Multidisciplinary Journal
of Management, Economics, and Accounting
ISSN: 2705-2842
Number 10 Issue 2 2024

Impact Of Sustainable Production On The Development Of International Business

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Abstract

This research aims to identify the impact of sustainable production on the development of international business. The research focuses on the global shift towards sustainability and its impact on business in various directions. Analyze the importance of sustainable production in achieving successful and sustainable international business development by building a structural model using the structural modeling method and testing the validity and quality of the models.

The impact of sustainable production includes environmental, economic, and social factors, and the development of international business is adopted by attracting customers and investors, product quality and building the reputation of the brand, The research reached a set of conclusions and recommendations and the research hopes that the results and recommendations will contribute to enhancing awareness of the importance of sustainability and encouraging more companies to adopt sustainable production practices in the context of international business.

Keywords:, Sustainable production, product design, process design, environmental performance, economic performance, development of international business.

Introduction

It is difficult at the present time to ignore the various effects of industrial activities on the environment, the irrational exploitation of resources and various forms of pollution have led to a threat to the lives of humans and other creatures and have made the future of generations unstable. On the other hand, the industrial facility cannot be isolated from the environment as a source of inputs, and although the industrial sector is the main engine of international economies, it is one of the elements that most threatens the environment and influences international business (Bouhabila, 2012) .

One of the fundamental dilemmas between the relationship of international business and sustainability, according to Ibarra (2007) is corporate social responsibility and the implications for international business practices and positioning in foreign markets, taking into account that developed countries prefer products that indicate that the environment has been protected during their production and marketing (Hernandez et al., 2020). With respect to the behavior of the international market, the social, economic, and environmental commitment is identified within the production processes that promote sustainable development. Developed countries focus their objectives under the framework of the Rio declaration on environment and development (UN, 2020), States should cooperate in promoting a favorable and open international economic system that leads to economic growth and sustainable development of all countries, in order to better address the problems of environmental degradation. (Paragraph, 11) (Den et al, 2021),In this way, the importance that determines the concept of sustainability within the business sector as a facilitator of good practices is reflected.

Likewise, Iraq has great challenges in consolidating a sustainable development structure and framing the implementation of environmentally friendly solutions. The Ministry of the Environment in September 2014 launched the National Business Plan to enhance Iraq’s competitiveness in these value chains and contribute to national

development goals of food security, inclusive growth, and job creation, particularly for women and youth. According to the International Trade Centre (ITC), reforms in the business sector could lead to more than 190,000 additional jobs in a moderate growth scenario by 2030 (Ocha, 2022). For this reason, the research is carried out given the concern of those who investigate sustainable production and the making of significant contributions so that they can have greater recognition for their level of corporate social responsibility , and in this way benefit the economic growth of the company and in turn that of the region, promoting a more sustainable society and cleaner industrialization processes, additionally the importance of improving the image of the company in international economies that favors attracting new investors, thereby improving the business opportunity. Its main objective is to define the guidelines and provide tools for planning and decision-making that allow the development, promotion, and promotion of both the supply and demand of green and sustainable businesses in the country, through the development of an appropriate platform of instruments, incentives, coordination, and institutional articulation aimed at economic growth, employment generation and conservation of Iraq's natural capital. (Ministry of Environment, 2020)

In this sense, the problematic core focuses on observing how sustainable production affects international business, what are the effects of the incorrect use of resources .

Sustainability

The principle of sustainability is to work on the different aspects of human development in order to guarantee that it lasts functionally in the long term. On the one hand, economic sustainability seeks to promote development, generating wealth without harming natural resources (Sooma & Jonathan,2020). Sustainability is defined as the efficient management of natural resources in productive activities, which ensures the needs of the present without compromising the needs of future

generations. In this sense, sustainability presents an alternative to traditional economic practices focusing on the preservation of the planet (Wong & Lam ,2018) . For a long time, the Earth has been treated as an inexhaustible source of resources for industrial production, but that era is nearing its end. It is increasingly less sustainable for natural resources to be exploited at the current level since they are limited and their overuse can cause them to cease to be available for human consumption (Den et al, 2021). That is why this new ecological perspective seeks to promote sustainable development by betting on a balance between social development, economic growth, and the needs of the environment. This is an effort that requires the commitment of everyone; people, companies, countries, and institutions, to guarantee its functioning in the future (Sooma & Jonathan,2020), Sustainability is multidimensional the (UNESCO) refer to the dimensions as being environmental, social, economic (Wong & Lam ,2018) .as it shown in Figure 1.

