, CSR, CGM, and IGM within a sharing economy and their roles in attaining SDGs are considered. The methodology applied to seek data about the aforementioned variables and the processes used for the estimation of the associations among the variables are described. The results are presented, and compared to past authors' findings. The study ends with conclusions, implications, and limitations.

Literature review

The SDGs were presented by the UN member states in an assembly in 2015. The basic objective of these goals is to promote sustainable development, which is a combination of social, environmental, and economic performance. The 17 SDGs are divided into social,

economic, and environmental goals, which are interrelated and inter-dependent. Achievements in one category could affect achievements in the other two (Huang et al., 2021a; Plewnia & Guenther, 2018). Sharing economy adoption to promote green practices within organizations is considered a source of achievement of the environment-related, and other, SDGs (Huang et al., 2021b; Jabbour et al., 2020). The present study examines the achievement of SGM, eco-design, CSR, CGM, and IGM using a sharing economy, and the impact on attaining SDGs. In previous literature, with conflicting ideas or considerations, studies shed light on the achievement of SGM, eco-design, CSR, CGM, and IGM using a sharing economy and their relationships to SDGs. The present study checks these relationships and develops hypotheses in light of past arguments.

SGM achieved by a sharing economy refers to the management of relations or dealings with suppliers in such a way as to formulate and implement ecologically friendly practices within organization through collaboration and cooperation (Karobliene & Pilinkiene, 2021). Ecologically friendly practices such as energy transition, reduced non-renewable energy use, reduced use of transportation, ecologically friendly production, and reduced waste are possible by effectively performing SGM. These practices eradicate the impact of firm operations on the climate, natural resources, and health, which are themselves SDGs and encourage other SDG achievement (Chien et al., 2021a; Chen et al., 2020). Manzoor et al. (2022) examine the sharing economy, SGM, and SDG achievement. The information collected from British auto-parts manufacturing SMEs implies that, if the barriers to sharing economy integration are removed and SGM practices are effectively implemented, the SDGs can be achieved. So, SGM within a sharing economy positively contributes to the achievement of SDGs. Govindan et al. (2020) examine removing barriers to a sharing economy, SGM, and SDG achievement. The theoretical survey for analysis is conducted on small and medium enterprises in India, and a literary review explores the relationship between the removal of sharing economy barriers and SGM effectiveness with SDGs achievement. The article reveals that when the barriers to the sharing economy are removed, relationships with suppliers can be improved, and sound relations motivate suppliers to be responsible while delivering resources, raw materials, and services to firms. The acquisition of environmentally friendly resources, raw material, and services helps firms carry out business with a minimum impact on the environment. A clean environment ensures life security with clean water and food, which are SDGs. Pérez-Pérez et al. (2021) examine the sharing economy contribution to SDGs of SGM. The variables and relationships are analysed through systematic literature review using the Web of Science (WoS) Core Collection and past studies. The findings state that a sharing economy helps firms effectively implement SGM and achieve high environmental performance, making a great contribution to SDG achievement. Based on the above discussion, we present the first hypothesis:

H1. SGM achievement using a sharing economy is positively related to the achievement of SDGs.

Eco-design involves designing or redesigning products, services, processes, or systems to prevent or repair damage to the environment, society, or the elements thereof. A sharing economy, which is the exchange of goods, services, processes, and ideas, helps firms develop ecologically friendly features in their processes, products, and services, through the use of pollution-free raw materials, clean energy, recyclable materials, sustainable design, and ecologically friendly packaging (Dlalisa & Govender, 2020; Criado-Gomis et al., 2020; Labbate et al., 2021). Many of the SDGs focus on the eradication of pollution and the safety and health of living beings, including humans. When eco-design is achieved through a sharing economy, the environment and health are protected from pollution or damage, and the environment-related SDGs can be addressed along with other interconnected SDGs (Heinrich et al., 2020; Scavarda et al.,

