Removing barriers to a sharing economy helps attain sustainable development goals in ASEAN countries

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ARTICLE INFO

ABSTRACT

Globally, the barriers to the sharing economy are significant. They present a hurdle to attaining sustainable development goals (SDGs) and require the focus of policymakers and researchers. Hence, this article investigates the influence of removing economic, social and technical barriers on the achievement of SDGs. A supportive organizational climate is considered as a mediator, and its impact on the link between removing economic, social and technical barriers and SDG achievement in the tourism industry of ASEAN countries is examined. Adapted questionnaires are used to gather data from respondents, and Smart-PLS is applied to analyse the data. The findings show that removing economic, social and technical barriers positively influences the achievement of SDGs. The results also indicate that a supportive organizational climate positively and significantly mediates the association between removing economic, social and technical barriers, and the achievement of SDGs. The current research provides guidelines for regulators developing policies related to SDG achievement by removing the economic, social and technical barriers to the sharing economy.

Introduction

As the population increases and there is expansion in economic activities, countries face many social and environmental issues which jeopardize their future growth. However, activities for social and environmental improvement are not always enough to change their situations. When considering the benefits of sustainable development and social and environmental concerns, state authorities engage in policy formation and carry out programmes with the objective of environmental and social welfare and financial development. The 17 sustainable development goals (SDGs) presented by the UN General Assembly in 2015 constitute a plan for survival and future growth. They are a set of international guidelines to overcome the issues to which the global community is exposed. They present opportunities for peace, prosperity and human dignity over generations while preserving natural life and the planet. The sharing economy is considered to be one solution for the achievement of SDGs and this article examines the role of removing economic, social and technical barriers to the sharing economy and the achievement of SDGs.

The concept of sustainable development is highly rated in the literature, and every country and organization around the globe has some goals and has designed roadmaps to achieve these goals. There are several core factors that support these goals (Inegbedion et al., 2021; Li et al., 2021; Rojek-Adamek, 2021; Zhao et al., 2021), among them the sharing economy. Sometimes the weakness of one firm can be the strength of others, as the result of collaboration, which is the aim of a sharing economy. A sharing economy is basically the exchanging of resources to overcome weaknesses and achieve goals. The rise of sharing economy and peer-to-peer platforms offer chances to boost local economies and tourism by allowing people to rent out their homes to short-term guests or provide transportation services using their own vehicles. However, incumbent sectors face obstacles. Health issues such as COVID-19 strongly impact the entire globe (Galant & Cadez, 2017; Gil-Gomez et al., 2020; Matuszewska-Pierzynka, 2021; Tan et al., 2021). The ASEAN region has been particularly effected by this health crisis, which, due to their own negligence and a precipitous decline of tourism, has led to an estimated 64% drop in tourist arrivals by march 2020, hurting the livelihoods of millions who are dependant on tourist dollars (Beh & Lin, 2021; Polyzos et al., 2021; Sadiq et al., 2022a).

Before the crisis, ASEAN countries had a well-earned reputation for thriving tourism. Statistics show that, in 2018, 128.7 million international tourists arrived in the region, generating 121 billion euros. This led to almost 12.6% growth in the Southeast Asian economy, which opened avenues for employment for 38.1 million people, or 12.2% of employment. While the ASEAN region has varying socio-

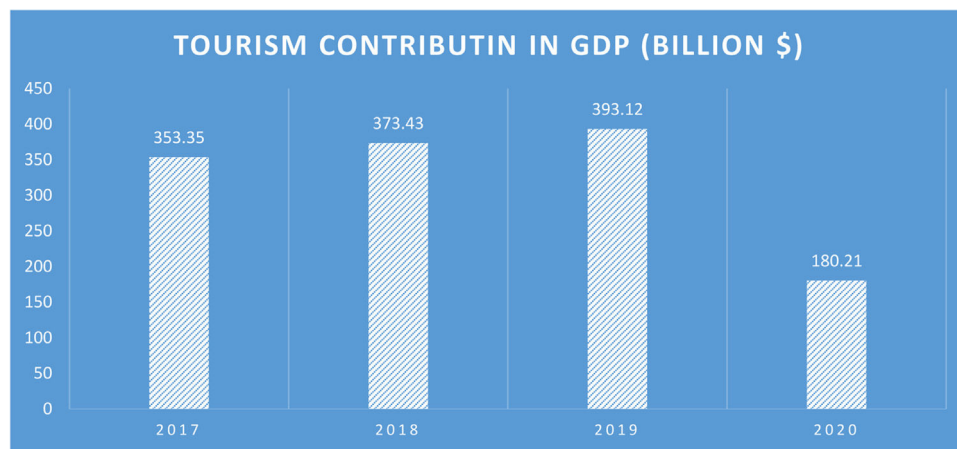E-mail address: huangshizheng@yahoo.com

Fig. 1. Tourism contribution to ASEAN GDP.

