

Exploratory Factor Analysis, Validation and Reliability of the 'Perceived Socio-Economic Sustainability Scale: An Entrepreneurship and Economic Corridors Perspective

Zia Ur Rehman*, Muhammad Arif**

Abstract

This research aimed to develop and test the measurement scale for perceived socio-economic sustainability (PSES). The context of this study was industrial entrepreneurship, One Belt One Road (OBOR), and China Pakistan Economic Corridor (CPEC). The study developed an 11-item scale for PSES. Data was collected from 425 experienced industrial entrepreneurs through the survey method of data collection. This research focused on constructing and testing the items of the PSES by using Exploratory Factor Analysis (EFA) technique. This study displays statistical processes for the EFA technique to ensure validity and reliability as a testimony for the instrument development. The findings of this study suggested that the statistically tested form of the PSES scale has 11-items under a single factor. This paper is an early attempt that contributes to the body of literature on entrepreneurship and Economic Corridors. The scale for PSES will be helpful for the scholars for measurement of 'perception' of other stakeholders of an entrepreneurial ecosystem like bankers from financial institutions, anchors working in media houses, supply chain providers, Government officials, public, and service providers etc. The research collected data only from Pakistani entrepreneurs. Future research may be conducted by collecting data from multiple countries.

Keywords: One belt one road (OBOR), China Pakistan economic corridor (CPEC), Perceived Socio-economic sustainability, Entrepreneurship, Scale development, Reliability and validity, Exploratory factor analysis (EFA)

JEL Classification: F63, F60

*PhD Scholar, Bahria University, Islamabad, Pakistan. Email: zia.rehman.1987@gmail.com (Corresponding Author)

** Faculty of Management Sciences, Bahria University, Islamabad, Pakistan. Email: arifkhattak78@gmail.com

1. Introduction

The concept of one belt One Road (OBOR) was introduced by China in 2013. It is a multi-trillion dollars investment scheme that has global as well as regional agendas of socioeconomic sustainability (Rahman & Shurong, 2017). The five pillars of trade under the OBOR initiative are mainly political willpower, capital investment in shape of foreign direct investment, infrastructure development, promotion of regional and local trade and people-to-people exchange programs etc. (Konings, 2018). The whole project of OBOR consists of six Economic Corridors; China Pakistan Economic Corridor (CPEC) is one corridor on OBOR (Zhang et al., 2018).

CPEC provides China with the shortest route to the markets of the Middle East and Europe. The road included in CPEC starts at Xinjiang-Kashagar, China and ends at Gwadar-Port, Pakistan, with a total length of approximately 3000 kilometres (Syed & Tariq, 2020; Zhang et al., 2018). On the other hand, CPEC is also helpful for Pakistan to achieve entrepreneurial growth, high tech- industrialization, and socioeconomic sustainability. The establishment of 9 country-wide Special Economic Zones (SEZs) joined with technology parks in different areas of Pakistan are added advantage for the entrepreneurial and industrial revolution in the country (Ali & Faisal, 2017). Initiatives like SEZs and technology transfer are the major ingredients to achieve socioeconomic sustainability in Pakistan (Syed & Tariq, 2020). Side by side with the belief in the benefits of CPEC, there also exists in Pakistan a negative perception about the project (CPEC). Some scholars stated that there is a mistrust between the Pakistani government and Pakistani entrepreneurs on providing entrepreneurial opportunities available under CPEC (Arif, 2018). Other scholars argued that there is fear among the Pakistani entrepreneurs that CPEC will cause a shutdown of small and medium size enterprises because Pakistani SMEs are not competitive against Chinese cost-effective products (Ahmad et al ., 2018).

Considering the said debates about the positive and negative potential of CPEC in Pakistan, it is sufficient to believe that a negative perception exists among the Pakistani entrepreneurs that CPEC may provide more entrepreneurial opportunities to the global entrepreneurs as compared to the Pakistani entrepreneurs. This adverse perception of the entrepreneurs is a major contributing factor to such narratives that Pakistan may have less chances to achieve socioeconomic sustainability through CPEC initiatives. These adverse perceptions against CPEC are a helping tool to say that CPEC is a Chinese dream which is materializing through Pakistan (Ramay, 2016).

The increasing importance of 'sustainability is highly recognized in different socioeconomic areas. Various studies on socio-economic sustainability have documented its usefulness. Some researchers investigate it as a positive global agenda (Talukhaba et al., 2005; Xu et al., 2017) while other scholars have offered qualitative description by

highlighting 11-sustainable socio-economic indicators (Akotia, 2014; Dalevska et al., 2019). These authors supplemented a positive debate on socio-economic sustainability, but they have differing opinions regarding the measurement scale of socioeconomic sustainability. Further, in the debate among these scholars for the instrument of socioeconomic sustainability, the perception of entrepreneurs was ignored which is covered by the present research.