2020). Karobliene & Pilinkiene (2021) shed light on the sharing economy's impact on eco-design and firms' contributions to SDG achievement. The study collects data from European Union countries and analyses eco-design achievement through sharing economies and its role in SDG achievement. The article suggests that a sharing economy helps firms access ecologically friendly resources, even when they have few financial resources. Ecologically friendly resources such as green materials and technologies help produce products that can be recycled and do not cause any health issues for users or damage to natural resources. The SDGs concerning good quality natural resources and healthy people, are made more attainable. Through empirical research, Reuschl et al. (2022) examine eco-design through a sharing economy and SDG achievement, with information collected through a mixed-method of quantitative and qualitative analysis. The study posits that, when sharing economy practices are implemented effectively and eco-design products are produced and traded, SDGs can be achieved. So, eco-design using a sharing economy positively contributes to the achievement of SDGs. The findings of Lyaskovskaya & Khudyakova (2021) indicate that eco-design by businesses prevents the accumulation of waste from items that have expired, and, because sharing economies stimulate eco-design, greenhouse gas and other harmful chemical emissions are reduced. The SDGs relating to climate, land safety, and public health can all be met. Hence the second hypothesis:

H2. The achievement of eco-design using a sharing economy is positively related to the achievement of SDGs.

A sharing economy gives firms access to information, resources, and techniques, and assures the credibility of relations. CSR refers to a firm's consciousness of its responsibilities towards its stakeholders and their self-regulation, meeting their requirements and taking care of their welfare (van Niekerk, 2020). When there is a sharing economy among partner firms, in both the downstream and upstream chains, they become more aware of the needs of stakeholders and regulate their operations in various areas, meaning the SDGs regarding social and environmental development can be achieved (Asian et al., 2019; Flores & Chang, 2020; Koloba, 2020; Sharma, 2020). Rojanakit et al. (2022) examine sharing economies, CSR, and SDG achievement. The study is a comprehensive systematic review which finds that, when CSR practices are executed efficiently through a sharing economy, firms see high social and environmental development and this helps achieve the economic objectives of the organization. As a result, SDGs can be attained. Hence CSR effectiveness through a sharing economy positively contributes to the achievement of SDGs. Görög (2019) examines the sharing economy's role in CSR and its impacts on SDGs. An analysis of the relationships among sharing economies, CSR, and SDG achievement using a stakeholder outline model is applied to multinational companies such as eBay (redistributing markets), Airbnb (collaborative lifestyles), and UBER (product-service systems). The findings show that firms in a sharing economy are more active in performing CSR and taking social and environmental responsibility for stakeholders. The fulfilment of social and environmental responsibilities enables firms to address all the three dimensions of the SDGs. So, successful CSR implementation using a sharing economy assures the achievement of SDGs. An empirical investigation by Mont et al. (2020) highlights the efficiency of sharing economy initiatives, and how they help firms undertake CSR, environmental, employee-related, and philanthropic activities. This enhances human capital, improves the environment, and stimulates resource abundance, all of which are general SDGs. The above literary arguments lead to the hypothesis.

H3. CSR using a sharing economy is positively related to the achievement of SDGs.

CGM is the management of relations or dealings with customers in such a way as to formulate and implement ecological practices within organizations with the collaboration and cooperation of

customers (Pouri & Hilty, 2018). Customers, whether individuals or organizations, can help firms acquire information, develop solid cooperative links, implement ecological practices, and introduce new ecologically friendly products and services to the market. When the organizations successfully carry out CGM in a sharing economy, they protect the environment in which they operate their business functions, mitigate climate change, and protect peoples' health by ensuring clean water, food, and natural resource abundance. These are among the aims of the SDGs in the 2030 Agenda (Kikulwe & Asindu, 2020; Sung et al., 2018). Geissinger et al. (2019) examine the sharing economy, CGM effectiveness, and the achievement of SDGs, and find that customers represent the public's perspectives and needs, providing valuable ideas for implementing green practices within a company. Loyal customers help accomplish environmentally favourable SDGs such as a clean work environment, healthy atmosphere, greenery, and improved food sources within a sharing economy. Schneiders et al. (2022) identify the relationship between the achievement of CGM and SDGs in a sharing economy. The study reveals that a downward sharing economy improves the relationships between organizations and customers. Thus, it becomes easy for organizations to influence their customers and make them assist in the implementation of SDGs. Hu et al. (2019) analyse the impact of CGM through a sharing economy on SDGs. The study posits that, in a sharing economy, commitment on the part of customers helps firms implement environmental plans and introduce new ecological products within the economy. Hence the hypothesis:

H4. CGM in a sharing economy is positively related to the achievement of SDGs.