economic and political development, all the countries, to varying degrees, treat tourism as a source of income and employment. Various types of mass tourism expansion have resulted in an uneven distribution of economic gains, resource overexploitation and unregulated tourism development (Polyzos et al., 2021; Sadiq et al., 2022b; Tetrevova et al., 2021; Yousaf et al., 2021). The arrival of tourists is not distributed evenly across the area or within individual nations. Thailand and Malaysia, experienced rapid growths in international tourism, beginning in the 1960s. In recent years, the ratio of tourism in India has been growing, albeit at a slower pace, due to the wealth of biological and cultural resources in the region, and increased accessibility due to the development of low cost carriers. The development of tourism is a major target for Bali. Until recently, Philippines was not well connected by aircraft, however the growth of tourism has increased the number of choices. Cambodia, Laos and Vietnam did not open their doors to foreign tourists until the 1990s. As the example of Cambodia demonstrates, tourism growth is frequently restricted to only a few major places within a nation, with operations mostly centred on Angkor Wat/Siem Reap and the capital Phnom Penh. Tourism, rather than bridging the economic divide between city and rural areas, has the potential to exacerbate regional inequities (Huang et al., 2021a; Öztürk et al., 2019; Sirisuthikul, 2018).

In terms of ASEAN progress toward the SDGs, a recent UN report shows that none of the targets are due to be met at present rates. The ASEAN region has made progress on SDG#4 regarding education, SDG#7 regarding cheap and sustainable energy, and SDG#9 regarding industry, innovation and infrastructure. However, in the areas of decent employment and economic growth (SDG#8), climate action (SDG#13) and peace, justice and strong institutions (SDG#14), there has been a decline (Al Mamun et al., 2021; Kongbuamai et al., 2020; Sadiq et al., 2021). As stated, tourism is a key driver of the ASEAN economy, and therefore makes a significant contribution to the SDGs. The United Nations World Tourism Organization (UNWTO) has made significant efforts to demonstrate this relationship; after all, tourism is a global industry with a lot of untapped potential to help achieve SDGs (Drebee et al., 2020; Ma'ruf & Aryani, 2019; Moslehpour et al., 2022a; Wang et al., 2021). There is no doubt that tourism in the ASEAN region is directly tied to the 17 SDGs. However, with tourism coming to a total standstill during the COVID-19 crisis, the industry's ability to meet these goals is severely hampered. Tourism has become a moribund industry, particularly the international tourism which is critical to SDG success. The importance of the traveller's return increases tourism's involvement in achieving SDGs, even if it is not easy to look beyond its economic function. It is undeniable that tourism is a major source of revenue and jobs, particularly in nations with extensive cultural and natural resources. However,

demonstrating the importance of tourism for overall development and actually establishing this relationship on the ground remain challenges (Kongbuamai et al., 2020; Liu et al., 2022b; Moslehpour et al., 2022b; Nguyen & Nguyen, 2021). Given that tourism's role in the past has not always been humanitarian, with health, education and gender empowerment sometimes considered by-products of tourist activities, understanding how tourism contributes to SDGs is complex. Tourism is one of the core industries of the ASEAN region, due to its geography. The gross domestic product (GDP) of any country defines its importance, and the contribution of tourism to ASEAN GDP is given in Fig. 1.

The present study addresses some of the gaps that exist in the literature: (1) although the achievement of sustainable development in the ASEAN context has been researched a great deal, it has not reached its peak; (2) Bali Swain & Yang-Wallentin (2020)) study the strategies, predicaments and economic grounds for the achievement of SDGs whereas the present study examines the sharing economy and the achievement of SDGs using the mediator of supportive organizational climate (SOC) in the ASEAN context; (3) Zhang et al. (2018) interpret the practices of development and language barriers that prevent countries from attaining SDGs, whereas this study investigates the relationship between aspects of the sharing economy, i.e., the economic, social and technical barriers, and the achievement of SDGs using the mediator of SOC in the ASEAN context; (4) Guo et al. (2021) and Nowak (2021) investigate innovative approaches to removing social barriers to the achievement of SDGs, whereas this study evaluates multiple aspects of the sharing economy, i.e., economic, social and technical barriers and the achievement of SDGs in the ASEAN context; and (5) the model of removed economic barriers (REB), removed technical barriers (RTB), and removed social barriers (RSB), and their links to attaining sustainable goals, taking SOC as mediator, has not previously been determined in an ASEAN context.

The ASEAN economies have struggled for a long time for sustainable development and implementation of the UN SDGs. To a limited extent, these economies have made progress on the achievement of these goals, but there is much work to be done. In many areas, these economies have been successful to some extent, but many other areas have had no attention. There is a need to find new ways to achieve SDGs and the present article is an attempt to explore these ways in the maximum number of areas. The present study contributes to the literature in several ways: (1) the concept of SDGs has been researched a great deal but has not yet reached its peak; (2) it highlights the importance of settlement and achievement of SDGs in the ASEAN region; (3) it highlights the importance of a sharing economy in the context of achievement of SDGs; and (4) it helps policymakers formulate and implement better policy to achieve SDGs in organizations and countries. The study is divided into sections. In the

first, the introduction to the study is presented. In the second, the evidence for removing economic barriers, technical barriers and social barriers, SOC and attaining sustainable goals is discussed in light of past studies. The third section discusses the methodology for data collection of REB, RTB, RSB, SOC, and the attainment of sustainable goals, along with its analysis and validity. The fourth section presents the findings of the study. The last section gives the implications, conclusion and recommendations of the study.

