International Journal of Global Research Innovations & Technology (IJGRIT)
ISSN : 2583-8717, Impact Factor: 6.382, Volume 02, No. 02, April-June, 2024, pp 192-203

SUSTAINABILITY AND ETHICAL CONSIDERATIONS IN E-COMMERCE BUSINESS MODELS

Dr. S.K. Saxena*
Dr. Suresh Kumar Sharma**

ABSTRACT

When it comes to the most serious environmental, social, and economic challenges of the present day, the subject of sustainability is at the top of the list. E-commerce that is sustainable is becoming an increasingly critical issue for customers, who are exerting pressure on businesses to embrace more environmentally friendly business methods. Due to the fact that the industry is associated with quick shipping, high return rates, and packaging that cannot be recycled, the environmental impact of e-commerce is enormous. The findings of research indicate that the popularity of online shopping is growing at a rapid rate and is always expanding. In spite of this, the most significant challenge is to figure out how to maintain the expansion of online commerce while simultaneously monitoring its impact on the environment. In light of this, it is imperative that the environmental impact be taken into consideration while evaluating the research gap concerning sustainable e-commerce operations. techniques such as cluster analysis, quantitative techniques, and qualitative methodologies are utilized in this research. The findings indicate that investing money in ways that are more environmentally friendly will, in the long term, be profitable. According to the findings of the study, over two-thirds of respondents believe that it is essential for online retailers to have rules on sustainability. Among all of the customers, just one quarter have made the decision to boycott businesses that do not conform to sustainable criteria. Therefore, it is vital to conduct study on environmentally responsible internet buying. According to the findings, only a small number of African countries have enacted policies to ensure the sustainability of e-commerce, in contrast to the majority of European countries (including Kenya). Because of this, the study has implications for both management theory and management practice. Additionally, the government, retailers, and customers should all work together to establish regulations that regulate the environmental impact of sustainable e-commerce.

Keywords: *Sustainability, E-Commerce, Business Models.*

Introduction

Over the course of the past ten years, the retail sector is only one of the many industries that has been swept up in the technological upheaval. A huge amount of growth has been observed on a global basis in the e-commerce business, which is a term that describes retail sales that are conducted through electronic methods. According to the World Economic Forum [1,] it is anticipated that this pattern will continue, with online sales accounting for about forty percent of total retail sales in the year 2026. E-commerce can be seen as a logical consequence of the development of the information society, despite the fact that traditional theories of the information society do not specifically address the topic of e-commerce themselves. The information and communications technology (ICT) industry is an essential component of the economic and social development of modern civilization. It is also the foundation of

* Associate Professor, Department of Business Administration, Faculty of Commerce, Seth RN Ruia Government College, Ramgarh Shekhawati, Sikar, Rajasthan, India.
** Associate Professor, Department of ABST, Faculty of Commerce, Seth R. N. Ruia Government College, Ramgarh Shekhawati, Sikar, Rajasthan, India.

online commerce and one of the most important resources for production. E-commerce is a fundamentally new formation that was created as a means of satisfying the demands of customers and contributing to the development of a society that is based on multi-functional service [2]. E-traders are required to make use of data from a wide variety of sources in order to steer and propel consumer decision-making. This is accomplished by integrating user purchasing patterns through mobile devices. By analyzing the preferences, behaviors, and demands of customers, they are able to put specific proposals into action [3]. For the purpose of preparing for the future of e-commerce, it is essential to consider the characteristics and standards that customers desire from websites such as Amazon, as well as the ways in which these companies could modify their operations in order to meet the requirements of their customers and their evolving perspectives on environmental concerns such as sustainability [4].

Additionally, in this day and age, people from all over the world are keen to address issues that are connected to sustainable development. Numerous businesses are making efforts to conform their operations to the criteria of this concept as a result of the great attention that this concept has garnered from both society and the e-commerce industry. Customers are also paying close attention to how firms are doing in this area because the concept of sustainability has become increasingly popular with business consumers. This is where sustainability comes into play; it is a weapon that can be used to maintain competitiveness and win over more customers in online marketplaces [5].