Firms which are linked in a supply chain and which adopt a sharing economy effectively, have the capacity to implement IGM and achieve SDGs (Gössling & Hall, 2019). When a sharing economy is adopted, green management can successfully create environmental awareness among the employees, form favourable energy consumption patterns, re-utilize waste, and implement eco-friendly technologies and recycling practices in the production, packaging and delivering of products and services to customers. Effectively implemented IGM reduces the influence of firms' resource utilization and processes, and keeps the environment clean and healthful, which assures the achievement of SDGs such as responsible consumption and production, clean climate, healthy food, and healthy life (Chien et al., 2021b; Ainou et al., 2021; Mahadevan, 2018). Akhmedova et al. (2022) explore the relationship between IGM using a sharing economy and SDG achievement. The sharing of information and communication technologies gives an equal chance for users to acquire quality information. The availability of ecologically friendly information assists in the adoption of resources and processes which reduce the negative impacts of businesses on the environment, meaning the SDGs regarding good quality water and food, climate change, resource protection, and good health can be achieved. Boar et al. (2020) examine the sharing economy, green management, and SDGs, and, firstly, explain that the 17 SDGs created by the UN are guidelines for countries to sustainability achieve a combination of social, environmental and economic development. The study analyses the content of 74 papers taken from the Web of Science database and shows that a sharing economy is helpful for getting eco-friendly information, incorporating green criteria into all the business departments, procurement, production, and marketing. IGM as a result of a sharing economy helps develop a clean and peaceful environment where workers provide services. Such an environment improves the health, wellbeing, and work performance of workers, which characterizes the SDGs. On the basis of this literary discussion, we put forward the hypothesis:

H5. IGM achievement using a sharing economy is positively related to the achievement of SDGs.

Research methodology

This article examines the impact of a sharing economy platform on achieving SGM, eco-design, CSR, CGM and IGM, which ultimately help in attaining the SDGs of the manufacturing industry in E7 countries. The study selects the E7 countries because sustainability issues in the manufacturing industry are at their peak (Chien et al., 2022; Rafique et al., 2021). The research applies a questionnaire method to gather data from respondents. The respondents are company employees attached to a sharing economy platform for achieving SDGs. Thus, purposive sampling is adopted by the researchers.

Surveys were distributed by mail to 515 respondents. After two weeks, 292 responses were returned, representing a 56.70% rate of response. Amos software was used to check the validity and reliability of the data, and the linkages between the variables. This tool has the characteristics of providing the best estimations when researchers use large sample sizes or complex frameworks (Hair et al., 2020).

The research uses five predictors, the use of a sharing economy platform to achieve CSR, eco-design, IGM, CGM, and SGM, and one predictive variable, attaining SDGs. The measurement scale of each variable is extracted from previous studies such as Hu et al. (2019), and Zamora-Polo et al. (2019). The questionnaire has four items regarding the sharing economy platform used to achieve CSR: SECSR1 "I could participate in creating more jobs for the local community in a sharing economy platform"; SECSR2 "I could participate in creating more income/wealth for the local community in a sharing economy platform"; SECSR3 "I could participate in helping minorities/women in a sharing economy platform"; and SECSR4 "I could participate in helping the local community for cultural development in a sharing economy platform". These items are extracted from Hu et al. (2019). A sharing economy platform to achieve eco-design is also taken as an independent variable. The researchers use a three-item scale to measure the sharing economy platform used to achieve eco-design: SEED1 "I could experience products and services from a company that designs to reduce consumption of materials/energy using a sharing economy platform"; SEED2 "I could experience products and services from a company that designs to reduce hazardous materials/manufacturing processes using a sharing economy platform"; and SEED3 "I could experience products and services from a company that designs recyclable/renewable materials/energy using a sharing economy platform". These items are extracted from Hu et al. (2019).

In addition, a sharing economy platform to achieve IGM is taken as a predictor. The researchers use a three-item scale to measure the sharing economy platform used to achieve IGM: SEIGM1 "I could experience eco-friendly products and services from a company whose employees effectively participate in environmental protection using a sharing economy platform"; SEIGM2 "I could experience eco-friendly products and services from a company that has a comprehensive environmental management system using a sharing economy platform"; and SEIGM3 "I could experience eco-friendly products and services from a company that has a clear environmental mission using a sharing economy platform". These items are extracted from Hu et al. (2019). A sharing economy platform used to achieve SGM is taken as an independent construct. The researchers use a four-item scale to measure the sharing economy platform used to achieve SGM: SESGM1 "I could experience eco-friendly products and services from a company the major suppliers of which are ISO 14000 certificated using a sharing economy platform"; SESGM2 "I could experience eco-friendly products and services from a company that supports suppliers to improve green practices using a sharing economy platform"; SESGM3 "I could experience eco-friendly products and services from a company that closely cooperates with suppliers regarding environmental objectives using a sharing economy platform"; and SESGM4 "I could experience eco-friendly products and services from a company that evaluates suppliers' environmental

practices regularly using a sharing economy platform". These items are extracted from [Hu et al. \(2019\)](#).

