

The impact of green opportunities on Green entrepreneurship

اثر فرص الاعمال الخضراء على المقاوالاتية الخضراء

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Abstract :

The aim of the present paper is to examine the impact of green opportunities on green entrepreneurship, for this purpose the case of SMEs in Algeria was considered; therefore a comprehensive research model has been developed based on the literature. The research model is then tested using the PLSPM package of R program and the used data were collected via a survey from a sample of SMEs in Algeria. The results of the research indicates that there is a lack of green opportunities offered by the authorities in the country and a shortage of green practices from the entrepreneurs, moreover, the results show that green opportunities has a positive and significant effect on green entrepreneurship.

Keys words: green entrepreneurship, green opportunities, green practices.**JEL classification codes: 31L**

ملخص: هدفت هذه الورقة إلى دراسة أثر الفرص الخضراء على ريادة الأعمال الخضراء، ولهذا الغرض كانت المؤسسات الصغيرة والمتوسطة في الجزائر محل الدراسة؛ فوضع نموذج بحث شامل على أساس الدراسات. بحيث تم اختبار نموذج البحث باستخدام حزمة PLSPM من برنامج R و جمع البيانات المستخدمة من خلال استبيان لعينة من المؤسسات الصغيرة والمتوسطة في الجزائر. توصلت نتائج البحث إلى أن هناك نقصاً في الفرص الخضراء التي توفرها السلطات في البلاد ونقصاً في الممارسات الخضراء من طرف رواد الأعمال، علاوة على ذلك، أوضحت النتائج أن الفرص الخضراء لها تأثير إيجابي وهام على ريادة الأعمال الخضراء.

الكلمات المفتاحية: الفرص الخضراء, ريادة الاعمال الخضراء, الممارسات الخضراء.

تصنيف JEL: 31L**Corresponding author: Mammeri Zakaria, mammerizakaria@gmail.com****1-Introduction**

Nowadays, the global energy infrastructure depends heavily on burning fossils fuels. This family of resources is non-renewable and its exploitation is considered as the main reason of pollution. To address this concern, many governments have encouraged the development of clean and renewable energies by incentivizing shareholders to invest and have businesses complying with standards to save the environment. On the other hand and at a micro-scale level,

many governments have conceptualized new programs and initiatives for SMEs willing to contribute in supporting this vision. In such programs and initiatives, green opportunities were offered to SMEs, where enterprises would have a certain financial advantages mostly appearing in form of exemption from taxes or a financial aid.

Algeria as one of the emerging countries in Africa thanks to the abundance of human and natural resources, it has great potentials to be a great actor in the mission of fighting the climate change. To assess the actual performance of the government in developing green markets for SMEs, business activities among the SMEs entrepreneurs have somehow create impact towards the environmental. This is due to the reduction of environmental impact by the economic activities. Moreover, it has been acknowledged by government and society everywhere throughout the world that entrepreneurship is a significant for a better sustainable society, therefore, this study came to address the following problem: what is the effect of green opportunities on green entrepreneurship?

The article is composed of six sections. After the introduction, in section two, the theoretical background and research literature are presented. Specifically literature has been reviewed for green opportunities and green entrepreneurship. In section 3 the methodology has been discussed specifically data collection sampling issues and questionnaire development steps are covered where 105 questionnaire were distributed and 65 were sent back (Purposive sample). The results are then presented in section 4. And are discussed in section 5. Finally in section 6 conclusion of the research has been discussed along with some recommendations for further research in the same field

1.Theoretical background and research literature

1.1-Green Entrepreneurship:

The green entrepreneurship's notion is considered as a new issue which had drawn specialists attention in the late nineties and commenced to develop gradually in the last years .Green entrepreneurship has various definitions ,it can be defined as a new type of entrepreneurship with a commitment to being environmentally friendly ,that aims at protecting and preserving the natural environment (maryana, 2018), also it can be considered as a creation of new products , services or organizations to meet market opportunities (B Cohen, 2007) ,Green entrepreneurship is also an economic activity whose products , services ,methods of production or organizations have positive effect on the environment (t.gevrenova, 2015)

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Thus, it can be said that green entrepreneurship is a set of policies and practices adopted by businesses owners to eliminate or mitigate the generated negative effects on environment while providing their products or services.