Literature review

Our world faces huge economic barriers, which are increased by a lack of sustainable policies (Huang et al., 2021b; Lv et al., 2017; Moslehpour et al., 2021; Sharma, 2020). Therefore, the SDGs of ASEAN countries could get a positive boost by removing economic barriers. Chien et al. (2022) and Vakulchuk & Knobel (2018) examine how economic trade is influenced by non-tariff barriers in the Eurasian economic unions. There are many economic barriers that affect sustainable development and create hurdles to attaining sustainable goals. Various approaches have been taken, such as the disaggregated model among elected factors. To achieve the SDGs relating to the economy, there is a dire need to remove the economic barriers. Similarly, Clauss et al. (2021) and Dosu et al. (2021) investigate the implications of economic and social barriers for the sustainability and maintainability of the economic policies of Ghana. For the achievement of sustainable goals related to the economy, policy plays a vital role which affects trade and the performance of the economy. Regression and correlation models are applied to elected factors of the economy and sustainable development. The results reveal that removing economic barriers is one step towards achieving SDGs. In addition, Dankiewicz et al. (2020) and Nosova (2017) interpret the relationship between reform policies in the economy and businesses, and the capital market of Kuwait. The empowerment of economic policies tends to be important for attaining business and economic growth. Therefore, economic barriers are the main factors that need to be eliminated, as interpreted by statistical tools and strategic policies. Removing economic barriers helps shape the economy and attain SDGs. Organizations and firms plan strategies to achieve their SDGs. Bali Swain & Yang-Wallentin (2020)) assess strategies and predicaments on economic grounds. Many of the barriers are framed by world economies for this purpose, and many policies are designed that state the robustness of grounds for development. The underlying pillars of the economy are analysed, and the environmental, social and economic conditions are assessed through structural equation modelling techniques. The findings indicate that developing countries could benefit from eliminating or restraining the prevailing barriers in their economies.

H1: REB significantly influences the attainment of sustainable development goals.

Among the many barriers in the developing world, technical barriers are the most numerous (Ferreira & Teixeira, 2019; Liu et al., 2021; Saunila, 2020; Cheba et al., 2020; Wei et al., 2021). Zhang et al. (2020) explore technical diffusion and spillover of knowledge among spatial economic interactions worldwide. There is a dire need for technical assistance for any economy to be boosted. Therefore, the technical barriers to the SDGs must be removed. Various statistical models are used to ascertain the relationships and impacts of elected factors. The study concludes that the effective removal of technical barriers significantly helps the attainment of SDGs. Dimian et al. (2021), Meloncon (2017) and Chien et al. (2021b) analyse the relationship between professional communication, professional development, writing instructions and contingent faculty, all noted barriers to development. Countries face many technical barriers and hurdles to SDGs that are assessed using regression and factor analysis. In order to achieve economic SDGs, there is a need to remove technical barriers. Khan et al. (2017) emphasize the role of women in training, vocational education and technical aspects in the Gulf States which are most disrupted due to technical barriers. A number of economic and technical reforms provide diversified knowledge that helps in sustainable development. Numerous statistical techniques are applied using macroeconomic and other technical factors. The results indicate that streamlining technical barriers could play a dominant role in attaining SDGs. Al Mamun et al. (2021) and Hennebry et al. (2019) assess the SDGs relating to migrant women workers who face many problems due to unresolved technical barriers. Women are considered integral to sustainable development and contribute much technical support which uplifts the economy. Therefore, the corresponding elected factors are examined using statistical approaches such as regression and correlation. The findings reveal a need to remove technical barriers to achieve SDGs.

H2: RTB significantly influences the attainment of sustainable development goals.

Social distancing and other social barriers are dominant hurdles to the SDGs of ASEAN countries. Huang et al. (2021c) and Zhang et al. (2018) interpret the practices of development and language barriers that disrupt countries' efforts to attain SDGs. Social policies play a vital role in removing these communication and cultural barriers. Statistical tools play an important role in understanding the relationships among the macroeconomic and social aspects. SDGs should be taken into consideration after removing the social barriers. Townsend et al. (2021) and Lydeka & Karaliūtė (2021) analyse the facilitators of and barriers to social participation that disrupt the attainment of SGDs. Systematic social participation helps countries boost their economies by facilitating social barrier elimination. The corresponding elements are examined using linear regression and other statistical tools to identify the social barriers. The studies find that a friendly social environment has the best potential for achieving SDGs. There are multiple barriers faced by firms during their journey to achieving SDGs. Pelucha et al., (2017) and Mantikei et al. (2020) emphasize the social development and entrepreneurship barriers that create hurdles for sustainable development in the Czech Republic. Social development is the main tool for any economy to rise in international and local markets. Focusing on the removal of social barriers, various associated factors are analysed using statistical and strategic techniques. The results indicate that significant social support and removal of social barriers could help in sustainable development. Accordingly, Guo et al. (2021) and Mazur & Duchlinski (2020) investigate the innovative approaches to removing the social barriers to achieving SDGs. The massive presence of indifferent cultures and social activities creates a problem for countries striving for sustainable development. The corresponding factors of social barriers and sustainable development are assessed using econometric and statistical techniques. Significant effort must be made to remove the social barriers that impact the SDGs.

H3: RSB significantly influences the attainment of sustainable development goals.