As e-business continues to expand, it will undoubtedly be of assistance to firms in maintaining their operations. The protection of the ecosystem, the cessation of its destruction, and the maintenance of the planet's habitability are therefore their responsibilities. This paper provides an overview of the components and relationships that make up the ecosystem of e-commerce that is relevant to sustainable development. In terms of the environment that the electronic market operates in, the supersystem is none other than the electronic economy. The absence of a defining integral indicator makes it impossible to evaluate and measure the ecosystem via the lens of the e-commerce business model. This is due to the enormous complexity of the system. As a result of this, we suggest making use of three components of its diagnostic in order to evaluate the effectiveness of business models in online commerce while taking into consideration the ecosystem of sustainable development:

- Economic;
- Environmental;
- Social.

In the absence of a guarantee of sustainability, there will be unexpected consequences that may result in the ecological systems experiencing a decline. It is important for businesses to make it simple for customers to communicate with them by incorporating features that take into account the preferences of the customers. Increasing the number of orders placed by customers is the objective of the expansion of online shopping, which in turn leads to an increase in the amount of CO2 emissions and congestion in transportation. As a result of the fact that business-to-consumer e-commerce shipments currently constitute a sizeable portion of the total e-commerce shipments, the levels of pollution are increasing [6]. There is a high probability that this pollution will disappear in the near future due to the fact that the number of consumers and businesses that use the Internet is continuing to increase. Furthermore, new businesses are constantly entering the market on the internet, which is putting a great deal of strain on the delivery of products that, if not managed correctly, might potentially do damage to the environment. It is not just the ecosystem that is harmed by pollution caused by excessive emissions, but also the people who live in the environment. As a consequence of this, internet retailers have the flexibility to prioritize environmental sustainability by negotiating for more cheap logistical services and making available more environmentally friendly means of transportation [7]. The primary purpose of a retail corporation is to concentrate on economic returns in order to generate sales and profits [8]. The right decisions can result in trade-offs that are beneficial to society, the environment, and the economy to the extent that they provide value. There is no nation or corporation that can avoid putting its natural resources in jeopardy in order to achieve sustainable economic growth over the long run. If they want to remain in business, companies need to find a way to make a profit while also minimizing the negative effects that internet purchasing has on the environment [9].

It has been established by previous research that the online marketplace calls for a more sophisticated and comprehensive scientific understanding of sustainable e-commerce. The question of how to incorporate the three pillars of sustainable e-commerce into actual business model operations has not been addressed in any of these studies. In order to fill this knowledge gap, the purpose of this study is to bring together a collection of techniques that may be used to determine whether or not business

models for e-commerce are sustainable. The purpose of this study is to provide a comprehensive scientific approach to evaluating the sustainability of the e-commerce business model. The rationale behind this study is that significant performance indicators ought to be incorporated into a single vector of business model sustainability. A distinctive feature of this investigation is the methodological approach that has been suggested. This method integrates a number of different instruments into a single set in order to assess the viability of business concepts by utilizing a vector indicator. In the context of vector deviations, the results of the study that was gathered indicate that both of these factors are equally important in the process of developing a business model that is sustainable. With the help of the suggested vector technique, one is able to forecast and evaluate the outcomes of various kinds of actions, which enables them to locate and implement the most effective instruments for the long-term growth of an e-commerce company.

Objectives

- To understand the impact of sustainability on e-commerce growth
- To ensure the right policies for sustainable e-commerce

Methodology

When conducting this study, a mixed-approaches approach was utilized, which included the utilization of both qualitative and quantitative methods, as well as cluster analysis. As a component of the quantitative method, responses to an online survey were sent out to customers who had previously made purchases of goods and services via the internet. A total of 501 respondents' responses were analyzed, and the results were generated using SPSS version 24, which is the Statistical Package for the Social Sciences. Our conclusions are based on this statistical analysis. The quantitative information was obtained through the use of a survey that was conducted online and, due to the fact that it was a study, it utilized purposeful sampling. Prior to the beginning of the study, the Research Ethics Committee of the University of Debrecen reviewed it and gave their approval for it to proceed.

Utilization of a structured survey instrument was carried out. A pilot study was conducted with five participants to check that the questionnaire was simple to read and contained questions that were easy to understand before it was distributed to the general community.

The supervisor performed a second round of checks on the final questionnaire to ensure that it gathered all of the information that was required for the study. Additionally, the notes from the sample pilot survey were incorporated into the questionnaire. The questionnaire inquired about a variety of subjects, including socioeconomic demographics, environmentally responsible e-commerce, and the impact that packaging materials have on the environment. According to Escursell et al. (2021) and N. Singh and Sahu (2022), the only way to ensure the long-term viability of e-commerce is to find solutions to the difficulties that have been identified.

