Technological and Economic Development of Economy
ISSN: 2029-4913 / eISSN: 2029-4921
2023 Volume 29 Issue 6: 1587–1610
https://doi.org/10.3846/tede.2023.19452

THE IMPACT OF ECONOMIC AND NON-ECONOMIC DETERMINANTS ON CIRCULAR ECONOMY IN VIETNAM: A PERSPECTIVE OF SUSTAINABLE SUPPLY CHAIN MANAGEMENT

Ka Yin CHAU[1], Manh Pham HONG[2], Chen-Hsien LIN[3,4], Thanh Quang NGO[5,6], Thi Thu Hien PHAN[7*], Pham Quang HUY[8]

[1]*Faculty of Business City University of Macau, Room 418, 4th Floor, Luso Chineses Building, Avenida Padre Tomas Pereira, Taipa, Macau*
[2]*Faculty of Economics, Nha Trang University, 02 Nguyen Dinh Chieu St., Nha Trang, Khanh Hoa Province, 650000, Vietnam*
[3]*Department of Business Management, National Taichung University of Science and Technology, No.129, Sec.3, Sanmin Rd, North Dist.,Taichung City 404, Taiwan R.O.C.*
[4]*Department of Hotel & M.I.C.E. Management, Overseas Chinese University, 100, Chiao Kwang Rd. Taichung 40721, Taiwan R.O.C.*
[5]*School of Government, University of Economics Ho Chi Minh City (UEH), Ho Chi Minh City 72407, Vietnam*
[6]*Research Group Public Governance and Developmental Issues, University of Economics Ho Chi Minh City (UEH), Ho Chi Minh City 72407, Vietnam*
[7]*Faculty of Accounting & Auditing, Foreign Trade University, Hanoi, Vietnam*
[8]*University of Economics Ho Chi Minh City (UEH), Ho Chi Minh, Vietnam*

Received 24 January 2023; accepted 11 June 2023

Abstract. The projections of UN indicate that by the year 2030, natural resource demand will become threefold as of today. This for sure surpasses existing capacity due to which many countries are facing depletion issue or might face depletion issue in coming years. Realizing this challenge, economies all over the globe are shifting towards circular economy development in order to address the environmental sustainability issue. In Vietnam, economic activities are normally based on the principle of linear economy. However, this traditional approach not only creates shortage of natural resources but also becomes the reason of environmental destruction. Thus, the study is an attempt to find out the harmonious relationship of economic and non-economic determinants with circular economy in the presence of sustainable supply chain management as a moderator. By employing structural equation modelling, findings indicate that circular economy is the right direction as it ensures job security and bring quality education and political stability. Results also confirm that sustainable supply chain management increases the strength of positive relationship of said variables. In the light of the evidences, the paper proposes few suggestions and implications to promote the development of circular economy so that economic growth and environmental quality can be achieved at the same time.

Keywords: economic and non-economic determinants, job security, quality education, political stability, circular economy, sustainable supply chain management.

JEL Classification: P36, H53, I125, F63, P19.

*Corresponding author. E-mail: *thithuhienphant@gmail.com*

Introduction

The world population continues to increase rapidly. It increases the demand for resources to be used as raw materials and supportive resources in business operations. But the supplies are getting decreased. Moreover, the increased economic practices cause a large number of waste emissions and different types of pollution (Grafström & Aasma, 2021; Hussain et al., 2022). The waste emission and pollution degrade the environment and natural resources quality. These natural resources are limited in number, and the damaged environment would not be satisfactory for maintaining the health of living beings and consistency in economic growth. In order to mitigate all these problems and sustain the country's development, a business concept, circular economy, has been introduced whose objective is to ensure that the economy will run on reusable material, resources, or products leaning no pollution or waste (Mies & Gold, 2021; Yousuf et al., 2021). Circular economy is comparatively a novel concept; however, it ensures the long-run growth towards sustainability. It also validates resource optimization, less raw material consumption. Moreover, it also offers waste recovery in the form of recycling. Thereby, the prime agenda of circular economy is to enhance the material resources usage at disposal. Circular economy concept works in to three fundamental principle such as reduce, reuse and recycle. The approach is effective as it focuses on waste utilization and stretches the life cycle of product, hence, offers sustainable model (Cera et al., 2022; Morseletto, 2020).

The concept is stimulated by nature; hence, it targets trashes or waste and works on their transformation in order to make them usable. This way, the concept can create balance between development and sustainability. The implementation of said concept is influenced by many economic and non-economic factors like job security, quality education, and political stability. Job security is the surety on the part of the employers to the employees that they will keep their jobs without any breaks or hurdles. Job security frees the employees from financial distress, and psychological well-being develops work devotion, motivation, and efficiency. So, the employees can wholeheartedly and effectively implement circular economy practices (Niaz, 2022; Velenturf & Purnell, 2021). Different educational institutions and business organizations themselves develop the intimacy of the individuals with the circular economy, its essence, needs, principles, and objectives through quality education. The improved quality of education enables us to overcome the hurdles and implement a circular economy at a progressive rate (Hartley et al., 2020; Marin-Garcia et al., 2022). Political stability is the stable structure of government with less frequent collapse. In a politically stable country, the patterns of consumption and production can be designed and implemented according to the circular economy principles: reduction of wastes, minimizing pollution, reuse and recycling of resources and products and maintaining nature's productivity (Kristensen & Mosgaard, 2020; Matuszewska-Pierzynka, 2021).

The current study aims to check the progress of the transition to a circular economy in Vietnam. The linear economy that underpins Vietnam's economic operations entails following the conventional "take-make-dispose" model. In this approach, the production process maximizes the use of gathered raw materials, finally leading to the disposal of unsuitable items (Chowdhury et al., 2022; Dat et al., 2022). Due to its irrational consumption, this

frequently results in substantial quantities of undesired and occasionally hazardous landfill waste emissions. It also adds to the scarcity of resources. Currently, nearly 85% of the waste produced in Vietnam is buried in landfills without being treated, which has severe negative consequences on the ecosystem. Well, the country has been shifting towards a circular economy over time. The "make-use-recycle" paradigm, which motivates waste reduction and less resource extraction is the foundation of the circular economy's three-pillar structure (Tri, 2021; Yodchai et al., 2022). In order to become more competitive economically, Vietnam is transitioning from a traditional economy to a circular economy. The government has released Decision 687 on the development of the circular economy, which was preceded by the revision of the Environmental Protection Law (LEP). This economic reformation has vital significance to businesses and investors in Vietnam (Nam & Hanh, 2019; Streimikiene & Akberdina, 2021).

Vietnam is making rapid progress at the economic growth rate. But its environment and resources are in danger in a linear economy. The resources are continuously being utilized for business purposes. At last, these resources are disposed causing environmental issues and a scarcity of resources. So, the country's economic development is not likely to be sustainable (Atkočiūnienė & Siudikienė, 2021; Saha et al., 2021). There is a need to introduce and implement a more appropriate business model where resources can be saved from being a victim of scarcity, and there is the optimal use of resources leaving fewer waste. The present study, which focuses on circular economy, fulfils this need of an emerging country. The study's objective is to assess the impacts of economic and non-economic determinants like job security and quality education, and political stability on the circular economy. The aim of the research is also to examine the role of sustainable SC management between job security and quality education, political stability and circular economy.

In the previous literature, mostly economic determinants have been analyzed in order to evaluate the circular economy. Little attention has been paid to the role of non-economic determinants like political stability in achieving a circular economy, or only an indirect relation of non-economic determinants to a circular economy has been checked. Therefore, the present study is a significant contribution to the literature because it explores the impacts of economic factors like job security and quality education as well as non-economic determinant like political stability on circular economy. Second, scholars have a debate on sustainable SC management's relationship with the circular economy. But a little discussion has been made on the moderating role of sustainable SC management between job security, quality education, and political stability in the circular economy. The current study extends the literature for analyzing sustainable SC management as a moderator between job security, quality education, political stability, and circular economy. Third, there is a need for a circular economy in Vietnam for the scarcity of resources, increasing basic human needs, and humans' impact on the environment. Some studies have tried to address the need for a circular economy and still are unsatisfactory in helping meet this need. The present study initiates deal with the need for a circular economy and analyzes the role of job security, quality education, and political stability in establishing a circular economy in Vietnamese context.

