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# The role of the core competence and core resource features of a sharing economy on the achievement of SDGs 2030



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#### ABSTRACT

Globally, sustainable development goals (SDGs), which need to be achieved using the sharing economy, are the focus of many recent studies. This article investigates the impact of sharing economy features such as core competence and resources on achieving SDGs in the tourism industry in the BRICS countries (Brazil, Russia, India, China, and South Africa). It examines the mediating impact of distinctive competitive advantage between the core competence and core resource features of a sharing economy, and achievement of the SDGs. The study also examines the moderating role of institutional support on the nexus of distinctive competitive advantage and achievement of SDGs in the BRICS countries. Questionnaires are used to collect primary data and Smart-PLS is used to analyse the data. The results indicate that the core competence and core resource features have a positive association with the achievement of SDGs, and that distinctive competitive advantage significantly mediates the association between core competence, core resources, and achievement of the SDGs. The outcomes reveal that institutional support significantly moderates the nexus of distinctive competitive advantage and achievement of SDGs. The research provides guidelines for regulators establishing policies related to the achievement of SDGs using the sharing economy.

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#### Introduction

Recently, the sharing economy has become a culturally and socially important topic in various countries, due to rising international markets. Businesses in many countries are based on core economic factors that help sustainable development. The contribution of effective values and core values significantly boosts businesses in a sharing economy and is considered a dominant approach for organizations hoping to attain competitive advantage. This competitive advantage requires the use of core resources and core competences. These features play a prominent role in the corresponding elements of innovation and other knowledge perspectives necessary for achieving sustainable development goals (SDGs). For organizations, both internal and external resources are core factors in forming a feasible environment for achieving SDGs. Shared resources and shared values are core features of a sharing economy and emphasize the integration of dynamic abilities for restructuring development goals. It is necessary to understand the external and internal resources and skills that can strengthen the competitiveness of sustainable development. Core resources and competence features can positively improve sustainable management strategies (Ainou et al., 2022; Bierwiaczonek et al., 2020; Husgafvel et al., 2018).

Competitive advantages are distinct, due to dynamic innovation capabilities and knowledge. The collective use of traditional, technological, and communication concepts plays a vital role in economic efficiency and sustainable development. Sharing of economies are linked to learning, municipalities, utilities, corporations, logistics, wellness, space, money, goods, food, services, and transportation. These elements are affected by core resources and core competence features which incorporate innovative services for attaining SDGs. Many new areas of sustainable development and core features are upgraded in many sectors through reputations, analytics, mobility services, and worker support. All these factors contribute to the core factors for achieving SDGs (Baruah & Nath, 2020; Chien et al., 2021; Gu, Renwick & Xue, 2018; Inegbedion et al., 2021).

Every country in the world sets goals for its industries, and each country formulates policies to achieve their goals. Once the goals are set, the ultimate aim is to achieve these goals at any cost by investing maximum effort. Every industry goal is set based on the history and analysis of that industry. The tourism industry is rated very highly in the context of BRICS countries. The geological positions of all the BRICS countries are suitable for tourism, as all the countries have a rich history and culture. The BRICS countries are getting closer to the application of a sharing economy, which is considered key to the achievement of their SDGs (Ali et al., 2018; Chien et al., 2022; McBride et al., 2019). The technological transformation of the world

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supports the sharing economy concept. Countries, cultures, and firms need only a single click to decide to apply the sharing economy concept. Often, the weakness of one firm becomes the strength of another and allows it to achieve its SDGs (Al Mamun et al., 2021).

Literature proposes that there is an association between the sharing economy and SDGs (Baruah & Nath, 2020; Chien et al., 2022). In the case of the tourism industry, the BRICS countries and their firms' adoption of a sharing economy plays a vital role. The number of tourists visiting any country shows the tourism industry's contribution to the country's economy, although there are several other industries associated with tourism. The more tourists visit, the more the country's economic wheel moves forward. Brazil is the first country in the BRICS list, and in 2020, 2.15 million tourists visited the country. Second on the BRICS list is Russia, and in 2020, 6.4 million tourists visited Russia to explore its beauty. Third on the list is India, where 6.33 million tourists visited in 2020 to explore its culture and beauty. Fourth on the list is China, one of the fastest-growing developed countries in the world, with 20.2 million tourists. Last on the list is South Africa, where 5 million tourists visited in 2020.

The present study addresses several existing gaps in the literature: (1) more research is needed into important topics such as the sharing economy and sustainable development; (2) researchers such as Huang et al. (2021b) and Jelinkova et al. (2021) investigate the sharing economy in the context of sustainable development and social responsibility, whereas the present study also tests the relationship between the sharing economy and sustainable development by adding: (a) a moderation factor, institutional support, and a mediation factor, distinctive competitive advantage; (b) features of the sharing economy such as core competence and core resources; and (c) a BRICS countries perspective; (3) researchers such as Huang et al. (2021a) and Karobliene & Pilinkiene (2021b) test the sharing economy and sustainable development in the context of European Union countries whereas this study tests the model in BRICS countries adding a moderation effect, institutional support, and a mediation factor, distinctive competitive advantage; (4) researchers such as Govindan et al. (2020) test sustainable goal achievement through a sharing economy from an Indian perspective whereas the present study adds the moderation and mediation effects, and considers the BRICS hospitality sector; and (5) from a BRICS perspective there is less evidences regarding the relationship between sharing economy factors and sustainable development with a moderation effect, institutional support, and a mediation factor, distinctive competitive advantage (Sharma, 2020).

The present study addresses some gaps that prevail in the literature: (1) core competence is a prominent feature of the sharing economy but is not correctly induced or used with many corresponding elements in sustainable development; (2) the core resource features of a sharing economy which could produce significant achievement in sustainable development are lacking; (3) distinctive competitive advantage is a core element of a sharing economy and a competitive advantage could be used to comprehensively achieve SDGs, while its mediating effects could play an internal and external role in core resources and competence; and (4) institutional support should be broadly incorporated with other factors to clarify the moderating effect on distinctive competitive advantage and SDGs.

The structure of the study is divided into various phases. In the first, the introduction to the study is presented. In the second, the evidence regarding the core competence features of a sharing economy, core resource features of a sharing economy, distinctive competitive advantage, institutional support, and achievement of SDGs is discussed in light of past studies. The third phase discusses the methodology for the data collection analysis and validity regarding the core competence features of a sharing economy, core resource features of a sharing economy, and achievement of support, and achievement of a sharing economy, distinctive competitive advantage, institutional support, and achievement of SDGs. The fourth phase presents the findings of the study based on the analysis conducted, thus approving

the results. The paper ends with implications, conclusions, and recommendations for further study.

#### Literature review

The core competence of a sharing economy is a system of knowledge creation that helps the sustainable development of BRICS countries. This unique relationship between technology, routine, and individuals has a major role in achieving SDGs. Huang et al. (2019) and Huang et al. (2021) examine the dynamics of core competence, establishing innovation and ecosystems and the enterprise of achieving SDGs. The findings indicate that the core competence feature is a strong contributor to the economy and sustainable development. The core competence of a sharing economy is difficult to replicate, and therefore there is a dire need for a sharing economy as a core competence necessary for achieving goals. The irreplaceable element of core competence helps produce the economic conditions necessary to attain a competitive advantage over the other economies in various countries. Kamarudin et al. (2021) and Tang et al. (2020) analyse the effects of core competence on the performance of service innovation and entrepreneurial orientation in SMEs. The study reveals that, in a sharing economy, the core competence significantly impacts the SDGs of many industries.

The rapidly changing environment of SDGs is due to the bifurcation of core competence. This is considerably more important for the sustainability and maintainability of competitive advantage in competitive international markets. There are numerous core competency elements that need to be restructured, integrated, and adapted, according to technological advancements. Chiu et al. (2019) and Lan et al. (2022) enumerate the many systems of core competence which develop strategies for achieving SDGs. In the automotive industry, SDGs have been positively achieved, with a significant influence of core competence. Bello (2020) and Dankiewicz et al. (2020) and Li et al. (2021) investigate SDGs in terms of corporate social responsibility and the core competence of a sharing economy. The internal and external aspects of organizations are based on the core competence that reacts to a changing environment. Sharma (2021) assesses the constraints on SDGs and the priorities of national and global goals. Various core competence features are important in influencing the attainment of SDGs according to international perspectives. To attain the SDGs of BRICS countries, the core competence plays a considerable role, along with the resources for achieving competitive advantage.

H1: The core competence feature of the sharing economy significantly influences SDG achievement.

The world requires many resources to develop economic stability, but the core resource of a sharing economy is the dominant one. The underpinning elements associated with core resources include cooperative systems, partnerships, and collaboration with other countries (Dankiewicz et al., 2020; Matuszewska-Pierzynka, 2021). These elements are necessary for achieving the SDGs of BRICS countries, while sharing the economy. Bilan et al. (2020) and Lakatos et al. (2021) examine many core concepts and aspects of a circular economy, taking the perspective of the core resources which are important in the sustainable development of cities. These resources certainly help organizations and countries perform with strategic ambition and deal with challenges. The technological advancements and values of the BRICS countries are sophisticated core resources for achieving various goals. These goals are directly related to sustainable development and are influenced by the core resource features of the sharing economy. Liu etb al. (2022) and Shen et al. (2020) analyse resources in the sharing economy from various perspectives which include the circular economy, as well as the participation of government in industries. The findings state that proper implementation of policies

about core resources and proper utilization helps countries attain SDGs.