Figure 1: Sustainability Dimensions

Sustainable Production

The roots of sustainable production extend to the late seventies, as that period was

considered a period of awareness related to environmental degradation and unsustainable use of resources (Bowen & Ford, 2020), but the concept of sustainable production actually appeared in 1992 at the United Nations Conference on Environment and Development, and is closely linked to the concept of sustainable development, and it was concluded that the main reason environmental degradation is unsustainable consumption and production, especially in industrialized countries. While sustainable consumption targets consumers, sustainable production is linked to organizations that provide products or services. Hence, many organizations began to understand the importance of sustainable development, although they were not sure how to apply this concept in business activities, and the Lowell Center for Sustainable Production was established in 1996 to promote new industrial forms and healthy, environmentally and socially safe production (Hajim & Salman, 2021).

According to the United Nations (UN, 2020, Para. 1) sustainability is "the satisfaction of the needs of the present generation, without compromising the ability of future generations to satisfy their own needs", a notion that has been gaining importance over the years and generating awareness in the social, business and government sphere, due to the great changes that the environment has undergone, causing global warming and countless diseases as a result of overpopulation and excessive growth, mainly in the industrial sector (Hernandez et al., 2020). Sustainable production is a model of production of goods and services that minimizes the use of natural resources, the generation of toxic materials, waste and polluting emissions, by promoting a productive management strategy that integrates the environmental dimension through a preventive approach to pollution and efficient management of resources. This model is mainly aimed at: reduce health risks, reduce impacts to the environment, reduce the use of resources and increase the competitiveness of business activity (Argentina,2022). The objective of this productive vision is to harmonize economic growth with social inclusion and care for the

environment; promoting industrial development that does not put at risk the productive, social and environmental needs of future generations.

Sustainable Production Dimensions

Studies indicate that there are many dimensions that belong to sustainable production, and that the most common are (product design, process design, environmental performance, economic performance) as follows (Sooma & Jonathan,2020):

- Product design includes a safe and sound environment in the product life cycle, in addition to recyclability and clean energy.
- Process design includes reducing and recycling waste and contaminated products, designing work spaces and reducing risks.
- Environmental performance includes commitment to preserving environmental systems and their risks, and working on environmental maintenance continuously. Evaluating the use of non-renewable resources, energy consumption, avoiding hazardous products, waste reduction and recycling.
- Economic performance is the ability of senior management to make good use of the means of production. damage, to achieve previously defined goals, diagnose deviations, and find For solutions.

International Business

International business is a term that refers to the trade of goods, services, technology, capital and/or knowledge across national borders on a global scale. It involves cross-border transactions of goods and services between two or more countries. Economic resource transactions include capital, skills, and people for the purpose of international production of physical goods and services .International business is also known as globalization (Efin, 2021), It is the process of internationalization of multinational companies, which is a company that has a global approach to markets, production and/or operations in multiple countries (Bowen & Ford, 2020). On the

other hand, the term international Business can be defined, according to (Wong & Lam ,2018) as a set of commercial transactions that are carried out between people, whether natural or legal, who are located in different countries. This leads to the assumption that international trade is a fundamental piece for the implementation of sustainable development strategies around the world (Hernandez et al., 2020).

Material and Methods

Instrument

According to previous studies and literatures a theoretical model were proposed to explain the sustainable production on the basis of its dimensions (product design, process design, environmental performance, economic performance) that affect the development of international business. The instrument used to collect the data is the questionnaire. It includes two parts which refer to the variables and dimensions. the conceptual framework is shown as in Figure 2 . and the sample of the study was the university professors , a random sample was selected of 61 respondents .

