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Green Entrepreneurship in Afghanistan: Prospects and Challenges

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Abstract. *Green entrepreneurship has a vital role in today's world wherein several businesses are considering profit maximization and ignoring the environmental concerns to some extent. The prime purpose of this paper is to analyze and recognize the impending challenges and opportunities faced by entrepreneurs in Afghanistan. Furthermore, it provides suggestions on how to benefit from green entrepreneurship in order to avoid environmental degradation. This research is exploratory; nevertheless, it utilizes both primary and secondary data. The study uses factor analysis and correlation coefficient to analyze the data. The variables include motivational factors and those of barriers to green entrepreneurship in Afghanistan. The primary data is gathered from 100 business management students through a well-designed questionnaire. This paper is expedient to understand the motivational factors, which will create a platform for entrepreneurs to develop their strategies accordingly. The study also encompasses the key drivers for green entrepreneurship in Afghanistan. The findings show that growing awareness and demand for organic products amongst consumers, providing a sustainable solution to ecological dangers and prevention of further degradation, and social responsibility are the motivational factor for green entrepreneurship in Afghanistan. Based on the results of this study, the government needs to increase the awareness among the people and support the entrepreneurs who start a green business in Afghanistan.*

Keywords: *Entrepreneurship, environmental degradation, green entrepreneurship, green technology, green product*

1. Introduction

Coffee plays an important role in the every individual can see the recent climate changes, which is initiated by the increase in human activities and industrial productions. Based on the studies conducted by World Bank and other international organizations, with almost all types of pollution, environmental degradation increases on a circadian and incremental basis. Environmental degradation and global warming are inevitable phenomena due to the human activities. Nonetheless, the adverse effects of this issue increased especially in the last few decades and it entails scholarly attention. Consequently, it becomes the responsibility of every country to have a contribution in controlling the situation. According to Intergovernmental Panel on Climate Change (IPCC), the climate change is "change in the state of the climate that can be identified (e.g. using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer" (IPCC, 2007, p.120). However, United Nations Framework Convention on Climate Change (UNFCCC) defines it as "a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere, and that is in addition to natural climate variability over comparable time periods" (UNFCCC, 1992, p.7). The chief factors for climate change are depletion of natural resources, global warming, reckless activities of human beings and industrial activities, which generate large amounts of wastes. The aforementioned foundations damage the communities in general and the quality of water, air, and soil in particular.

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It is vital to accurately investigate these phenomena and take corrective and preventive measures in order to reduce the adversarial effects of climate change. Climate change will not affect specific countries rather the developed and developing nations both will bear the destructive consequences. Hence, it will affect tourism, agriculture, energy and many other segments. Therefore, green entrepreneurship seems significant and can help the conservation of natural resource along with the usage of the eco-friendly product.

Green entrepreneurship can be one of the practices to control environmental issues such as climate change, global warming or preventing the use of products, which damage the environment. This newly emerging conception formulates a platform in which several norms and standards can be developed in order to enhance businesses approaches towards eco-friendly activities. It correspondingly creates the prospects for several production innovations, better and more diversities of products, and employment opportunities. Developing countries benefit more from green entrepreneurship for the probability of job creation and dropping their unemployment rates to a substantial level.

Initial signs of green entrepreneurship appeared in the 60s when the industrialized nations and western world came to know about the progressively more adverse effects of industrialization and impairment to the environment. The formation of Environmental Protection Agency (EPA) is also due to these environmental apprehensions. The primary objective of this agency is to find solutions for environmental degradation. Several new occupational opportunities evolved due to actions were taken by (EPA). It also presented alternative methods for businesses to assist them to produce additional eco-friendly products. Likewise, the agency stimulated entrepreneurs to use better and new sources of raw materials (Mathur & Tandon, 2016).

Doing a green business is required to have a sustainable environment and to utilize the resource efficiently without harming the environment. Several studies have been done on green entrepreneurship in both developing and developed countries. However, this topic is relatively new in Afghanistan and has not been explored much. It is vital to know those issues which help the entrepreneurs to become a green entrepreneur. Therefore, this paper will contribute to showing relevant findings and recommendation for this new concept in Afghanistan.

The result of this paper will help the current entrepreneurs in the improvement of their technology management. That is through understanding the facilities that the government provides for entrepreneurs with the aim of doing green business. Some of the businesses already have the required technology which could be used for the eco-friendly production process. However, they don't have the appropriate knowledge and motivation to use them as green technology.

This paper aims to discover the motivational factors and barriers to green entrepreneurship in Afghanistan. The data used in this study is derived from primary and secondary sources. The secondary sources contain journal articles, published papers, a master's thesis, books on green entrepreneurship and others. Primary data, on the other hand, is composed through a well-designed and well-structured questionnaire. The respondents include business management students at various levels of their studies.