1.2- Green opportunities:

Nowadays the majority of companies from all over the world moving to the application of green practices due to the benefits and opportunities it carries along with the favors to their business (Rafidah, 2019), it can be considered that green opportunities are all programs and initiatives that have been unveiled in the country (Mukonza, 2016), Green opportunities focus on the financial return obtained from being green, in addition the incentives and initiatives provided by the authorities to raise the environmental awareness ,and to attract small and medium enterprises towards green practices , thus looking for these green opportunities by owners of small and medium enterprises is considered as a business financing scheme.

1.3 - Literature review:

Based on previous studies related to this research, a study model was built of two variables, namely, green opportunities and green entrepreneurship. The selection of such two variables is based on the numerous case studies highlighted in the literature review.

1.3.1 A systematic study report on barriers and incentives to green entrepreneurship in transition economics found that there are resemblances between the countries which have a transition economy but in the same time entrepreneurial culture, the economic and political frame is different in each country and can lead to different performance (SÎRB, 2017), This study did not address the second variable of the research paper which is green opportunities

1.3.2 Another research titled by Green Entrepreneurship: Strengthening Indian Economy by Innovating the Future showed that green entrepreneurship has opened enormous opportunity for beginners who has identified and explored innovative ideas in serving the Indian society (Sharma, 2017), the research did not highlighted the impact of green opportunities.

1.3.3 Also a previous study in this field focused on factors influencing green entrepreneurship concluded that the adoption of environmentally responsible business practices has opened up an additional range of opportunities for entrepreneurs (Mukonza, 2016),The study focused on all factors affecting green entrepreneurship, while our study focused on only one factor .

1.3.4 Then a work was made about The Role of Opportunities for Green Entrepreneurship towards Investigating the Practice of Green Entrepreneurship among SMEs in Malaysia clarified that Green entrepreneurship among SMEs in Malaysia, is obviously scarce. The acceptance of SMEs in adopting the green technology in their daily operation can be questioned since in general, one will think that extra cost will be directly associated with it. Lack of studies and available data are noticeable when carrying out the studies. This is also the same for the key determinants that influencing the adaptation of the green technology (Rafidah, 2019), the similarities between this study and our study is the both of them have investigated the role of green opportunities but the first was on green practices and the second was on green entrepreneurship

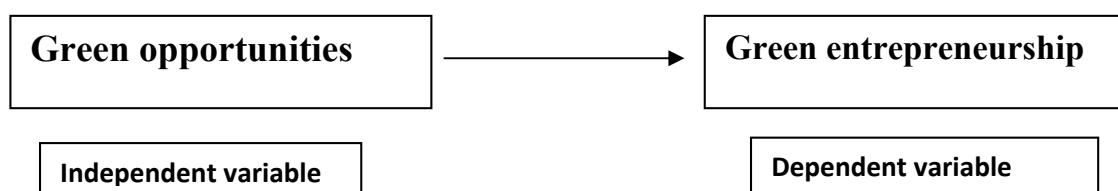
1.3.5 Recent review study on this topic investigated the effect of emerging green market on green entrepreneurship and sustainable development in knowledge-based companies, illustrated that paying attention to the emergence of green market and the willingness of people to preserve the environment requires the existence of entrepreneurs who aim to maintain natural resources (Rafidah, 2019), the independent variable of this study was emerging green market while our research was green opportunities .

2. Methodology:

2.1 Research Framework

The literature review led us to develop a conceptual model, hence this research is conducted to examine the relationship between variables that are assumed to have mutual influence, the variables of this study are divided in two types, independent and dependent variables.

The figure below illustrates the theoretical framework of this study:



The main Hypothesis of the study is formulated based on the most relevant literature where it was proved that various factors can lead to the implementation of green entrepreneurship among small and medium companies. Among the important factors reviewed is green opportunities, hence the present study will test the subsequent hypothesis:

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H1: there is a significant effect of green opportunities on green entrepreneurship.