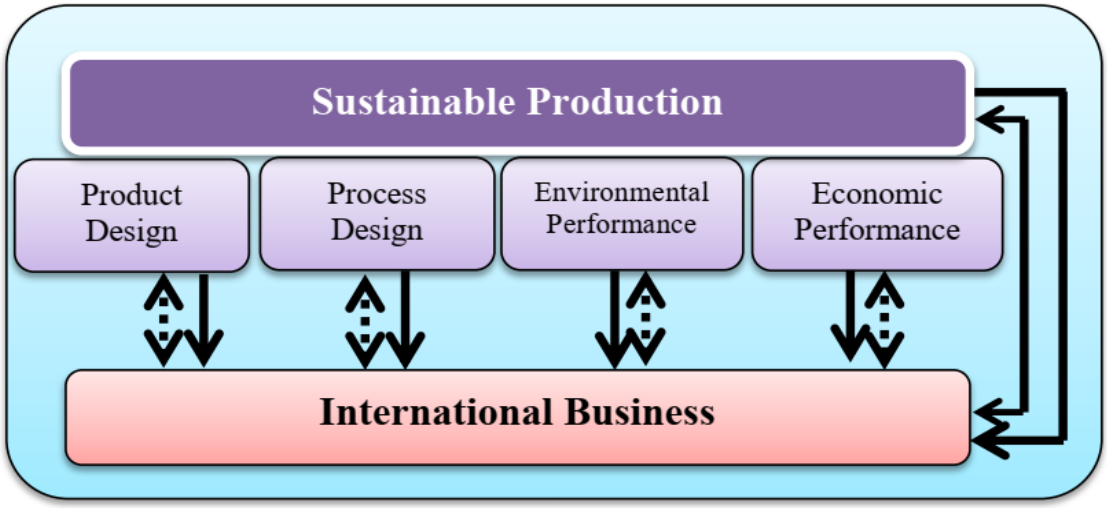

Figure 2: Conceptual Framework

In order to test the reliability Cronbach alpha coefficient were calculated as it shown in Table 1, that proved acceptable value of reliability , all have a Cronbach's Alpha value greater than 0.7.

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Table 1: Alpha Cronbach Model

Var.	Item	Cronbachs Alpha
Product Design	X1	0.781
Process Design	X2	0.812
Environmental Performance	X3	0.894
Economic Performance	X4	0.731
Sustainable Production	X	0.754
International Business	Y	0.864

Normality Test

In order to test the normality the study used skewness and kurtosis coefficient , and the threshold must be between (+1.96 , -1.96) , Table 2 , 3 refers to that the data follow the normality.

Table 2 : Normality Test of X data

Variable	min	max	skew	c.r.	kurtosis	c.r.
DataX_20	2.000	5.000	-.607	-2.189	-.151	-.272
DataX_19	3.000	5.000	-.232	-.837	-.829	-1.495
DataX_18	2.000	5.000	-.601	-2.166	.010	.018
DataX_17	2.000	5.000	-.575	-2.073	.032	.058
DataX_16	3.000	5.000	-.550	-1.983	-.754	-1.359
DataX_15	3.000	5.000	-.405	-1.460	-1.131	-2.039
DataX_14	3.000	5.000	-.409	-1.474	-.944	-1.701
DataX_13	3.000	5.000	-.414	-1.493	-.824	-1.485
DataX_12	2.000	5.000	-.764	-2.754	.137	.248
DataX_11	3.000	5.000	-.514	-1.853	-.765	-1.379
DataX_10	3.000	5.000	-.433	-1.561	-.724	-1.305
DataX_9	3.000	5.000	-.462	-1.667	-1.011	-1.822
DataX_8	2.000	5.000	-.766	-2.763	.485	.874
DataX_7	3.000	5.000	-.690	-2.488	-.561	-1.011
DataX_6	2.000	5.000	-.713	-2.569	.687	1.239
DataX_5	3.000	5.000	-.318	-1.148	-1.103	-1.989
DataX_4	3.000	5.000	-.699	-2.521	-.605	-1.091
DataX_3	3.000	5.000	-.479	-1.726	-.886	-1.598
DataX_2	3.000	5.000	-.397	-1.432	-.721	-1.299

DataX_1	2.000	5.000	-.955	-3.444	.428	.772
Multivariate					182.828	27.216

Table 4 : Normality Test of Y data

Variable	min	max	skew	c.r.	kurtosis	c.r.
DataY_8	2.000	5.000	-.464	-1.671	.115	.207
DataY_7	2.000	5.000	-.655	-2.361	-.018	-.032
DataY_6	3.000	5.000	-.228	-.822	-.622	-1.121
DataY_5	3.000	5.000	-.196	-.707	-.585	-1.054
DataY_4	2.000	5.000	-.608	-2.192	-.119	-.214
DataY_3	2.000	5.000	-.317	-1.144	-.492	-.887
DataY_2	3.000	5.000	-.126	-.456	-.584	-1.052
DataY_1	3.000	5.000	-.144	-.520	-.581	-1.047
Multivariate					32.203	11.242

Results

Confirmatory Factor Analysis

The study used structural equation modeling to test the confirmatory factor analysis (CFA) , And the model fit needs that the loadings above 0.50 and the significant level less than 0.05 , and the goodness fit index as it shown in Table 4.