In order to ensure an accurate and precise outcome from the data, the questionnaire is validated through counseling with experts. Furthermore, the questionnaire was pretested which helped the researcher in correcting and simplifying the survey questions. After validation and other minor changes, the questionnaires were distributed to the respondents. A sample size of 100 business management students is interviewed for the

purpose. The analysis of data is done through factor analysis and some descriptive statistics. After the introduction to the paper, the next part is the literature review. In the literature review, a number of papers already published are critically reviewed and discussed. Thereafter, the author explains the research methodology, the findings, conclusion, recommendation, limitation of the study, and future research required.

2. Literature Study

Berly (1991), in his book "Business opportunities that can save the earth and make you money" introduces the concepts of environment preservation, recycling, and renewable energy. He also states, "one man's garbage is another man's treasure.". Therefore, Berly raises the discussion about green entrepreneurship for the first time. Various definitions for green entrepreneurship in the literature make it difficult to define it which could be acceptable to all as green entrepreneurship is a multidisciplinary theory which relates to Psychology, Economics, and Sociology (Blundel & Smith, 2001). This term received more attention in the late 90s with many researchers and authors. Allen and Malin (2009), define green entrepreneurship as the beginning of business which is committed towards environmental sustainability. Environmental concerns became the fundamental value and characteristic of such firms which assist them to promote themselves as unique and thereby obtaining a 'competitive advantage'.

Saying this, it is perceived vital by researchers to investigate and research on this kind of businesses. Firms can apply the concept of green entrepreneurship in both stages namely start-ups and existing companies. The existing companies can perform their social responsibility towards the environment by restructuring the business activities in a green manner with less amount of damage to the environment. The second category of businesses is those whose commencement and start is focused on environmental issues. Thus, firms can gain competitive advantage and differentiation by adopting green entrepreneurship (Reinhardt, 2000). The study claims a strong relationship between corporate responsibility and environmental management along with innovation gains as well as a competitive advantage (Hull & Rothenberg, 2008).

However, a number of researchers found that applying this approach firms will incur some additional costs which could affect the company negatively (Hartman & Stafford, 1997). Thus, in this framework, green entrepreneurship is the action of people to spread the idea and promote the environmentally friendly activities of the business via various means such as market or non-market routs (Pastakia & Jensen, 1998). In addition, for newly starting businesses which start with the aim of environmental protection, green entrepreneurship is defined as 'the creation of new products, services or organizations to utilize market opportunities' (Lober, 1998, p.26). Cohen & Winn (2007), name these firms as "sustainable" which have the aim of "bringing into existence future goods and services with economic, psychological and social consequences". Hence, looking to the literature in green entrepreneurship it is union or combination of multiple theories of several disciplines such as Economics and Environmental Economics. Various nations look to this concept from a different viewpoint. Especially, the developed countries see it as an opportunity for new products and business opportunity (Pachaly, 2012).

However, in Afghanistan and other developing countries producers perceive green entrepreneurship as producing cheap products to satisfy the needs of low-income households. Meanwhile, they try to manufacture eco-friendly products through which the objective of the transformation of the economy could be achieved as well. Withal, a number of studies have been

conducted to find the motivational factors for green entrepreneurship (Keogh & Polonsky, 1998). Besides these, several other researchers have studied and entrepreneurship. The conclusions derived by researchers are different to some extent, one from another. In a study Lennenen (2002), states that lack of awareness about eco-friendly products and the investment community are some of the factors which are counted as a challenge for the development of green entrepreneurship.

Demuth (2014), studies the opportunities and challenges against green entrepreneurship in Tunisia. In this study, it is found that there are three different measures through which the potential green entrepreneurs. They are namely, a legal and regulatory framework, financial incentive mechanisms and an institutional support framework. Moreover, it is found that the rising living standards and high growth of population are a great threat to the environment.

According to a study conducted by (Choudhary & Patil, 2015), there are few initiatives taken by government which could be motivational factors for green entreprenuers. The government of Nepal has certain policies which enhances the growth of green entrepreneurship. In a report prepared by Thomson Reuters Point Carbon (Point Carbon) for the London Sustainable Development Commission (LSDC), it found that the green entrepreneureship activities have created 160,000 jobs in London (Manchanda, 2013).