OBOR initiative leads socio-economic collaborations everywhere in the globe (Bode et al., 2019). For socioeconomic collaborations under economic corridors, it is important to explore the phenomenon of the positive or negative perceptions of different stakeholders involved in the entrepreneurial ecosystem. The perception about socioeconomic sustainability is a major contributing ingredient for the success of socio-economic collaborations at country, regional and beyond regional levels (Brooks et al., 2019; Rasoolimanesh et al., 2019). Drawing on the existing literature, it has been identified that there is a need to develop a valid and reliable scale to measure the perception of different stakeholders (either positive or negative) about socioeconomic sustainability. The present study is among the first few studies which attempted instrument development to measure the ‘*perception*’ of industrial-entrepreneurs for ‘*socioeconomic sustainability*’.

2. Literature Review

Since 2008, United Nations Economic and Social Council (ECOSOC) has organized high-level segments to prepare and implement the theme of “Sustainable Goals” (Celik et al., 2009; Sachs et al., 2019). For this purpose, many roundtables were held all around the globe. As a result, ECOSOC suggested to develop and adopt sustainable economic and social goals as major policy guidelines for global interventions (Abbott & Bernstein, 2015). The council suggested replacing the existing Millennium Development Goals (MDGs) with proposed 17-Sustainable Development Goals (SDGs) (Gupta & Nilsson, 2017; Kroll & Zipperer, 2020). A well-known scholar, Wals (2007), hypothesized that to achieve infinite co-existence of humans on earth, the principle of ‘sustainability’ be ensured on every level of economic and social life.

This research analyzed the above said argument through extensive literature study. This research found that during the human age on earth from 2000 to 2015, information and communication technologies (ICTs) were found a major source to achieve fast track developmental goals (Foley et al., 2017; Vinuesa et al., 2020). Different stakeholders under the entrepreneurial ecosystem have applied smart machines and digital policies along with ICTs practices for the success of entrepreneurship (Ivanova et al., 2019; Vlasov et al., 2019). After the achievement of the basic mechanism of ICTs, the development goals have been achieved by exponential multiplication. The higher level of achievement of development goals would cause doubt on sustainability (Tsai & Liao, 2017). To avoid the adverse effects of ICTs, the United Nations has accepted and implemented the narrative of 17-SDGs since January 2015

(Wellard, 2017). Among the 17-SDGs, sustainable socio-economic indicators like no poverty, zero hunger, good health and education, industrial innovation, and economic growth are the major agenda of the United Nation. Changing the paradigm with a major shift from ‘developmental goals’ towards ‘sustainable goals’, the sustainable socioeconomic indicators become an important aspect in international collaborations all around the globe.

Side by side with the implementation of 17-SDGs as a replacement of MDGs, the world also witnessed a new paradigm shift for regional collaborations from free trade agreements to economic corridors (Grubel, 1982; Rehman et al., 2020). Economic corridors are considered as assurance for socioeconomic sustainability at country, regional as well as beyond regional levels. The economic corridor is known as joint infrastructures within interconnected geographical areas to stimulate economic activities (Xing, 2018). The types of infrastructures both in social as well as economic areas which relate to the initiatives for economic corridors are sea routes from port to port, roads from country to country, inter and intra country fiber lines, energy projects to help inter and intra country needs of electricity and power, motorways, transportation of both raw material and finished goods through country-to-country railway tracks etc. (Buranelli, 2018; Wolf, 2020).

Scholars have suggested that the new age economic corridors are a replacement of earlier global trade agreements (Zhang et al., 2018) because these economic corridors are associated with infrastructure features that are helpful to revolutionize the socioeconomic conditions towards sustainable goals. Costanza and Patten (1995) defined it as a sustainable system is one that survives or persists. Perceived Socio-Economic Sustainability is hereby referred to as the perception about the persistence of socio-economic indicators. Socioeconomic indicators include but are not limited to health, safety, welfare, education, training, affordable housing, stakeholders’ participation, local community security and wellbeing, positive image and physical appearance of the local environment, value for money, return on investment, employment, local area economic growth, and growth for local enterprises (Akotia, 2014; Massaro et al., 2020).

In 2013, the One Belt One Road (OBOR) initiative was introduced by China as a new age socioeconomic collaboration for geographically connected regional countries, and beyond regional countries. OBOR consists of economic corridors between 65 countries all around the globe. Importantly, there exist six economic corridors in OBOR member countries and CPEC is one among them. (Xin et al., 2020). The Economic Corridors are considered as one of the ways forward for socioeconomic sustainability of the regions (Farooq & Khawaja, 2019; Vakili et al., 2020). CPEC is helpful both for China as well as Pakistan in different areas like economic growth, entrepreneurial growth, and infrastructure development.