According to the study, a Likert scale of five points was applied, with one point representing "strongly disagree" and five points representing "strongly agree." Customers who are proficient in technology and who frequently place orders through e-commerce platforms make up the target demographic for this product. As a result, the vast majority of respondents, precisely ninety percent, belong to the age group that is typically linked with online shopping. This age group consists of university students in Kenya, specifically those who are between the ages of 18 and 35.

In contrast, as part of the qualitative methodology, interviews were conducted with two online retailer businesses, namely Jumia and Safaricom, which were designated as X and Y, respectively. The interviews were conducted in a structured interview format. Interviews are being conducted with professionals and high-ranking executives from both of the companies participating in the process. For the purpose of compiling the feedback and recommendations that customers have provided regarding the brands, the most senior members of staff and specialists were selected by hand. The interviewees were given the questions in advance so that they could correctly prepare for the interview, and this was done with the purpose of ensuring that the interview was of high quality. Interview responses served as the basis for the case studies provided by both companies.

Additionally, secondary data points were included, which were taken from past literature reviews on the subject of the challenges concerning sustainable e-commerce that online enterprises are confronted with. We also wanted to determine whether or if there is a growing interest in products that are long-lasting, sustainable, and do not cause harm to the environment, so we conducted these interviews to acquire this information. A statistical breakdown of the number of times spent shopping online, broken down by gender, educational achievement, and the number of times spent shopping online. Table 1 presents the data that were collected from the survey's sample.

Table 1: A Few Representative Survey Statistics

		Frequency (n)	Percentage (%)
Gender	Female	250	50.0
	Male	250	50.0
	Total	500	100
Education level	Bachelor's	281	56.3
	Master's	141	28.3
	Ph.D.	30	6
	Lecturer	28	5.5
Participants	Consumers	17	3.3
	Retailers	2	.6
Frequency/month on online shopping	Once	100	22.5
	Twice	95	24.5
	Three times	90	26.5
	> 4 times	75	27.5

Retail is the field in which each and every one of the sustainable e-commerce specialists who took part in the interviews is employed. Due to the fact that a significant number of consumers post reviews of goods and services on the internet (Wright & Lund, 2000). In order to do the data analysis, Microsoft 360 and SPSS version 24 were utilized. Cluster analysis was utilized with the intention of determining the relevance of the impact that industrialized European nations have had on sustainability practices in online commerce and evaluating the impact that these nations have had. Both tables 6 and 7 present the findings of the investigation.

Empirical Results and Discussion

According to Anwyl-Irvine, it is essential to conduct a battery of analytical tests in order to guarantee that the data collection instruments are of a high standard and that the study is successful in accomplishing its objectives (Anwyl-Irvine et al., 2021). In light of this, the testing for this study consisted of determining the validity and reliability of the scale, determining whether or not there was collinearity, and employing a structural equation model that was based on partial least squares. Next, we explore the challenges that sustainable e-commerce must overcome in order to be successful. Examples of frequent acronyms include: "Good policies" (abbreviated as "BP"), "sustainable e-commerce beneficiaries" (abbreviated as "BE"), "environmental impact" (abbreviated as "EI"), and "packaging materials" (abbreviated as "PM"

- **Reliability and Validity**

Cronbach's alpha (CA) is the method that is utilized to determine composite reliability (CR). One of the most important factors in determining whether or not a test is credible is whether or not its scale value is at least 0.7. For your convenience, the results of the validity and reliability test are presented in Table 2. In accordance with the information presented in Table 2, the minimum CA values are as follows: (0.789; EI scale), (0.889; BP scale), (0.867; PM scale), and (0.825; BS scale), in that particular order. When the values obtained are larger than 0.7, which shows that all of the research constructs are reliable, the validity test can be carried out. This makes it possible to carry out the test. When both the average variance extracts (EVA) and the values of the outliers' loads are greater than the thresholds that have been defined, the convergent validity test is used to assess whether or not this is the case.7. As can be seen in Table 3 below, the validity test was successfully completed with EVA values of 0.792,.751, 0.742, and 0.701, respectively, and outliers' loads ranging from 0.768 to 0.889. This represents a successful completion of the validity test.