The paper is structured into five parts: The literature review is next to the introduction part. It deals with the past authors' views and establishes the relationship between job secu-

rity, quality education, political stability, and a circular economy. The third part, methodology, states the process of acquiring data and techniques to analyze the data for testing the hypotheses regarding the relationship among factors. The research findings are supported by the past conducted studies through comparison. The conclusive remarks of the study provide the glimpse of study along with implications and limitations.

1. Literature review

1.1. Theoretical lens

A circular economy is taken as a new approach to production and consumption. It includes leasing, sharing, recycling, repairing, re-furbishing, and reusing resources and products to the largest possible extent. This novel concept has the potential to combat global problems such as "biodiversity loss, climate change, waste, and pollution" by looking into the aspects through the lens of three fundamental principle; water and pollution reductions, material reusage and nature resilience. These are essential to transform the traditional concept of economy into circular one (Bui et al., 2020; Paraschiv et al., 2021).

Natural resource-based view framework establishes connection of organization with natural environment. According to Allen et al. (2021) circular economy's roots are linked with natural resource-based view framework. The reason is that it offers a transitioning path to circular economy. NRB view provides lens through which scholars can understand that how businesses models can be transformed when earn competitive edge which is tied with "rare, tacit, and socially complex capabilities". These capabilities helps in creating sustainable economy with a variety of sustainable activities. This perspective f NRBV snyc with current idea of study as selected determinants such as job security, education and political stability are the principles of circular economy, hence can be viewed as a unique resource which is hard to imitate and help economies to achieve the goal of circular economy.

As discussed, the current study examines the role of job security and quality education, and political stability in the transition to a circular economy, along with variable like sustainable SC management. Thus, the present study establishes hypotheses for the relationship of selected variables with the help of past authors' opinions about these relations.

1.2. Job security and circular economy

The employment rate of a country determines its capacity to move from a linear economy to a circular one. When job security is given to the employees, the employment rate is high and sustainable, and this leads the country to have a circular economy (El Wali et al., 2021; Shafi et al., 2022). When the employees have the security in a job, they get emotionally attached to the organization to whom they are providing services. These employees not only think about the accomplishment of the present organizational goals, rather they also have an eye on the future requirements and do their best for sustainable organizational performance. That leads the overall economy towards being circular (Padilla-Rivera et al., 2021). Kryshtanovych, Filippova, Huba, Kartashova, and Molnar (2020), investigates the role of job security in implementing a circular economy in 20 EU states. The study implies that the prac-

tices like effective, efficient, and economical use of resources, manufacturing of good quality, recyclable products, the reduction of wastes, and sharing through effective interaction with the stakeholders, require some extra care, watchfulness, and efficiency from employees. The employees having job security and are competent to perform these practices. Therefore, job security helps to implement a circular economy. Similarly Fiksel, Sanjay, and Raman (2021) throws light on the job security's role in the circular economy with evidence from India. The study implies that job security ensures the success of circular economy implementation. Hence, we hypothesize that:

H1: Job security has a positive relation to a circular economy.

1.3. Education quality and circular economy

To prevail circular economy, the economic actors and other individuals must have environmental awareness, information about the need for a circular economy, and the procedure to attain a circular economy. All this information and skills can be acquired through education. If the education quality is good, the circular economy can be achieved (Del Vecchio et al., 2021; Tiberius et al., 2021). Rokicki et al. (2020), examines the role of quality education in achieving the goals of the circular economy. The information on the education quality and progress to achieve a circular economy was collected from countries across the European Union, and this research spans 2013–2018. For empirical analysis, the Gini concentration coefficient, Pearson's linear correlation coefficient, coefficient of variation, and concentration analysis using the Lorenz curve, were used. The findings show that the quality of education for adolescents improves the efficiency and productivity of human resources to be applied within the economy. This clears the way towards circular economy. Kirchherr and Piscicelli (2019), analyzes the impacts of education quality on circular economy implementation. This research finds that with educational opportunities, employees can acquire the required knowledge and abilities in order to respond to contemporary professional requirements. If the education quality improves, employees might be ready to execute circular economy behaviors like sharing, responsible consumption and production, and high-quality production. So, the improvement in educational standards makes it simpler to implement the circular economy. Hence we hypothesize that:

H2: Education quality has a positive relation to a circular economy.

1.4. Political stability and circular economy

If there is political stability, environmental regulations are being effectively implemented within the country. As a result, economic entities adopt a responsible attitude and behavior while forming consumption patterns and production procedures. This results in the development of a circular economy (Shahzad et al., 2022; Smol et al., 2020). Kębłowski et al. (2020), analyzes the political stability in urban areas and its role in implementing a circular economy. The sampled population was chosen for the study was Brussels in Belgium, the urban area where struggles are being made to adopt a circular economy as a part of the socio-economy. The study proclaims that when there is political stability in the country, there is easy trade of

renewable resources and accomplishment of sustainable energy projects. The increasing use of recyclable resources and sustainable energy technologies helps to attain the eco-friendly and resource-preservation goals of the circular economy. So, political stability is helpful in implementing a circular economy in urban areas. In the study on political, legal, social, economic, and technological factors affecting the circular economy, Mishra et al. (2019) explores the relationship among political stability, international manufacturing network, and circular economy. The PESTLE–SWOT approach was applied to short-list the factors affecting the circular economy, and PLS was used to analyze the relationship of the factors with the circular economy. The study findings show that political stability facilitates the international manufacturing network, and thereby, the circular economy can be developed. The above-stated literature gives the following hypothesis:

H3: Political stability has a positive relation to a circular economy.

1.5. Sustainable SC management role between job security and circular economy

When businesses are operating their functions being integrated into sustainable SC and sustainable SC management is actively regulating and effectively implementing business sustainability practices, the integrated firms provide job security to the organizational personnel. sustainable SC management itself works for the achievement of objectives of circular economy, and by increasing job security, it facilitates the firms to enhance their contribution to circular economy (Edwin Cheng et al., 2022). Alkhuzaim, Zhu, and Sarkis (2021), investigates the relationship of sustainable SC management, job security, and circular economy. The chain firms' business strategies are guaranteed to be sustainable through the successful use of sustainable SC management techniques. This makes the firms feel their responsibility towards their employees and keep them from job burnout distress. There is improvement in employees' psychological development and productivity because of job security of employees. A circular economy can only be implemented by productive workers. The relationship between job security and the circular economy is thereby improved via sustainable SC management. Manavalan and Jayakrishna (2019), investigates the relationship between sustainable SC management, job security, and circular economy. The data were collected through a case study of a paper manufacturing organization that integrated sustainable SC with other similar firms in South India. The study implies that the sustainable SC management arouses a sense of responsibility in the firm's top managers for their employees. This motivates them to give job security to employees so that they can be free from mental distress and better focus on their work. Thereby, sustainable SC management encourages the firms to implement the 6Rs like Remanufacture, Recover, Reuse, Recycle, Redesign, and Reduce, which contribute to a circular economy. Hence, we hypothesize that:

H4: Sustainable SC management is a significant moderator between job security and the circular economy.