Through CPEC, Chinese products will reach the Middle East and Europe in a short time period. The shipping cost and time for Chinese products will be reduced up to 50%. Pakistan has also identified various indicators to achieve socioeconomic sustainability. In Pakistan, though CPEC, various infrastructure development contracts amounting to Rs. 62 billion USD have been signed with China (Xing, 2018). Under these infrastructure development contracts, industrialization in Pakistan is at the top of the agenda. For industrialization, various other schemes like technology transfer, migrant entrepreneurship, foreign direct investment in key industrial projects are also in the hands of both countries (Xin et al., 2020). The significant contribution of CPEC in Pakistan is the establishment of 09 Special Economic Zones (SEZs). These 09 SEZs are planned to be established in such a way that the whole geographical area of Pakistan, including four provinces and tribal areas, will get maximum socioeconomic benefits. The provinces in Pakistan like Baluchistan and Northern areas, which are left behind in socioeconomic growth, are targeted to bring them at the growth level of Punjab and Sindh. To achieve these socioeconomic targets, Pakistan and China are working day and night in Gwadar Port, Baluchistan, since 2015. Land acquisition is completed for Rashakai Economic Zone, KPK in 2020. Inauguration of Allama Iqbal Industrial City in Faisalabad, Punjab has also been done in 2020 and Pakistani as well global entrepreneurs are mobilizing to this economic zone. Now, the land acquisition for China Special Economic Zone in Dhabeji is under process and to be completed in 2021 (Ullah et al., 2021; Rehman et al., 2020). To reap these socioeconomic benefits of CPEC for Pakistan, measurement of entrepreneurs is required which is provided by the present research.

3. Methods

3.1 *Procedure for Participants*

Systematic random sampling was used and 500 industrial entrepreneurs in Pakistan were selected for this study. Their emails were obtained from the websites of the Chamber of Commerce. This research applied a survey method for data collection. The participants filled the questionnaire voluntarily since China Pakistan Economic Corridor (CPEC) is a potentially hopeful project for the industrial revolution in Pakistan and every Pakistani is expecting an improvement in socioeconomic indicators due to OBOR and CPEC. This research knocked 425 responses. It was found that male respondents were 93% and females were 7%. The higher number of male respondents is due to the reason that the Pakistani social and business system is based on patriarchy (i.e., male/man dominated society) rather than a matriarchy (i.e., a female-dominated society). The major responses have been received within the age 41-50 years, with an average number of experiences >20 years. Finally, the major number of respondents were having Masters Qualification.

3.2 *Procedure for Instrument Development for ‘Perceived Socio-Economic Sustainability’*

The present research examined 11-indicators of socioeconomic sustainability as suggested by (Akotia, 2014). These 11-indicators are ‘researcher-made indicators’, systematically designed because of ‘research-based evidence’ for socioeconomic sustainability. The 11-indicators of socio-economic sustainability as suggested by Akotia (2014) are mainly:

- Health and safety for the work force and local community/residents
- promoting education and training /apprenticeships opportunities
- promoting affordable housing
- Promoting stakeholder’s participation (including local community)
- Promoting community security/wellbeing
- Promoting physical appearance / positive image of the local environment
- Promoting value for money
- Promoting profitability for investors/developer (Return on investment)
- Promoting employment opportunities
- Promoting local/area economy growth
- Promoting local community enterprises/organizations.

The authors of the present study transformed the above stated 11-indicators of socio-economic sustainability into sentences/items. This instrument for PSES was proposed as uni-dimensional scale (i.e., single factor) that measures perception of the industrial entrepreneurs involved in OBOR & CPEC initiatives in Pakistan. Sample items are “I think that health, safety, and welfare are available for workforce and residents” and “I think that value for money is promoting through effective financial measures”, and so on.

For in depth understanding of the scale development process, the authors studied detailed literature e.g. (bhattacharjee, 2002; Kausar et al., 2018; Rehman et al., 2020; Saleem et al., 2019). The face and content validation sheet are the mechanisms used for the present research. In this regard, the procedure guided by well-known scholars e.g. (Aydin et al., 2014; Nicholson et al., 2006) was followed. The face validity sheet was validated by the authors of this present research. To mature the sentences for items, the authors also studied relevant literature (Talukhaba et al., 2005b; Sekaran, 2006; Xu et al., 2017).

After the face validity, the content validation was conducted. Content validation is defined as a systematic process of getting and incorporating experts’ opinions about the scale to which some elements/items represent a concept (Polit & Beck, 2011). In content validation, three out of seven evaluators are sufficient for an item to be retained/modified/deleted/inserted in the item pool.

For the present, the content validation sheet was validated by 7 experts from academia, 6 experts from non-academics (i.e., top ranked Govt. officials/policy makers, bankers, chief level officers, and sector technocrats), and 3 PhD scholars. These experts linked the content validation sheet with whether each item in the PSES scale is perfect, needs rephrasing/modification, deletion of the item, merger with existing item, and need a new item. These 11-items were also validated by the said experts in terms of their need, suitability, and perfection for the construct which it supposes to represent. The construct ensures clarity in the items, and specificity to differentiate the items from each other (Agustin Perez, 2012; Neff, 2003). In light of the experts' opinion, the authors finalized the sentences for the 11-item scale of PSES.