Mandal (Mandal & Maiti, 2022) asserts that determining whether or not there is a correlation between the independent variables and the dependent variables associated with the regression model is of equal importance. For the purpose of measuring this, the factor of variance inflation (VIF) is utilized. The presence of collinearity is generally considered to be the case when the VIF is greater than 3. VIF values that are fewer than three, on the other hand, are indicative of the absence of collinearity. Due to the fact that the value of the VIF for our circumstance was 1.423, it can be concluded that the independent variables did not demonstrate collinearity; however, they do have mutual impacts. In order to investigate the construct-to-construct correlations, the discriminant validity test was subjected to a hoterotrait-monotrait ratio, also known as HTMT. According to the findings of the study, its baseline value is 0.865. It is not possible for HTMT to meet the threshold of 0.865, as it has a score of 0.423. On the basis of this, we may argue that the validity of discrimination has been fully eradicated. The validity and reliability tests are presented in Table 2, which may be seen here.

Table 2: Reliability and Validity Tests

Constructs	Outlier loadings	CA	CR	AVE	VIF Value		HTMT Value	
					EI	SE	SE	PM
EI	[0.768-0.897]	0.788	0.888	0.751				
BP	[0.756-0.923]	0.887	0.902	0.742				
PM	[0.745-0.892]	0.868	0.893	0.701		1.423	**0.465**	
BS	[0.731-0.889]	0.887	0.824	0.867	1.282	1.465	0.612	**0.423**

- **Pls-Sem**

PLS-SEM, which stands for partial least squares route modeling, was the method that we utilized in order to put the four assumptions regarding sustainable e-commerce to the test. The tests will concentrate on the following areas: the impact on the environment, sustainable e-commerce (both in terms of implementation and communication), sustainable packaging materials, and the beneficiary organizations of sustainable online businesses. Due to the skewed statistical answers, it is presumed that the data follows a normal distribution. Using the bootstrapping method, we begin with a smaller sample size of 501 and then proceed to measure the distribution using a repeating sample size of 5100. Based on the findings of this investigation, it can be concluded that all four hypotheses, namely H1, H2, H3, and H4, are supported at a level of significance of 95% (p-value = 0.000<0.005). Table 3 illustrates the relationships that exist between the various ideas. A significance criterion of 95% was utilized for evaluation, with the p-value being equal to or less than 0.005. This evaluation was based on the beta factor β and the standard deviation.

In order to simplify our research and steer clear of a convoluted analysis, we did not include any moderator or mediating components in our investigation. It has been determined that the impact of environmental impact (EI) on sustainable e-commerce is both positive and statistically significant (β=0.594, p-value 0.005). With a beta coefficient of 0.462 and a p-value of 0.005, the positive and significant influence of better policies (BP) on sustainable e-commerce is evident. With a value of (β=0.354, p-value=0.005), it can be observed that the impact of packaging materials on environmental impact is more positive and substantial than the impact on sustainable e-commerce. Last but not least, sustainable e-commerce has a domino effect on retailers and customers, which has the long-term effect of enhancing customer pleasure, brand loyalty, and reputation. The BS value (β=0.145, p-value 0.005) indicates that there is a need for further inquiry into the integration of environmentally responsible e-commerce with environmental effect. The PLS-SEM test is a test that may be used for both exploratory and predictive evaluations of the influence and casual correlations between the variables that have been theoretically hypothesized at the same time. The outcomes of the PLS-SEM tests that were carried out on several variables and casual correlations are presented in Table 3.

Table 3: PLS-SEM Analyses of Variables and Incidental Correlations

Relationship	Hypotheses	β	STDEV	P Values	Result
EI>SE	H1	0.595	0.041	0.000	Supported
BP>SE	H2	0. 461	0.031	0.000	Supported
SE>BG	H3	0.355	0.045	0.000	Supported
		0.146	0.015	0.000	Supported

R2, f2, Q2 Tests

Coefficient Determination (R2)

A score of 1.0 for the coefficient of determination (R2) implies that the data are consistent with the linear model of the equation, which is a principle in the field of social research on consumer behavior. R2 values of 0.5 or below suggest that the level of variability that can be attributed to independent variables is considered to be acceptable. As can be seen in Table 4 below, the study came to the conclusion that the EI was 0.312, which is somewhat lower than the threshold (showing that there was no major deviation from the acceptably high value). By achieving an R2 value of 0.420, which is the same as the acceptable threshold, sustainable e-commerce (S.E.) becomes a goal that is both observable and feasible.