1.6. Sustainable SC management role between education quality and circular economy

Sustainable SC is the one which focuses on the ethical, social, and environmental responsibilities of the firms integrated and collaborated in the chain (Sehnem et al., 2019). The one major aspect of sustainable SC management is to produce knowledgeable, talented, and skilled employees for the economy. Hence, it encourages quality education for adolescents who are future economic actors or currently providing their professional services. Moreover, the sustainable SC management, with its focus on social and environmental responsibilities, encourages circular economic practices like recycling, re-consumption, recovery, and reduction of waste and pollution. Hence, the sustainable SC management improves the relationship between education quality and the circular economy (Allen et al., 2021). Hussain and Malik (2020), investigates the relationship between sustainable SC management, education quality, and circular economy. A research survey was conducted on firms in different supply chains in the economies of the United Arab Emirates (UAE), and information about the understudy factors was collected. The structural equation modelling (SEM) approach is used to check the accuracy of the established hypotheses. The study suggests that when the sustainable SC management practices are effectively implemented, the firms involved in the chains take care of the employees' education. Higher quality education enhances professional knowledge, and environmental awareness and enables them to perform circular economy practices. Similarly, Daú, Scavarda, Scavarda, and Portugal (2019), states that sustainable SC management encourages the firms to take care of the rights of employees and supportive behavior towards them. These firms provide quality education and, thereby, professional support to employees. Such employees can more efficiently work for implementing a circular economy. Based on the above discussion, it can be hypothesized:

H5: Sustainable SC management is a significant moderator between education quality and the circular economy.

1.7. Sustainable SC management role between political stability and circular economy

Because of the major focus on ethical, social, and environmental responsibilities, sustainable SC management restrains the firms involved in the chains from getting engaged in immoral or corrupt practices. The fair dealings of the firms and their transparent records, the legal or political disputes are minimum. The sustainable SC management effectiveness also helps to undertake sustainable business practices, which are required for the circular economy. Hence, when the sustainable SC management is effective, political stability can be useful in implementing a circular economy (Bai et al., 2020). Mahroof, Omar, Rana, Sivarajah, and Weerakkody (2021), identify the relationship among sustainable SC management, political stability and circular economy. The sustainable SC management effectiveness ensures political stability. When there is political stability in the country, sustainable practices like REP, REC, the used of recycling raw materials, production of goods that can be repaired, reused, or

re-manufactured, as well as the reduction of waste. So, the economy can be circular. Hence, sustainable SC management strengthens the relationship between political stability and a circular economy. Yadav et al. (2020), examines the relationship between sustainable SC management, political stability and circular economy. The study implies that sustainable SC management reduces corruption and fosters better communication. So, maintaining political stability is beneficial. Hence, we hypothesize that:

H6: Sustainable SC management moderates the relationship between job security and the circular economy.

2. Methodology

The study analyzes the impact of job security, quality education and political stability on the circular economy of Vietnam and investigates the moderating impact of sustainable SC management among job security, quality education, political stability, and the circular economy of Vietnam. The present article has also gathered the primary data with the help of survey questionnaires. The variables are measured with the items, and these items are extracted from the past literature and based on five-point Likert scale. For example, the variable named job security has been measured with ten items scale taken from the article of Kraimer, Wayne, Liden, and Sparrowe (2005). These items are given in Table 1.

Table 1. Measurement scale for job security

Items	Statements	Sources
JS1	"I can keep my present job as long as I wish."	Kraimer et al. (2005)
JS2	"My current organization will not cut back on my weekly work hours."	
JS3	"If my current organization was facing economic problems, my job would be the first to go."	
JS4	"I am confident that I will be able to work for my organization as long as I wish."	
JS5	"My job will be there as long as I want it."	
JS6	"If my job were eliminated, I would be offered another job in my current organization."	
JS7	"I will have a job at my current organization regardless of economic conditions."	
JS8	"I am secure in my job."	
JS9	"My current organization would transfer me to another job if I were laid off from my present job."	
JS10	"My job is not a secure one."	

In addition, the variable named quality education has been measured with seven items scale taken from the article of Ashraf (2019). These items are given in Table 2.

Table 2. Measurement scale for quality education

Items	Statements	Sources
QE1	"My government develops an effective curriculum."	Ashraf (2019)
QE2	"In my country, educational background is of good quality."	
QE3	"My country is well-equipped with modern education facilities."	
QE4	"The overall reputation of my country in the education sector is high."	
QE5	"If I had to start fresh, I would select my country for education."	
QE6	"I would recommend my country's education to friends or relatives in other countries."	
QE7	"Overall, the quality of education in my country is excellent."	

Moreover, the variable named political stability has been measured with four items scale taken from the article of Eid, El-Kassrawy, and Agag (2019). These items are given in Table 3.

Table 3. Measurement scale for political stability

Items	Statements	Sources
PS1	"My family will not worry about my safety during my stay in Vietnam."	Eid et al. (2019)
PS2	"Whoever is with me will never be injured by terror attacks in Vietnam."	
PS3	"I do not fear the effect that political events around the world might have on the attitude of the locals toward me."	
PS4	"My conduct will never be seen negatively by the locals."	

Furthermore, sustainable SC management is also measured with six items extracted from the study of Green, Zelbst, Meacham, and Bhadauria (2012). These items are given in Table 4.

Table 4. Measurement scale for sustainable SC management

Items	Statements	Sources
SSCM1	"Eco-labeling of products."	Green et al. (2012)
SSCM2	"Cooperation with suppliers for environmental objectives."	
SSCM3	"Environmental audit of suppliers' internal management.	
SSCM4	"Suppliers' ISO 14000 certification."	
SSCM5	"Second-tier supplier environmentally friendly practice evaluation."	
SSCM6	"It provided design specifications to suppliers that included environmental requirements for the purchased item."	

Finally, the circular economy is also measured with six items extracted from the study of Nuñez-Cacho, Górecki, Molina-Moreno, and Corpas-Iglesias (2018). These items are given in Table 5.

Table 5. Measurement scale for circular economy

Items	Statements	Sources
CE1	"Our country is designed according to Circular economy principles."	Nuñez-Cacho et al. (2018)
CE2	"Our country aims the transformation into a Circular economy model."	
CE3	"Our country considers the issues related to the smooth running of the circular economy."	
CE4	"There is a Circular economy awareness in our society."	
CE5	"Our country has built an effective circular economy platform."	
CE6	"We dispose of board indicators for the management of a circular economy."	

The study has selected the well-reputed economist of the country as the respondent. The surveys were sent through virtual platforms and used purposive sampling method. Total 533 questionnaires to the selected economists were distributed but only 290 valid surveys were received. These valid responses have approximately 54.41 percent response rate. Moreover, PLS methodology was used to assess the relationship among variables. Smart-PLS is an appropriate method for primary data (Ringle et al., 2015). In addition, the study has used one dependent variable named circular economy (CE) and also taken one moderating variable named sustainable SC management (SSCM). Finally, the study has taken three independent variables such as job security (JS), quality education (QE), and political stability (PS). Figure 1 illustrates the proposed framework.

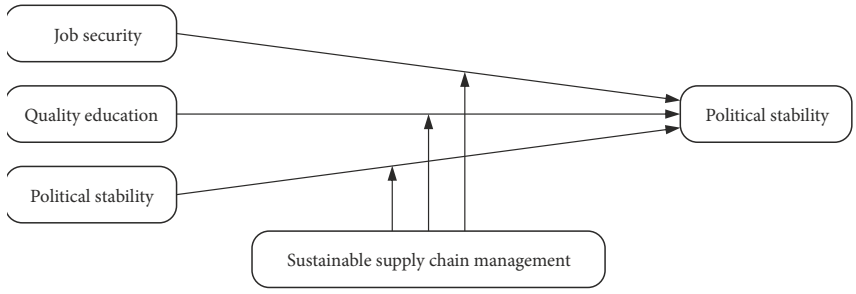

Figure 1. Research framework

3. Research findings

The results show the correlation among the items, known as convergent validity. Firstly, Alpha and composite reliability (CR) are used to test the convergent validity, and the values of the tests are more than 0.70. Secondly, factor loadings and AVE are used to test the convergent validity, and the values of the tests are more than 0.50. These values revealed a high correlation among items. Table 6 shows the outcomes of the study.

The results from Table 7 show the correlation among the variables known as discriminant validity. Firstly, discriminant validity is tested via Fornell Larcker. The values that highlighted the connection with the variable itself are larger than those that highlighted the connection with other variables. These values revealed the low correlation among variables.

Secondly, cross-loadings are used to test the discriminant validity, and values highlighting the connection with the variable are bigger than those highlighting the connection with other variables. These values revealed the low correlation among variables. Table 8 shows the outcomes of the study.