Table 4: Fit Goodness Modeling

Fit Index	Acceptable Threshold Levels	Description
Absolute Fit Indices Chi-Square X2	Low $\chi 2$ relative to degrees of freedom with an insignificant *p* value ($p > 0.05$)	
Relative $\chi 2$ ($\chi 2$/df)	2:1 (Tabachnik & Fidell, 2007) 3:1 (Kline, 2005)	Adjusts for sample size.
(RMSEA)	Values less than 0.07 (Steiger, 2007)	Has a known distribution. Favours parsimony. Values less than 0.03 represent excellent fit.
GFI	Values greater than 0.95	Scaled between 0 and 1, with higher values indicating better model fit. This statistic should be used with caution.
AGFI	Values greater than 0.95	Adjusts the GFI based on the number of parameters in the model. Values can fall outside the 0-1.0 range.
RMR	Good models have small RMR (Tabachnik and Fidell, 2007)	Residual based. The average squared differences between the residuals of the sample covariance and the residuals of the estimated covariance.
SRMR	SRMR less 0.08 (Hu& Bentler, 1999)	Standardized version of the RMR. Easier to interpret due to its Standardized nature.
Incremental Fit Indices		
NFI	Values greater than 0.95	Assesses fit relative to a baseline model which assumes no covariance between the observed variables. Has a tendency to fit in small samples.
NNFI (TLI)	Values greater than 0.95	Non-normed, values can fall outside the 0-1 range. Favours parsimony. Performs well in simulation studies (Sharma et al, 2005; McDonald and Marsh, 1990)
CFI	Values greater 0.95	Normed, 0-1 range.

Source : Daire et al,2008

X Model

The model of X variable includes four dimensions with 20 items , according to SEM techniques for the confirmatory factor analysis (CFA) , the model in Figure 3 does not meet the required conditions and not good to measure this variable, so it need to modify the model by using (modification indices) . So the acceptable model be as it shown in Table 5 and Figure 4.

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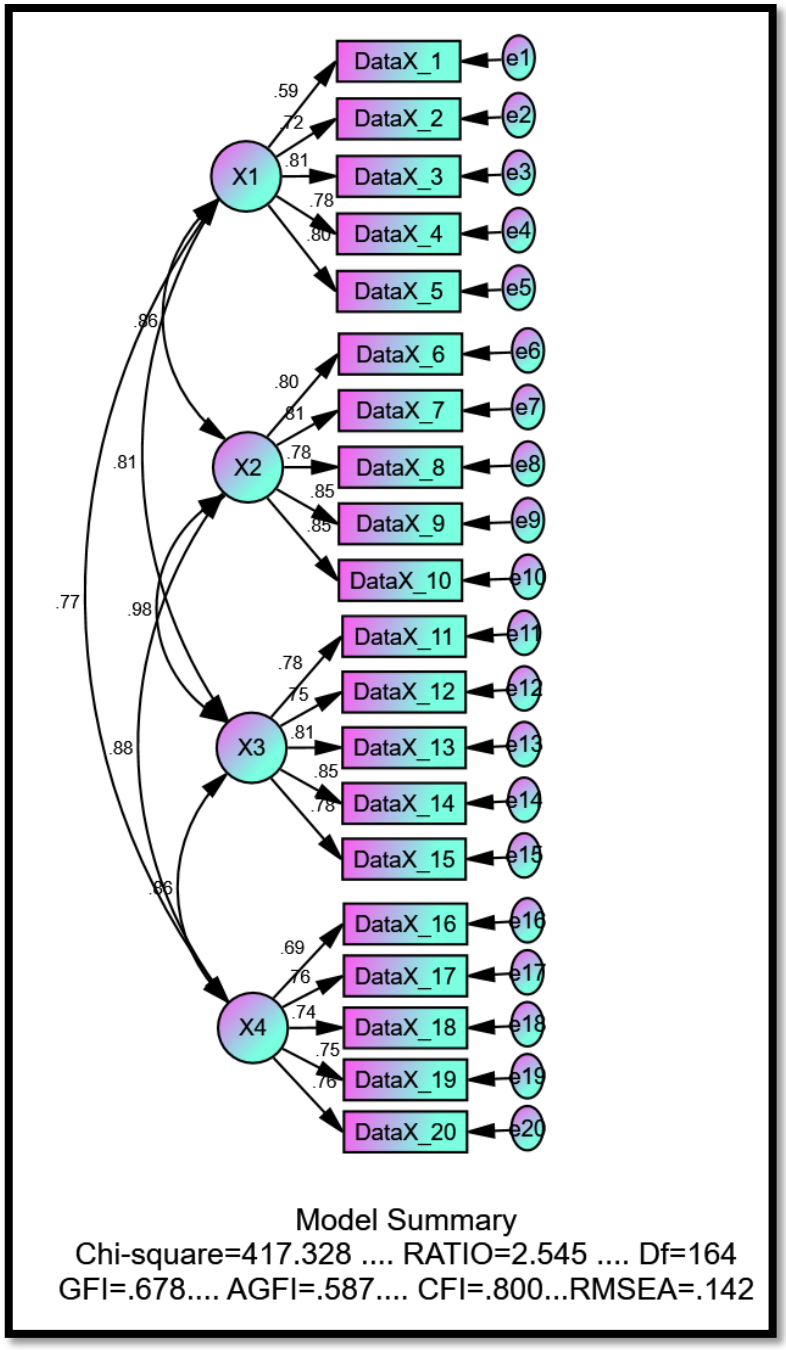