Frequency Strength

Within the context of related structures, the strength frequency is specified by F2. In terms of the severity of the effects, the criteria for weak, moderate, and severe are 0.02, 0.15, and 0.35 F2. Table 4 presents the frequency strengths of R2, F2, and Q2 in one convenient location.

Predictive Relevance (Q2)

In question 2, both the exploratory power and the latent variable prediction are displayed. When the value of Q2 is greater than zero, it is an indication that the model is significant and that it provides very accurate predictions regarding relevance. As a result of the fact that all of the Q2 values are more than zero, notably Q2EI=0.122 and Q2S.E=0.330, the predictive relevance of the model has been drastically increased. Table 4 presents the outcomes of the R2, F2, and Q2 tests that were conducted.

Table 4: R2, F2, Q2 Test Results

Constructs	R2	F2	Q2
EI	0.12	0.243	0.122
SE	0.420	0.025(EI)/0.395BP	0.130

The interviewers took sure to take as little time as possible from the experts and retailers who were still working in their stores. This was done with regard to the qualitative approach. Interviews were carried out with the purpose of bringing attention to the significance of sustainability departments to businesses that provide e-commerce platform services. It is shown in Table 5 that the schedules of both interviewers are shown.

Table 5: Interview Timetable for both Participants

Interviews	Company	Interviewee	Date	Duration
Interviewer 1	X	Sustainability mgr.	21/02/2021	15 minutes
Interviewer 2	Y	e-commerce mgr.	22/02/2021	10 minutes

E-commerce companies that are not in the financial sector and have more than ten employees and a total revenue of more than one million dollars are eligible to use cluster analysis. Listed below are the companies that have e-commerce websites, broken down by percentage. From the information that Eurostat compiled in 2021, businesses that had more than ten employees were eliminated. This did not include financial businesses. As can be seen in Figure 2, the vast majority of companies that engage in e-commerce are well-established and have implemented procedures that promote e-commerce sustainability. In the majority of wealthy nations, the flip amount is greater than fifteen percent of total e-commerce sales; however, in less developed nations, it is not quite as high. E-commerce companies that have a total turnover and more than ten employees are displayed in Figure 1. The banking industry is not included in this figure.

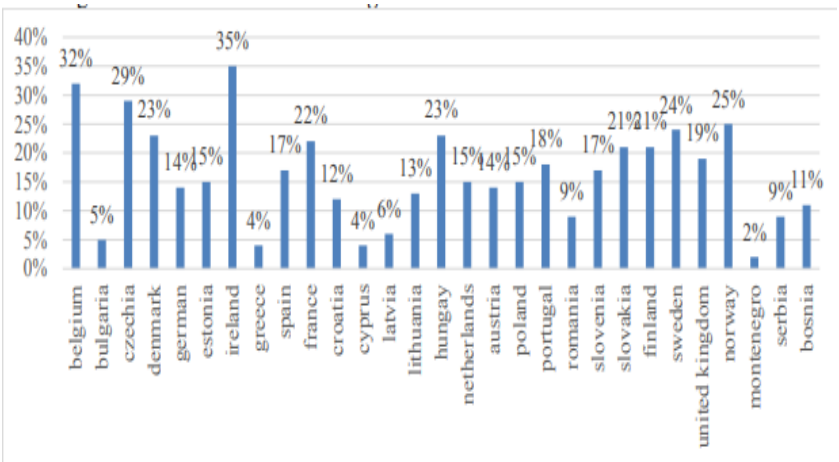

Figure 1: E-commerce Companies with over 10 Employees and Total Turnover, Excluding Financial Sectors

Firms that are engaged in e-commerce and have more than ten employees and a total income of more than one hundred thousand euros (excluding financial services). In comparison to the Czech Republic (29%), Norway (25%), and Ireland (35%), this is a significant improvement. France accounts for 22%, Slovakia and Finland for 21%, the United Kingdom for 19%, Portugal for 18%, Sweden (24%) and Hungary (23%) and Denmark (23%) respectively. With Slovenia and Spain accounting for 17%, Poland, the Netherlands, and Estonia accounting for 15%, and the remaining countries accounting for less than 15% of the total.

Calculating the averages of four groups over seven variables: There are four different k-means of different e-commerce models, with names like e.comm, e.comm_web, e-.comm_EDI, e.comm_B2C, e.comm_B2C_B2G, e.comm_B2C_10, and e.comm_B2C_20. The graph presents the function in terms of the cost of doing business under each of the seven clusters that are analyzing the regulations that govern the sustainability of e-commerce. This allows for the determination of which of the seven clusters is the most effective. Based on the findings, it can be concluded that the fourth cluster, within which sustainability standards have been implemented, is still functioning. The means of four different groups and seven different variables that are associated with the viability of online shopping are displayed in Figure 2.