2.2-Instrument Design

To test the developed hypothesis, data were collected using the questionnaire instrument.

The questionnaire was composed of three parts (demographic items, items for evaluating green opportunities, as the independent variable, items for evaluating green entrepreneurship as the dependent variable).

The first part of the questionnaire consist of five demographic questions, the second part included 13 questions to measure the independent variable which is green opportunities, the last part of the questionnaire composed of 25 questions in order to measure the dependent variable, green entrepreneurship.

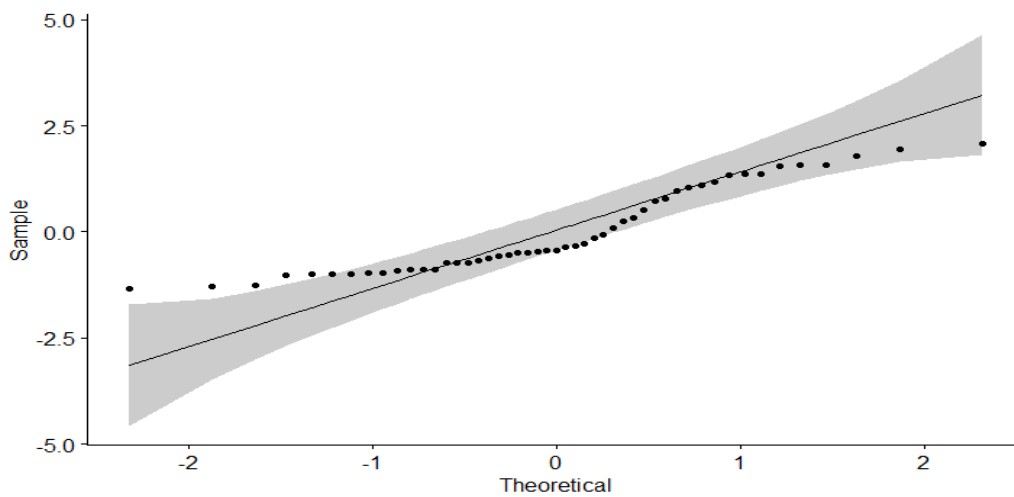
All items were measured on Likert-type scales varying from 1 (strongly disagree) to 5 (strongly agree)

The questionnaire targeted small and medium companies in Algeria where 105 questionnaires were delivered, and 49 were sent back (Purposive sample). Based on the data collected, the developed model is then tested using the PLSPM package of R program. The R program is a statistical and environmental calculator system for analyzing data and graphics. The PLSPM package is then a specialized package for analyzing path models by the least squares method, where the explained variance of the latent internal variables is maximized by estimating partial model relationships in a repeating sequence of regular least squares (saousse, 2019).

2.3. Data Normality:

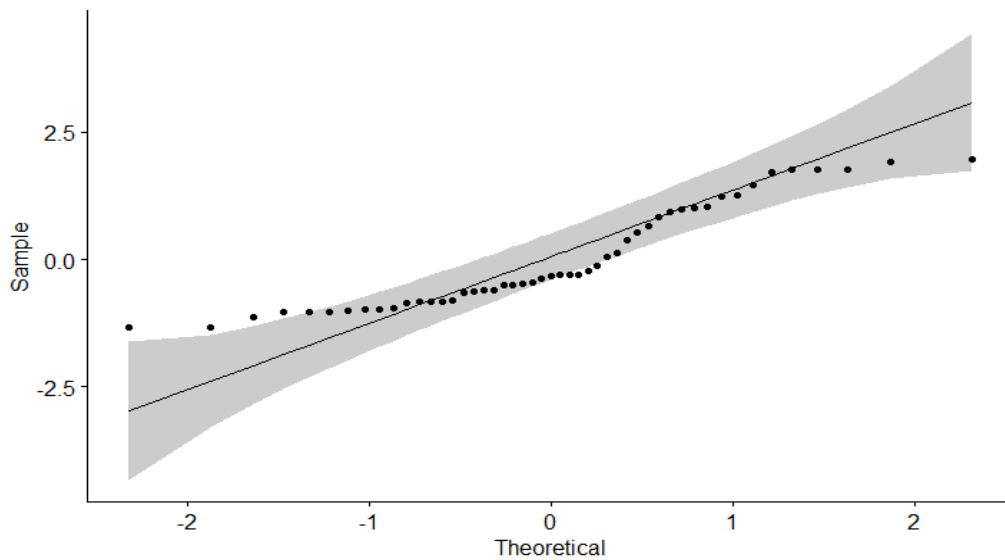
Analysis of data requires that it be diagnosed as a first stage, to check whether statistical analysis is appropriate and can be done, hence data normality of the study variables was confirmed by using the Q-Q plot curve ,After performing the analysis using the partial least squares method of the latent variables included in the model , the results are the following :