Various activities in the BRICS countries are determined to be core resources of a sharing economy that directly impact SDGs. Liu et al. (2022) and Geisendorf and Pietrulla (2018) investigate the relationship between the concepts of a circular economy and the core resources of a circular economy that influence sustainable development. There are framing conditions and implementations of the sharing economy's core resources which influence the goals of sustainable development. Al Mamun et al.(2021) and Ruckert et al. (2017) interpret the relationships between SDGs, health, and policy coherence. The goals are widely assessed with the core resource features that impact sustainable development from a partnership perspective. The dimensions of environment, economy, and social culture offer guidance for the integration of a sharing economy with other countries. Therefore, the core resources are considered a significant contributor to sustainable economic growth. Liu et al. (2021) and Morrison-Saunders et al. (2020) assess achieving SDGs by high profile core resource features. In attaining the relevant SDGs, the ambition of working together prevails under the core resource feature of a sharing economy. Most strategic positions are formed according to the core resource feature of the sharing economy that strengthens BRICS countries' businesses (Apostoaie & Bilan, 2020; Vveinhardt & Sroka, 2021).

H2: The core resource feature of the sharing economy significantly influences SDG achievement.

Distinctive competitive advantage is related to the positional advantage that mobilizes barriers to strategic positions. Therefore, competitors being unchangeable and having a distinctive competitive advantage has a mediating role between core competence and achieving SDGs (Bilan et al., 2020). Martín-Rojas et al. (2017) and Moslehpour et al. (2022) study the encouraging performance of organizations which impacts the technologically distinctive competences over entrepreneurship. Distinctive competencies are highly competitive in sustainable development. The BRICS countries have a competitive advantage due to being many countries that share consumer satisfaction, profitability, and economic factors. The combination of core competence and its necessary elements helps develop sustainable goals while distinctive advantage plays a mediating role. Dijkman et al. (2017) and Moslehpour et al. (2022) investigate the core competence of working with differently aged people who contribute a significant portion of the development of professionals which helps to achieve SDGs in the social and healthcare fields. With the help of sustainable development and core competence, every restructuring and development possesses a significant and distinctive competitive advantage. Amprazis and Papadopoulou (2020) and Moslehpour et al. (2021) emphasize the impediments to achieving SDGs that come from the positive inclusion of core competence features. These features induce positive environmental balances, hiding the negative factors for achieving SDGs.

To achieve SDGs, the core competence features of a sharing economy are significantly associated with the role of distinctive competitive advantage. The mediating effect of distinct competitive advantage is very clear from the aspects of the core competence. In a sharing economy, the core competence features play a prominent role. Della Corte et al. (2017) and Sadiq et al. (2022) analyse the relationship between competitive advantage, user innovation, openness, and smartness for various industries' sustainable development. The findings make it clear that distinctive competitive advantages positively mediate SDGs and core competence. The achievement of SDGs through core competence and competitive advantage has a dominant impact as a mediator. Many features of core competence perform in conjunction with distinctive competitive advantage in competitive markets (Lan et al., 2021; Wei et al., 2021). H3: Distinctive competitive advantage significantly mediates the relationship between the core competence feature of a sharing economy and the achievement of SDGs.

The BRICS countries possess major core resources for sharing economic conditions and competitive advantage to tackle various situations. These countries usually strive to achieve SDGs which are significantly mediated by distinctive competitive advantage. Fernandez et al. (2018) and Sadig et al. (2022) interpret the relationship between competency-based management and distinctive competencies in most regulated sectors and their sustainable development. Various approaches to distinct competitive advantage positively upgrade the attainment of core competence and sustainable development. Due to the distinctive approach of BRICS countries, the core resources of a sharing economy are positively induced to achieve SDGs. Sadiq et al. (2022), Na & Kang (2018) assess the effects of and relationships between sharing economy, core competence, core resources, and behaviour intentions for sustainable development. The impacts of core resources are dominant in shared values and sustainable development. Goals are achieved with the help of the sharing economy's core resources and the positive role of distinctive competitive advantage. Core resources are linked to learning effects which contribute to the achievement of competitive advantage over other countries.

There are many factors that affect the achievement of the SDGs of firms and countries. Policymaking is key to the achievement of goals. In this context, Fitsilis & De Vrieze (2020) study the monitoring and maintaining of SDGs with proper legislative procedure and scrutiny of the core competence features. This scrutiny positively induces the corresponding elements of the core competence features to strengthen the distinctive competitive advantage mediating effect over sustainable development. The core resources of a sharing economy are designed to be responsible for long-term results, and therefore distinctive advantage has a mediating role among them. While achieving SDGs, the core resources have a prominent and major impact, mediated by distinctive competitive advantage. Various resources are linked to the attainment of profitability and significant performance, and distinctive competitive advantage has a dominant influence among them. Im et al. (2020) and Zhao et al. (2021) show the influence of innovation, knowledge management and competitive advantage over the core competencies. Distinctive competitive advantage forms a clear path to effective core competencies for sustainable development. There is a differentiation in competitive advantage, due to the large amount of strategic decision-making required for core resources and sustainable development. Both factors are interlinked due to the sharing of the economy.

H4: Distinctive competitive advantage significantly mediates the relationship between the core resources feature of the sharing economy and the achievement of SDGs.

The platforms of the sharing economy endorse traditional economic concepts which are significant and prominent among SDGs and competitive advantage. Therefore, institutional support forms a bridge between distinctive competitive advantage and the achievement of SDGs. Heagney & Benson (2017) and Mahmood et al. (2021) express the need for education and innovation among students of mature age to help the institutional support for distinctive competitive advantage. The moderating impact of institutional support is clear between SDGs and distinctive competitive advantage. There are various crucial organizations which act as unknown factors in economic and sustainable development. Sadler et al. (2018) and Tan et al. (2022) examine programmes of innovation and their needs, impacts, and purposes within the institutional support needed to achieve SDGs. The findings show the problematic issues of sustainable development and distinctive advantage which could be apparent through institutional support. Many organizational practices are necessary for distinctive advantage and sustainable development, and institutional support evidently moderates among them.

Multiple factors rate very highly in the achievement of development goals. Resta et al. (2018) assess competitive advantage taking a distinctive approach to the sustainability of the environment as well as achieving goals. The practices and innovations of distinctive approaches to competitive advantage integrate significant sustainability goals with the help of institutional support. Issever Grochová & Litzman (2021) show the efficiency and efficacy of SDGs and their relationship with distinctive competitive advantage, having a moderating effect on institutional support. Positive improvements in institutional support, and its relative efficiency, induce moderating effects among SDGs and distinctive competitive advantage. Proper dynamics are maintained and developed with the help of institutional support, which forms various organizational practices and policies. These policies and practices focus on the pluralism of institutional forms which are removed with the assistance of institutional support. The complexities of the perspectives that prevail in distinctive competitive advantage and SDGs face the moderating effect of institutional support. Sáez-Martín et al. (2021) analyse the relationship between institutional support and municipal size, which provides freedom of information and knowledge for attaining distinctive advantage and achieving sustainable goals. The role of institutional support between SDGs and distinctive advantage is dominant due to the implementation of legislation by institutions. For stable businesses and organizations, and to attain sustainable development and distinctive competitive advantage, institutional support works as a moderator. Ode and Ayavoo (2020) and Huo et al. (2018) emphasize the dynamics and effects of institutional support, evidently influencing business policies and emerging markets. Therefore, SDGs and distinctive competitive advantage have a moderating influence on institutional support (Aslam et

#### Table 1

Measurements of achievement of SDGs.

al., 2021). The configuration of institutional support is needed to understand local and international perspectives on distinctive competitive advantage. Among many countries, the BRICS countries promote institutional support as a significant moderator which helps sustain the environment.

H5: Institutional support significantly and positively moderates between distinctive competitive advantage and achievement of SDGs.

#### Methodology

This article investigates the impact of core competence and core resources on SDG achievement. It examines the mediating impact of distinctive competitive advantage between core competence, core resources, and achievement of SDGs. The study examines the moderating role of institutional support on the nexus of distinctive competitive advantage and achievement of SDGs in BRICS countries. Questionnaires are used to collect primary data. The study treats SDG achievement as the dependent variable, measured through 17 items adapted from Zamora-Polo et al. (2019), as shown in Table 1.

The study takes institutional support as the moderating variable using five items from Eairween (2018), given in Table 2.

The study treats distinctive competitive advantage as a mediator, adapting its instrument from Na and Kang (2018). These measurements are given in Table 3.

The study takes two predictors, the core competence feature of sharing economy (CCFSE), with nine items, and the core resources feature of sharing economy (CRFSE), with nine items, from Na and Kang (2018). These measurements are given in Tables 4 and 5.

The tourism industry is selected and sharing economy-related employees are the respondents. The researchers used purposeful sampling to select the respondents, and personal visits were used to distribute the questionnaires. A total of 535 surveys were sent, but

Variable	Item	Statement	Source
Achievement SDG	AHSDG1	"My organization takes part in poverty reduction."	(Zamora-Polo et al., 2019)
	AHSDG2	"My organization plays a significant role in hunger-reduction."	
	AHSDG3	"My organization is working for healthcare and wellness."	
	AHSDG4	"My company provides quality education to employees and employees' families."	
	AHSDG5	"My firm always works for gender equality."	
	AHSDG6	"I have access to clean water and sewerage."	
	AHSDG7	"My firm has accessible and non-polluting energy."	
	AHSDG8	"My firm takes part in decent work and economic growth."	
	AHSDG9	"My firm has innovation and effective infrastructure."	
	AHSDG10	"My firm always works to reduce inequalities."	
	AHSDG11	"My firm is creating sustainable cities and communities."	
	AHSDG12	"My firm has the ability for responsible consumption and production."	
	AHSDG13	"My organization always considers the weather care."	
	AHSDG14	"My firm always cares about underwater life."	
	AHSDG15	"My firm always cares for life in terrestrial ecosystems."	
	AHSDG16	"My firm participates in peacebuilding, justice, and corruption-free institutions."	
	AHSDG17	"My organization strives to build alliances to achieve the above goals."	