In removing the barriers to the SDGs of ASEAN countries, SOC plays a vital role (Lan et al., 2022; Świadek & Gorączkowska, 2020). Mahmood et al. (2021) and Phua (2018) analyse the relationship between SDGs and economic barriers along with the role of SOC. The growing interest in sustainable development has considerably increased the idea that it is mediated by SOC. Strong linear regression and other statistical tools are applied to the roles of and relationships between elected factors. The finding indicate that SOC plays a significant mediating role explaining the impact of economic barriers on sustainable development. Voth Schrag et al. (2019) assess the

relationship between mental health, economic hardship, economic abuse and SDGs. To remove any country's economic barriers, the role of SOC cannot be omitted. The relationships between and impacts of the elected factors are assessed using mediation analysis, regression analysis and bivariate correlation. The study indicates that the significant mediating effect of SOC is clear between sustainable development and economic barriers. The achievement of SDGs relies on the impact of social factors such as genderism. Gammage & Stevanovic (2019) and Liu et al. (2022a) explore the relationship between care deficit, migration, gender deficit and sustainable development. These factors are known to be economic barriers to sustainable development, and removing them is important, along with a positive role of SOC. Using the homogenous approaches of economy, SOC successfully mediates economic barriers and SDGs. Chien et al. (2021a) and Hatjidis et al. (2019) examine the relationship between change readiness, quality perception, organizational climate and tacit knowledge. The main factor of removing economic barriers plays a vital part in sustainable development, with the assistance and mediation of SOC. Various factors are taken into consideration to assess the relationship, which are interpreted using mediation analysis and regression analysis. The study shows the positive implications of SOC in removing the economic barriers to SDGs.

H4: SOC significantly mediates the relationship between REB and attaining sustainable development goals.

The cultures and the climates of organizations play a vital role in SDGs. In this context, He et al. (2021) and Kim & Park (2020) investigate the relationship between learning, organizational climate, knowledge sharing, and transformational leadership. This relationship reveals the mediating role of SOC which helps in removing technical barriers to SDGs. The corresponding elements of the elected variables are assessed using correlation and descriptive statistics. The findings indicate that removing technical barriers could enhance SDGs through the mediating effects of SOC. Khayatzadeh-Mahani et al. (2020) and Kikulwe & Asindu (2020) examine the relationship between solutions and barriers to the up-gradation of SDGs. These SDGs are directly associated with improving employment for disabled people who are technically professional. The factors associated with the barriers, and a goal with mediating effects, are analysed using Delphi and group techniques of statistics. The findings reveal that removing technical barriers in a country can promote the attainment of SDGs, along with the mediating effects of the organizational climate. Ingutia (2020) and Kamarudin et al. (2021) assess various aspects of the technical barriers that could influence SDGs. These technical barriers are mostly related to the marginalization of education and lack of interest in giving employment to the technical people of a country. Descriptive statistical analysis is performed using the corresponding elements of technical barriers and sustainable development. The results show that inefficiency in sustainable development could be due to unresolved technical barriers that require the mediation of SOC. Human factors play a vital role in the achievement of SDGs. The skills and talent of the country's youth are key factors in the achievement of SDGs. In this context, Flores & Chang (2020), Hussain et al. (2021) and King (2017) analyse the talent system in countries and organizations while considering supportive sustainable development perspectives. Most of the technical barriers in any country exist due to a lack of talent discernible by employees and a lack of priorities in technical education. Many factors are taken into consideration in the relationship between them, applying strong statistical techniques. The studies find that SOC has a strong mediating role in removing the technical barriers to SDGs.

H5: SOC significantly mediates the relationship between RTB and attaining sustainable development goals.

Organizational climate somewhat impacts SDGs in this context, and Chen et al. (2020) report that the effects of organizational climate and supportive behaviours of families enable the removing of social barriers. By removing social barriers, SDGs attain a considerable advantage. For this purpose, many factors are considered, including the corresponding elements assessed using correlation and regression analysis. The study reveals that SOC is dominant in removing social barriers to SDGs. The removal of social barriers is vital to attaining SDGs. Societal factors can be removed by supporting partnership between the firms. Koloba (2020) and Williams et al. (2018) investigate the fruitful partnership between SOC and social practices that help disable social barriers. There are many social barriers that negatively impact economic conditions internationally. Therefore, attaining SDGs while removing social barriers is assessed using statistical methods. The impact of removing social barriers is considerable upon SDGs, with a mediating effect of SOC. Degai & Petrov (2021) and Dlalisa & Govender (2020) explore the agenda for attaining SDGs while removing social barriers worldwide. Many countries have established policies for strengthening social feasibility. Therefore, upon the removal of social barriers, many corresponding factors are assessed using econometric and statistical techniques. The findings show that the engagement of the social climate is beneficial for SDGs and there is a mediating role for SOC. Moreover, Hayat & Afshari (2021) state that people working in most organizations face challenges of gender, culture and other discrimination. Therefore, the well-being of employees must not be omitted, and the need to remove social barriers is compulsory. Various factors related to social barriers are analysed using structural equation modelling techniques. The findings reveal that a SOC strongly mediates between removing social barriers and achieving SDGs.

H6: SOC significantly mediates the relationship between RSB and attaining sustainable development goals.