After face and content validation, the 11-item scale for PSES was forwarded to the 500 industrial entrepreneurs for primary data collection. All the responses were marked on a Likert scale between 1 to 7 and response options were set from 1-strongly disagree- to 7-strongly agree. The authors received 425 responses which were used for dimension reduction/EFA tests.

3.3 Procedure of statistical tests

For statistical analysis, a test named as 'reliability analyses' was run in SPSS 22. This test is used either as an item to be retained or rejected. A correlation between the items was used to decide about the deletion or retaining the item. A minimum and maximum range of 0.40-0.90 of correlation among the items was set to retain an item (Jones et al., 2008).

This research applied the dimension reduction method at statistically validation phase for PSES instrument development (Xu & Rahman, 2004). This research used SPSS 22 for exploratory factor analysis (EFA). Under EFA, the authors applied different tests like correlation matrix, KMO and Bartlett's Test, Anti-Image matrix, communalities, total variance extracted, and component matrix/rotated component matrix. These tests are applied to check the discriminant, convergent and construct validity of the scale (Gorsuch, 1997). These tests also address instrument reliability & validity on the grounds that how many factors exist under the construct; how many items exist under each factor; which item is statistically proof to retain or delete. This research applied the principal component test with varimax testing technique for factor analysis as all items are related to uni-dimensional construct (Horel, 1984). We set eigen value as 1 (Wielandt, 1955). A factor loading to retain each item was set > 0.3 (Park & Yun, 1986).

4. Results

As the first step in instrument-development process, data screening was performed to check missing data analysis. No missing data was found because authors marked it

mandatory to respond against each question at the time of online submission of the questionnaire. Before factor analysis, test named “KMO and Bartlett’s test” for sampling adequacy was conducted. Table 01 below shows the results of KMO and Bartlett’s test

Table 1
KMO and Bartlett’s Test

KMO and Bartlett's Test Sphericity		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.959
Bartlett's Test of Sphericity	Approx. Chi-Square	3036.619
	Df	55
	Sig.	.000

The sampling adequacy is found 0.94 ($p = .000$) representing the adequacy of the sample. The sample adequacy further represented that the items are related with the construct to run an EFA (Dahal, 2007). Principal component analysis was used to extract the factors (if any) as this technique is helpful to examine the shared variance in a set of measurements through a small set of latent variables (Kulcsár, 2010; Qurat-ul-Ann et al., 2015). The authors used varimax rotation technique with principal component because PSES is uni-dimensional construct and items related with each other for the main construct.

Using principal component and varimax rotation, the authors extracted one factor (i.e., PSES) consisting of 11 items. Given hereunder are the eigenvalues that show the items in terms of percentage to explain the factors. It shows that the first item explained the factor 61.8% and other ten items explained 39.2%. Table 02 below shows the results of total variance explained by each item.

Table 2
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
PSES	6.807	61.881	61.881	6.807	61.881	61.881
PSES	.656	5.964	67.846			
PSES	.617	5.611	73.456			
PSES	.539	4.898	78.354			
PSES5	.442	4.020	82.375			
PSES6	.374	3.401	85.776			
PSES7	.363	3.298	89.074			
PSES8	.333	3.030	92.104			
PSES9	.303	2.753	94.856			
PSES10	.296	2.694	97.550			
PSES11	.269	2.450	100.000			

The correlation between the items was found between 0.4 and 0.9. No item was deleted based on high or low correlation. Table 03 below shows the correlation among the items and all the correlations were found at $p = .000$.

Table 3
Correlation Table

PSES	PSES1	PSES1									
1	2	3	4	5	6	7	8	9	0	1	
1.000											
.713	1.000										
.684	.714	1.000									
.630	.618	.637	1.000								
.628	.644	.668	.626	1.000							
.631	.665	.658	.613	.672	1.000						
.562	.546	.574	.606	.535	.475	1.000					
.510	.529	.533	.544	.531	.564	.565	1.000				
.604	.611	.628	.598	.625	.640	.514	.517	1.000			
.539	.546	.579	.516	.615	.601	.463	.535	.620	1.000		
.556	.549	.538	.461	.539	.516	.477	.480	.521	.563	1.000	

This research applied communalities test to analyze variance in each component/item of the construct. Communality test indicated the variance in each item of the construct. The value of communalities indicates a sum of the squared item loadings up to the number of items extracted during factor analysis. While using principal component extraction methods for factor extraction as well as determining the components of the factors, the initial value of communalities always equals to 1.0 which assumes its initial correlation with the other items. But extracted value of communalities is acceptable > 0.3 for each item. Given hereunder is a table of communalities which shows that values of 11-item scale for PSES are >0.3 and ranged between 0.506 to 0.703. The values of communalities are dissimilar to each other which further indicated that each component/item is explaining the main construct differently from the other components. Table 04 below shows the extracted values of communalities:

Table 4
Communalities

Component / item	Initial value	Extracted value
PSES1	1.000	.672
PSES2	1.000	.689
PSES3	1.000	.703
PSES4	1.000	.630
PSES5	1.000	.677
PSES6	1.000	.668
PSES7	1.000	.527
PSES8	1.000	.524
PSES9	1.000	.636
PSES10	1.000	.576
PSES11	1.000	.506

Values of cross loading of the items indicates the chances of discriminant validity of the components. Discriminant validity indicates that concepts are unrelated with the other concepts which are not supposed to be related. It states that components are uncorrelated between difference concepts/factors. The discriminant validity means that an item(s) under one factor is also explaining the other factor. The acceptable value for cross loading is <0.3 . The Instrument-development and validation for PSES is a uni-dimensional construct and we have not found any chances of discriminant validity among the items. Table 05 below shows the factor loading in a way that all 11-item exist under a single factor i.e., PSES. The 11-indicators for socioeconomic sustainability as suggested by well-known scholars e.g. (Akotia, 2014) have also been statistically validated by this research.

Table 5
Component Matrix

Component / Item	Factor Loading
I think that.	
Health, safety, and welfare are available for work force and local residents (PSES1)	.820
Education and training opportunities are available to all (PSES2)	.830
Affordable housing are available to all (PSES3)	.839
Stakeholder's participation is promoting (PSES4)	.794
Community security and wellbeing is promoting (PSES5)	.823
Physical appearance / positive image of local environment is promoting (PSES6)	.818
Value for money is promoting through effective financial measures (PSES7)	.726
Investors rate of return (ROI) is higher (PSES8)	.724
Employment opportunities is promoting (PSES9)	.797
Local area economy growth is promoting (PSES10)	.759
Local community enterprises/organizations are promoting (PSES11)	.711

Descriptive statistics of the items show an acceptable threshold. The mean of the items shows that most of the respondents marked for agree and strongly agree whereas the standard deviation of the items was also found positive and near to 1. To finalize the instrument development for PSES, the authors performed reliability tests. The value of Cronbach's alpha was found 0.938 (acceptable >0.7). Table 06 below shows the reliability statistics of the PSES scale:

Table 6
Reliability Statistics

Cross Processing Summary				Reliability Statistics	
		N	%	Cronbach's α	N of items
Cases	Valid	425	100	0.938	11
	Excluded	0	0		
	Total	425	100		

5. Discussion

5.1 *Major Findings*

The above stated statistical results indicated that the Perceived Socio-Economic sustainability scale has 11-items, and it is uni-dimensional construct for industrial entrepreneurship and economic corridors perspective. The results of this study have confirmed the statistical process suggested by (Agustin Perez, 2012; Neff, 2003). The scale developed by this study for perceived socioeconomic sustainability consists of the following 11-items:

1. I think that health, safety, and welfare are available for workforce and residents.
2. I think that education and training opportunities are available to all.
3. I think that affordable housing is available to all.
4. I think that stakeholder's participation is promoting.
5. I think that community security and wellbeing is promoting.
6. I think that physical appearance / positive image of local environment is promoting.
7. I think that value for money is promoting through effective financial measures.
8. I think that investors rate of return (ROI) is higher.
9. I think that employment opportunities is promoting.
10. I think that local area economy growth is promoting.
11. I think that local community enterprises/organizations are promoting.

5.2 *Implications*

Scale development provides a basic understanding for operationalizing the concepts into variables and variables into factors. This study contributes to the literature and is helpful for the researchers, policy makers, and Government functionaries in so many ways. First, this instrument-development for PSES is helpful for the researchers in the field of entrepreneurship, economic corridors and socioeconomic sustainability as this study provides a valid and reliable scale to measure the perception of different stakeholders of the entrepreneurial ecosystem. Secondly, this is helpful in measuring the perceptions of specific characters in the society- whether their perception is positive toward the society or negative.

Thirdly, through this study, the scholars of behavioral sciences will be able to suggest a way forward to convert the negative perception into a positive perception. Fourthly, this study is also helpful for the policy makers and Governments by providing them with a mechanism to measure the positive or negative perception of the entrepreneurs for collaboration in economic corridors. These collaborations and positive perceptions of the entrepreneurs are the ingredients for the entrepreneurs to take the decision of new startups in economic corridors.

Fifthly, the policy makers, as well as the Government functionaries, are able through this study to analyze that country level positive perception for investment and startups is possible by providing health, safety, welfare, education, training, affordable housing, stakeholders participation, security, wellbeing, physical appearance, positive image of the local environment, value for money, rate of return, employment opportunities, local areas economy growth, and local enterprises growth. Sixthly and finally, the policy makers can analyze the 'extent/tendency' of negative perception (if any) for engagement of different stakeholders in Government sector mega projects.