Table 6. Convergent validity

Constructs	Items	Loadings	Alpha	CR	AVE
Circular Economy	CE1	0.827	0.848	0.888	0.572
	CE2	0.801			
	CE3	0.837			
	CE4	0.629			
	CE5	0.682			
	CE6	0.738			
Job Security	JS1	0.921	0.978	0.981	0.865
	JS10	0.924			
	JS2	0.942			
	JS4	0.930			
	JS5	0.932			
	JS7	0.939			
	JS8	0.925			
	JS9	0.928			
Political Stability	PS1	0.828	0.888	0.922	0.749
	PS2	0.858			
	PS3	0.893			
	PS4	0.881			
Quality Education	QE1	0.825	0.911	0.929	0.653
	QE2	0.838			
	QE3	0.711			
	QE4	0.775			
	QE5	0.828			
	QE6	0.839			
	QE7	0.832			
Sustainable SC Management	SSCM1	0.954	0.959	0.968	0.835
	SSCM2	0.827			
	SSCM3	0.953			
	SSCM4	0.955			
	SSCM5	0.825			
	SSCM6	0.955			

Table 7. Fornell Larcker

	CE	JS	PS	QE	SSCM
CE	0.756				
JS	0.495	0.930			
PS	0.369	0.412	0.865		
QE	0.514	0.486	0.426	0.808	
SSCM	0.506	0.499	0.372	0.827	0.914

Table 8. Cross-loadings

	CE	JS	PS	QE	SSCM
CE1	**0.827**	0.398	0.307	0.457	0.493
CE2	**0.801**	0.430	0.329	0.464	0.446
CE3	**0.837**	0.404	0.309	0.442	0.382
CE4	**0.629**	0.359	0.186	0.304	0.278
CE5	**0.682**	0.338	0.217	0.260	0.244
CE6	**0.738**	0.306	0.300	0.353	0.397
JS1	0.443	**0.921**	0.387	0.448	0.465
JS10	0.483	**0.924**	0.350	0.436	0.468
JS2	0.460	**0.942**	0.403	0.463	0.457
JS4	0.436	**0.930**	0.414	0.468	0.450
JS5	0.454	**0.932**	0.383	0.458	0.473
JS7	0.461	**0.939**	0.399	0.458	0.462
JS8	0.487	**0.925**	0.351	0.438	0.471
JS9	0.453	**0.928**	0.380	0.451	0.469
PS1	0.290	0.379	**0.828**	0.396	0.354
PS2	0.331	0.350	**0.858**	0.318	0.292
PS3	0.336	0.353	**0.893**	0.394	0.342
PS4	0.318	0.345	**0.881**	0.370	0.306
QE1	0.409	0.386	0.337	**0.825**	0.663
QE2	0.452	0.451	0.340	**0.838**	0.731
QE3	0.379	0.315	0.325	**0.711**	0.535
QE4	0.396	0.398	0.362	**0.775**	0.662
QE5	0.406	0.379	0.337	**0.828**	0.662
QE6	0.451	0.456	0.346	**0.839**	0.723
QE7	0.406	0.351	0.366	**0.832**	0.682
SSCM1	0.463	0.460	0.319	0.769	**0.954**
SSCM2	0.467	0.442	0.378	0.725	**0.827**
SSCM3	0.466	0.463	0.318	0.760	**0.953**
SSCM4	0.452	0.462	0.321	0.777	**0.955**
SSCM5	0.464	0.444	0.382	0.723	**0.825**
SSCM6	0.453	0.459	0.318	0.765	**0.955**

Thirdly, Heterotrait Monotrait (HTMT) ratio is used to test the discriminant validity, and values are <0.85. These values show low correlation among constructs (see Table 9).

Table 9. Heterotrait Monotrait ratio

	CE	JS	PS	QE	SSCM
CE					
JS	0.541				
PS	0.418	0.444			
QE	0.572	0.513	0.476		
SSCM	0.548	0.515	0.404	0.882	

The results indicated that job security, quality education, and political stability have a significant and positive connection with the circular economy of Vietnam and accept H1, H2, and H3. The findings also revealed that sustainable SC management significantly moderates among job security, quality education, political stability, and the circular economy of Vietnam and accepts H4, H5, and H6. Table 10 shows the outcomes of the study.

Table 10. Structural model

Relationships	Beta	S.D.	T Statistics	P Values
JS -> CE	0.145	0.073	1.979	0.025
JS*SSCM -> CE	–0.327	0.063	5.207	0.000
PS -> CE	0.188	0.071	2.659	0.005
PS*SSCM -> CE	0.153	0.054	2.809	0.003
QE -> CE	0.292	0.086	3.384	0.001
QE*SSCM -> CE	0.130	0.069	1.874	0.032
SSCM -> CE	0.135	0.077	1.763	0.041

3.1. Discussions

The results in Figure 2, Figure 3 and Figure 4 revealed that job security has a positive relation to a circular economy. Boon and Anuga (2020) also offered the similar evidences by showing that human resources play a significant role in implementing the business strategies formulated by organizations. When human resources have job security, they feel peaceful mentally and may have high devotion to work. In this case, the strategies of sharing, efficiency in resource allocation, and recycling are effectively implemented. So, job security leads the economy to be circular. These results are supported by the study of Poponi, Arcese, Pacchera, and Martucci (2022), which examines the job security role in circular economy development. This study posits that the business organizations where the employees are not put under stress out of fear of losing their job, they have satisfaction and attachment to the organization. So, the employees try to overcome the costs of the organizations, and therefore, they reduce the excessive use of resources. This results in the progress to a circular economy.