Similarly, a sharing economy platform used to achieve CGM is taken as a predictor. The researchers use a four-item scale to measure the sharing economy platform used to achieve CGM: SECGM1 "I could participate in the eco-friendly design of corresponding products/services using a sharing economy platform"; SECGM2 "I could participate in cleaner production using a sharing economy platform"; SECGM3 "I could participate in reducing greenhouse gas using a sharing economy platform"; and SECGM4 "I could participate in reducing the utilization of natural resources using a sharing economy platform". These items are extracted from [Hu et al. \(2019\)](#). Finally, attaining SDGs is taken as the dependent construct. The researchers use a seventeen-item scale to measure the attainment of SDGs: ASDG1 "My organization takes part in poverty reduction"; ASDG2 "My organization plays a significant role in hunger-reduction"; ASDG3 "My organization is working for health care and wellness"; ASDG4 "My company provides quality education to their employees and employees' families"; ASDG5 "My firm always works for gender equality"; ASDG6 "I have access to clean water and sewerage"; ASDG7 "My firm has accessible and non-polluting energy"; ASDG8 "My firm takes part in decent work and economic growth"; ASDG9 "My firm has innovation and effective infrastructure"; ASDG10 "My firm always works to reduce inequalities"; ASDG11 "My firm is creating sustainable cities and communities"; ASDG12 "My firm has the ability for responsible consumption and production"; ASDG13 "My organization always considers weather care"; ASDG14 "My firm always cares about underwater life"; ASDG15 "My firm always cares for life in terrestrial ecosystems"; ASDG16 "My firm takes part in peacebuilding, justice, and corruption-free institutions"; and ASDG17 "My organization

strives to build alliances to achieve the above goals". These items are extracted from [Zamora-Polo et al. \(2019\)](#).

Research findings

The content validity using factor loadings has a value more than 0.40, indicating high correlation among the items and good content validity. The findings also show convergent validity using average variance extracted (AVE), with an AVE value more than 0.50, indicating good convergent validity. Finally, the findings show reliability, with a composite reliability (CR) value more than 0.70 indicating significant reliability, as shown in [Table 1](#) and [Fig. 1](#).

The findings also show discriminant validity, as the first value in each column is larger than the rest of the values, indicating that the relationship of the variable with itself is stronger than with the other variables. Thus, the results have good discriminant validity. [Table 2](#) shows the discriminant validity results.

The path analysis reveals that SGM using a sharing economy, eco-design using a sharing economy, and CGM using a sharing economy have a positive role in attaining SDGs of industries in E7 countries, and H1, H2, and H4 are accepted. [Table 3](#) and [Fig. 2](#) show the path analysis results.

Discussion

The results indicate that green supplier management (SGM) using a sharing economy is positively related to the achievement of SDGs. The results imply that a sharing economy, in which firms are intended to share resources, techniques, and services with related firms, gives an opportunity for firms to keep in contact with suppliers and seek their cooperation in implementing ecologically friendly policies. With the collaboration of suppliers, it becomes easy to raise ecological performance, which is a step to attaining the SDGs. Hence, the achievement of effective green management by suppliers using a sharing economy helps firms to contribute to SDG achievement ([Light & Miskelly, 2019](#)). These results agree with [Standing et al. \(2019\)](#), that under green supplier management through a sharing economy, clean energy resources can be acquired at reasonable prices. The use and preservation of clean energy for business operations help firms cut the use of fossil fuels for production and marketing. This initiative for clean climate action preserves living and non-living natural resources. Thus, the SDGs are made easier to address. These results also agree with [Cherry & Pidgeon \(2018\)](#), that when, under a sharing economy, suppliers have good relations with firms and act responsibly in their dealings, they take care of the resources delivered. Ecologically friendly operations and products as a result of efficient supplier green management, assure the achievement of SDGs such as the health, safety and wellbeing of people.