5.3 *Limitations of the study and future research direction*

This research employed all efforts to operationalize 'Perceived Socioeconomic Sustainability for Pakistani industrial entrepreneurs in the context of economic corridors. This research has few limitations which may be addressed in future research. First, this research was designed for Pakistani industrial entrepreneurs and future research may consider the multinational or global aspects i.e., foreign partners countries, religious partner countries, region to region comparison, initiatives of united nations for 17-SDGs and so on for operationalizing the scale for perceived socioeconomic sustainability. Secondly, this research was designed for industrial entrepreneurs whereas other components of the entrepreneur's ecosystem i.e., traders, marketers, service providers and Government Organizations were ignored. It is, therefore, recommended that future research may be conducted by considering other stakeholders of entrepreneurs' ecosystem to measure the perception of bankers & financial institutions, supply chain organizations, and labor unions etc.

Thirdly, this research was conducted at the start of the second phase of CPEC in which the development of infrastructure and special economic zones are under process. It is recommended that perception of the entrepreneurs may also be measured at post-development stage of infrastructure and SEZs. This research recommended testing scale for perceived socioeconomic sustainability across country level studies for more generalizability and to further authenticate the validity and reliability of this scale. This scale is recommended to be used to explore further avenues of research in entrepreneurial disciplines like entrepreneurial ecosystem, entrepreneurs trust on Govt., entrepreneurs' investment intentions and their startup behavior, and the role of transparency.

5.4 *Conclusion*

Considering the importance of 'perception' of different stakeholders of entrepreneurial ecosystem, this study examined the perception of industrial entrepreneurs. This study argued that to measure the perception of industrial entrepreneurs for socioeconomic sustainability, researchers need to statistically analyze it through the availability of health, safety, welfare, education, training, affordable housing, stakeholder's participation, security,

wellbeing, physical appearance, positive image of local environment, value for money, rate of return, employment opportunities, local areas economy growth, and growth of local enterprises. As more similar affordable socioeconomic 11-indicators are available in the country, the perception of the industrial entrepreneurs remained positive. This positive perception leads towards a trustable relationship between entrepreneurs and Government initiatives.

References

- Abbott, K. W., & Bernstein, S. (2015). The high-level political forum on sustainable development: Orchestration by default and design. *Global Policy*, 6(3), 222-233.
- Agustin Perez, J. (2012). The validation of the marital spirituality scale. *International Journal of Social Science and Humanity*, 2(4), 296.
- Ahmad, B., Naz, F., & Majid, J. (2018). Growth Prospects of SMEs in CPEC Perspective. *Global Management Journal for Academic & Corporate Studies*, 8(1), pp. 101-111.
- Akotia, J. K. (2014). *A framework for social and economic sustainability benefits evaluation of sustainable regeneration projects in the UK*. University of Salford.
- Ali, M. M., & Faisal, F. (2017). CPEC, SEZ (Special Economic Zones) and Entrepreneurial Development Prospects in Pakistan. *Pakistan Development Review*, 56(4), 143-155.
- Arif, A. (2018). CPEC: a continuum of opportunities and challenges for Pakistan (Publication no. <http://eprints.lse.ac.uk/id/eprint/89993> (access on 10 May 2019).
- Aydin, A., Ahmed, K., Brewin, J., Khan, M. S., Dasgupta, P., & Aho, T. (2014). Face and content validation of the prostatic hyperplasia model and holmium laser surgery simulator. *Journal of surgical education*, 71(3), 339-344.
- Bhattacharjee, A. (2002). Individual trust in online firms: Scale development and initial test. *Journal of management information systems*, 19, 211-241
- Bode, C., Rogan, M., & Singh, J. (2019). Sustainable cross-sector collaboration: Building a global platform for social impact. *Academy of Management Discoveries*, 5(4), 396-414.
- Brooks, R. A., Nieto, O., Landrian, A., & Donohoe, T. J. (2019). Persistent stigmatizing and negative perceptions of pre-exposure prophylaxis (PrEP) users: implications for PrEP adoption among Latino men who have sex with men. *AIDS care*, 31(4), 427-435.