Research methods

This study examines the impact of the sharing economy in removing the economic, social and technical barriers to achieving SDGs, and the mediating role of SOC in the association between the sharing economy characteristic of removing barriers and the achievement of SDGs in the tourism industry in ASEAN countries. The study uses questionnaires to collect primary data from selected respondents. The questionnaires consist of five REB items: REB1 "sharing economy means you can get the expected financial results soon after implementation"; REB2 "sharing economy causes reduction in some capital costs"; REB3 "sharing economy reduces the time and cost consuming process"; REB4 "business organizations get some financial support from a sharing economy"; and REB5 "the sharing economy provides economic help to the organizations involved in this process". These items are adapted from Govindan et al. (2020).

The questionnaire has eight RTB items: RTB1 "if two industries are planning to connect in a sharing economy grid, they need to identify a solid technology to stay connected and get help from each other"; RTB2 "the sharing economy provides experts who can assist and tackle the inherent problems that generally exist in organizations"; RTB3 "in a sharing economy, organizations share the technology and other sources that help both organizations"; RTB4 "sharing economy is an effective business model that provides facilities to all organizations involved in the sharing process"; RTB5 "there are interactive platforms provided by the sharing economy process for industrial partners to engage, communicate, and orient on sharing their resources with reliability"; RTB6 "sharing economy increases all organizations' trust and reputation under the process"; RTB7 "implementing a sharing economy is a process of several value chain actors, and huge resources are involved that provide benefits to all the associated

firms"; and RTB8 "sharing economy provides access to organizations' previous records and their values and trust on the business chain". These items are taken from Govindan et al. (2020).

The questionnaire includes five RSB items: RSB1 "sharing economy changes the concept of lack of willingness to change to the new system"; RSB2 "sharing economy reduces the barriers of proper communication channels and designs specific communication platforms for sharing economy transactions"; RSB3 "sharing economy creates a certain level of awareness among organizations regarding the shared resources and benefits"; RSB4 "sharing economy provides a platform that reduces differentiation in goals and opinions, unlike service sectors"; and RSB5 "sharing economy reduces the communication barriers to compete in the market". These items are extracted from Govindan et al. (2020).

The questionnaire has eight SOC items: SOC1 "our company often encourages employees to propose new ideas"; SOC2 "employees in our company have been praised for their innovation behaviour"; SOC3 "employees in our company challenge each other's ideas through positive thinking"; SOC4 "superiors in our company expect that their staff can work in a more creative way"; SOC5 "our company offers a sufficient budget to support the development of an innovative project". SOC6 "it is acceptable in our company for a staff member to fail to achieve the expected outcome while carrying out an innovative learning plan"; SOC7 "superiors in our company value the contribution made by each member of their staff"; and SOC8 "the staff in our company can freely exchange ideas". These items are adapted from Balozi (2017).

The questionnaires also has 17 SDG items: ASDG1 "my organization takes part in poverty reduction"; ASDG2 "my organization plays a significant role in hunger-reduction"; ASDG3 "my organization is working for healthcare 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 of 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 taken from Zamora-Polo et al. (2019).

Employees in the tourism industry related to sharing economy activities were selected as respondents, using purposive sampling. The surveys were sent to selected employees using mail and personal visits. A total of 510 surveys were sent, and 290 responses were received, a 56.86% response rate. The research used Smart-PLS to test the validity and reliability of the items and constructs and the associations among the variables. This statistical tool effectively estimates complex frameworks and large sample sizes (Hair Jr et al., 2021). The study has three independent variables: REB, RSB, and RTB, and takes SOC as a mediating variable and achievement of SDGs as the dependent variable.

Research findings

The research tests the convergent validity of the correlation between items using composite reliability (CR), Cronbach's alpha, average variance extracted (AVE), and factor loadings. As shown in Table 1, the CR and alpha statistics are higher than 0.70, which verifies the convergent validity and shows a high correlation between items.

Table 1
Convergent validity.

Item	Loading	Alpha	CR	AVE
ASDG1	0.470	0.872	0.907	0.662
ASDG10	0.685			
ASDG12	0.657			
ASDG13	0.658			
ASDG14	0.626			
ASDG15	0.671			
ASDG16	0.647			
ASDG17	0.717			
ASDG2	0.484			
ASDG3	0.677			
ASDG4	0.848			
ASDG5	0.768			
ASDG6	0.849			
ASDG7	0.845			
ASDG8	0.765			
ASDG9	0.845			
REB1	0.800	0.851	0.885	0.609
REB2	0.842			
REB3	0.794			
REB4	0.767			
REB5	0.860			
RSB1	0.818	0.941	0.951	0.710
RSB2	0.726			
RSB3	0.881			
RSB4	0.708			
RSB5	0.755			
RTB1	0.833	0.935	0.941	0.504
RTB2	0.862			
RTB3	0.849			
RTB4	0.820			
RTB5	0.873			
RTB6	0.866			
RTB7	0.849			
RTB8	0.786			
SOC1	0.923	0.978	0.981	0.865
SOC2	0.943			
SOC3	0.931			
SOC4	0.933			
SOC5	0.940			
SOC6	0.922			
SOC7	0.930			
SOC8	0.921			

Source: author's estimations.

The research tests the discriminant validity of the correlation between variables using the Fornell-Larcker criterion, cross-loadings, and heterotrait monotrait (HTMT) ratio. The outcomes show that the association with the variable itself is stronger than with other constructs (Table 2). These findings verify the discriminant validity and show a low correlation between variables.