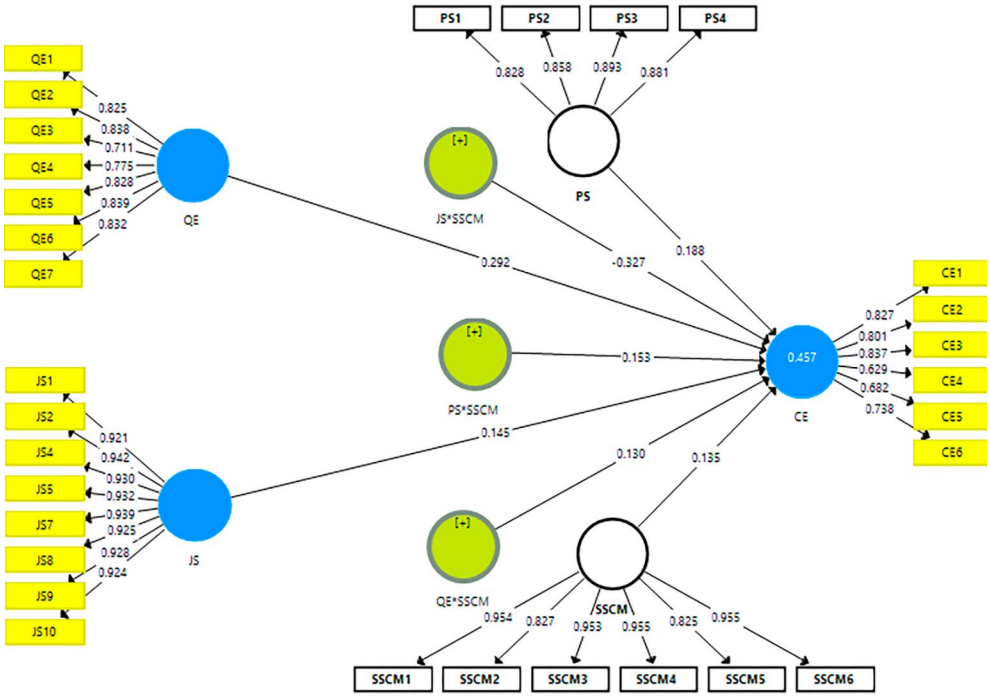

Figure 2. Measurement model assessment

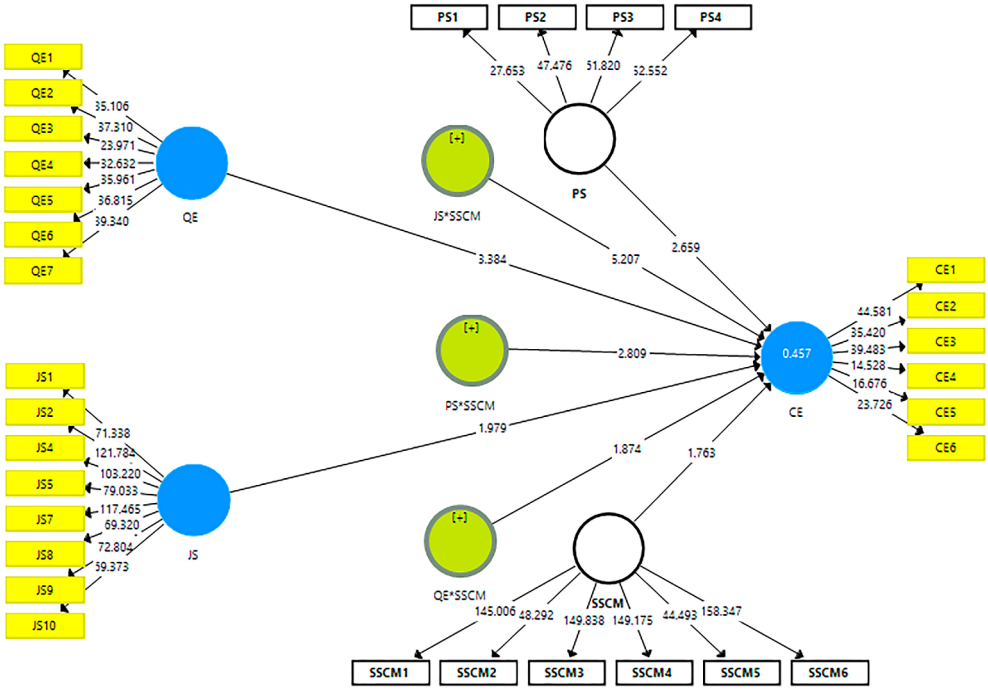

Figure 3. Structural model assessment

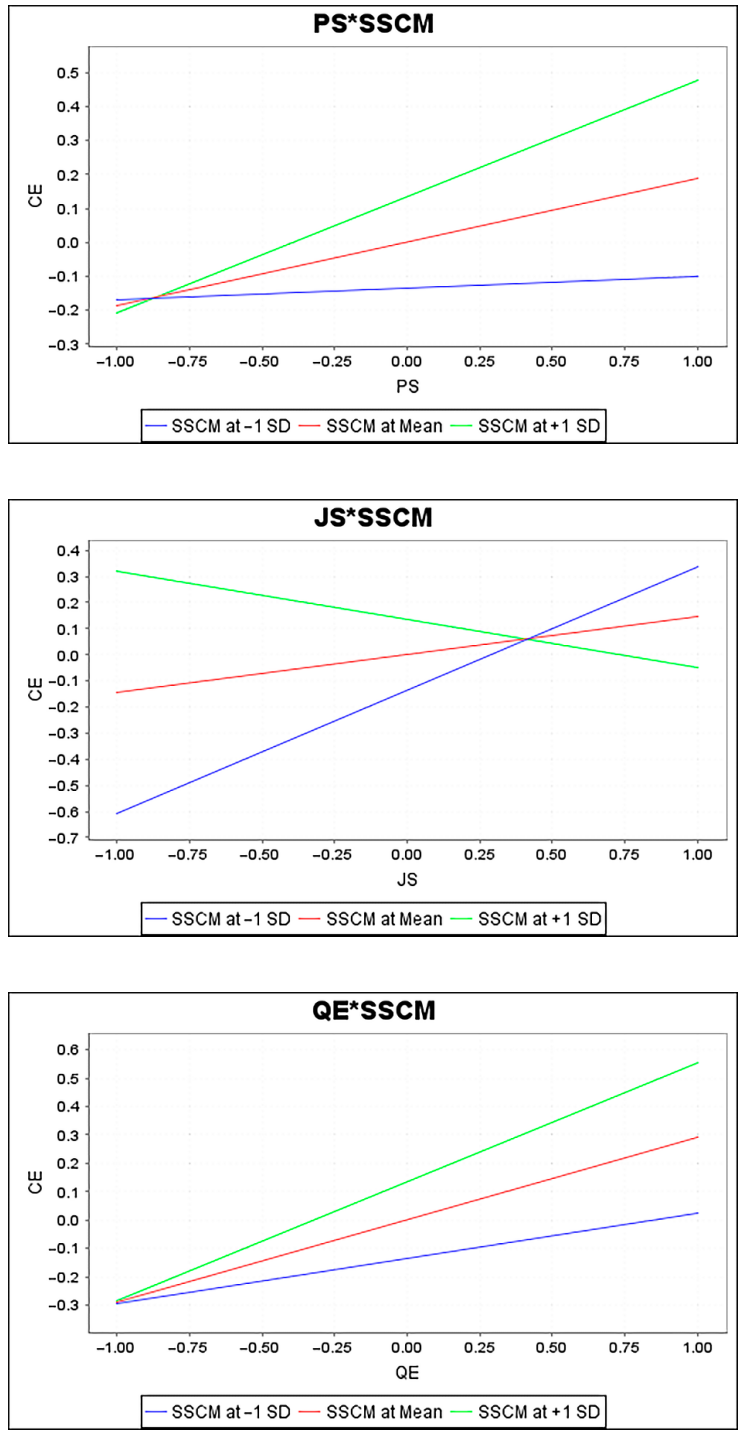

Figure 4. Moderation analysis

Results show consistency with the past study of Völker, Kovacic, and Strand (2020), which articulates that if organizations pay attention to the employee's welfare and give them job security, they can execute the circular economy principles.

The results revealed that education quality has a positive relation to a circular economy. The findings confirms the evidences of previous study of Mendoza, Gallego-Schmid, and Azapagic (2019). This previous study claims that education enables employees to learn all necessary concepts and skills according to modern business requirements. If the employees are given quality information, they can be prepared to implement circular economy practices like sharing, responsible consumption and production, and quality production. Hence, the improvement in quality education creates easiness in implementing the circular economy. Findings are consistent with Kopnina (2019), which examines the education quality impacts on circular economy development. The study implies that many business organizations give opportunities to their employees to gain education be updated. If business organizations give quality education to employees, they can keep their employees skilled and active. This enhances the understanding of the circular economy and enables them to implement circular economy practices. Obtained results show consistency with Bugallo-Rodríguez and Vega-Marcote (2020), that stimulates that the increase in the quality of education improves human capital and, thereby, increases the chances for business organizations to turn towards a circular economy. So, the previous studies confirm that improvement in quality education helps develop a circular economy.

The results revealed that political stability has a positive relation to a circular economy. Iacovidou, Hahladakis, and Purnell (2021) also provides back up to similar evidences and explains that when there is political stability, it is possible that the projects started for the production of recyclable and durable resources must be completed without any break. The increase in the production of such resources doesn't let the economy face shortage of resources and pollution problems because of waste emissions. So, a circular economy can be achieved with political stability. Similarly, Yazdani et al. (2019) also proclaims that in political stability within the country, there are effective economic regulations, and business organizations are operating their functions effectively with great social responsibility. In this situation, the use of renewable resources, energy transition, production of recyclable products, and reduction of manufacturing wastes come into practice which all constitute a circular economy. Findings are confined with Savini (2021), that proclaims that when there is political stability, the government succeeds in planting more forests, increasing the production of REP, encouraging the use of renewable energy resources, and motivating individuals and business organizations to adopt energy efficiency. This leads to turning the linear economy into a circular one.