#### Table 2

Measurements of institutional support.

Variable	Item	Statement	Source
Institutional Support	IS1 IS2 IS3 IS4 IS5	"The firm provides technical support for e-learning." "The platforms chosen by the firm to support e-learning are easy to use." "The platforms chosen by the firm include the necessary features and functions I need." "There are enough clear instructions/training about organizing a digital process from the institution." "I receive a satisfactory and timely response from the IT services staff"	(Eairween, 2018)

#### Table 3

Measurements of distinctive competitive advantage.

Variable	Item	Statement	Source
Distinctive Competitive Advantage	DCA1	"Tendency for innovation of sharing economy service."	(Na & Kang, 2018)
	DCA2	"Management drive of sharing economy service."	
	DCA3	"Differentiated advantage of sharing economy service."	

#### Table 4

Measurements of core competence feature of sharing economy.

Variable	Item	Statement	Source
Core Competence Feature of Sharing Economy	CCFSE1	"User experience information of sharing economy service."	(Na & Kang, 2018)
	CCFSE2	"User experience imitation of sharing economy service."	
	CCFSE3	"Environment for personal experience sharing of sharing economy service."	
	CCFSE4	"Information sharing linkage option of sharing economy service."	
	CCFSE5	"Information spreading ability to share economy service."	
	CCFSE6	"Delivery of pursued value of sharing economy service."	
	CCFSE7	"Information mediator environment of sharing economy service."	
	CCFSE8	"New information creation of sharing economy service."	
	CCFSE9	"Reciprocal information utilization of sharing economy service."	

#### Table 5

Measurements of core resources feature of sharing economy.

Variable	Item	Statement	Source
Core Resources Feature of Sharing Economy	CRFSE1 CRFSE2 CRFSE3 CRFSE4 CRFSE5 CRFSE6 CRFSE6	"Clarity of sharing economy service." "Target market of sharing economy service." "Value expression of sharing economy service." "Niche market (customer needs) of sharing economy service." "Product scarcity of sharing economy service." "Unrivalled value of sharing economy service." "Ingine resource of sharing economy service."	(Na & Kang, 2018)
	CRFSE8 CRFSE9	"Inimitable product power of sharing economy service." "Inimitable value of sharing economy service."	

after fifteen days, only 295 were returned, representing a 55.14% response rate. The researchers used Smart-PLS to examine the item validity and variable reliability, and to investigate the nexus among the variables. Smart-PLS has the characteristics to effectively deal with large sample sizes and complex models (Hair Jr et al., 2021). The framework of the study is given in Fig. 1

The results highlight Cronbach's alpha, AVE, and CR to check the convergent validity. The CR and Cronbach's alpha values greater than 0.70, and the AVE values larger than 0.50 are shown in Table 7, indicating valid convergent validity.

The results highlight the association between the variables, called the discriminant validity. The study uses Fornell Larcker, cross-loadings, and heterotrait monotrait (HTMT) ratio to check the discriminant validity. Fornell Larcker is used to check the variable reliability, and the first value is higher than the rest, indicating stronger relationships among the construct itself than others and indicating valid discriminant validity. Table 8 shows these outcomes.

Secondly, cross-loadings is used to check the variable reliability and all the values of the variable are higher than the figures for other variables, indicating a stronger relation among the construct itself than others and indicating a valid discriminant validity. Table 9 shows these outcomes.

Finally, the HTMT ratio is used to check the variable reliability and values lower than 0.90 indicate a stronger relationship among the construct itself than others, indicating a valid discriminant validity as shown in Table 10



#### Fig. 1. Research model.

## Table 6

adıngs.

Construct	Item	Factor	Loading	5		
Achievement of SDGs	AHSDG1	0.635				
	AHSDG10	0.803				
	AHSDG11	0.871				
	AHSDG12	0.874				
	AHSDG13	0.801				
	AHSDG14	0.870				
	AHSDG15	0.726				
	AHSDG16	0.743				
	AHSDG17	0.698				
	AHSDG2	0.611				
	AHSDG3	0.590				
	AHSDG4	0.600				
	AHSDG5	0.570				
	AHSDG6	0.620				
	AHSDG7	0.587				
	AHSDG8	0.660				
	AHSDG9	0.873				
Core Competence Fea-	CCFSE1		0.859			
ture of Sharing						
Economy	CCECED		0.770			
	CCFSE2		0.775			
	CCESE4		0.753			
	CCESE5		0.870			
	CCESEG		0.800			
	CCFSF7		0.876			
	CCFSF8		0.855			
	CCESE9		0.814			
Core Resources Feature	CRFSE1		0.011	0.762		
of Sharing Economy						
	CRFSE2			0.737		
	CRFSE3			0.685		
	CRFSE4			0.692		
	CRFSE5			0.727		
	CRFSE6			0.751		
	CRFSE7			0.745		
	CRFSE8			0.736		
	CRFSE9			0.748		
Distinctive Competitive Advantage	DCA1				0.973	
	DCA2				0.973	
	DCA3				0.860	
Institutional Support	IS1					0.867
	IS2					0.862
	IS3					0.875
	IS4					0.887
	IS5					0.870

#### Table 7

Convergent validity.

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
AHSDG	0.943	0.948	0.522
CCFSE	0.947	0.955	0.705
CRFSE	0.915	0.912	0.536
DCA	0.929	0.956	0.878
IS	0.921	0.941	0.761

#### Table 8

	AHSDG	CCFSE	CRFSE	DCA	IS
AHSDG	0.722				
CCFSE	0.504	0.840			
CRFSE	0.412	0.370	0.732		
DCA	0.253	0.263	0.308	0.937	
IS	0.479	0.440	0.366	0.682	0.872

Table 9
Cross-loadings.