Fig3.1: Q-Q plot of scores Green_ entrepreneurship



Source: R program outcome

Fig3.1: Q-Q plot of scores Green Opportunities



Source: R program outcome

It is clear from the figures above that all data of the standard scores for the latent variables included in the model, some of their data fall outside the normal range, and therefore the data for these variables do not follow the normal distribution, which justifies the use of the partial least squares method.

2.4. Testing validity of the study variable scale:

The validity test of model variables depends on the decision base of researchers Ravand, H., & Baghaei, Which states that the evaluation of the model in its first stage passes on the validity of the variables or one-dimensional of the latent variables of the study with compared to the measured variables, meaning that the measured variables measures one latent variable and only which must have a high alpha Cronbach coefficient exceeding 0.7 and the closer it is to number one the better it is, also the latent root for the first factor is greater than number one and the latent root for the second factor must be less than the correct number one, as well as the loading coefficients for the measured variables must be higher than 0.7 and in the case of the loading coefficients it is confined between 0.4 and 0.7 the effect of the increase and decrease is studied with the average variance index with the adoption of the threshold of 0.5 ,otherwise in the case of loading transactions least then 0.4 it is finally erased of the scale and adopt of the measured variables that meet the above conditions (Ravand, 2016), this are the results of the validity variables for the following study:

Table 4.1: Results of validity variables of the study model

name	Block	loading	C.alpha	eig.1st	eig.2nd	AVE
O7	Green Opportunities	0.75	0.88	3.72	0.84	0.62
O8		0.72				
O9		0.77				
O11		0.84				
O12		0.81				
O13		0.8				
G9		0.72				
G16	0.74					
G17	0.76					
G18	Green_entrepreneurship	0.8	0.91	5.38	0.91	0.6
G19		0.76				
G20		0.81				
G21		0.8				
G22		0.77				
G25		0.78				

Source: **R program outcome**

The above table shows the results of the validity for the variables of the study model, from which the measured variables were filtered and maintained the measured variables that verify the validity of the variables, where good indicators were obtained for loading factors for all measured variables for the latent variables ranged between the lowest value of 0.72 and the highest value of 0.84 and the C.alpha parameter for all the latent variables was Greater than 0.88,

which is a good value, while a subjective value for the first factor of all variables recorded a value greater than the correct number one, and on the other hand, all subjective values for the second factor were less than the correct number one, which indicates the mono of latent variables. As for the variance extracted, values above the 0.5 threshold were recorded, indicating that the measured variables account for more than half of the variance.