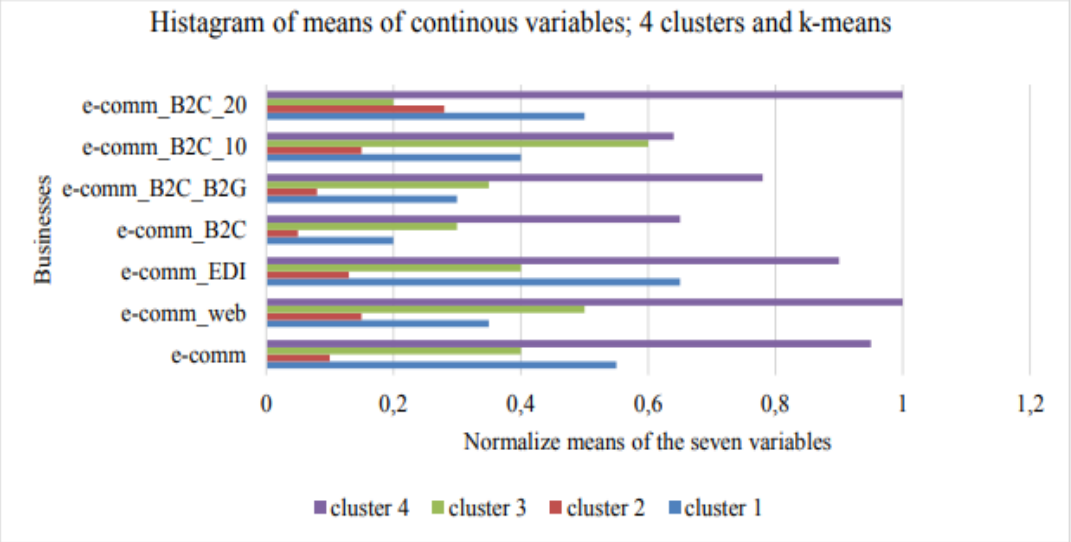

Figure 2: Presents the Averages of Seven Indicators and Four Clusters for the Sustainability of e-Commerce

For the analysis of variance (ANOVA) and K-means clustering, a total of 29 countries were selected using Eurostat. There were seven variables and four clusters selected for the analysis. In the 1% level of statistical significance, each of the four clusters was shown to be statistically significant. The findings of an analysis of variance (ANOVA) conducted with Eurostat data for a total of 29 countries, four clusters, and continuous variables are presented to the reader in Table 6.

Table 6: ANOVA analysis using 29 Nations, 4 Clusters, and Continuous Data from Eurostat

ANOVA for continuous variables: Number of clusters: 4, total number of countries case: 29						
	Between SS	**df**	**Within SS**	**df**	**F**	**p-value**
e-comm	1514, 163	3	476,389	25	26,487	0,000***
e-comm_web	244,700	3	90,472	25	22,539	0,000***
e-comm_EDI	697,115	3	320,333	25	18,135	0,000***
e-comm_B2C	29,158	3	26,083	25	9,316	0,000***
e-comm_B2C_B2G	95,717	3	54972	25	14,510	0,000***
e-comm_B2C_10	454,568	3	367,639	25	10,304	0,000***
e-comm_B2C_20	121,413	3	87,139	25	11,611	0,000***

***Statistically significant at 1%

The average values of the seven variables are shown in Table 7, which is organized according to the four groups. Cluster 4, which consists of Ireland and Belgium, is the one in which the means of all seven variables stand at their highest. With that being said, when all seven elements are considered, the total turnover from e-Commerce for Enterprises in Cluster 4 has the highest mean value, which comes in at 33.50 pounds. Except for Enterprises' turnover from web sales - B2C, which is 1.33, Cluster 2 has the lowest mean values across the board for all seven variables. This is the only variable that does not fall into this category. Business data on e-commerce from 29 different countries, broken down by cluster, and displaying the average values for seven different variables in 2022 are presented in Table 7. A breakdown of the seven mean variables for each of the four groups is presented in Table 7.