AHSDG1         0.635         0.466         0.319         0.165         0.380           AHSDG10         0.803         0.853         0.332         0.226         0.386           AHSDG11         0.871         0.590         0.333         0.165         0.351           AHSDG13         0.801         0.451         0.332         0.234         0.386           AHSDG14         0.870         0.595         0.331         0.171         0.348           AHSDG15         0.726         0.504         0.318         0.221         0.349           AHSDG16         0.743         0.580         0.253         0.199         0.387           AHSDG3         0.590         0.434         0.304         0.167         0.349           AHSDG3         0.590         0.434         0.304         0.167         0.333           AHSDG3         0.590         0.434         0.304         0.167         0.337           AHSDG4         0.600         0.392         0.236         0.160         0.295           AHSDG4         0.600         0.392         0.237         0.176         0.337           AHSDG4         0.600         0.392         0.237         0.176         0.338		AHSDG	CCFSE	CRFSE	DCA	IS
AHSDG10         0.803         0.853         0.332         0.226         0.386           AHSDG11         0.871         0.590         0.335         0.165         0.351           AHSDG12         0.874         0.500         0.343         0.182         0.352           AHSDG13         0.801         0.451         0.332         0.234         0.386           AHSDG14         0.870         0.595         0.331         0.171         0.348           AHSDG15         0.726         0.504         0.318         0.221         0.387           AHSDG17         0.698         0.557         0.228         0.256         0.355           AHSDG2         0.611         0.434         0.304         0.167         0.349           AHSDG3         0.590         0.434         0.335         0.179         0.333           AHSDG4         0.600         0.392         0.236         0.160         0.345           AHSDG5         0.570         0.396         0.237         0.176         0.337           AHSDG5         0.577         0.384         0.289         0.078         0.316           AHSDG5         0.577         0.384         0.289         0.333         0.34	AHSDG1	0.635	0.466	0.319	0.165	0.380
AHSDG110.8710.5900.3350.1650.351AHSDG120.8740.5000.3430.1820.352AHSDG130.8010.4510.3320.2340.386AHSDG140.8700.5950.3310.1710.348AHSDG150.7260.5040.3180.2210.349AHSDG160.7430.5800.2530.1990.387AHSDG170.6980.5570.2280.2560.355AHSDG20.6110.4340.3040.1670.349AHSDG30.5900.4340.3350.1790.333AHSDG40.6000.3920.2360.1600.295AHSDG50.5700.3960.2370.1760.357AHSDG60.6200.4230.2670.1800.345AHSDG50.5770.3840.2890.0780.316AHSDG80.6600.4690.3170.1450.333AHSDG90.8730.4950.3370.1760.348CCFSE10.7570.8590.3150.2330.380CCFSE30.6930.7530.2250.2570.362CCFSE40.7820.8760.3440.1990.351CCFSE50.7650.8600.3210.2320.370CCFSE40.7990.8550.3310.2140.373CCFSE90.7310.8140.3270.2210.369CCFSE70.7770.8760.344<	AHSDG10	0.803	0.853	0.332	0.226	0.386
AHSDG120.8740.5000.3430.1820.352AHSDG130.8010.4510.3320.2340.386AHSDG140.8700.5950.3310.1710.348AHSDG150.7260.5040.3180.2210.349AHSDG160.7430.5800.2530.1990.387AHSDG20.6110.4340.3040.1670.349AHSDG30.5900.4340.3350.1790.333AHSDG40.6000.3920.2360.1600.295AHSDG50.5700.3960.2370.1760.357AHSDG60.6200.4230.2670.1800.345AHSDG70.5870.3840.2890.0780.316AHSDG80.6600.4690.3170.1450.333AHSDG90.8730.4950.3370.1760.348CCFSE10.7570.8590.3150.2330.380CCFSE30.6930.7530.2250.2570.362CCFSE50.7650.8600.3210.2320.370CCFSE50.7650.8600.3210.2320.370CCFSE50.7650.8600.3210.2320.370CCFSE50.7960.8550.3310.2140.373CCFSE50.7660.8660.7620.2850.380CRFSE10.5060.4660.7620.2850.380CRFSE10.5060.4660.762 <td>AHSDG11</td> <td>0.871</td> <td>0.590</td> <td>0.335</td> <td>0.165</td> <td>0.351</td>	AHSDG11	0.871	0.590	0.335	0.165	0.351
AHSDG130.8010.4510.3320.2340.386AHSDG140.8700.5950.3310.1710.348AHSDG150.7260.5040.3180.2210.349AHSDG170.6980.5570.2280.2560.355AHSDG20.6110.4340.3040.1670.349AHSDG30.5900.4340.3350.1790.333AHSDG40.6000.3920.2360.1600.295AHSDG50.5700.3960.2370.1760.357AHSDG60.6200.4230.2670.1800.345AHSDG80.6600.4690.3170.1450.333AHSDG80.6600.4690.3170.1450.333AHSDG80.6600.4690.3170.1450.333AHSDG80.6600.4690.3170.1450.389CCFSE10.7570.8560.3280.2230.370CCFSE30.6930.7530.2250.2010.389CCFSE40.7820.8760.3280.2320.370CCFSE60.7750.8760.3440.1990.351CCFSE10.5660.4660.7620.2850.380CCFSE40.7990.4530.7370.3140.416CRFSE30.2000.1600.6850.1740.262CRFSE40.1990.1610.6920.1670.256CRFSE30.2000.1600.685 <td>AHSDG12</td> <td>0.874</td> <td>0.500</td> <td>0.343</td> <td>0.182</td> <td>0.352</td>	AHSDG12	0.874	0.500	0.343	0.182	0.352
AHSDG140.8700.5950.3310.1710.348AHSDG150.7260.5040.3180.2210.349AHSDG160.7430.5800.2530.1990.387AHSDG170.6980.5570.2280.2560.355AHSDG20.6110.4340.3040.1670.349AHSDG30.5900.4340.3350.1790.333AHSDG40.6000.3920.2360.1600.295AHSDG50.5700.3960.2370.1760.343AHSDG50.6600.4430.2890.0780.316AHSDG80.6600.4690.3170.1450.333AHSDG90.8730.4950.3370.1760.348CCFSE10.7570.8590.3150.2330.380CCFSE20.7430.7760.2520.2010.389CCFSE30.6930.7530.2250.2570.362CCFSE40.7820.8760.3240.1990.351CCFSE50.7650.8600.3210.2320.370CCFSE60.7750.8760.3410.2050.353CCFSE90.7310.8140.3270.2140.373CCFSE90.7310.8140.3270.2140.373CCFSE90.7310.8550.3310.2140.373CCFSE50.0940.6660.7620.2850.380CCFSE50.1170.1170.713 <td>AHSDG13</td> <td>0.801</td> <td>0.451</td> <td>0.332</td> <td>0.234</td> <td>0.386</td>	AHSDG13	0.801	0.451	0.332	0.234	0.386
AHSDG150.7260.5040.3180.2210.349AHSDG160.7430.5800.2530.1990.387AHSDG170.6980.5570.2280.2560.355AHSDG20.6110.4340.3040.1670.349AHSDG30.5900.4340.3350.1790.333AHSDG40.6000.3920.2360.1600.295AHSDG50.5700.3960.2370.1760.357AHSDG60.6200.4230.2670.1800.345AHSDG80.6600.4690.3170.1450.333AHSDG80.6600.4950.3170.1450.333AHSDG80.6600.4950.3150.2330.380CCFSE10.7570.8590.3150.2330.380CCFSE20.7430.7760.2520.2010.389CCFSE30.6930.7530.2250.2570.362CCFSE40.7820.8760.3440.1990.351CCFSE50.7650.8600.3210.2320.370CCFSE60.7750.8760.3410.2050.353CCFSE90.7310.8140.3270.2210.369CCFSE40.1990.1610.6850.1740.262CRFSE30.2000.1600.6850.1740.262CRFSE30.2000.1600.6850.1740.262CRFSE30.0940.0660.727	AHSDG14	0.870	0.595	0.331	0.171	0.348
AHSDC160.7430.5800.2530.1990.387AHSDC170.6980.5570.2280.2560.355AHSDG20.6110.4340.3040.1670.349AHSDG30.5900.4340.3350.1790.333AHSDG40.6000.3920.2360.1600.295AHSDG50.5700.3960.2370.1760.357AHSDG60.6200.4230.2670.1800.345AHSDG70.5870.3840.2890.0780.316AHSDG80.6600.4690.3170.1450.333AHSDG90.8730.4950.3370.1760.348CCFSE10.7570.8590.3150.2330.380CCFSE20.7430.7760.2520.2010.389CCFSE30.6930.7530.2250.2570.362CCFSE30.7650.8600.3210.2320.370CCFSE50.7650.8760.3440.1990.351CCFSE30.7960.8550.3310.2140.373CCFSE30.7960.8550.3310.2140.373CCFSE30.7960.8550.3310.2140.373CCFSE30.7960.8550.3310.2140.373CCFSE30.7960.8650.1740.262CRFSE10.5060.4660.7620.2850.380CRFSE10.5060.4660.7620.285<	AHSDG15	0.726	0.504	0.318	0.221	0.349
AHSDC170.6980.5570.2280.2560.355AHSDC20.6110.4340.3040.1670.349AHSDC30.5900.4340.3350.1790.333AHSDC40.6000.3920.2360.1600.295AHSDC50.5700.3960.2370.1760.357AHSDC60.6200.4230.2670.1800.345AHSDC70.5870.3840.2890.0780.316AHSDC80.6600.4690.3170.1450.333AHSDC90.8730.4950.3370.1760.348CCFSE10.7570.8590.3150.2330.380CCFSE20.7430.7760.2520.2010.389CCFSE30.6930.7530.2250.2570.362CCFSE40.7820.8600.3210.2320.370CCFSE50.7650.8600.3210.2320.373CCFSE60.7750.8760.3440.1990.351CCFSE30.7960.8550.3310.2140.373CCFSE90.7310.8140.3270.2210.369CRFSE10.5060.4660.7620.2850.380CRFSE30.0940.0660.7270.1530.124CRFSE40.1990.1610.6920.1670.256CRFSE70.1170.1170.7510.1730.102CRFSE70.1170.1180.736 <t< td=""><td>AHSDG16</td><td>0.743</td><td>0.580</td><td>0.253</td><td>0.199</td><td>0.387</td></t<>	AHSDG16	0.743	0.580	0.253	0.199	0.387
AHSDG20.6110.4340.3040.1670.349AHSDG30.5900.4340.3350.1790.333AHSDG40.6000.3920.2360.1600.295AHSDG50.5700.3960.2370.1760.357AHSDG60.6200.4230.2670.1800.345AHSDG70.5870.3840.2890.0780.316AHSDG80.6600.4690.3170.1450.333AHSDG90.8730.4950.3370.1760.348CCFSE10.7570.8590.3150.2330.380CCFSE20.7430.7760.2520.2010.389CCFSE30.6930.7530.2250.2570.362CCFSE40.7820.8760.3280.2280.381CCFSE50.7650.8600.3210.2320.370CCFSE60.7750.8760.3410.2050.353CCFSE80.7960.8550.3310.2140.373CCFSE90.7310.8140.3270.2210.369CRFSE10.5060.4660.7620.2850.380CRFSE20.4990.4530.7370.3140.416CRFSE30.0940.0660.7270.1530.124CRFSE40.1990.1610.6820.1670.256CRFSE30.0940.0660.7260.1570.111CRFSE30.0940.0660.726 <td< td=""><td>AHSDG17</td><td>0.698</td><td>0.557</td><td>0.228</td><td>0.256</td><td>0.355</td></td<>	AHSDG17	0.698	0.557	0.228	0.256	0.355
AHSDG30.5900.4340.3350.1790.333AHSDG40.6000.3920.2360.1600.295AHSDG50.5700.3960.2370.1760.357AHSDG60.6200.4230.2670.1800.345AHSDG70.5870.3840.2890.0780.316AHSDG80.6600.4690.3170.1450.333AHSDG90.8730.4950.3370.1760.348CCFSE10.7570.8590.3150.2330.380CCFSE20.7430.7760.2520.2010.389CCFSE30.6930.7530.2250.2570.362CCFSE40.7820.8760.3210.2320.370CCFSE50.7650.8600.3210.2320.370CCFSE60.7750.8760.3410.2050.353CCFSE70.7770.8760.3410.2050.353CCFSE90.7310.8140.3270.2210.369CRFSE10.5060.4660.7620.2850.380CRFSE30.2000.1600.6850.1740.416CRFSE30.2000.1600.6850.1740.262CRFSE40.1990.1610.6920.1670.256CRFSE50.0940.0660.7260.1500.113CRFSE90.1170.1170.7510.1730.124CRFSE90.1040.1060.748 <td< td=""><td>AHSDG2</td><td>0.611</td><td>0.434</td><td>0.304</td><td>0.167</td><td>0.349</td></td<>	AHSDG2	0.611	0.434	0.304	0.167	0.349
AHSDC40.6000.3920.2360.1600.295AHSDC50.5700.3960.2370.1760.357AHSDC60.6200.4230.2670.1800.345AHSDC70.5870.3840.2890.0780.316AHSDC80.6600.4690.3170.1450.333AHSDC90.8730.4950.3370.1760.348CCFSE10.7570.8590.3150.2330.380CCFSE20.7430.7760.2520.2010.389CCFSE30.6930.7530.2250.2570.362CCFSE40.7820.8760.3280.2320.370CCFSE50.7650.8600.3210.2320.370CCFSE60.7750.8760.3440.1990.351CCFSE70.7770.8760.3410.2050.353CCFSE80.7960.8550.3310.2140.373CCFSE90.7310.8140.3270.2210.369CRFSE10.5060.4660.7620.2850.380CRFSE30.2000.1600.6850.1740.262CRFSE40.1990.1610.6920.1670.256CRFSE50.0940.0660.7270.1530.124CRFSE90.1040.1060.7480.1670.106DCA10.2430.2530.3310.9730.661DCA20.2280.2380.3220.5	AHSDG3	0.590	0.434	0.335	0.179	0.333
AHSDG50.5700.3960.2370.1760.357AHSDG60.6200.4230.2670.1800.345AHSDG70.5870.3840.2890.0780.316AHSDG80.6600.4690.3170.1450.333AHSDG90.8730.4950.3370.1760.348CCFSE10.7570.8590.3150.2330.380CCFSE20.7430.7760.2520.2010.389CCFSE30.6930.7530.2250.2570.362CCFSE40.7820.8760.3280.2280.371CCFSE50.7650.8600.3210.2320.370CCFSE60.7750.8760.3410.2050.353CCFSE70.7770.8760.3410.2050.353CCFSE80.7960.8550.3310.2140.373CCFSE90.7310.8140.3270.2210.369CRFSE10.5060.4660.7620.2850.380CRFSE30.2000.1600.6850.1740.262CRFSE40.1990.1610.6920.1670.256CRFSE50.0940.0660.7270.1530.124CRFSE60.1170.1170.7510.1730.102CRFSE70.1170.1180.7450.1570.111CRFSE30.0980.0660.7260.1500.113CRFSE40.1980.03830.328 <t< td=""><td>AHSDG4</td><td>0.600</td><td>0.392</td><td>0.236</td><td>0.160</td><td>0.295</td></t<>	AHSDG4	0.600	0.392	0.236	0.160	0.295
AHSDG60.6200.4230.2670.1800.345AHSDC70.5870.3840.2890.0780.316AHSDG80.6600.4690.3170.1450.333AHSDG90.8730.4950.3370.1760.348CCFSE10.7570.8590.3150.2330.380CCFSE20.7430.7760.2520.2010.389CCFSE30.6930.7530.2250.2570.362CCFSE40.7820.8760.3280.2280.381CCFSE50.7650.8600.3210.2320.370CCFSE60.7750.8760.3440.1990.351CCFSE70.7770.8760.3410.2050.353CCFSE80.7960.8550.3310.2140.373CCFSE90.7310.8140.3270.2210.369CRFSE10.5060.4660.7620.2850.380CRFSE30.2000.1600.6850.1740.262CRFSE40.1990.1610.6920.1670.256CRFSE70.1170.1170.7510.1730.102CRFSE70.1170.1180.7450.1670.104CRFSE70.1170.1180.7360.1500.113CRFSE70.1170.1180.7450.1670.106DCA10.2430.2530.3310.9730.661DCA20.2280.2380.3280.9	AHSDG5	0.570	0.396	0.237	0.176	0.357
AHSDG70.5870.3840.2890.0780.316AHSDG80.6600.4690.3170.1450.333AHSDG90.8730.4950.3370.1760.348CCFSE10.7570.8590.3150.2330.380CCFSE20.7430.7760.2520.2010.389CCFSE30.6930.7530.2250.2570.362CCFSE40.7820.8760.3280.2220.370CCFSE50.7650.8600.3210.2320.373CCFSE60.7750.8760.3440.1990.351CCFSE70.7770.8760.3410.2050.353CCFSE80.7960.8550.3310.2140.373CCFSE90.7310.8140.3270.2210.369CRFSE10.5060.4660.7620.2850.380CRFSE20.4990.4530.7370.3140.416CRFSE30.0940.0660.7270.1530.124CRFSE40.1990.1610.6920.1670.256CRFSE70.1170.1180.7450.1750.111CRFSE30.0940.0660.7260.1500.113CRFSE40.1990.3510.6600.1670.160DCA10.2430.2530.3310.9730.661DCA10.2430.2530.3310.9730.661DCA30.2420.2510.1920.860	AHSDG6	0.620	0.423	0.267	0.180	0.345