2.5. Model Differentiation Validity Test:

After the first stage, in which the one-dimensional evaluation of the latent variables and filtering of the measured variables that measure these variables well and honestly, comes the stage of evaluating the differentiation validity of the path model in which the Fornell-Larcker criterion is analyzed as shown in Table below:

Table 5.1: Fornell-Larcker criterion

	Green Entrepreneurship	Green opportunities
Green Entrepreneurship	0.77	
Green opportunities	0.67	0.79

Source : R program outcome

It is noted from the table above that the values related to the correlations between the latent variables are high ,those values which represents the square fence of the average variance extracted at each latent variable with the largest correlation coefficients between the various latent variables, and which represent the different possible structures, and therefore it can be said that the model has a better differentiation power compared to the other possible structures, in addition, the cross load factors with the external load factors for each latent Variable are analyzed by the following table:

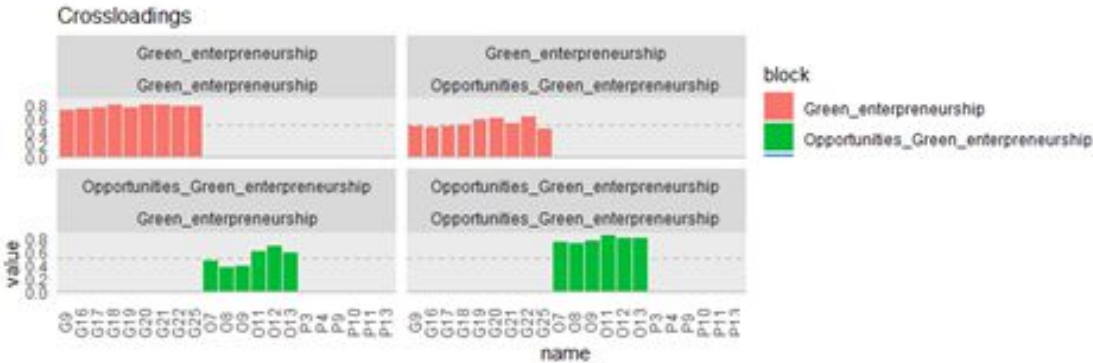
Table 5.2 :

name	Block	G E	O G E	P G E
O7	O G	0.45	(0.75)	0.3
O8		0.35	(0.72)	0.22
O9		0.39	(0.77)	0.3
O11		0.61	(0.84)	0.31
O12		0.68	(0.81)	0.36
O13		0.58	(0.8)	0.22
G9	G E	(0.72)	0.47	0.3
G16		(0.74)	0.45	0.23
G17		(0.76)	0.47	0.32
G18		(0.8)	0.49	0.38
G19		(0.76)	0.58	0.4
G20		(0.81)	0.59	0.24
G21		(0.8)	0.52	0.33
G22		(0.77)	0.62	0.42
G25		(0.78)	0.44	0.45

Source: R program outcome

It is noted from the table above that the external load factors for each variable recorded a higher values compared to the cross-load factors corresponding to other possible structures (each item versus the other variable) meaning that the height of the cross-load factors for each latent variable with the same latent variable from the rest of the cross-load factors with other variables, This indicates the sincerity of good differentiation compared to other buildings. As shown in the following figure:

Fig 5.1: Differentiation Validity



Source: R program outcome

Where it is observed in the figure that the forms of cross-loading factors for each latent variable with the same latent variable were higher than the

cross-loading factors with the other variable, meaning that the cross-loading factors between green entrepreneurship with itself were greater than the cross-transactions between green entrepreneurship and green opportunities, which is the same observation in the cross of green opportunities with itself and the other variable which is green entrepreneurship.

3. Results:

3.1.Descriptive Analysis of the Independent Variable (Green Opportunities):

The following table shows the results of the descriptive analysis of the green Opportunities variable:

Table 3.1.: Descriptive analysis of green entrepreneurship

Item	Mean	Sd	c v	Rank
<i>O7</i>	2.14	0.16	0.08	4
<i>O8</i>	2.1	0.15	0.07	5
<i>O9</i>	2.29	0.18	0.08	6
<i>O11</i>	2.24	0.18	0.08	1
<i>O12</i>	2.53	0.19	0.07	2
<i>O13</i>	2.41	0.19	0.08	3
<i>O</i>	2.29			

Green opportunities variable recorded a mean rank of 2.29, and it belongs to the average field, so it falls between the value 1 and the value 2.33. The explanation is that green opportunities from the respondents' point of view are not present on the ground. Item O11 recorded the best coefficient of difference c v, the highest agreement between respondents, with a mean rank of 2.24, and a standard deviation of 0.08, on the other hand, Item O9 recorded the worst coefficient of difference, the lowest agreement between respondents, with a mean rank of 2.29, and a standard deviation of 0.08.