Table 7: Displays Seven Instances of the Four Clusters' mean Variables

	Cluster 1	Cluster 2	Cluster 3	Cluster 4
e-comm	19,83	5,00	15,44	33,50
e-comm_web	6,08	2,67	7,56	15,00
e-comm_EDI	13,50	2,33	8,00	19,00
e-comm_B2C	2,25	1,33	3,00	5,50
e-comm_B2C_B2G	4,08	1,67	4,56	9,50
e-comm_B2C_10	12,92	7,33	17,89	18,50
e-comm_B2C_20	4,42	2,67	1,89	10,00
Number of cases	12	6	9	2

Results

One of the primary focuses of the quantitative part of the research was the collection, preparation, and examination of data. Throughout the course of the investigation, a questionnaire was utilized to ascertain the opinions and assessments of the participants with regard to the dependent variable (transitional crisis) and the independent variables (neoliberal ideology, deficit of institutional changes, heritage of socialism, geopolitics, nomenclature authorities, and nine-level Likert scale). A scale that varied from 1 (extremely low) to 5 (very high) was utilized in order to quantify the dependent variable, which was the transitional crisis of the individual. We assessed the negative influence of the independent factors on the dependent variable, beginning with the least negative impact (1) and going all the way up to the most negative impact (5). A total of 1,500 responses were received from Montenegro, Serbia, and Bosnia and Herzegovina, each of which had a total of 500 questionnaires to complete out amongst them. For the purpose of this inquiry, SPSS was utilized to do processing on the data that was gathered. In accordance with the goal that was outlined in the work hypothesis, descriptive statistics were utilized in order to carry out data analysis, correlation analysis, and multi-correlation. In accordance with the principle of least squares, both the hierarchical multiple regression model and the multiple linear regression model were utilized.

Application of Multiple Linear Regression Analysis

In the time leading up to the regression analysis, descriptive statistics were evaluated. Table 8 presents the outcomes that were deemed to be meaningful based on the data that was collected.

Table 8: Means End Standard Deviation

Variables	Montenegro		Serbia		Bosnia and Herzegovina		Total	
	Mean	Standard dev.	Mean	Standard dev	Mean	Standard dev.	Mean	Standard dev.
Crisis	2.7590	.73655	3.2590	.73655	3.7515	.72212	3.2560	.83582
Path depend.	2.8679	1.07412	3.8120	1.09666	3.8610	1.07260	3.5154	1.17298
Globalization	3.8940	.67652	4.3060	.52241	4.0560	.61776	4.0853	.63165
Politics	2.6320	1.28720	3.1120	1.25363	3.5431	1.15498	3.0953	1.28699
Institutions	3.5990	.78161	4.0870	.76229	4.5020	.49849	4.0613	.78485
Neoliberalideo.	3.3236	.88945	4.4260	.53861	3.9279	.53755	4.1278	.76309

For all three countries:

$$\overline{Y} = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5$$

$$ZaX_1 = 3.51.\ X_2 = 4.08.\ X_3 = 3.09.\ X_4 = 4.08\ X_5 = 4.12$$

$$\overline{Y} = 4.63 - 0{,}21X_1 - 0.23X_2 - 0.03X_3 - 0.31X_4 - 0.26X_5$$

$$\overline{Y} = 3{,}25$$

Montenegro has the lowest level of transitional crises, with a mean total of 2.75. This is followed by Serbia, which has a mean total of 3.25, and Bosnia and Herzegovina, which has a mean total of 3.75. The means of the variables are compared on Graph 3, which displays the results.