Findings also showcased that sustainable SC management is a significant moderator between job security and the circular economy. Findings agreed with Kumar et al. (2021). According to this previous literature, the effective execution of sustainable SC management practices ensures sustainability in the business policies and strategies across the chain firms. This motivates the firms to give job security to their employees. This job security improves the employees' psychological well-being and work efficiency. Efficient employees are required to implement a circular economy. So, sustainable SC management improves the relationship between job security and the circular economy. Similarly, Nandi et al. (2021) also highlights

that sustainable SC management works for sustainable relations across the chain nodes. In this regard, the firms try to bring improvement in human resources management and give job security to employees to improve their mental well-being and motivate them for better performance. Moreover, sustainable SC management motivates and facilitates the firms to contribute to a circular economy. In this situation, the contribution of job security to the circular economy increases.

The results revealed that sustainable SC management is a significant moderator between education quality and the circular economy. Del Giudice et al. (2020) supports the present evidences and demonstrates that the implementation of sustainable SC management practices like working for human rights and supportive dealings with the employees motivate the organizations to arrange learning classes for the employees and provide quality education. And the focus of sustainable SC on environmental quality and corporate social responsibility motivates the firms to perform sustainable practices and, thus, move towards the circular economy. Therefore, sustainable SC management increases the contribution of education quality to circular economy development. Frei, Jack, and Krzyzaniak (2020) also shows that sustainable SC management is helpful to tutors' abilities in education institutions linked to the sustainable SC. It brings improvement in education quality. When in a country, adolescents are provided with a good quality education, they may give the best services for sustainable practices like recycling, energy transition, waste reduction etc. and create a circular economy.

It is also revealed sustainable SC management is a significant moderator between political stability and the circular economy. Present findings and Dev, Shankar, and Qaiser (2020) study shows consistency, which shows that sustainable SC management controls corruption and improves relations. So, it is helpful to maintain political stability. In case there is political stability in the country it is more likely to implement the circular economy practices, which require attention. Similarly, consistency is shown with the study of Meherishi, Narayana, and Ranjani (2019). This previous study highlights that sustainable SC management improves political stability and accelerates progress of developing a circular economy. Hence, the relationship between political stability and the circular economy becomes stronger.

Conclusions

The study aimed to examine the role of economic determinants like job security and quality education and non-economic determinant like political stability in creating a circular economy in the presence of sustainable supply chain management. The results showed that when employees in different economic sectors and with different job statuses have the security of a job, they may have healthy minds and good economic positions. Thus, the employees are able to participate in the activities like sharing, leasing, caring, savings, efficient use of resources, repairing, and recycling. And this all determines the circular economy. The results also indicated that when educational institutions and companies, during jobs, provide quality education to adolescents, they may have higher social, economic, and environmental as well as they may learn the required skills to implement circular economic practices. So, improvement in the quality of education is helpful in implementing the circular economy concept effectively.

The study also concluded that when, in a country, there is political stability, the economic and fiscal policies are safe from inconsistency, and the resultant stability in economic conditions can be favorable for the circular economy. The study also concluded that when the private or government, economic and social organizations are integrated into sustainable SC and the sustainable SC management is effectively working, it assures job security for employees and there is accelerating progress in attaining a circular economy. It also showed that the sustainable SC management is effective, it is likely to provide quality education and assures job security for employees, and there is accelerating progress in attaining a circular economy. In addition, in case the social, as well as economic organizations, are collaborated in sustainable SC and the sustainable SC management is performing efficiently, there is political stability, and a circular economy can be achieved.

Implication of the study

The present study has considerable significance to Vietnam and similar emerging economies, which are facing the common issues of pollution, scarcity of resources, and economic problems. The current study presents the solution to all these issues with the emphasis on developing a circular economy. The study suggests that the government and economists must formulate economic policies to ensure job security for employees in different economic sectors so that a circular economy can be achieved. It is also suggested that government, social, and economic reformers must encourage quality education to individuals prior to or during their professional lives in order to create a circular economy. The study also guides them that government must try to ensure political stability in the country to create a circular economy. In addition, it is a guideline that there must be made suitable economic policies promote sustainable SC management so that job security can be ensured for employees and, thereby, a circular economy can be developed. It also highlighted policymakers that they must improve the sustainable SC management effectiveness to improve education quality and achieve a circular economy. This study helps policymakers to establish new policies regarding the improvement of the circular economy using economic and non-economic determinants. Moreover, the study guides the policymakers that there must be made suitable economic policies to implement sustainable SC management practices because, in this way, ensure political stability can be ensured in the country, leading to the achievement of a circular economy.

Moreover, in order to promote circular economy development in Vietnam, it is inevitable to formulate solution with the synchronization of two objectives; creating awareness so that the establishment of perfect institutions could be possible. First, country needs to fulfill all legal formalities which are needed for circular economy development. This is possible, when necessary, amendments can be done in laws related to environmental protection. The amendments must ensure the significant role of manufacturers and distributors which helps in recovery journey. This not only enlightens recycling cost of waste products but also provides road map for the development of further environmental standards. Besides, injecting

the speed to complete preferential mechanism in order to support environmental industry is also an essential step to have successful development of circular economy. Further, to build an effective economic growth model, it is imperative to use input resources effectively with the help of advance technologies especially waste management techniques. The replacement of fuels and other hazardous material also saves environment from deterioration and gives kick to economic activities.

Future directions

The present study still has to face some limitations. For suppose, the current study examines just the limited economic and non-economic factors. The economic and non-economic determinants, like technological advancement, energy transition, and social consumption behavior, etc., that matter a lot in implementing the circular economy are paid no attention in this research. The future authors are recommended to pay focus on these economic and non-economic determinants as well for correct analysis of the circular economy. In this study, only a single moderator of sustainable SC management between job security, quality education, political stability, and circular economy development has been used. It is recommended that scholars, further, must also take some mediator as well to check the relationship between job security, quality education, political stability, and circular economy development. The current study hypotheses for the relationship between job security, quality education, political stability, and circular economy development are tested with the data from Vietnam alone. Vietnam is a developing country with specific economic and non-economic conditions, and therefore, it may not be equally valid for all countries. The future authors are recommended that they must collect information from multiple countries for valid results on the relationship between job security, quality education, political stability, and circular economy development.

Acknowledgements

This research is partly funded by the University of Economics Ho Chi Minh City (UEH), Vietnam.

Availability of data and material

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

References

Alkhuzaim, L., Zhu, Q., & Sarkis, J. (2021). Evaluating emergy analysis at the nexus of circular economy and sustainable supply chain management. *Sustainable Production and Consumption*, *25*, 413–424. https://doi.org/10.1016/j.spc.2020.11.022

Allen, S. D., Zhu, Q., & Sarkis, J. (2021). Expanding conceptual boundaries of the sustainable supply chain management and circular economy nexus. *Cleaner Logistics and Supply Chain*, *2*, Article 100011. https://doi.org/10.1016/j.clscn.2021.100011

Ashraf, M. A. (2019). Influences of working condition and faculty retention on quality education in private universities in Bangladesh: An analysis using SEM. *International Journal of Educational Management*, *33*(1), 149–165. https://doi.org/10.1108/IJEM-03-2018-0121

Atkočiūnienė, Z. O., & Siudikienė, D. (2021). Communication management in promoting knowledge and creativity in fostering innovations in the creative organizations. *Creativity Studies*, *14*(2), 549–576. https://doi.org/10.3846/cs.2021.15550

Bai, C., Sarkis, J., Yin, F., & Dou, Y. (2020). Sustainable supply chain flexibility and its relationship to circular economy-target performance. *International Journal of Production Research*, *58*(19), 5893–5910. https://doi.org/10.1080/00207543.2019.1661532

Boon, E. K., & Anuga, S. W. (2020). Circular economy and its relevance for improving food and nutrition security in Sub-Saharan Africa: The case of Ghana. *Materials Circular Economy*, *2*(1), 1–14. https://doi.org/10.1007/s42824-020-00005-z

Bugallo-Rodríguez, A., & Vega-Marcote, P. (2020). Circular economy, sustainability and teacher training in a higher education institution. *International Journal of Sustainability in Higher Education*, *21*(7), 1351–1366. https://doi.org/10.1108/IJSHE-02-2020-0049