Figure 3: X Model

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ISSN: 2705-2842
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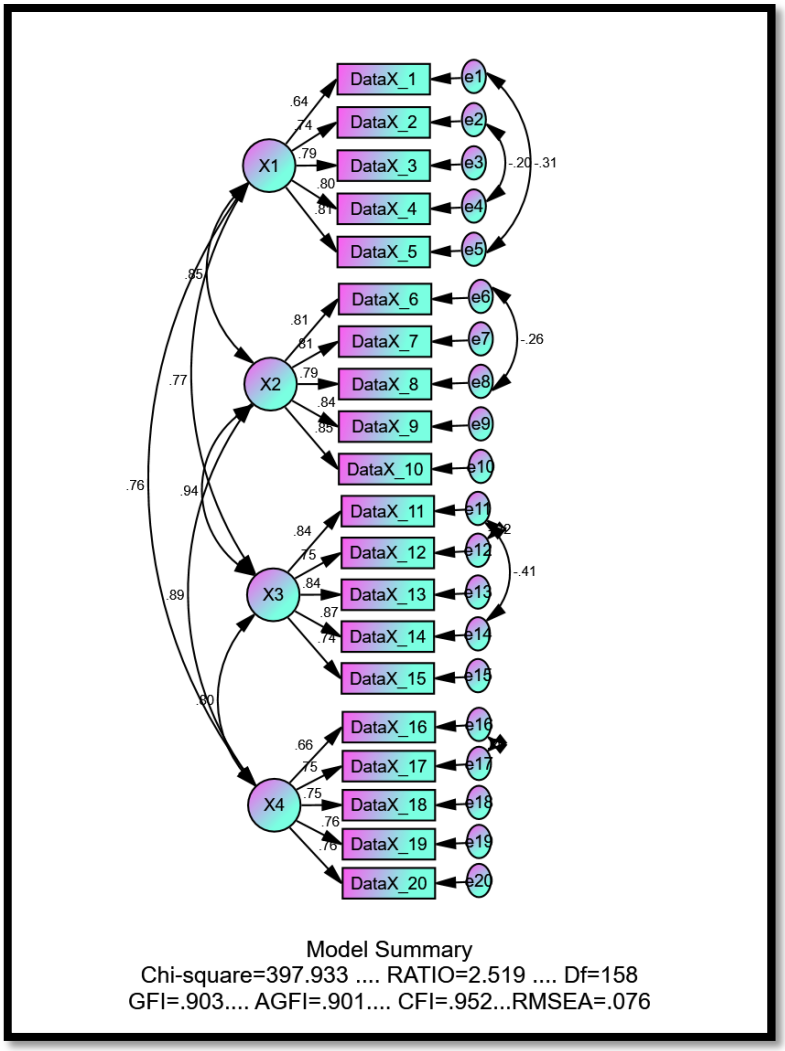

Figure 4: Modified Model Of X

Table 5: Indicators for X Model

Indicator	Value	Condition
Chi/DF	2.519	Support
GFI	0.903	Support
AGFI	0.901	Support
RMSEA	0.076	Support
CFI	0.952	Support

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Y Model

The model of Y variable includes 8 items , according to SEM techniques for the confirmatory factor analysis (CFA) , the model in Figure 5 does not meet the required conditions and not good to measure this variable, so it need to modify the model by using (modification indices) . So the acceptable model be as it shown in Table 6 and Figure 6.