- Buranelli, F. C. (2018). One Belt, One Road and Central Asia: Challenges and Opportunities *The Belt & Road Initiative in the Global Arena* (pp. 207-230): Palgrave Macmillan, Springer.
- Celik, A. P., Zyman, R., & Mahdi, R. (2009). *Sustainable Urbanization in the Information Age*: UN.
- Costanza, R., & Patten, B. C. (1995). *Defining and predicting sustainability. Ecological Economics*, 15(3), 193-196.
- Dahal, H. (2007). Factor analysis for soil test data: a methodological approach in environment friendly soil fertility management. *Journal of Agriculture and Environment*, 8, 8-19.
- Dalevska, N., Khobta, V., Kwilinski, A., & Kravchenko, S. (2019). A model for estimating social and economic indicators of sustainable development. *Entrepreneurship and Sustainability Issues*, 6(4), 1839-1860.
- Farooq, U., & Khawaja, A. S. (2019). China-Pakistan Economic Corridor: Geo-political Implications, Regional Constraints and Benefits of CPEC. *South Asian Studies*, 34(2), 599.
- Foley, A., Smyth, B. M., Pukšec, T., Markovska, N., & Duić, N. (2017). A review of developments in technologies and research that have had a direct measurable impact on sustainability considering the Paris agreement on climate change: Elsevier.
- Gorsuch, R. L. (1997). Exploratory factor analysis: Its role in item analysis. *Journal of personality assessment*, 68(3), 532-560.
- Grubel, H. G. (1982). Towards a theory of free economic zones. *Weltwirtschaftliches Archiv*, 118(1), 39.
- Gupta, J., & Nilsson, M. (2017). 12 Toward a Multi-level Action Framework for Sustainable Development Goals. Governing through goals: *Sustainable Development Goals as governance innovation*, 275.
- Horel, J. D. (1984). Complex principal component analysis: Theory and examples. *Journal of climate and Applied Meteorology*, 23(12), 1660-1673.
- Ivanova, V. N., Poltarykhin, A. L., Szromnik, A., & Anichkina, O. (2019). Economic policy for country's digitalization: A case study. *Entrepreneurship and Sustainability Issues*, 7(1), 649.

- Jones, G., Radley, S., Lumb, J., & Jha, S. (2008). Electronic pelvic floor symptoms assessment: tests of data quality of ePAQ-PF. *International Urogynecology Journal*, 19(10), 1337-1347.
- Kaousar, S., Rehman, A., Zafar, M., Ali, K. and Nasir, N. (2018), “China-Pakistan economic corridor: a gateway to sustainable economic development”, *International Journal of Social Economics*, 45(6), 909-924.
- Konings, J. (2018). Trade impacts of the Belt and Road Initiative.
- Kroll, C., & Zipperer, V. (2020). The Political Economy of the Sustainable Development Goals (SDGs): *Does Performance on the SDGs Affect Re-Election?* *Sustainability*, 12(16), 6445.
- Kulcsár, E. (2010). Principal component analysis in tourism marketing. *Management & Marketing*, 5(2), 151-158.
- Massaro, E., Athanassiadis, A., Psyllidis, A., & Binder, C. R. (2020). Ontology-Based Integration of Urban Sustainability Indicators. *Sustainability Assessments of Urban Systems*, 332.
- Neff, K. D. (2003). *The development and validation of a scale to measure self-compassion. Self and identity*, 2(3), 223-250.
- Nicholson, W. J., Cates, C. U., Patel, A. D., Niazi, K., Palmer, S., Helmy, T., & Gallagher, A. G. (2006). Face and content validation of virtual reality simulation for carotid angiography: results from the first 100 physicians attending the Emory NeuroAnatomy Carotid Training (ENACT) program. *Simulation in Healthcare*, 1(3), 147-150.
- Park, S., & Yun, S. N. (1986). A study for development of a tool measuring organizational characteristics in nursing. *The Journal of Nurses Academic Society*, 16(3), 31-37.
- Polit, D. F., & Beck, C. T. (2011). *Fundamentos de pesquisa em enfermagem: avaliação de evidências para a prática da enfermagem*: Artmed Editora.
- Qurat-ul-Ann, A.-R., Mirza, F. M., & Awan, G. W. (2015). Entrepreneurial Characteristics and Firm Growth: A Case Study of Sports Industry in Sialkot. *The Pakistan Journal of Social Issues*, 6, 53-69.