The cross-loadings (Table 3) show that the association with the variable itself is stronger than with other constructs. These findings verify the discriminant validity and show a low correlation between variables.

Table 4 shows the results of the HTMT ratio. All values are lower than 0.90, which verifies the discriminant validity and shows a low correlation between variables.

The results of the direct path, shown in Table 5, reveal that the sharing the economy characteristic of removing economic and technical barriers has a positive nexus with the achievement of SDGs; thus H1 and H2 are accepted. In contrast, the sharing the economy characteristic of removing social barriers has an insignificant nexus with SDG achievement; thus H3 is rejected.

The findings related to the indirect path (Table 6) indicate that SOC significantly mediates the association of the sharing economy characteristics of removing economic, social and technical barriers to the achievement of SDGs for the tourism industry in ASEAN countries. Therefore, H4, H5 and H6 are accepted.

Table 2
Fornell-Larcker.

	ASDG	REB	RSB	RTB	SOC
ASDG	0.710				
REB	0.766	0.813			
RSB	0.039	0.035	0.780		
RTB	0.469	0.447	−0.109	0.843	
SOC	0.557	0.456	−0.134	0.434	0.930

Source: author's estimations.

Table 3
Cross-loadings.

	ASDG	REB	RSB	RTB	SOC
ASDG1	**0.470**	0.278	−0.086	0.204	0.358
ASDG10	**0.685**	0.389	−0.083	0.356	0.344
ASDG12	**0.657**	0.410	−0.131	0.333	0.403
ASDG13	**0.658**	0.336	−0.027	0.308	0.306
ASDG14	**0.626**	0.356	−0.103	0.359	0.322
ASDG15	**0.671**	0.390	−0.138	0.354	0.332
ASDG16	**0.647**	0.329	−0.099	0.318	0.307
ASDG17	**0.717**	0.432	−0.040	0.337	0.398
ASDG2	**0.484**	0.240	−0.116	0.237	0.337
ASDG3	**0.677**	0.446	−0.115	0.364	0.429
ASDG4	**0.848**	0.757	0.029	0.347	0.459
ASDG5	**0.768**	0.711	0.040	0.392	0.442
ASDG6	**0.849**	0.746	0.028	0.349	0.463
ASDG7	**0.845**	0.762	0.025	0.350	0.462
ASDG8	**0.765**	0.709	0.045	0.395	0.444
ASDG9	**0.845**	0.751	0.029	0.347	0.458
REB1	0.634	**0.800**	−0.071	0.349	0.386
REB2	0.578	**0.842**	−0.032	0.359	0.324
REB3	0.703	**0.794**	0.013	0.367	0.451
REB4	0.524	**0.767**	−0.053	0.348	0.316
REB5	0.643	**0.860**	−0.008	0.393	0.351
RSB1	−0.027	−0.034	**0.818**	−0.073	−0.097
RSB2	−0.015	0.008	**0.726**	−0.075	−0.075
RSB3	−0.072	−0.070	**0.881**	−0.126	−0.158
RSB4	0.046	0.036	**0.708**	−0.048	−0.070
RSB5	−0.007	0.001	**0.755**	−0.047	−0.050
RTB1	0.362	0.325	−0.089	**0.833**	0.351
RTB2	0.396	0.387	−0.106	**0.862**	0.354
RTB3	0.364	0.362	−0.112	**0.849**	0.346
RTB4	0.381	0.393	−0.058	**0.820**	0.379
RTB5	0.384	0.394	−0.096	**0.873**	0.369
RTB6	0.425	0.407	−0.102	**0.866**	0.376
RTB7	0.454	0.398	−0.094	**0.849**	0.392
RTB8	0.381	0.340	−0.076	**0.786**	0.352
SOC1	0.510	0.423	−0.151	0.406	**0.923**
SOC2	0.514	0.430	−0.123	0.421	**0.943**
SOC3	0.498	0.436	−0.123	0.432	**0.931**
SOC4	0.519	0.436	−0.144	0.400	**0.933**
SOC5	0.519	0.425	−0.120	0.419	**0.940**
SOC6	0.535	0.407	−0.096	0.377	**0.922**
SOC7	0.516	0.429	−0.143	0.399	**0.930**
SOC8	0.532	0.406	−0.098	0.376	**0.921**

Source: author's estimations.

Discussion

The results indicate that removing economic barriers, as a result of a sharing economy, has a positive link with attaining SDGs. The ASEAN economies face a lack of financial resources, and have a smaller number of other economic resources, weak financial management, and lower incomes rates. These economic barriers are removed with the help of a sharing economy and the SDGs covering economic areas can be achieved. These results are in line with Govindan et al. (2020), who reveals that all 17 SDGs proposed by the 2030 agenda need financial resources to be achieved. In the countries where a sharing economy is implemented to its full potential, the interested parties enjoy many economic benefits as the sharing economy saves the costs of goods and services. The resultant resources can be used

Table 4
Heterotrait monotrait ratio.

	ASDG	REB	RSB	RTB	SOC
ASDG					
REB	0.774				
RSB	0.118	0.068			
RTB	0.499	0.491	0.105		
SOC	0.576	0.487	0.125	0.452	

Source: author's estimations.

Table 5
Direct path.