3.2. Descriptive analysis of the dependent variable (green entrepreneurship):

The following table shows the results of the descriptive analysis of the green entrepreneurship variable:

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Table 3.2.: Descriptive analysis of green entrepreneurship

Item	Mean	Sd	c v	Rank
<i>G9</i>	2.76	0.16	0.06	4
<i>G16</i>	2.82	0.16	0.06	1
<i>G17</i>	2.8	0.16	0.06	3
<i>G18</i>	2.63	0.19	0.07	9
<i>G19</i>	2.86	0.16	0.06	2
<i>G20</i>	2.55	0.15	0.06	5
<i>G21</i>	2.55	0.16	0.06	6
<i>G22</i>	2.39	0.16	0.07	8
<i>G25</i>	2.51	0.17	0.07	7
<i>G</i>	2.65			

Source: R program outcome

Green entrepreneurship variable recorded a mean rank of 2.65 and it belongs to the average field, so it falls between the value 2.33 and the value 3.66 and the explanation is that the reality of practicing green entrepreneurship is insignificant.

Thus, according to the view point of the respondents, green entrepreneurship still does not rise to the expected level in the country, while Item G16 scored the best coefficient of difference cv for the highest agreement between the respondents with a mean rank of 2.82 and a standard deviation of 0.16 Whereas, Item G18 scored the worst coefficient of difference, which the lowest agreement between respondents, with a mean rank of 2.63 and a standard deviation of 0.19.

3.3- Testing the hypothesis of the study:

The hypothesis states that "there is a significant effect of green opportunities on green entrepreneurship ". To test this hypothesis, the table displays the results of the following hypothesis test:

Table 3.3: The hypothesis test

	Estimate	Std...Err or	value	Pr...t..
Green_Opportunities Green_entrepreneurship	-> 0.681	0.107	6.38	0.000

Source: R program outcome

According to table 3.3, it is clear that the effect of green opportunities on green entrepreneurship is positive, amounting to 0.681, which is a moral impact, and

accordingly the hypothesis study is accepted, meaning "there is a significant effect of green opportunities on green entrepreneurship."

Discussion

Table 3.1 show that there is no availability of opportunities according to the majority of the respondents; this could be attributed to the lack of programs and initiatives that have been unveiled in the last few years in the country. Despite the opportunities granted by international organization and bodies to encourage green entrepreneurship, however Algeria is still lagging behind in this field.

Table 3.2 displayed that green entrepreneurship doesn't rise the aspired level and this is due mainly to the lack of environmental awareness of entrepreneurs, the shortage of skills and qualified personnel, in addition to the barriers markets, and limited access to information, knowledge and technology concerning green entrepreneurship domain.

In this research it was shown that the effects of green opportunities on green entrepreneurship is positive and significant ,hence it can considered that green opportunities is one of the most important factors that incentivize entrepreneurs to introduce green products and technologies to the market , therefore this result of this study is consistent with what is conceptual pointed out by (chipo mukonza) , who illustrated that availability of opportunities is one of the major factors influencing green entrepreneurship activities in South Africa (Mukonza, 2016)

By confirming the hypothesis of the study, it can be argued that in order to incentivize entrepreneurs to adhere green practices, it is necessary to provide a significant number of green opportunities by the government. In other words, the lack of commitment of Algerian entrepreneurs to comply with green practices is mainly due to fact that Algerian government still has not yielded a sufficient number of green opportunities, this finding is consistent with the results of the studies by works of (rafidah) who showed that green entrepreneurship practices among SMEs in Malaysia is obviously scarce due of non-availability of green opportunities (Rafidah, 2019) .

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Limitations and Avenue for future research:

The outcome of this paper has certain limitations, for instance due to the limited number of respondents, generalization of the results must be considered with certain cautions.