- Rahman, S. U., & Shurong, Z. (2017). Analysis of Chinese Economic and National Security Interests in China Pakistan Economic Corridor (CPEC) under the Framework of One Belt One Road (OBOR) Initiative. *Arts and Social Sciences Journal*, 8(4), 12-23. doi: <https://doi.org/10.4172/2151-6200.1000284>
- Ramay, S. A. (2016). China Pakistan economic corridor: A Chinese dream being materialized through Pakistan. Islamabad, Pakistan: *Sustainable Development Policy Institute (SDPI)*
- Rasoolimanesh, S. M., Noor, S. M., & Jaafar, M. (2019). Positive and negative perceptions of residents toward tourism development: *Formative or reflective Quantitative Tourism Research in Asia* (pp. 247-271): Springer.
- Rehman, Z., U., Ahmed, M., Ali, A., Syed, Khattak, A. & Sameer, I. (2020). Entrepreneurial Factors Affecting Perceived Socioeconomic Success in One Belt One Road Initiative—A Study of China-Pakistan Economic Corridor. *International Journal of Management*, 11(9), 1110-1124.
- Sachs, J. D., Schmidt-Traub, G., Mazzucato, M., Messner, D., Nakicenovic, N., & Rockström, J. (2019). Six transformations to achieve the sustainable development goals. *Nature Sustainability*, 2(9), 805-814.
- Saleem, H., Jiandong, W., Aldakhil, A. M., Nassani, A. A., Abro, M. M. Q., Zaman, K., Khan, A., Hassan, Z. B. & Rameli, M. R. M. (2019). Socio-economic and environmental factors influenced the United Nations healthcare sustainable agenda: evidence from a panel of selected Asian and African countries. *Environmental Science and Pollution Research*, 26, 14435-14460
- Sekaran, U. (2006). *Research Methods for Business: Metodologi Penelitian Untuk Bisnis*. Buku 2
- Syed, J., & Tariq, M. (2020). Cooperation among Business Schools across the Belt and Road: A CPEC Perspective *China's Belt and Road Initiative in a Global Context* (pp. 329-358): Springer.
- Talukhaba, A., Ngowi, A., & Letlape, K. (2005a). *Implementation of socio-economic sustainability in construction projects at the planning stage in developing countries*. Paper presented at the Proceedings, CIBW99 working commission fourth triennial conference—rethinking and revitalizing construction safety, health and quality.

- Talukhaba, A., Ngowi, A., & Letlape, K. (2005b). *Implementation of socioeconomic sustainability in construction projects at the planning stage in developing countries*. Paper presented at the Proceedings of the CIB W99 Triennial International Conference, Port Elizabeth, South Africa, edited by TC Haupt and J. Smallwood, 401-416. Walmer, South Africa: Construction Research Education and Training Enterprises.
- Tsai, K. H., & Liao, Y. C. (2017). Sustainability Strategy and Eco-Innovation: A Moderation Model. *Business Strategy and the Environment*, 26(4), 426-437.
- Ullah, K., Haider, S. & Hameed, G. (2021). Examining Islamic Religiosity and Youth Perception towards Socio-Economic and Cultural Impact of Tourism Development in Gilgit-Baltistan, Pakistan
- Vakili, K., Teodoridis, F., & Bikard, M. (2020). *Detrimental Collaborations in Creative Work: Evidence from Economics*. Paper presented at the Academy of Management Proceedings.
- Vinuesa, R., Azizpour, H., Leite, I., Balaam, M., Dignum, V., Domisch, S., Nerini, F. F. (2020). The role of artificial intelligence in achieving the Sustainable Development Goals. *Nature communications*, 11(1), 1-10.
- Vlasov, A. I., Shakhnov, V. A., Filin, S. S., & Krivoshein, A. I. (2019). Sustainable energy systems in the digital economy: Concept of smart machines. *Entrepreneurship and Sustainability Issues*, 6(4), 1975-1986.
- Wals, A. E. (2007). *Social learning towards a sustainable world: Principles, perspectives, and praxis*. The Netherlands: Wageningen Academic Pub.
- Wellard, H. (2017). Sustainable development goals. *Incite*, 38(3/4), 16.
- Wielandt, H. (1955). An extremum property of sums of eigenvalues. *Proceedings of the American Mathematical Society*, 6(1), 106-110.
- Wolf, S. O. (2020). The GSP+ Conundrum and the CPEC's Impact on EU-Pakistan Economic and Trade Relations *the China-Pakistan Economic Corridor of the Belt and Road Initiative* (pp. 243-260): Springer.
- Xin, G., Bolan, Y., Bingquan, Y., & Ejaz, T. (2020). An Analysis of Pakistan's Macroeconomic Development Strategic Role in the Context of Belt and Road Initiative. *Journal of the Research Society of Pakistan-Vol. No*, 57(1).

- Xing, L. (2018). China's Pursuit of the "One Belt One Road" Initiative: A New World Order with Chinese Characteristics? *Mapping China's 'One Belt One Road' Initiative* (pp. 1-27). Singapore: ISEAS.
- Xing, L. (2019). China's Pursuit of the "One Belt One Road" Initiative: A New World Order with Chinese Characteristics? In *Mapping China's 'One Belt One Road' Initiative* (pp. 1-27). Palgrave Macmillan, Cham.
- Xu, G., Feng, X., Li, Y., Chen, X., & Jia, J. (2017). Environmental risk perception and its influence on well-being. *Chinese Management Studies*.
- Xu, H., & Rahman, S. (2004). A generalized dimension-reduction method for multidimensional integration in stochastic mechanics. *International Journal for Numerical Methods in Engineering*, 61(12), 1992-2019
- Zhang, R., Shi, G., Wang, Y., Zhao, S., Ahmad, S., Zhang, X., & Deng, Q. (2018). Social impact assessment of investment activities in the *China–Pakistan economic corridor*. *Impact Assessment and Project Appraisal*, 36(4), 331-347doi: <https://doi.org/10.1080/14615517.2018.1465227>