AHSDG80.6600.4690.3170.1450.333AHSDC90.8730.4950.3370.1760.348CCFSE10.7570.8590.3150.2330.380CCFSE20.7430.7760.2520.2010.389CCFSE30.6930.7530.2250.2570.362CCFSE40.7820.8760.3280.2280.381CCFSE50.7650.8600.3210.2320.370CCFSE60.7750.8760.3440.1990.351CCFSE70.7770.8760.3410.2050.353CCFSE80.7960.8550.3310.2140.373CCFSE90.7310.8140.3270.2210.369CRFSE10.5060.4660.7620.2850.380CRFSE20.4990.4530.7370.3140.416CRFSE30.2000.1600.6850.1740.262CRFSE40.1990.1610.6920.1670.256CRFSE50.0940.0660.7260.1530.124CRFSE60.1170.1170.7510.1730.102CRFSE80.0980.0660.7360.1500.113CRFSE90.1040.1060.7480.1670.106DCA10.2430.2530.3310.9730.661DCA30.2420.2510.1920.8600.595IS10.4130.3830.2910.663<	AHSDG7	0.587	0.384	0.289	0.078	0.316
AHSDG90.8730.4950.3370.1760.348CCFSE10.7570.8590.3150.2330.380CCFSE20.7430.7760.2520.2010.389CCFSE30.6930.7530.2250.2570.362CCFSE40.7820.8760.3210.2320.370CCFSE50.7650.8600.3210.2320.370CCFSE60.7750.8760.3440.1990.351CCFSE70.7770.8760.3410.2050.353CCFSE80.7960.8550.3310.2140.373CCFSE90.7310.8140.3270.2210.369CRFSE10.5060.4660.7620.2850.380CRFSE20.4990.4630.7370.3140.416CRFSE30.2000.1600.6850.1740.262CRFSE40.1990.1610.6920.1670.256CRFSE50.0940.0660.7270.1530.124CRFSE60.1170.1170.7510.1730.102CRFSE90.1040.1060.7480.1670.113CRFSE90.1040.1060.7480.1670.106DCA10.2430.2530.3310.9730.661DCA30.2420.2510.1920.8600.595IS10.4130.3830.2910.6630.867IS20.3730.3530.3220.583 <td>AHSDG8</td> <td>0.660</td> <td>0.469</td> <td>0.317</td> <td>0.145</td> <td>0.333</td>	AHSDG8	0.660	0.469	0.317	0.145	0.333
CCFSE1         0.757         0.859         0.315         0.233         0.380           CCFSE2         0.743         0.776         0.252         0.201         0.389           CCFSE3         0.693         0.753         0.225         0.257         0.362           CCFSE4         0.782         0.876         0.328         0.222         0.370           CCFSE5         0.765         0.860         0.321         0.232         0.370           CCFSE6         0.775         0.876         0.344         0.199         0.351           CCFSE6         0.777         0.876         0.341         0.205         0.353           CCFSE9         0.731         0.814         0.327         0.221         0.369           CRFSE1         0.506         0.466         0.762         0.285         0.380           CRFSE3         0.200         0.160         0.685         0.174         0.462           CRFSE3         0.200         0.160         0.685         0.174         0.262           CRFSE3         0.200         0.160         0.685         0.174         0.262           CRFSE3         0.200         0.166         0.748         0.175         0.111	AHSDG9	0.873	0.495	0.337	0.176	0.348
CCFSE2         0.743         0.776         0.252         0.201         0.389           CCFSE3         0.693         0.753         0.225         0.257         0.362           CCFSE4         0.782         0.876         0.328         0.228         0.381           CCFSE5         0.765         0.860         0.321         0.232         0.370           CCFSE6         0.775         0.876         0.344         0.199         0.351           CCFSE7         0.777         0.876         0.341         0.205         0.353           CCFSE8         0.796         0.855         0.331         0.214         0.373           CCFSE9         0.731         0.814         0.327         0.221         0.369           CRFSE1         0.506         0.466         0.762         0.285         0.380           CRFSE3         0.200         0.160         0.685         0.174         0.262           CRFSE4         0.199         0.161         0.692         0.167         0.256           CRFSE4         0.199         0.161         0.692         0.167         0.256           CRFSE5         0.094         0.066         0.727         0.153         0.124	CCFSE1	0.757	0.859	0.315	0.233	0.380
CCFSE3         0.693         0.753         0.225         0.257         0.362           CCFSE4         0.782         0.876         0.328         0.228         0.381           CCFSE5         0.765         0.860         0.321         0.232         0.370           CCFSE6         0.775         0.876         0.344         0.199         0.351           CCFSE7         0.777         0.876         0.341         0.205         0.353           CCFSE8         0.796         0.855         0.331         0.214         0.373           CCFSE9         0.731         0.814         0.327         0.221         0.369           CRFSE1         0.506         0.466         0.762         0.285         0.380           CRFSE2         0.499         0.453         0.737         0.314         0.416           CRFSE3         0.200         0.160         0.685         0.174         0.262           CRFSE3         0.200         0.161         0.692         0.167         0.256           CRFSE4         0.199         0.161         0.692         0.167         0.256           CRFSE5         0.094         0.066         0.727         0.153         0.112	CCFSE2	0.743	0.776	0.252	0.201	0.389
CCFSE4         0.782         0.876         0.328         0.228         0.381           CCFSE5         0.765         0.860         0.321         0.232         0.370           CCFSE6         0.775         0.876         0.344         0.199         0.351           CCFSE6         0.777         0.876         0.341         0.205         0.353           CCFSE8         0.796         0.855         0.331         0.214         0.373           CCFSE9         0.731         0.814         0.327         0.221         0.369           CRFSE1         0.506         0.466         0.762         0.285         0.380           CRFSE2         0.499         0.453         0.737         0.314         0.416           CRFSE3         0.200         0.161         0.662         0.167         0.256           CRFSE4         0.199         0.161         0.662         0.167         0.256           CRFSE4         0.199         0.161         0.662         0.167         0.256           CRFSE4         0.199         0.161         0.662         0.167         0.124           CRFSE4         0.194         0.066         0.727         0.153         0.112	CCFSE3	0.693	0.753	0.225	0.257	0.362
CCFSE5         0.765         0.860         0.321         0.232         0.370           CCFSE6         0.775         0.876         0.344         0.199         0.351           CCFSE7         0.777         0.876         0.341         0.205         0.353           CCFSE8         0.796         0.855         0.331         0.214         0.373           CCFSE9         0.731         0.814         0.327         0.221         0.369           CRFSE1         0.506         0.466         0.762         0.285         0.380           CRFSE1         0.506         0.466         0.762         0.285         0.380           CRFSE2         0.499         0.453         0.737         0.314         0.416           CRFSE3         0.200         0.160         0.685         0.174         0.262           CRFSE4         0.199         0.161         0.692         0.167         0.256           CRFSE5         0.094         0.066         0.727         0.153         0.124           CRFSE6         0.117         0.117         0.175         0.113         0.102           CRFSE8         0.098         0.066         0.736         0.150         0.113	CCFSE4	0.782	0.876	0.328	0.228	0.381
CCFSE6         0.775         0.876         0.344         0.199         0.351           CCFSE7         0.777         0.876         0.341         0.205         0.353           CCFSE8         0.796         0.855         0.331         0.214         0.373           CCFSE9         0.731         0.814         0.327         0.221         0.369           CRFSE1         0.506         0.466         0.762         0.285         0.380           CRFSE1         0.506         0.466         0.762         0.285         0.380           CRFSE2         0.499         0.453         0.737         0.314         0.416           CRFSE3         0.200         0.160         0.685         0.174         0.262           CRFSE4         0.199         0.161         0.692         0.167         0.256           CRFSE5         0.094         0.066         0.727         0.153         0.124           CRFSE6         0.117         0.117         0.751         0.173         0.102           CRFSE8         0.098         0.066         0.736         0.150         0.113           CRFSE9         0.104         0.106         0.748         0.167         0.106	CCFSE5	0.765	0.860	0.321	0.232	0.370
CCFSE7         0.777         0.876         0.341         0.205         0.353           CCFSE8         0.796         0.855         0.331         0.214         0.373           CCFSE9         0.731         0.814         0.327         0.221         0.369           CRFSE1         0.506         0.466         0.762         0.285         0.380           CRFSE2         0.499         0.453         0.737         0.314         0.416           CRFSE3         0.200         0.160         0.685         0.174         0.262           CRFSE4         0.199         0.161         0.692         0.167         0.256           CRFSE5         0.094         0.066         0.727         0.153         0.124           CRFSE6         0.117         0.117         0.751         0.173         0.102           CRFSE7         0.117         0.118         0.745         0.175         0.111           CRFSE8         0.098         0.066         0.736         0.150         0.113           CRFSE9         0.104         0.106         0.748         0.167         0.106           DCA1         0.243         0.253         0.331         0.973         0.661	CCFSE6	0.775	0.876	0.344	0.199	0.351
CCFSE8         0.796         0.855         0.331         0.214         0.373           CCFSE9         0.731         0.814         0.327         0.221         0.369           CRFSE1         0.506         0.466         0.762         0.285         0.380           CRFSE2         0.499         0.453         0.737         0.314         0.416           CRFSE3         0.200         0.160         0.685         0.174         0.262           CRFSE4         0.199         0.161         0.692         0.167         0.256           CRFSE5         0.094         0.066         0.727         0.153         0.124           CRFSE6         0.117         0.117         0.751         0.173         0.102           CRFSE7         0.117         0.118         0.745         0.150         0.111           CRFSE9         0.104         0.106         0.748         0.167         0.106           DCA1         0.243         0.253         0.331         0.973         0.660           DCA2         0.228         0.238         0.328         0.973         0.661           DCA3         0.242         0.251         0.192         0.860         0.595 </td <td>CCFSE7</td> <td>0.777</td> <td>0.876</td> <td>0.341</td> <td>0.205</td> <td>0.353</td>	CCFSE7	0.777	0.876	0.341	0.205	0.353
CCFSE9         0.731         0.814         0.327         0.221         0.369           CRFSE1         0.506         0.466         0.762         0.285         0.380           CRFSE2         0.499         0.453         0.737         0.314         0.416           CRFSE3         0.200         0.160         0.685         0.174         0.262           CRFSE3         0.200         0.161         0.692         0.167         0.256           CRFSE4         0.199         0.161         0.692         0.167         0.256           CRFSE5         0.094         0.066         0.727         0.153         0.124           CRFSE6         0.117         0.117         0.751         0.173         0.102           CRFSE7         0.117         0.118         0.745         0.157         0.111           CRFSE9         0.104         0.106         0.748         0.167         0.160           DCA1         0.243         0.253         0.331         0.973         0.660           DCA2         0.228         0.238         0.328         0.973         0.661           DCA3         0.242         0.251         0.192         0.860         0.595 </td <td>CCFSE8</td> <td>0.796</td> <td>0.855</td> <td>0.331</td> <td>0.214</td> <td>0.373</td>	CCFSE8	0.796	0.855	0.331	0.214	0.373