The results indicate that internal green management (IGM) using a sharing economy is negatively but insignificantly related to the achievement of SDGs. The results imply that a sharing economy facilitates the acquiring of resources with less funds, and thus the availability of ecologically friendly resources enables firms to effectively implement practices of internal green management and enhanced green performance, which reduces environmental pollution, and the SDGs relating to responsible production, but this situation does not exist in the E7 countries where improved health of living beings, and climate action are achieved. These results are in line with ([Grinevich et al., 2019](#)), who reveal that internal green management policies, such as the sharing of creative practice ideas or strategies, are helpful. The undertaking of green management practices such as waste management, reducing the use of non-renewable energy, and reducing chemical or toxic gas emissions help meet SDG environmental objectives. These results are supported by [Khalid et al. \(2018\)](#), who find that the sharing of resources in a sharing economy creates new links, and develops cooperative relations. These links help internal

Table 1
Convergent validity.

Items	Loadings	CR	AVE	MSV	ASV
SECSR4 ← SECSR	0.827	0.919	0.799	0.694	0.402
SECSR3 ← SECSR	0.814				
SECSR2 ← SECSR	0.890				
SECSR1 ← SECSR	0.836				
SECGM4 ← SECGM	0.826	0.756	4.087	0.627	0.173
SECGM3 ← SECGM	0.867				
SECGM2 ← SECGM	0.812				
SECGM1 ← SECGM	0.829				
SESGM4 ← SESGM	0.759	0.716	1.367	0.663	0.387
SESGM3 ← SESGM	0.774				
SESGM2 ← SESGM	0.801				
SESGM1 ← SESGM	0.846				
SEED3 ← SEED	0.633	0.994	0.975	0.627	0.255
SEED2 ← SEED	0.991				
SEED1 ← SEED	0.998				
SEIGM3 ← SEIGM	0.993				
SEIGM2 ← SEIGM	0.997	0.730	1.131	0.295	0.179
SEIGM1 ← SEIGM	0.631				
ASDG17 ← ASDG	0.746				
ASDG16 ← ASDG	0.802				
ASDG15 ← ASDG	0.740	0.731	2.165	0.994	0.404
ASDG14 ← ASDG	0.763				
ASDG13 ← ASDG	0.813				
ASDG12 ← ASDG	0.831				
ASDG11 ← ASDG	0.833				
ASDG10 ← ASDG	0.858				
ASDG9 ← ASDG	0.797				
ASDG8 ← ASDG	0.740				
ASDG7 ← ASDG	0.756				
ASDG6 ← ASDG	0.648				
ASDG5 ← ASDG	0.812				
ASDG4 ← ASDG	0.808				
ASDG3 ← ASDG	0.831				
ASDG2 ← ASDG	0.847				
ASDG1 ← ASDG	0.854				