Relationship	Beta	SD	T Statistic	P Value	LL	UL
REB -> ASDG	0.617	0.043	14.339	0.000	0.539	0.679
REB -> SOC	0.329	0.062	5.266	0.000	0.200	0.413
RSB -> ASDG	0.025	0.040	0.632	0.264	−0.048	0.082
RSB -> SOC	0.092	0.055	1.669	0.049	0.179	1.009
RTB -> ASDG	0.092	0.045	2.042	0.022	0.026	0.168
RTB -> SOC	0.277	0.071	3.900	0.000	0.180	0.415
SOC -> ASDG	0.239	0.064	3.728	0.000	0.136	0.352

Source: author's estimations.

Table 6
Indirect path.

Relationship	Beta	SD	T Statistic	P Value	LL	UL
REB -> SOC -> ASDG	0.078	0.027	2.925	0.002	0.035	0.126
RSB -> SOC -> ASDG	0.122	0.055	2.218	0.022	0.049	1.003
RTB -> SOC -> ASDG	0.066	0.025	2.667	0.004	0.037	0.108

Source: author's estimations.

to better the lives of human beings living in the country. Thus, the sharing economy removes economic barriers to SDG achievement and sustains economic growth. These results are supported by Ainou ett al. (2022) and Lyaskovskaya & Khudyakova (2021), who show that under the facility of a sharing economy, industrial or services enterprises can have access to the instruments needed for the production of goods and services and logistics for the transfer of goods and services without bearing the overall costs. This increases economic activity, improves employment opportunities and income levels, and reduces the poverty level, promoting the achievement of the SDGs related to production, economic progress, poverty and hunger.

The results indicate that removing technical barriers due to the sharing economy has a positive link with attaining SDGs. In many ASEAN economies there is lack of technological advancement, and where a number of technological instruments have been introduced many individuals and firms fail to adopt these technologies. Therefore, it is difficult to implement innovation, industry, economic development, high living standards, and many other SDGs. A sharing economy, by providing access to technologies and technical tools, removes technical barriers, making it easier to achieve SDGs. These results are in agreement with Melián-González et al. (2019), who find technological barriers to SDG achievement which can be removed through a sharing economy. In a sharing economy, technology is not used by a single hand at a specific time and later kept idle, but is rented out to other parties. The efficient use of and easy access to technology increases reformation, developmental, productive and innovative activities in social and economic enterprises. These activities contribute to SDG achievement. These results corroborate those of Revinova et al. (2020), who argue for the removal of technological barriers to SDG attainment through the sharing economy. The increase in personal vehicles for driving or transportation of luggage increases the use of energy, causing greenhouse gas emissions. The resultant climate change could be destroying ecosystems. Under a

sharing economy, the use of vehicles is discouraged, and this contributes to the achievement of SDGs relating to climate change, human health and safety, and the protection of living creatures.

The results reveal that removing social barriers as a result of a sharing economy has an insignificant link to attaining SDGs. In many ASEAN economies, individuals and organizations have weak social relations to stakeholders and lack social development and prosperity. As many of the SDGs are based on societal development, social prosperity and strength of connections, the removal of social barriers by a sharing economy helps achieve SDGs. These results correspond with Asian et al. (2019), who state that several of the SDGs declared by the UN General Assembly have social criteria. As there may be many social barriers in ASEAN countries, it becomes difficult for them to attain SDGs. A sharing economy does not always develop social bonds among individuals, organizations, or between individuals and organizations. It does not necessarily create equality, justice, social wellbeing or partnership, which are part of the SDGs. These results are supported by Heinrich et al. (2020) and Olabi et al. (2022), who find that a sharing economy gives access to goods and services with limited financial resources, but does not promote social welfare activities such as bonding among the regions. Sharing transportation and access to infrastructure improves the conditions of social buildings, and gives control over pollution with minimal use of energy resources. Hence, removing social barriers is difficult through a sharing economy and does not help attain SDGs.

The results show SOC to be a mediator between REB due to a sharing economy and attaining SDGs. In ASEAN economies, many business organizations lack supportive environments, and the main reason is a lack of economic prosperity. When organizations overcome their economic problems through a sharing economy and enhance their capacity to spend on employees, they can create supportive environments helpful to achieving SDGs. Jabbour et al. (2020) suggest that, when an organization applies a sharing economy among its departments for the use of resources or technologies, efficient use of resources brings economic benefits with fewer costs and greater resultant profits. To encourage employees in their performance, organizational management, through effective initiatives and leadership, builds a supportive climate. In a supportive climate, all workers work cooperatively and implement environmentally-friendly projects effectively. Gössling & Michael Hall (2019) report that efficient utilization of resources through sharing processes and technology saves resources and reduces expenditure, providing economic benefits to the organization and motivating it to adopt a supportive behaviour to encourage efficiency. This supportive behaviour could be useful to reduce inequality, create innovation and improve production quality. Thus, it helps achieve the SDGs related to gender equality, equal income distribution, economic growth, innovation and responsible production.