Bui, T.-D., Tsai, F. M., Tseng, M.-L., Wu, K.-J., & Chiu, A. S. (2020). Effective municipal solid waste management capability under uncertainty in Vietnam: Utilizing economic efficiency and technology to foster social mobilization and environmental integrity. *Journal of Cleaner Production*, *259*, Article 120981. https://doi.org/10.1016/j.jclepro.2020.120981

Cera, G., Khan, K. A., Blahova, A., & Belas, Jr. J. (2022). Do owner-manager demographics in SMEs matter for corporate social responsibility? *Equilibrium. Quarterly Journal of Economics and Economic Policy*, *17*(2), 511–531. https://doi.org/10.24136/eq.2022.018

Chowdhury, S., Dey, P. K., Rodríguez-Espíndola, O., Parkes, G., Tuyet, N. T. A., Long, D. D., & Ha, T. P. (2022). Impact of organisational factors on the circular economy practices and sustainable performance of small and medium-sized enterprises in Vietnam. *Journal of Business Research*, *147*, 362–378. https://doi.org/10.1016/j.jbusres.2022.03.077

Dat, N. M., Dai, N. Q., & Ngoc, P. B. (2022). The impact of corporate social responsibilities (CSR), entrepreneurship, and financial factors on the financial performance of the banks in ASEAN countries. *Contemporary Economics*, *16*(2), 227–240. https://doi.org/10.5709/ce.1897-9254.479

Daú, G., Scavarda, A., Scavarda, L. F., & Portugal, V. J. T. (2019). The healthcare sustainable supply chain 4.0: The circular economy transition conceptual framework with the corporate social responsibility mirror. *Sustainability*, *11*(12), Article 3259. https://doi.org/10.3390/su11123259

Del Giudice, M., Chierici, R., Mazzucchelli, A., & Fiano, F. (2020). Supply chain management in the era of circular economy: the moderating effect of big data. *The International Journal of Logistics Management*, *32*(2), 337–356. https://doi.org/10.1108/IJLM-03-2020-0119

Del Vecchio, P., Secundo, G., Mele, G., & Passiante, G. (2021). Sustainable entrepreneurship education for circular economy: Emerging perspectives in Europe. *International Journal of Entrepreneurial Behavior & Research*, *27*(8), 2096–2124. https://doi.org/10.1108/IJEBR-03-2021-0210

Dev, N. K., Shankar, R., & Qaiser, F. H. (2020). Industry 4.0 and circular economy: Operational excellence for sustainable reverse supply chain performance. *Resources, Conservation and Recycling*, *153*, Article 104583. https://doi.org/10.1016/j.resconrec.2019.104583

Edwin Cheng, T., Kamble, S. S., Belhadi, A., Ndubisi, N. O., Lai, K.-h., & Kharat, M. G. (2022). Linkages between big data analytics, circular economy, sustainable supply chain flexibility, and sustainable performance in manufacturing firms. *International Journal of Production Research*, *60*(22), 6908–6922. https://doi.org/10.1080/00207543.2021.1906971

Eid, R., El-Kassrawy, Y. A., & Agag, G. (2019). Integrating destination attributes, political (in) stability, destination image, tourist satisfaction, and intention to recommend: A study of UAE. *Journal of Hospitality & Tourism Research*, *43*(6), 839–866. https://doi.org/10.1177/1096348019837750

El Wali, M., Golroudbary, S. R., & Kraslawski, A. (2021). Circular economy for phosphorus supply chain and its impact on social sustainable development goals. *Science of the Total Environment*, *777*, Article 146060. https://doi.org/10.1016/j.scitotenv.2021.146060

Fiksel, J., Sanjay, P., & Raman, K. (2021). Steps toward a resilient circular economy in India. *Clean Technologies and Environmental Policy*, *23*(1), 203–218. https://doi.org/10.1007/s10098-020-01982-0

Frei, R., Jack, L., & Krzyzaniak, S. A. (2020). Sustainable reverse supply chains and circular economy in multichannel retail returns. *Business Strategy and the Environment*, *29*(5), 1925–1940. https://doi.org/10.1002/bse.2479

Grafström, J., & Aasma, S. (2021). Breaking circular economy barriers. *Journal of Cleaner Production*, *292*, Article 126002. https://doi.org/10.1016/j.jclepro.2021.126002

Green, K. W., Zelbst, P. J., Meacham, J., & Bhadauria, V. S. (2012). Green supply chain management practices: Impact on performance. *Supply Chain Management: an International Journal*, *17*(3), 290–305. https://doi.org/10.1108/13598541211227126

Hartley, K., van Santen, R., & Kirchherr, J. (2020). Policies for transitioning towards a circular economy: Expectations from the European Union (EU). *Resources, Conservation and Recycling*, *155*, 1046–1058. https://doi.org/10.1016/j.resconrec.2019.104634

Hussain, H. I., Kamarudin, F., Anwar, N. A. M., Sufian, F., Ali, A., & Saudi, M. H. (2022). Social globalisation and efficiency of microfinance institutions nexus: Empirical evidence on financial and social efficiency. *Engineering Economics*, *33*(1), 27–46. https://doi.org/10.5755/j01.ee.33.1.29130

Hussain, M., & Malik, M. (2020). Organizational enablers for circular economy in the context of sustainable supply chain management. *Journal of Cleaner Production*, *256*, Article 120375. https://doi.org/10.1016/j.jclepro.2020.120375

Iacovidou, E., Hahladakis, J. N., & Purnell, P. (2021). A systems thinking approach to understanding the challenges of achieving the circular economy. *Environmental Science and Pollution Research*, *28*(19), 24785–24806. https://doi.org/10.1007/s11356-020-11725-9

Kębłowski, W., Lambert, D., & Bassens, D. (2020). Circular economy and the city: An urban political economy agenda. *Culture and Organization*, *26*(2), 142–158. https://doi.org/10.1080/14759551.2020.1718148

Kirchherr, J., & Piscicelli, L. (2019). Towards an education for the circular economy (ECE): Five teaching principles and a case study. *Resources, Conservation and Recycling*, *150*, Article 104406. https://doi.org/10.1016/j.resconrec.2019.104406

Kopnina, H. (2019). Green-washing or best case practices? Using circular economy and Cradle to Cradle case studies in business education. *Journal of Cleaner Production*, *219*, 613–621. https://doi.org/10.1016/j.jclepro.2019.02.005

Kraimer, M. L., Wayne, S. J., Liden, R. C., & Sparrowe, R. T. (2005). The role of job security in understanding the relationship between employees' perceptions of temporary workers and employees' performance. *Journal of Applied Psychology*, *90*(2), 389–398. https://doi.org/10.1037/0021-9010.90.2.389

Kristensen, H. S., & Mosgaard, M. A. (2020). A review of micro level indicators for a circular economy – moving away from the three dimensions of sustainability? *Journal of Cleaner Production*, *243*, Article 118531. https://doi.org/10.1016/j.jclepro.2019.118531

Kryshtanovych, M., Filippova, V., Huba, M., Kartashova, O., & Molnar, O. (2020). Evaluation of the implementation of the circular economy in EU countries in the context of sustainable development. *Verslas: Teorija ir praktika/Business: Theory and Practice*, *21*(2), 704–712. https://doi.org/10.3846/btp.2020.12482

Kumar, P., Singh, R. K., & Kumar, V. (2021). Managing supply chains for sustainable operations in the era of industry 4.0 and circular economy: Analysis of barriers. *Resources*, *Conservation and Recycling*, *164*, Article 105215. https://doi.org/10.1016/j.resconrec.2020.105215

Mahroof, K., Omar, A., Rana, N. P., Sivarajah, U., & Weerakkody, V. (2021). Drone as a Service (DaaS) in promoting cleaner agricultural production and Circular Economy for ethical Sustainable Supply Chain development. *Journal of Cleaner Production*, *287*, Article 125522. https://doi.org/10.1016/j.jclepro.2020.125522

Manavalan, E., & Jayakrishna, K. (2019). An analysis on sustainable supply chain for circular economy. *Procedia Manufacturing*, *33*, 477–484. https://doi.org/10.1016/j.promfg.2019.04.059