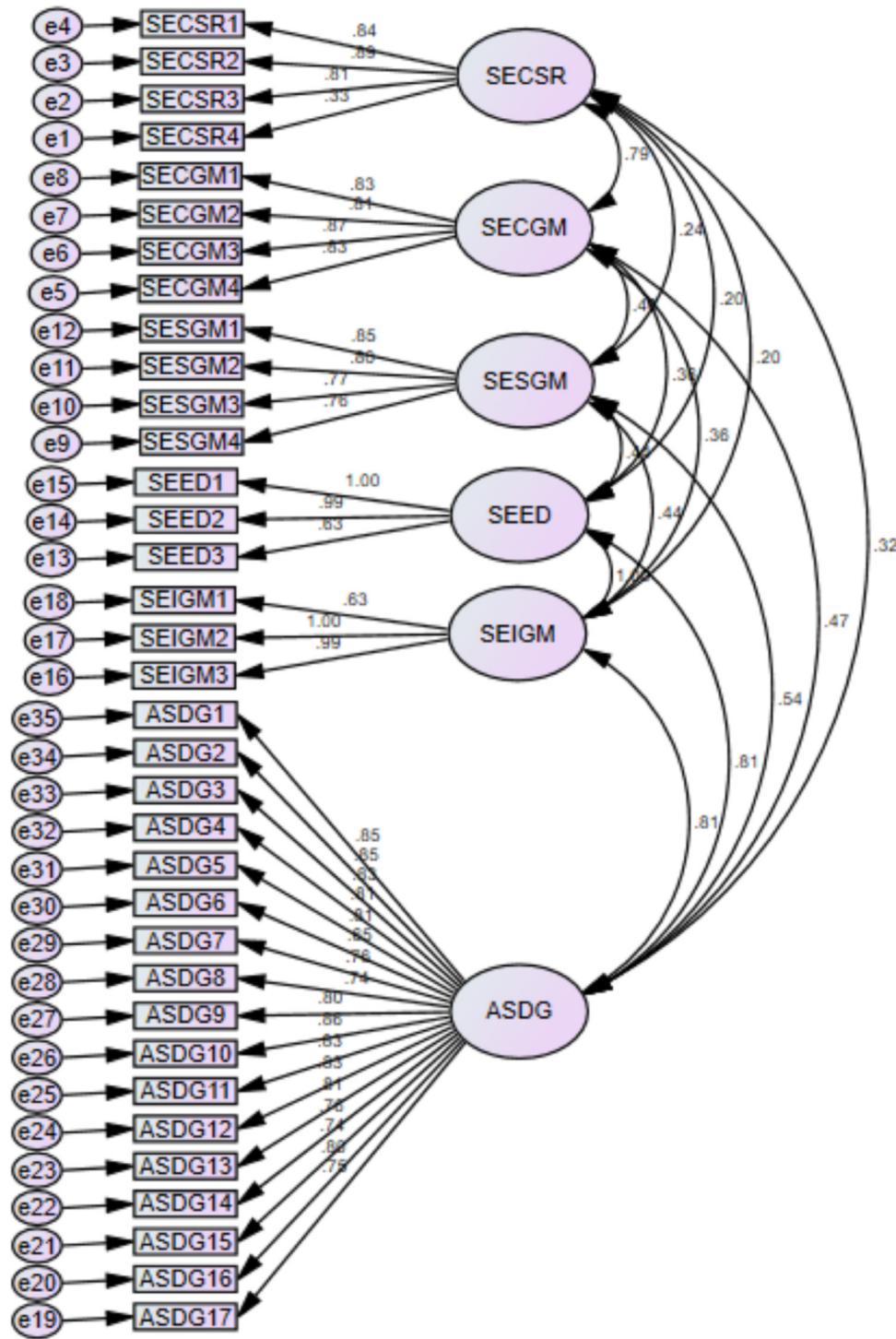


Fig. 1. Measurement model assessment.

Table 2
Discriminant validity.

	SEIGM	SECSR	ASDG	SECGM	SESGM	SEED
SEIGM	0.894					
SECSR	0.196	2.022				
ASDG	0.509	0.319	1.169			
SECGM	0.363	0.592	0.472	0.987		
SESGM	0.438	0.238	0.543	0.403	1.063	
SEED	0.497	0.205	0.614	0.361	0.437	1.471

environmental monitoring, green governance, and the implementation of green concepts which enhance the environmental performance of firms and facilitate SDG achievement.

The results indicate that customer green management (CGM) using a sharing economy is positively related to the achievement of SDGs. The results mean that, in supply chains, where firms not only share policies, processes, and resources with suppliers or peer firms, but also keep on sharing with customers, they develop relations with customers, gaining their loyalty and commitment. This commitment and cooperation are helpful for attaining internal green objectives,

Table 3
Path analysis.

Relationships	Beta	S.E.	C.R.	P
ASDG ← SECGM	0.0610	0.0350	1.7560	0.0790
ASDG ← SECSR	0.0550	0.0390	1.4040	0.1600
ASDG ← SEED	0.8190	0.2120	3.8640	0.0000
ASDG ← SESGM	0.0950	0.0310	3.0420	0.0020
ASDG ← SEIGM	-0.1670	0.2120	-0.7880	0.4310

which include the reduction of greenhouse gas emissions, chemicals in water sources, and other waste problems. These are all goals of sustainable development. These results are in line with [Benjaafar & Hu \(2020\)](#), who investigate the customer green management effectiveness in sharing economies, and its relation to the achievement of SDGs. They argue that customers represent public views and requirements and are likely to give good ideas for carrying out green practices within organizations. In a sharing economy, loyal customers are helpful for achieving ecological SDGs such as a clean work environment, healthy atmosphere, greenery, and improved food sources. These results are supported by [Wang et al. \(2019\)](#), who explore the sharing economy incorporation among business firms and individuals to get customer loyalty and cooperation in ecologically friendly practices. The participation of customers in green programs carried out by the firms saves the natural environment from the damage that business practices cause, and thus help countries achieve SDGs.