As mentioned, green entrepreneurship is a relatively new and emerging concept especially in developing countries where it is not applied extensively. Thus, it can be argued that the green entrepreneurship is a movement and feasible answer for various environmental, ethical, and social issues (Walley & Taylor, 2002). This research is conducted in order to find the motivational factors for Afghan entrepreneurs to start green entrepreneurship. Furthermore, to explore those barriers and challenges that entrepreneurs face for beginning a green business in Afghanistan. However, there is well enough literature on green entrepreneurship which is mostly applicable to developed nations and not developing countries. This is due to the fact that most of the developed countries have taken the initiatives to promote and support green businesses, unlike Afghanistan which does not have a suitable mechanism for it. As aforementioned, there is several research articles conducted on this particular topic in various contexts. A research explains the role and nature of entrepreneurship in the society (Thoronton, 1999). Moreover, some research explores the importance of entrepreneurial orientation (Schwartz, 1992), and how institutions and culture contribute to this concept (Williamson, 2000).

3. Methodology

Factor Analysis Modelling

To analyze the data, it is vital to employ a suitable statistical model. There are couples of simple and complex models to estimate a relationship between latent and existed items. One of them is Factor Analysis (CFA), which researchers use for such type of data. Factor Analysis is used to find the relationship between variables. In this paper, the researcher applies Confirmatory Factor Analysis. This statistical model is applicable when there is one or more unobservable variable(s) (latent variable) and a number of observed variables. As the name indicates, in this method then there is a prior knowledge about the relationships to be confirmed. As mentioned before, CFA is usually used in social research. This research method is used when the research is hypothesized and the researcher wants to see if the hypothesized relationships have existed and consistent in the give data. Jöreskog was the first author who developed CFA. However, there were other similar methods used in research such as the MTMM Matrix which analysis construct validity. The questionnaires were distributed to 100 respondents which include Business Management students. After the collection,

the data is organized and cleaned to make sure it is error free. There are three sections in this paper. The first dependent variable (latent variable or capital X) is Motivation, the second is Drives, and the third is Barriers to green entrepreneurship in Afghanistan.

Furthermore, every latent variable depends on several other observed independent variables. One such example or factor analysis path is illustrated in figure 1.

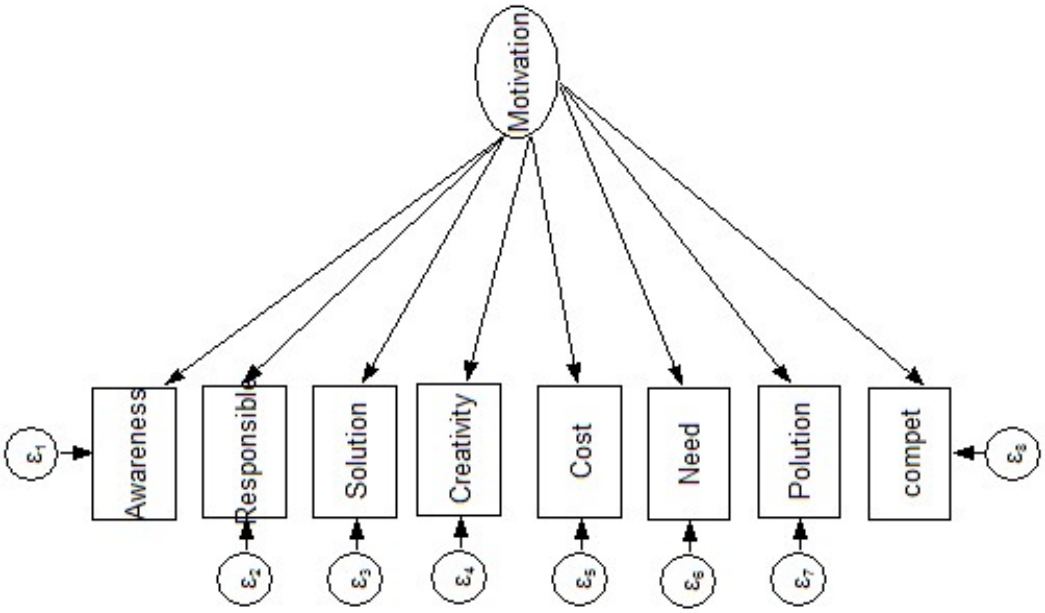

Figure 1.
Confirmatory Factor Analysis Path Diagram

The data is analyzed through Stata 14 computer software. The CFA model is written as follows:

$$x_i = a_i + \beta_i X + e.x_i \quad (1)$$

Where "X" is the latent variable, small "x" is observed variable alpha and beta are constants, and "e" is the error term. Figure 1 shows the confirmatory factor analysis path diagram of the motivational factors. The rest parts namely, the key drivers and barriers to green entrepreneurship in Afghanistan can be also put in the same manner.