CRFSE1         0.506         0.466         0.762         0.285         0.380           CRFSE2         0.499         0.453         0.737         0.314         0.416           CRFSE3         0.200         0.160         0.685         0.174         0.262           CRFSE4         0.199         0.161         0.692         0.167         0.256           CRFSE5         0.094         0.066         0.727         0.153         0.124           CRFSE6         0.117         0.117         0.751         0.173         0.102           CRFSE6         0.117         0.118         0.745         0.150         0.111           CRFSE8         0.098         0.066         0.736         0.150         0.113           CRFSE9         0.104         0.106         0.748         0.167         0.106           DCA1         0.243         0.253         0.331         0.973         0.660           DCA2         0.228         0.238         0.328         0.973         0.661           DCA3         0.242         0.251         0.192         0.860         0.595           IS1         0.413         0.383         0.291         0.663         0.867	CCFSE9	0.731	0.814	0.327	0.221	0.369
CRFSE2         0.499         0.453         0.737         0.314         0.416           CRFSE3         0.200         0.160         0.685         0.174         0.262           CRFSE4         0.199         0.161         0.692         0.167         0.256           CRFSE5         0.094         0.066         0.727         0.153         0.124           CRFSE6         0.117         0.117         0.751         0.173         0.102           CRFSE7         0.117         0.118         0.745         0.175         0.111           CRFSE8         0.098         0.066         0.736         0.150         0.113           CRFSE9         0.104         0.106         0.748         0.167         0.106           DCA1         0.243         0.253         0.331         0.973         0.660           DCA2         0.228         0.238         0.328         0.973         0.661           DCA3         0.242         0.251         0.192         0.860         0.595           IS1         0.413         0.383         0.291         0.663         0.867           IS2         0.373         0.353         0.325         0.583         0.862	CRFSE1	0.506	0.466	0.762	0.285	0.380
CRFSE3         0.200         0.160         0.685         0.174         0.262           CRFSE4         0.199         0.161         0.692         0.167         0.256           CRFSE5         0.094         0.066         0.727         0.153         0.124           CRFSE6         0.117         0.117         0.751         0.173         0.102           CRFSE7         0.117         0.118         0.745         0.175         0.111           CRFSE8         0.098         0.066         0.736         0.150         0.113           CRFSE9         0.104         0.106         0.748         0.167         0.106           DCA1         0.243         0.253         0.331         0.973         0.661           DCA2         0.228         0.238         0.328         0.973         0.661           DCA3         0.242         0.251         0.192         0.860         0.595           IS1         0.413         0.383         0.291         0.663         0.867           IS2         0.373         0.352         0.583         0.882         153         0.400         0.382         0.342         0.634         0.875           IS4         0.438	CRFSE2	0.499	0.453	0.737	0.314	0.416
CRFSE4         0.199         0.161         0.692         0.167         0.256           CRFSE5         0.094         0.066         0.727         0.153         0.124           CRFSE6         0.117         0.117         0.751         0.173         0.102           CRFSE7         0.117         0.118         0.745         0.175         0.111           CRFSE8         0.098         0.066         0.736         0.150         0.113           CRFSE9         0.104         0.106         0.748         0.167         0.106           DCA1         0.243         0.253         0.331         0.973         0.660           DCA2         0.228         0.238         0.328         0.973         0.661           DCA3         0.242         0.251         0.192         0.860         0.595           IS1         0.413         0.383         0.291         0.663         0.867           IS2         0.373         0.353         0.325         0.583         0.862           IS3         0.400         0.382         0.342         0.634         0.875           IS4         0.438         0.405         0.317         0.585         0.887	CRFSE3	0.200	0.160	0.685	0.174	0.262
CRFSE5         0.094         0.066         0.727         0.153         0.124           CRFSE6         0.117         0.117         0.751         0.173         0.102           CRFSE7         0.117         0.118         0.745         0.173         0.111           CRFSE8         0.098         0.066         0.736         0.150         0.113           CRFSE9         0.104         0.106         0.748         0.167         0.106           DCA1         0.243         0.253         0.331         0.973         0.660           DCA2         0.228         0.238         0.328         0.973         0.661           DCA3         0.242         0.251         0.192         0.860         0.595           IS1         0.413         0.383         0.291         0.663         0.867           IS2         0.373         0.353         0.342         0.634         0.875           IS4         0.438         0.405         0.317         0.585         0.887           IS5         0.455         0.393         0.324         0.519         0.870	CRFSE4	0.199	0.161	0.692	0.167	0.256
CRFSE6         0.117         0.117         0.751         0.173         0.102           CRFSE7         0.117         0.118         0.745         0.175         0.111           CRFSE7         0.117         0.118         0.745         0.175         0.111           CRFSE8         0.098         0.066         0.736         0.150         0.113           CRFSE9         0.104         0.106         0.748         0.167         0.106           DCA1         0.243         0.253         0.331         0.973         0.660           DCA2         0.228         0.238         0.328         0.973         0.661           DCA3         0.242         0.251         0.192         0.860         0.595           IS1         0.413         0.383         0.291         0.663         0.867           IS2         0.373         0.353         0.342         0.634         0.875           IS3         0.400         0.382         0.342         0.634         0.875           IS4         0.438         0.405         0.317         0.585         0.887           IS5         0.455         0.393         0.324         0.519         0.870	CRFSE5	0.094	0.066	0.727	0.153	0.124
CRFSE7         0.117         0.118         0.745         0.175         0.111           CRFSE8         0.098         0.066         0.736         0.150         0.113           CRFSE9         0.104         0.106         0.748         0.167         0.106           DCA1         0.243         0.253         0.331         0.973         0.660           DCA2         0.228         0.238         0.328         0.973         0.661           DCA3         0.242         0.251         0.192         0.860         0.595           IS1         0.413         0.383         0.291         0.663         0.867           IS2         0.373         0.353         0.325         0.583         0.862           IS3         0.400         0.382         0.342         0.634         0.875           IS4         0.438         0.405         0.317         0.585         0.887           IS5         0.455         0.393         0.324         0.519         0.870	CRFSE6	0.117	0.117	0.751	0.173	0.102
CRFSE8         0.098         0.066 <b>0.736</b> 0.150         0.113           CRFSE9         0.104         0.106 <b>0.748</b> 0.167         0.106           DCA1         0.243         0.253         0.331 <b>0.973</b> 0.660           DCA2         0.228         0.238         0.328 <b>0.973</b> 0.661           DCA3         0.242         0.251         0.192 <b>0.860</b> 0.595           IS1         0.413         0.383         0.291         0.663 <b>0.867</b> IS2         0.373         0.353         0.325         0.583 <b>0.862</b> IS3         0.400         0.382         0.342         0.634 <b>0.875</b> IS4         0.438         0.405         0.317         0.585 <b>0.887</b> IS5         0.455         0.393         0.324         0.519 <b>0.870</b>	CRFSE7	0.117	0.118	0.745	0.175	0.111
CRFSE9         0.104         0.106 <b>0.748</b> 0.167         0.106           DCA1         0.243         0.253         0.331 <b>0.973</b> 0.660           DCA2         0.228         0.238         0.328 <b>0.973</b> 0.661           DCA3         0.242         0.251         0.192 <b>0.860</b> 0.595           IS1         0.413         0.383         0.291         0.663 <b>0.867</b> IS2         0.373         0.353         0.325         0.583 <b>0.862</b> IS3         0.400         0.382         0.342         0.634 <b>0.875</b> IS4         0.438         0.405         0.317         0.585 <b>0.887</b> IS5         0.455         0.393         0.324         0.519 <b>0.870</b>	CRFSE8	0.098	0.066	0.736	0.150	0.113
DCA1         0.243         0.253         0.331 <b>0.973</b> 0.660           DCA2         0.228         0.238         0.328 <b>0.973</b> 0.661           DCA3         0.242         0.251         0.192 <b>0.860</b> 0.595           IS1         0.413         0.383         0.291         0.663 <b>0.867</b> IS2         0.373         0.355         0.325         0.583 <b>0.862</b> IS3         0.400         0.382         0.342         0.634 <b>0.875</b> IS4         0.438         0.405         0.317         0.585 <b>0.887</b> IS5         0.455         0.393         0.324         0.519 <b>0.870</b>	CRFSE9	0.104	0.106	0.748	0.167	0.106
DCA2         0.228         0.238         0.328         0.973         0.661           DCA3         0.242         0.251         0.192         0.860         0.595           IS1         0.413         0.383         0.291         0.663         0.867           IS2         0.373         0.353         0.325         0.583         0.862           IS3         0.400         0.382         0.342         0.634         0.875           IS4         0.438         0.405         0.317         0.585         0.887           IS5         0.455         0.393         0.324         0.519         0.870	DCA1	0.243	0.253	0.331	0.973	0.660
DCA3         0.242         0.251         0.192 <b>0.860</b> 0.595           IS1         0.413         0.383         0.291         0.663 <b>0.867</b> IS2         0.373         0.353         0.325         0.583 <b>0.862</b> IS3         0.400         0.382         0.342         0.634 <b>0.875</b> IS4         0.438         0.405         0.317         0.585 <b>0.887</b> IS5         0.455         0.393         0.324         0.519 <b>0.870</b>	DCA2	0.228	0.238	0.328	0.973	0.661
IS1         0.413         0.383         0.291         0.663 <b>0.867</b> IS2         0.373         0.353         0.325         0.583 <b>0.862</b> IS3         0.400         0.382         0.342         0.634 <b>0.875</b> IS4         0.438         0.405         0.317         0.585 <b>0.887</b> IS5         0.455         0.393         0.324         0.519 <b>0.870</b>	DCA3	0.242	0.251	0.192	0.860	0.595
IS2         0.373         0.353         0.325         0.583         0.862           IS3         0.400         0.382         0.342         0.634         0.875           IS4         0.438         0.405         0.317         0.585         0.887           IS5         0.455         0.393         0.324         0.519         0.870	IS1	0.413	0.383	0.291	0.663	0.867
IS3         0.400         0.382         0.342         0.634 <b>0.875</b> IS4         0.438         0.405         0.317         0.585 <b>0.887</b> IS5         0.455         0.393         0.324         0.519 <b>0.870</b>	IS2	0.373	0.353	0.325	0.583	0.862
IS4         0.438         0.405         0.317         0.585 <b>0.887</b> IS5         0.455         0.393         0.324         0.519 <b>0.870</b>	IS3	0.400	0.382	0.342	0.634	0.875
IS5 0.455 0.393 0.324 0.519 <b>0.870</b>	IS4	0.438	0.405	0.317	0.585	0.887
	IS5	0.455	0.393	0.324	0.519	0.870