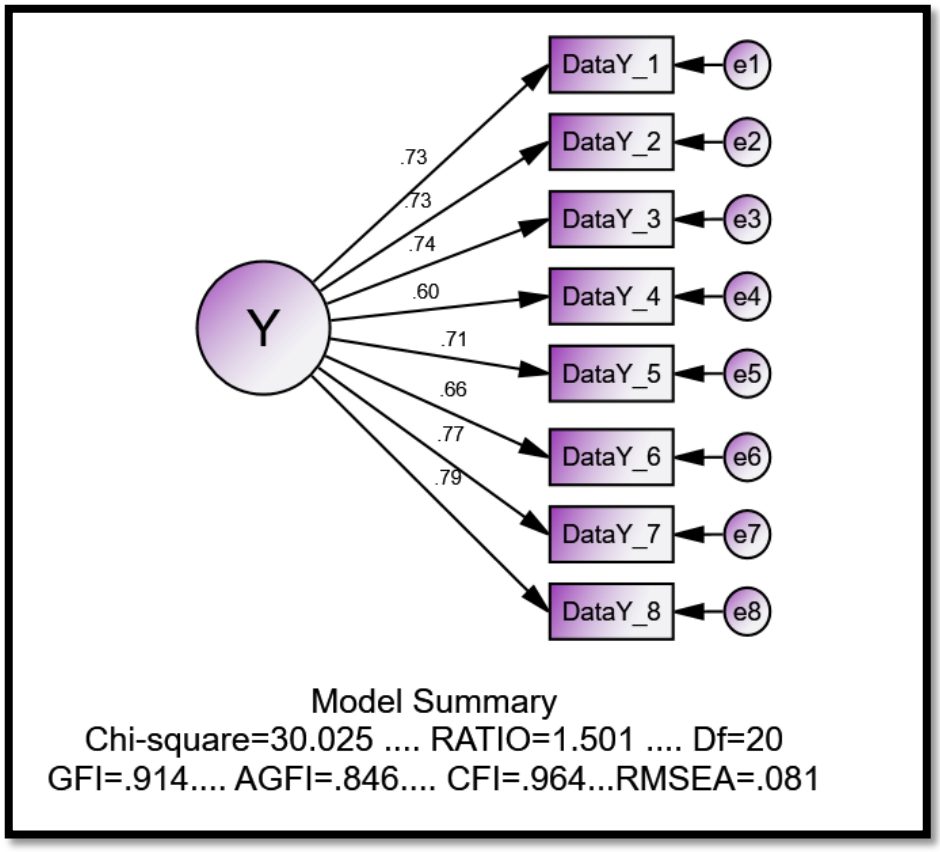

Figure 5: Y Model

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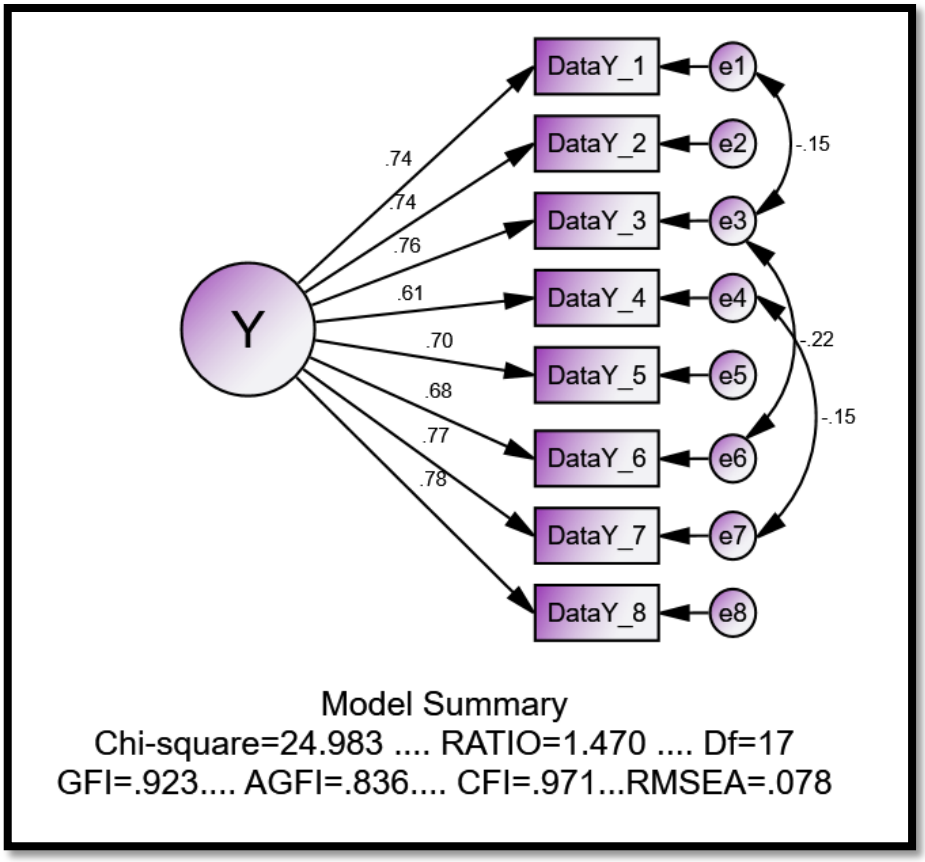