The results indicate that corporate social responsibility (CSR) using a sharing economy is positively but insignificantly related to the achievement of SDGs. The results imply that a sharing economy enhances knowledge about stakeholders' perceptions and actions, and helps management implement CSR, including their environmental, philanthropic, employment, ethical, and other social responsibilities. The implementation of all these SCR practices improves firms' overall performance, including ecological, social, and economic performance, and thus helps in achieving all the SDGs based on social, environmental, and economic development, but this situation is not seen in E7 countries. These results agree with [Chuah et al. \(2022\)](#), who focus on the sharing economy achievement of CSR for accomplishing SDGs. The study suggests that the SDGs proposed by the UN General Assembly are intended to promote the prosperity of the people and safety of the planet. These two objectives are achievable

when CSR is executed effectively with the help of the sharing economy principle of collaboration. These results are in line with [Vith et al. \(2019\)](#), who examine sharing economy practices and their effectiveness in achieving SDGs. This study reveals that, under a sharing economy, firm managers have the ability to formulate CSR practices for the environmental wellbeing of the people. This cleans the atmosphere, encourages resource abundance, and improves human capital, which are general SDGs. These results agree with [Rong et al. \(2021\)](#), who state that the benefits of a sharing economy help attain SDGs through their contribution to the achievement of CSR practices.

The results indicate that the achievement of eco-design using a sharing economy is positively related to the achievement of SDGs. In a sharing economy, firms are prepared to exchange ecologically friendly practices, clean resources, recyclable materials, and strategies to produce goods. This is why, within a sharing economy, products with ecologically friendly features can be produced. Products with eco-design don't have any negative impact on the environment, natural resources, or the health of the user. Eco-design products assure environmental protection and the wellbeing of users, which help attain SDGs. These results are supported by [Tambovceva & Titko \(2020\)](#), who show that eco-design by firms does not allow the pile-up of waste or expiring products, a sharing economy encourages eco-design by firms, and reduces greenhouse gas and other toxic chemical emissions. The SDGs concerning climate balance, the safety of life on land, and health protection for the public are achieved. These results agree with [Gazzola et al. \(2019\)](#), that in a sharing economy, the implementation of CSR practices reduces inequality promotes the education, justice, health, and social wellbeing of the community. The agenda for sustainable development contains all these goals.

Implications

The present study has both theoretical and empirical implications. The study makes a significant contribution to the theory of sustainable development. The study examines the achievement of SGM, eco-design, CSR, CGM, and IGM using a sharing economy and SDG attainment. The sharing economy is a concept which has recently become a significant subject for SDG scholars. However, these scholars pay little heed to the individual practices or achievements of sharing economies, such as SGM, eco-design, CSR, CGM, and IGM, and the impact on

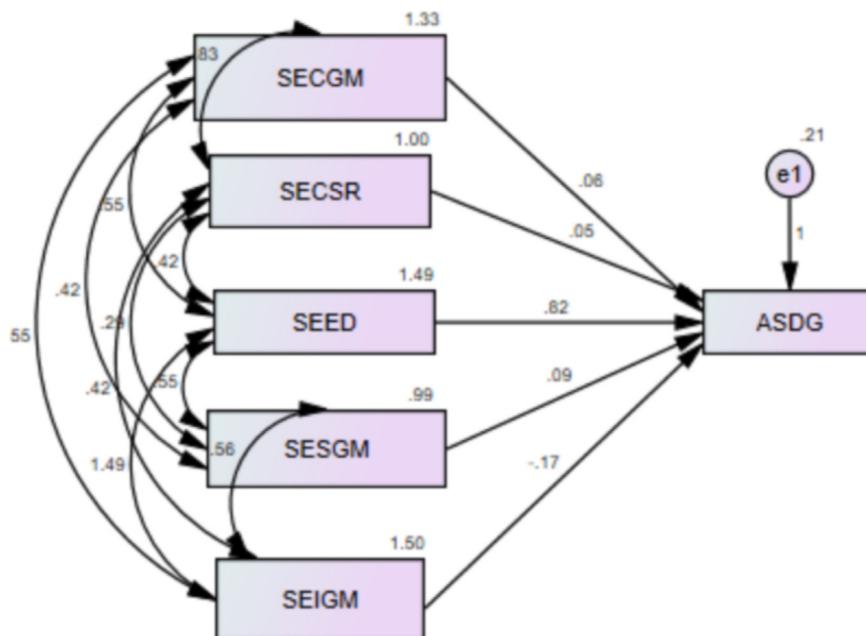


Fig. 2. Structural model assessment.