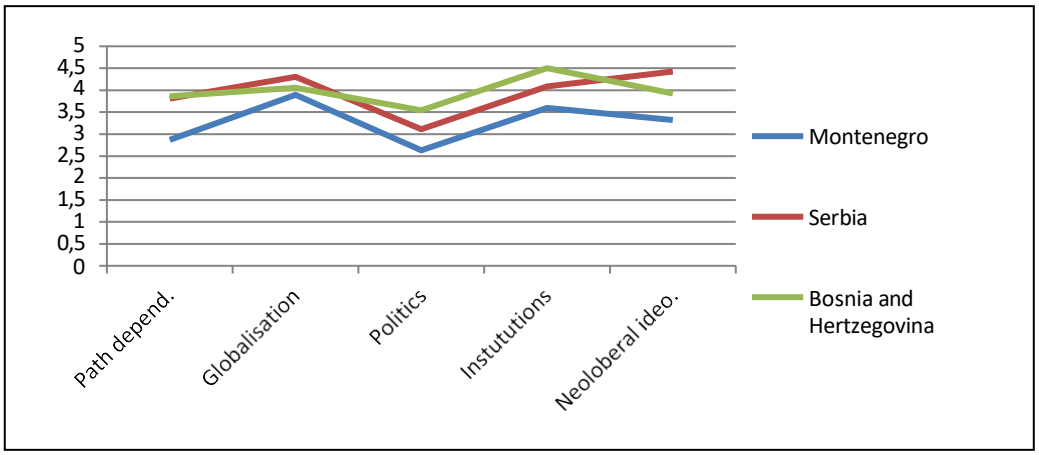

Figure 3: Comparation Data by Countries

Source: *own data*

Graph 3 illustrates the huge differences that exist between countries in terms of how they perceive independent variables. When compared to Serbia and Montenegro, Bosnia and Herzegovina is in a much more precarious position in terms of the severity of the transition challenge. Bosnia and Herzegovina, Serbia, and Montenegro are among the top three countries in terms of the detrimental influence that independent factors have on their respective countries. When compared to other nations, Montenegro is performing significantly better in each and every domain that has been investigated. In light of the fact that the preceding transition period brought about changes in the areas of economics, politics, institutions, and society, it is reasonable to anticipate that there will be certain variations. This study has also failed to include additional problems that are pertinent to the discussion. Nevertheless, the data that have been presented make it abundantly evident that, on the basis of characteristics that are often found in studies on influence, the models of influence and functional reliance are relatively equivalent to one another.

Conclusion

E-commerce that is sustainable is essential to the long-term profitability and expansion of online companies, according to Schoneveld's research from 2020. As a consequence of this, environmentally responsible e-commerce is inextricably linked to sustainable business practices both for online retailers and for consumers. If they support legislation that encourage environmentally responsible buying, online merchants have a significant probability of success and expansion (Calderon-Monge et al., 2020; Yayla et al., 2021). This is according to research conducted by Yayla et al., 2021.

In accordance with the conclusions of earlier study, the following is a summary of our findings: When sustainability regulations are formed and put into effect, sustainable e-commerce is advantageous to all parties involved. This results in a competitive advantage and interactions that are mutually beneficial (Pereira-Moliner et al., 2021). In accordance with the implementation of the policy, it will also attract countries that are in favor of environmentally responsible e-commerce and are willing to work together in order to bring about a more comprehensive transformation. At the same time that we are working toward the 17 sustainable development goals that were outlined in Vision 2030 (Pimonenko et al., 2021) in environmentally friendly products and low gas emissions to minimize pollution, which will lead to improved prosperity and a healthier ecosystem across all industries. The long-term success of e-commerce businesses in the sharing economy, which encourages efficiency and effective use of resources in environmental, economic, and social dimensions, is contingent on everyone's agreement to promote and purchase environmentally friendly products while also protecting the natural environment (Valentinas et al., 2021). This is the case because the sharing economy promotes efficiency and effective use of resources in all three dimensions.

A clustering pattern can be seen in the results for each of the seven variables. It is demonstrated in Cluster 4 that Ireland and Belgium have successfully used their outstanding information and communication technology (ICT) infrastructure in order to acquire a competitive advantage and develop synergies. The countries that make up Cluster 3 are emerging nations who, due to a lack of

integration and synergy, have not yet fully realized the benefits of environmentally responsible and sustainable e-commerce practices. There is a disadvantage associated with Cluster two in terms of the digitalization and adoption of businesses. This implies that the sustainable e-commerce mean values of the countries may not be fulfilled due to the fact that businesses do not embrace sustainability in all of its elements. Cluster 4 comes to a close with the developing countries who have paid considerable sums in the process of constructing the requisite information and communication technology infrastructure to allow the shift to digital operations and firms that engage in e-commerce. As a consequence of this, we will fall severely behind schedule in our efforts to fulfill Vision 2030 by putting into practice environmentally responsible business practices. According to Scutariu et al. (2022), during the course of the epidemic, the usage of online shopping became the standard in the majority of countries.

In accordance with the findings, countries that apply sustainable e-commerce practices in a sharing economy across a variety of industries enjoy a competitive advantage and, as a consequence, experience synergies (Pereira-Moliner et al., 2021). Furthermore, Zorouja et al. (2020) state that there is a discernible gap between the selected European nations in terms of the quality of online sales and e-commerce activities, as well as the utilization of these activities.

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