Figure: 6 Modified Model of Y

Table 6: Indicators for Y Model

Indicator	Value	Condition
Chi/DF	1.470	Support
GFI	0.923	Support
AGFI	0.836	Approximately Support
RMSEA	0.078	Support
CFI	0.971	Support

Hypothesis Testing

Table 7 and Figure 7 indicate that there is positive effect of X1 on Y the indicators is (0.14) and it is significant relationship which support the H1-1 , Also there is positive effect of X2 on Y the indicators is (0.18) and it is significant relationship which support the H1-2, and there is positive effect of X3 on Y the indicators is (0.34) and it

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is significant relationship which support the H1-3 , Also, there is positive effect of X4 on Y the indicators is (0.51) and it is significant relationship which support the H1-4. Finally, Figure 8 and Table 7 indicate that there is positive effect of X on Y the indicators is (0.76) and it is significant relationship which support the H1.

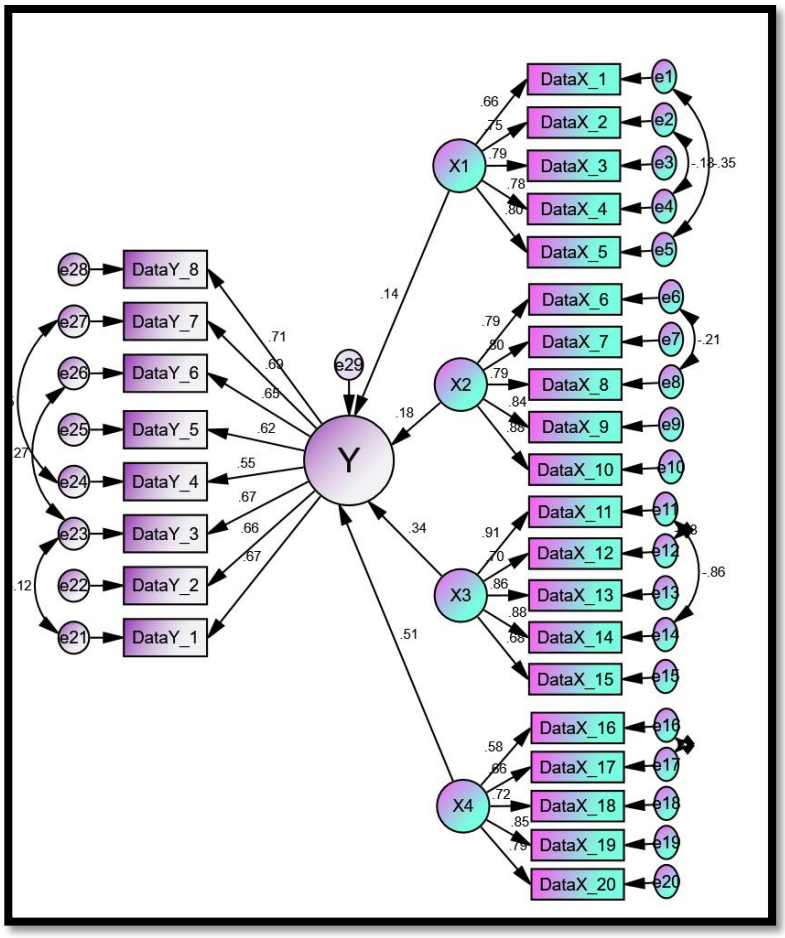

Figure 7 : Effect of X Dimensions on Y

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ISSN: 2705-2842
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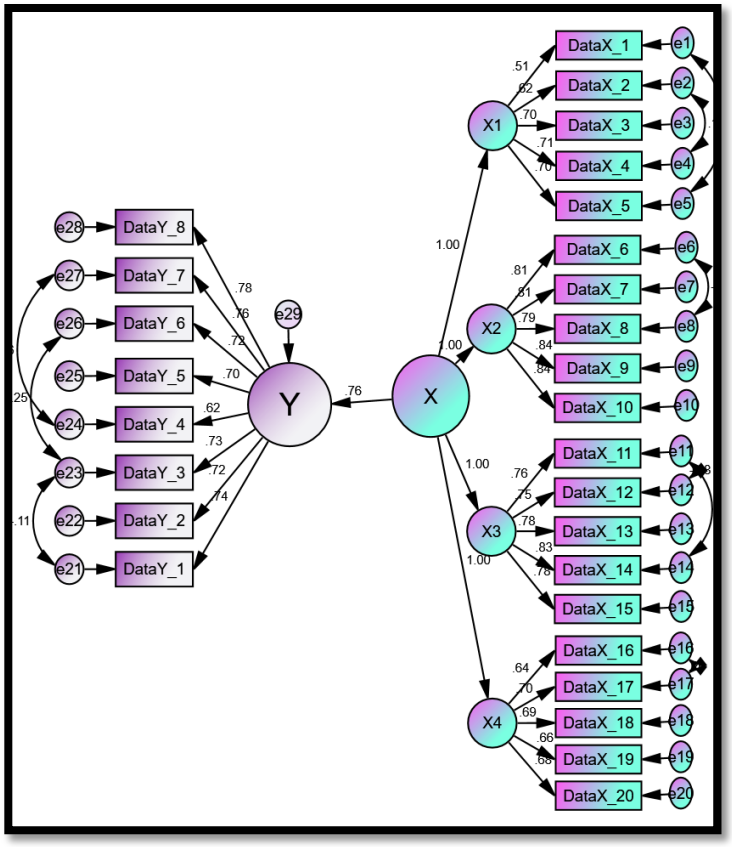

Figure 8 : Effect of X on Y

Table 7: Path Results

Path			Estimate	P
Y	<---	X1	0.14	0.034
Y	<---	X2	0.18	0.021
Y	<---	X3	0.34	0.000
Y	<---	X4	0.51	0.000
Y	<---	X	0.76	0.000

Discussion And Conclusion

Sustainable production is an essential part of international business strategies aimed at achieving sustainable development. Sustainable production can be defined as an approach to producing goods and services in ways that satisfy current needs without negatively affecting the ability to meet the needs of future generations. The results of this study have proven the following:

1- Product design has a direct impact on the development of international business, and when the product is designed to meet the needs and preferences of international customers, the company can expand its markets and increase its sales in global markets. Designing the product based on a deep understanding of the needs of the international market helps in achieving better success.