# Table 10Heterotrait monotrait ratio.

	AHSDG	CCFSE	CRFSE	DCA	IS
AHSDG					
CCFSE	0.708				
CRFSE	0.308	0.268			
DCA	0.269	0.282	0.269		
IS	0.519	0.471	0.294	0.740	

The results of the direct path, shown in Table 11, indicate that the core competence and core resource features of a sharing economy have a positive association with the achievement of SDGs, and the hypotheses H1 and H2 are accepted.

The findings for the indirect path, shown in Table 12, show that distinctive competitive advantage significantly mediates the association of core competence, core resources, and achievement of SDGs. Therefore, H3 and H4 are accepted. The outcomes also reveal that institutional support significantly moderates the nexus of distinctive competitive advantage and SDG achievement, hence H5 is accepted.

### Discussion

The study results indicate that the core competence feature of a sharing economy has a positive association with SDG achievement.

Table 11 Direct path analysis.

Relationship	Beta	Standard Deviation	T Statistic	P Value	Lower Limit	Upper Limit
CCFSE -> AHSDG	0.839	0.022	38.623	0.000	0.801	0.870
CCFSE -> DCA	0.173	0.076	2.268	0.013	0.029	0.288
CRFSE -> AHSDG	0.070	0.032	2.163	0.016	0.016	0.114
CRFSE -> DCA	0.244	0.072	3.401	0.000	0.128	0.377
DCA -> AHSDG	0.073	0.033	2.175	0.016	0.146	1.023
IS -> AHSDG	0.170	0.035	4.850	0.000	0.112	0.228

Table 12

Indirect path analysis.