Marin-Garcia, A., Gil-Saura, I., & Ruiz-Molina, M. E. (2022). Do innovation and sustainability influence customer satisfaction in retail? A question of gender. *Economic Research-Ekonomska Istraživanja*, *35*(1), 546–563. https://doi.org/10.1080/1331677X.2021.1924217

Matuszewska-Pierzynka, A. (2021). Relationship between corporate sustainability performance and corporate financial performance: Evidence from US companies. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, *16*(4), 885–906. https://doi.org/10.24136/eq.2021.033

Meherishi, L., Narayana, S. A., & Ranjani, K. (2019). Sustainable packaging for supply chain management in the circular economy: A review. *Journal of Cleaner Production*, *237*, Article 117582. https://doi.org/10.1016/j.jclepro.2019.07.057

Mendoza, J. M. F., Gallego-Schmid, A., & Azapagic, A. (2019). Building a business case for implementation of a circular economy in higher education institutions. *Journal of Cleaner Production*, *220*, 553–567. https://doi.org/10.1016/j.jclepro.2019.02.045

Mies, A., & Gold, S. (2021). Mapping the social dimension of the circular economy. *Journal of Cleaner Production*, *321*, Article 128960. https://doi.org/10.1016/j.jclepro.2021.128960

Mishra, S., Singh, S. P., Johansen, J., Cheng, Y., & Farooq, S. (2019). Evaluating indicators for international manufacturing network under circular economy. *Management Decision*, *57*(4), 811–839. https://doi.org/10.1108/MD-05-2018-0565

Morseletto, P. (2020). Targets for a circular economy. *Resources*, *Conservation and Recycling*, *153*, Article 104553. https://doi.org/10.1016/j.resconrec.2019.104553

Nam, N. H., & Hanh, N. T. (2019). Implementing Circular Economy: International experience and policy implications for Vietnam. *VNU Journal of Science: Economics and Business*, *35*(4), 68–81. https://doi.org/10.25073/2588-1108/vnueab.4277

Nandi, S., Sarkis, J., Hervani, A. A., & Helms, M. M. (2021). Redesigning supply chains using blockchain-enabled circular economy and COVID-19 experiences. *Sustainable Production and Consumption*, *27*, 10–22. https://doi.org/10.1016/j.spc.2020.10.019

Niaz, M. U. (2022). Socio-Economic development and sustainable development goals: A roadmap from vulnerability to sustainability through financial inclusion. *Economic Research-Ekonomska Istraživanja*, *35*(1), 3243–3275. https://doi.org/10.1080/1331677X.2021.1989319

Nuñez-Cacho, P., Górecki, J., Molina-Moreno, V., & Corpas-Iglesias, F. A. (2018). What gets measured, gets done: Development of a circular economy measurement scale for building industry. *Sustainability*, *10*(7), Article 2340. https://doi.org/10.3390/su10072340

Padilla-Rivera, A., do Carmo, B. B. T., Arcese, G., & Merveille, N. (2021). Social circular economy indicators: Selection through fuzzy delphi method. *Sustainable Production and Consumption*, *26*, 101–110. https://doi.org/10.1016/j.spc.2020.09.015

Paraschiv, D. M., Manea, D. I., Țițan, E., & Mihai, M. (2021). Development of an aggregated social inclusion indicator. Disparities in the European Union on inclusion/exclusion social determined with social inclusion index. *Technological and Economic Development of Economy*, *27*(6), 1301–1324. https://doi.org/10.3846/tede.2021.15103

Poponi, S., Arcese, G., Pacchera, F., & Martucci, O. (2022). Evaluating the transition to the circular economy in the agri-food sector: Selection of indicators. *Resources*, *Conservation and Recycling*, *176*, Article 105916. https://doi.org/10.1016/j.resconrec.2021.105916

Ringle, C., Da Silva, D., & Bido, D. (2015). Structural equation modeling with the SmartPLS. *Brazilian Journal of Marketing*, *13*(2), 29–36.

Rokicki, T., Perkowska, A., Klepacki, B., Szczepaniuk, H., Szczepaniuk, E. K., Bereziński, S., & Ziółkowska, P. (2020). The importance of higher education in the EU countries in achieving the objectives of the circular economy in the energy sector. *Energies*, *13*(17), Article 4407. https://doi.org/10.3390/en13174407

Saha, K., Dey, P. K., & Papagiannaki, E. (2021). Implementing circular economy in the textile and clothing industry. *Business Strategy and the Environment*, *30*(4), 1497–1530. https://doi.org/10.1002/bse.2670

Savini, F. (2021). The circular economy of waste: Recovery, incineration and urban reuse. *Journal of Environmental Planning and Management*, *64*(12), 2114–2132. https://doi.org/10.1080/09640568.2020.1857226

Sehnem, S., Jabbour, C. J. C., Pereira, S. C. F., & de Sousa Jabbour, A. B. L. (2019). Improving sustainable supply chains performance through operational excellence: Circular economy approach. *Resources*, *Conservation and Recycling*, *149*, 236–248. https://doi.org/10.1016/j.resconrec.2019.05.021

Shafi, M., Szopik-Depczyńska, K., Cheba, K., Ciliberto, C., Depczyński, R., & Ioppolo, G. (2022). Innovation in traditional handicraft companies towards sustainable development. A systematic literature review. *Technological and Economic Development of Economy*, *28*(6), 1589–1621. https://doi.org/10.3846/tede.2022.17085

Shahzad, M., Qu, Y., Rehman, S. U., & Zafar, A. U. (2022). Adoption of green innovation technology to accelerate sustainable development among manufacturing industry. *Journal of Innovation & Knowledge*, *7*(4), Article 100231. https://doi.org/10.1016/j.jik.2022.100231

Smol, M., Marcinek, P., Duda, J., & Szołdrowska, D. (2020). Importance of sustainable mineral resource management in implementing the circular economy (CE) model and the european green deal strategy. *Resources*, *9*(5), Article 55. https://doi.org/10.3390/resources9050055

Streimikiene, D., & Akberdina, V. (2021). Public views of the economy of the renewable energy sources: Evidence from Russia. *Contemporary Economics*, *15*(3), 256–267. https://doi.org/10.5709/ce.1897-9254.447

Tiberius, V., Schwarzer, H., & Roig-Dobón, S. (2021). Radical innovations: Between established knowledge and future research opportunities. *Journal of Innovation & Knowledge*, *6*(3), 145–153. https://doi.org/10.1016/j.jik.2020.09.001

Tri, N. M. (2021). Circular economic development ensures sustainable development in Vietnam: Opportunities and challenges. *International Journal of Aquatic Science*, *12*(3), 2419–2430.

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

Völker, T., Kovacic, Z., & Strand, R. (2020). Indicator development as a site of collective imagination? The case of European Commission policies on the circular economy. *Culture and Organization*, *26*(2), 103–120. https://doi.org/10.1080/14759551.2019.1699092

Yadav, G., Luthra, S., Jakhar, S. K., Mangla, S. K., & Rai, D. P. (2020). A framework to overcome sustainable supply chain challenges through solution measures of industry 4.0 and circular economy: An automotive case. *Journal of Cleaner Production*, *254*, Article 120112. https://doi.org/10.1016/j.jclepro.2020.120112

Yazdani, M., Gonzalez, E. D., & Chatterjee, P. (2019). A multi-criteria decision-making framework for agriculture supply chain risk management under a circular economy context. *Management Decision*, *59*(8), 1801–1826. https://doi.org/10.1108/MD-10-2018-1088

Yodchai, N., Ly, P. T. M., & Tran, L. T. T. (2022). Co-creating creative self-efficacy to build creative performance and innovation capability for business success: A meta-analysis. *Creativity Studies*, *15*(1), 74–88. https://doi.org/10.3846/cs.2022.13852

Yousaf, Z., Radulescu, M., Nassani, A., Aldakhil, A. M., & Jianu, E. (2021). Environmental management system towards environmental performance of hotel industry: Does corporate social responsibility authenticity really matter? *Engineering Economics*, *32*(5), 484–498. https://doi.org/10.5755/j01.ee.32.5.28619