2- Process design directly affects international business. Increasing efficiency, improving productivity, and designing production and supply processes effectively can reduce costs and increase productivity. This helps the company provide products and services with internationally competitive costs.

3-The environmental performance has a significant impact on the development of international business, and this impact becomes more important in the current era as interest in environmental issues and sustainability has increased. Reducing environmental impact can lead to improved efficiency and reduced costs. this can make products more attractive and more competitive in international markets.

4- The economic performance has a significant impact on the development of international business. economic performance includes several important aspects that affect the company's ability to expand and develop its activity in international markets. Companies that achieve strong economic performance are more able to withstand the challenges and economic shocks related to international markets, so they can remain in the global market for longer periods and achieve sustainable growth.

Accordingly, the principle of sustainability is to work on various aspects of human development in order to ensure its functional continuity in the long term. On the one hand, economic sustainability seeks to promote development and generate wealth without harming natural resources. The use of biodegradable materials in the production of goods is therefore encouraged to ensure that they can end their useful life without causing environmental damage. Applying these practices also enhances

sustainability, gives the planet time to manage its natural processes, and ensures the rational use of resources. Thus, environmental sustainability also focuses on innovation, searching for new ways to promote the use of renewable energy, water conservation, and developing sustainable engineering. Promoting economic and environmental sustainability can also lead to positive impacts at the social level, since if natural resources are used efficiently, it is possible to ensure that people maintain their quality of life, and are able to carry out their activities in a stable way, without having to change their practices due to lack of resources.

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