The findings show that SOC is a mediator between the RTB resulting from a sharing economy and attaining SDGs. In ASEAN economies, many business organizations still face technical problems and there is a lack of support from organizations to their employees. When these technical issues are removed, the organizations become active in providing social and economic support to their employees, increasing their living standards and improving their efficiency, adding to SDG achievement. Karobliene & Pilinkiene (2021) find that the sharing economy can bring sustainability to firms' economic development through energy efficiency and the appropriate use of technologies and technological changes. This creates a soft corner in organizational management and a supportive environment within the organization. This supportive environment contributes to the achievement of goals set for sustainable development. Chen et al. (2020) reveal that, in the sharing economy, organizational management and leadership adopt supportive behaviour towards employees with the purpose of sharing production and operational technologies or technical instruments efficiently with one another through proper division of timing and pieces of work. The supportive behaviour of the organization toward the employees motivates them to use technological instruments and other resources optimally. A SOC improves the economic and health benefits to employees and helps them perform effectively, saving resources which are useful for achieving SDGs.

The results show that SOC is a mediator between the RSB as a result of sharing economy and attaining SDGs. In ASEAN economies, many business organizations face social issues such as a lack of effective relations and weak communication networks which destroy organizational support. By removing social barriers through encouraging a sharing economy, organizations can provide supportive behaviour to employees. When employees have high levels of support from organizations, they cooperate to achieve SDGs. Scavarda et al. (2020) posit that a sharing economy within organizations builds an effective communication network, sharing ideas and cooperative behaviour creates SOC. Many of the SDGs linked to the performance of an economic enterprise are positively affected by the creation of SOC. Hence, SOC mediates between RSB as a consequence of a sharing economy and the attaining of SDGs. These results are in line with van Niekerk (2020), who indicates that an organizational climate where management and leaders show supportive behaviour towards stakeholders is more likely to be created if the social barriers to SDGs are removed by a sharing economy. Through this process, it becomes possible to achieve SDGs.

Theoretical and empirical implications

The current study has both theoretical and empirical implications. The study has great theoretical significance on account of the contribution to the literature. It addresses the role of a sharing economy in removing barriers to SDGs. This study examines the role of a sharing economy in removing three types of barriers to SDGs, economic barriers, technological barriers and social barriers, and their impact on the attainment of SDGs. The sharing economy is a novel economic concept that is a favourite of many researchers, and many authors present their views on the sharing economy's contribution to SDGs. Nonetheless, very few studies analyse individual sharing economies removing individual barriers to SDGs. The present study examines the benefits of the sharing economy such as removing economic, technological and social barriers and their role in achieving SDGs. This study is an addition to the literature as it, for the first time, examines the mediating role of SOC between the benefits of a sharing economy such as REB, RTB and RSB, and attaining SDGs.

The study has empirical significance in almost all countries, as each requires highly sustainable development to survive and compete with other economies on an international platform. Considering the need for sustainable development, the UN General Assembly proposed a set of 17 SDGs in its 2030 agenda. These SDGs are interconnected and based on social, economic and environmental wellbeing, but there may be some economic, technological and social barriers to SDGs. The study provides the information for governments and economists, who must focus on implementing sharing economies through effective policies in order to attain SDGs. This study suggests that the economic, technological and social barriers to SDGs can be removed through a sharing economy, and thus, the way to attain SDGs is clear. The study provides guidelines for the benefits of a sharing economy such as REB, RTB and RSB, which create SOC, making it more likely that the benefits of a sharing economy such as REB, RTB and RSB can help attain SDGs.

Conclusions and limitations

The ASEAN countries are developing economies, but an exponential increase in economic activities threatens the countries' development in upcoming years. Although the SDGs have been proposed by

the UN General Assembly in the 2030 agenda, the process of implementing them is slow because of various barriers. The aim of the current study is to examine the benefits of a sharing economy such as REB, RTB and RSB, and the impacts on attaining SDGs. The study's objective is to examine the relationship of SOC to the benefits of a sharing economy such as REB, RTB and RSB, and attaining SDGs. Through a quantitative survey of the manufacturing sector of ASEAN economies, the authors analyse SOC, the benefits of a sharing economy such as REB, RTB and RSB, and the achievement of SDGs. The results show that in a sharing economy, when resources or technologies are shared when performing tasks, or with outsiders, both the owners and the people who access the resources see economic benefits. In a country, the economic barriers to sustainable development can be removed by encouraging a sharing economy. Hence, a large number of SDGs can be attained. The results indicate that the sharing economy, on the one hand, encourages the sharing of technologies useful for performing tasks associated with constructive, developmental and productive programmes, while, on the other hand, reducing the overall use of technologies that cause pollution in the environment and removing technological barriers to SDGs. The results indicate that in a sharing economy, the social barriers to SDGs are removed though cooperation and collaboration among individuals, organizations, or between individuals and organizations, and with the encouragement of social welfare activities. This enables countries to achieve SDGs. The study concludes that the benefits of a sharing economy, such as REB, RTB and RSB, create SOC that leads to achieving SDGs.

The current study has great theoretical significance, but has several limitations, which it is hoped can be removed in future studies. Firstly, the study examines only the benefits of the sharing economy, REB, RTB and RSB to attain SDGs. The most important factors, environmental concerns, are ignored. Future researchers must explore the removal of environmental concerns through the sharing economy and its role in attaining SDGs. The current study takes data from the ASEAN countries, most of which are fast developing countries that can enforce sharing economies and achieve maximum SDGs. The study may not have equal validity in other countries. Future studies must choose diverse regions across the world for subject analysis.

Acknowledgement

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