The presented study is a preliminary study on green entrepreneurship to test the most important factors affecting it, which was represented in green opportunities as it was shown, therefore research can investigate another factors that may have an impact on green entrepreneurship. Specifically, the shortage of environmental awareness among entrepreneurs, public policy and strategies in the country also can be taken into account, in addition the role of green Education, in other words the aforementioned factors need to be highlighted.

Based on the findings of the present paper it is highly recommended to raise the level of environmental awareness among entrepreneurs through the involvement of the media, education and universities, also the necessity of giving priority to financing Environment-Friendly projects at the national level, then create financial funds to support research in the development of sustainable and environmentally friendly technologies.

9-Appendices: The format of the distributed questionnaire was as follows:

The democratic republic of Algeria

Ministry of Higher Education and Scientific Research

University of Ahmed draria adrar

Questionnaire research about:

The impact of green opportunities on Green entrepreneurship

This questionnaire aims to collect the necessary data to study the impact of green opportunities on Green entrepreneurship in a group of small and medium enterprises, and your company has been chosen within the research sample to answer them objectively because of this has a great impact on the validity of the results that the research will reach, as we inform you that this data will be used only For scientific research purposes, thank you in advance for your kind cooperation

First axe: general information

Please put an (x) in the appropriate box

1- Classification of companies by ownership	public	Private	Mixt

2- Classification of companies by sector	1-9 worker	10-49 worker	50-250 worker

3- Classification of companies by activity sector	commercial	Industrial	Services

4- Classification of companies by the size of capital	Less than 10 million da	10-99 million da	100-500 million da	More than 500 million da

5- Classification of companies by age	Less than a year	1-5 years	5-10 years	More than 10 years

Second axe: We kindly ask you to put an (X) under the appropriate selection according to the degree of acceptance

Part two	Degree of acceptante				
	Strongly agree	agree	neutral	disagree	Strongly disagree
Loans for green activities are available.					
There is a fund for green entrepreneurship.					
Reduced paper work for access to green funding.					
There are subsidies given to green business.					
There are low interest loans available to green entrepreneurs.					
There are wide varieties of financing programs for companies who are					

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practicing to green practices.					
There are enough policies and strategies in place to provide support and financial access for green entrepreneurs.					
There is government support for green innovation.					
There are public policies supporting green initiative.					
There are no entry barriers into market venture to implement green practices.					
There is a high demand for green production and services.					
There are wide opportunities for green procurement.					
The customer/public has support for green activities					

	Degree of acceptante				
Part one	Strongly agree	agree	neutral	disagree	Strongly disagree
Prioritize the reduction of the impact of facility construction and operation.					
Use resources more efficiently.					
Create by-products, recycle and re-use to eliminate waste.					
Avoid actions causing changes to the climate, water, infrastructure and nature.					
Use alternative energy sources in production and manufacturing					

processes.					
Use green technology to remain competitive and increase productivity.					
Use green initiatives to attract new market opportunities.					
Use only green packaging for products.					
Be committed to investing in green research and development initiatives.					
Use green marketing to make customers aware of environmentally friendly business.					
Sell only green products.					
Ensure brand loyalty by being an environmentally friendly business.					
Advertise positive environmentalism.					
Continually remind customers in advertisements of eco- friendly products.					
Develop the company's reputation as a supplier of eco- friendly products.					
Ensure that all businesses in the supply chain meet ISO 14000 standards.					
Purchase only from suppliers selling environmentally friendly products.					
Produce/ supply eco- friendly products in spite of higher production costs.					
Use space- saving warehousing or storage facilities to reduce environmental impact.					
Use alternatives means of transport to					

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make transport efforts greener.					
Use containers at full capacity to reduce the number of trips to distribute products.					
Share warehouse facilities / transportation networks to avoid traffic congestions.					
Avoid penalties, fines, and legal costs for non- compliance with environmental legislation.					
Expand the use of sustainable paper products while reducing the use of paper.					
Complete a green business audit to ensure that green.					

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