Relationship	Beta	Standard Deviation	T Statistic	P Value	Lower Limit	Upper Limit
CRFSE -> DCA -> AHSDG CCFSE -> DCA -> AHSDG	0.018 0.023	0.011 0.009	1.676 2.556	0.048 0.041	0.039 0.032	1.005 1.001
DCA*IS -> AHSDG	0.062	0.021	2.985	0.002	0.026	0.100

These results are supported by the previous study of Gössling and Hall (2019), who state that, in a sharing economy, business organizations collaborate through verbal and written contracts by which they share their services or competencies among themselves to perform their functions effectively with minimum resources, the core competencies, such as leadership, supervision, communication skills, and performance evaluation. By sharing core competencies, organizations can enhance their production and thereby raise employment rates, improve income levels, and increase social wellbeing. These findings are also consistent with those of Boar et al. (2020), who show that, under a sharing economy, the opportunity to exchange the core competencies required to carry out environmentally friendly practices, such as the skills to operate ecologically friendly technology and processes, reduces the negative influences of business activities on the natural environment. Thus, a sharing economy stimulates climate action and reduces environmental pollution, which tends to be the main objective of SDGs. These results also agree with Karobliene and Pilinkiene (2021a), who examine the sharing economy with the feature of exchanging core competencies and the achievement of SDGs. The study implies that the sharing of core competencies, such as supportive leadership, emotional intelligence, and communication skills, improves the social relations of the organization with its stakeholders. The increase in social performance, along with economic progress, leads to SDG achievement.

The findings indicate that the core resources feature of a sharing economy has a positive association with SDG achievement. These results are supported by the recent study of Chen et al. (2020), who show that many of the SDGs of the UN are based on improved technology acquisition and utilization, which improve firm performance in three criteria: people, planet, and progress. The sharing of resources under a sharing economy helps in the acquisition of ecologically friendly technologies (information, communication, and production technologies), which give higher social, economic, and environmental performance and help achieve SDGs. These results are in line with Lucas et al. (2021), who examine the core resources feature of a sharing economy in the achievement of SDGs. This study posits that, in a sharing economy, the exchange of high-quality resources which are too expensive for firms to acquire by themselves, on the whole, develops their ability to adopt innovation, responds to market demands, increases productivity both in quality and variety, achieves economic growth and provides jobs for people. In this way, a sharing economy helps sustainable development. These results are in line with Lyaskovskaya and Khudyakova (2021), who state that, for sustainable development or the achievement of the SDGs defined by UN resolution, a large number of quality resources are needed. Since an effectively implemented sharing economy improves the strength of businesses through resource access, sustainable development is more easily achieved.

The results show that distinctive competitive advantage plays a mediating role between the core competence features of a sharing economy and SDG achievement. These results are consistent with Scavarda et al. (2020), who state that, through sharing economic collaboration in terms of management abilities, labour skill for technologies, and manufacturing abilities, business organizations can possess more efficient technologies and resources, produce higher quality products, and provide more satisfactory services. These competitive advantages enable organizations to create benefits for customers and gain higher educational performance, which are among the SDGs focusing on economic growth, innovation, quality of production, and customer wellbeing. Thus, competitive advantages build links between the core competence features of the sharing economy and SDG achievement. The findings are consistent with Govindan et al. (2020), who show that, in a sharing economy, competencies, from management level to consultants, leaders, and lower-level workers, can be integrated. Access to dynamic competencies proves helpful for partner firms, giving them a higher position in the market, and developing the organization itself to acquire distinctive competitive advantages that differentiate them from others. Competitive advantages such as lower costs for the same production, a more cooperative workforce, and innovation-based products, lead the company towards the achievement of SDGs.

The results reveal that distinctive competitive advantages play a mediating role between the core resource features of a sharing economy and SDG achievement. These results are in line with Melián-González et al. (2019), who analyse the sharing economy's role in developing distinctive competitive advantages and the achievement of SDGs. The study implies that the sharing economy, which promotes the exchange of resources, is beneficial for business organizations, helping them acquire access to more productive land or buildings equipped with necessities for improving production or brand image. The development of competitive advantages through the sharing economy clarifies how to achieve SDGs. The results are also in line with Nakamura et al. (2021), who argue that the implementation of a sharing economy gives businesses easy access to resources. The distinctive competitive advantages, such as the possession of resources (information, physical, and human resources) which are not available to competitors, not only help firms improve their brand images and profitability but also bring an exponential increase in business scope, which provides benefits to all stakeholders (e.g., more employment opportunities for the general public, greater income for employees, and motivation for investment). All these improvements lead to the achievement of SDGs.

The results reveal that institutional support plays a moderating role between distinctive competitive advantages and SDG achievement. This is in line with Laukkanen & Tura (2020), who analyse organizations' behaviours, or those of their representatives, among themselves or with subordinates, and the effect on business function. When institutions adopt supportive behaviour through management or leaders, they motivate employees to work wholeheartedly and bring innovation to their performance, so that competitive advantage can be attained over rival firms within the industry. Supportive behaviour helps employees overcome hardships, solve problems, meet challenges, find opportunities, and improve firm performance, leading to the achievement of SDGs. Hence, distinctive competitive advantages can be useful in achieving SDGs. These results agree with Asian et al. (2019), who show that institutional support increases distinctive competitive advantage and helps in achieving SDGs, improving the potential relationship between distinctive competitive advantage and SDG achievement. These results agree with Leung et al. (2019), who state that, in the case that an institution adopts supportive behaviour towards employees, it can have distinctive competitive advantages and make a greater contribution to the achievement of its SDGs.

#### Conclusion

The governments of the BRICS countries (Brazil, Russia, India, China, and South Africa), intend to adopt the SGDs proposed by UN resolution. They make efforts in this regard, but these efforts are not satisfactory. Hence, there is a need to focus on this issue, seek effective ways to achieve the SDGs, and secure the countries' positions on the world stage. The authors intend to present a solution to this problem. The aim of writing this study is to check the influences of the core competence feature and core resource feature of a sharing economy on SDG achievement. It explores the linking role of distinctive competitive advantage between the core competence and core resource features of the sharing economy and achieving SDGs, and the role of institutional support between distinctive competitive advantage and the achievement of SDGs. The information about the core competence feature and core resource feature of a sharing economy, distinctive competitive advantage, institutional support, and SDG achievement, and the relationships between these factors, is acquired from BRICS economies. The results show that a sharing economy allows the sharing of core competencies such as administrative skills, leadership skills, emotional intelligence, communication skills, and production abilities, among others. Consequently, the sustainable performance of firms contributes to countries' capacities to achieve SDGs. The study concludes that the sharing economy allows the sharing of core resources which facilitates firms' access to resources they cannot afford alone, but which are required for improved social, environmental, and economic performance, leading to the achievement of SDGs. The results show that both the core competence and core resource features of a sharing economy can help create distinctive competitive advantages, which leads to SDG achievement.

The present study has theoretical and empirical implications, which contribute to the literature on sustainable development. The study analyses the role of the core competence feature and core resource feature of a sharing economy in the achievement of SDGs. Much research has been conducted into the role of the sharing economy in achieving SDGs, without reference to core competence and core resource sharing. This study examines the core competence feature and core resources feature of the sharing economy to determine success in achieving SDGs. In the existing literature, the impacts of distinctive competitive advantages on the achievement of SDGs are analysed, but not the mediating role of distinctive competitive advantages between the core competence and core resource features of the sharing economy in the achievement of SDGs. The research provides

guidelines for regulators establishing policies related to SDG achievement using the sharing economy. The study examines the role of distinctive competitive advantages in the core competence and core resource features of a sharing economy in the achievement of SDGs, thus adding to the literature. Institutional support, likewise, impacts distinctive competitive advantage and SDG achievement. However, little research into the moderating role of institutional support and its impacts on distinctive competitive advantage and the achievement of SDGs has been conducted, and the present study addresses this issue.

This study is also empirically significant in all countries, as every country demands high-level sustainable development in order to compete with other economies on a global scale. Given the critical need for sustainable development, the United Nations General Assembly has adopted a set of 17 SDGs in the 2030 Agenda for Sustainable Development. Although these SDGs are interconnected and based on social, economic, and environmental wellbeing, they face certain economic, environmental, and societal challenges. The study makes it clear to economists and governments that they must pay attention to implementing the sharing economy while making policies for attaining SDGs. The study suggests that the policymakers try to implement both the core competence and resource features of the sharing economy in order to effectively achieve SDGs. This study guides business management in the struggle to achieve distinctive competitive advantage and develop institutional support for implementing the core competence and core resource features of a sharing economy for achieving SDGs.

The present study has some limitations, despite its importance in theory and practice. These limitations are expected to be removed by future authors willing to write on the subject. Firstly, this study is not comprehensive as its focus is only on two features of a sharing economy, core competencies and core resources. There are a number of other factors which could contribute to or hinder the achievement of SDGs, but these factors are not given any attention. As an ideal research guideline which could be applied in practice, future authors could consider more factors which are likely to influence SDG achievement. Moreover, the quantitative data about the variables under study and their mutual relations are acquired for BRICS economies. These five countries have specific economic situations which restrict or assist the achievement of SDGs, with different potentials. Therefore, the results may not have equal validity in other economic circles.

#### Findings of the study

The results highlight the association between the items, called the convergent validity. The study uses factor loadings, Cronbach's alpha, average variance extracted (AVE), and composite reliability (CR) to check the convergent validity. Firstly, factor loadings are used to check the item validity, and the values higher than 0.50 are shown in Table 6, indicating valid convergent validity.

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