SDGs. The present study sheds light on these individual practices within a sharing economy. Previous authors do not analyse the role of sharing economies in the achievement of SGM, eco-design, CSR, CGM, and IGM in E7 countries, even though there has long been an issue of weak performance in terms of SDG achievement. This study addresses the need for a sharing economy for the achievement of SGM, eco-design, CSR, CGM, and IGM and, therefore, SDGs in E7 countries. This study has great significance for emerging economies, especially lower-middle-income countries which find it difficult to afford the high-cost energy resources needed to achieve SDGs. The present research guides policymakers formulating regulations related to SDG achievement using a sharing economy platform. One empirical implication of the study is that economists must form policies to regulate firms which ensure the undertaking of sharing economy practices such as SGM, eco-design, CSR, CGM, and IGM, so that firms can contribute to SDG achievement. Similarly, individual businesses must undertake sharing economy practices to achieve SGM, eco-design, CSR, CGM, and IGM while formulating policies to attain SDGs. The study suggests that a sharing economy, and the achievement of SGM, eco-design, CSR, CGM, and IGM, all tend to improve the environment and, thereby, the performance of firms. Hence, their execution helps achieve SDGs.

Conclusion

The E7 countries, Brazil, Russia, China, India, Mexico, Indonesia, and Turkey, are developing countries with low rates of economic progress. Though these countries are emerging, their economic progress is at risk from social issues such as injustice, lack of employment opportunities, poverty, social distress, lack of education, and so on, and environmental problems such as climate change, threats to living creatures, and weak human health. Many sustainable development plans and social reforms are being implemented, yet there is no significant change in the situation. This adverse situation restricts the sustainable development of these countries and forces the authors to present solutions. The authors examine the role of the sharing economy in the achievement of SGM, eco-design, CSR, CGM, and IGM, by applying a questionnaire method and collecting data from the manufacturing sector of E7 countries to analyse the impacts on SDGs. The results indicate a positive relationship between the achievement of SGM, eco-design, and CGM, using a sharing economy and the achievement of SDGs. In a sharing economy, firms exchange resources, services, and practices that they cannot afford alone. This develops relations with suppliers and motivates them to cooperate to meet their environmental responsibilities, leading them to ultimately address their SDGs. The results show that access to products, services, and production strategies, under a sharing economy facilitates eco-design, which helps address the environment-related SDGs. Similarly, the execution of CSR principles in a sharing economy reduces inequality and promotes education, justice, health, and social wellbeing for community members. All these objectives are included in the 2030 Agenda for Sustainable Development. Under a sharing economy, the execution of CGM practices helps reduce the negative environmental impacts of businesses and achieve the SDGs.

Limitations

There are some limitations of the present study. Future authors should pay attention to these limitations and, with some additions, remove them. The present study examines only the role of a sharing economy, with some of its green practices, in achieving SDGs. Other factors, such as green finance, green human resource management, corporate governance etc., may also be significant to SDG achievement, but the present study misses these variables which are less applicable to the economies considered. In upcoming research, these variables should be included for a more reliable and applicable study.

Moreover, this research examines only the green achievements of a sharing economy without paying attention to the social or economic achievements. This minimizes the scope of the study and requires future authors to analyse the environmental, social, and economic perspectives of a sharing economy along with their role in SDGs. This study applies a questionnaire method to collect data, which restricts the quality of the data and the reliability of the study concepts. Scholars should conduct studies on the association between the sharing economy and SDG achievement by adopting multiple data collection techniques. This study examines the influence of sharing economy practices on SDG attainment in developing countries only. Developing economies have specific geographical characteristics and social and economic conditions. A study conducted in developing countries cannot be used as an appropriate guideline for other economies, so future scholars must address the same relations in developed countries for better validity.

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