Table 1.
Description of the Variables Used in the Study

Motivational Factors		**Key Drivers**		**Barriers**	
Variables	**Description**	**Variables**	**Description**	**Variables**	**Description**
Awareness	Growing awareness and demand for organic products amongst consumers.	Benefits	Potential economic benefits	Absence	The absence of green society cooperation
Solution	Providing a sustainable solution to ecological dangers and prevention of further degradation.	Knowledge	Knowledge of local entrepreneurs on green entrepreneurship	Funds	The absence of green funds

Table 2. (Continued)
Description of the variables used in the Study

Motivational Factors		**Key Drivers**		**Barriers**	
Variables	**Description**	**Variables**	**Description**	**Variables**	**Description**
Creativity	Scope for creativity and innovation in new emerging opportunities.	Schemes	Locally certified schemes	Infrastructure	Limited existing green infrastructure
Responsible	Business ought to be socially and ecologically responsible.	NGO	Cooperation with NGO	Cost	High investment costs
Cost	Availability of low- cost technological solutions to optimize cost in green ventures.	Employment	Employment in "green" professions	Technology	Limited knowledge of green technology
Need	Green products are the need of the time and thus a business can be profitable.	Area	The existence of environmentally protected areas	Institution	The absence of appropriate institutional factors
Pollution	Increasing pesticides, pollution and uncleanness in everyday consumable products have shifted consumer preference towards natural ingredients and manufacturing.	Resources	Existence of appropriate natural resources	Demand	Low demand for green products
Compet.	Green ventures offer differentiation and scope for brand building as a source of competitive advantage.			Knowledge	Limited knowledge of green entrepreneurship

Table 1 explains the variables which are used in the modeling and estimation. The original variables are in the pattern of the sentences. Since using the sentences as a variable for estimation makes it difficult, therefore, every variable is named with a short reference to variable accordingly.

The structural equation model in Stata is used in order to estimate the factor loadings of the confirmatory factor analysis.

4. Findings and Discussion

This section of the paper is devoted to data analysis and discussion. Table 2 provides the information regarding the personal profile of the respondents.

Table 3 .
Profile of Respondents

Gender	Obs.	Percentage
Male	74	74
Female	26	26
Age		
Mean	24.13	24.13
Median	23	23
Mode	21	21
Education		
Undergraduate	75	75
Graduate	21	21
Postgraduate	4	4
Family Background		
Entrepreneur	20	20
Service	53	53
Any other	27	27
Total	100	100

Based on the findings of this research, the absolute majority of respondents i.e. 86%, say they are very well aware of all those harms caused by human or industrial activities which degrade the environment. Moreover, 96% of the interviewees have supported a strict prevention of environmental degradation through a comprehensive plan, massive communication, and public awareness.

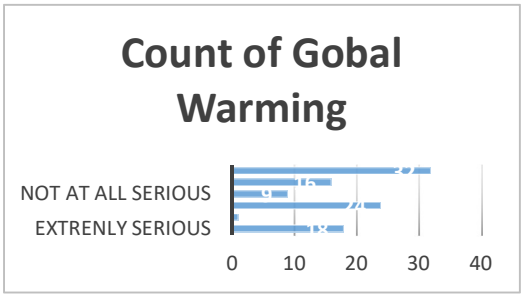

Figure 2a.
Count of Global Warming

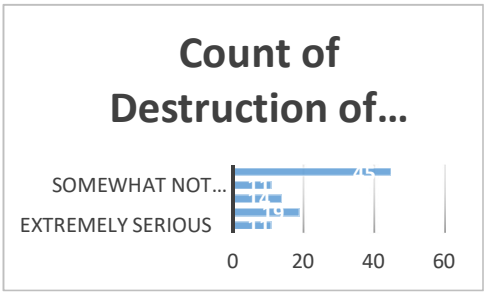

Figure 2b.
Destruction of Ozone

Figure 2a Illustrates the concern of respondents regarding the ozone destruction to the people of Afghanistan. From the respondents, 45 persons wrote that this phenomenon is somewhat serious. In addition, the respondents showed the concern regarding the importance of the global warming as the climate change problem in Afghanistan. About 32 of them referred to it as somewhat serious (figure 2.b.). Only 9 and 14 respondents think that the global warming and ozone destruction are not at all serious problem concerning the environment.

Table 4.
Factor Loading for Motivational Factors

Standardized	**Coef.**	**z**	**p>/z/**
Measurement			
Awareness<-			
Motivation	0.5774	6.88	0.00
Solution <-			
Motivation	0.5040	5.53	0.00
_Cons	1.8421	11.22	0.00
Creativity <-			
Motivation	0.4337	4.58	0.00
_Cons	1.9017	11.35	0.00
Responsible <-			
Motivation	0.7335	10.75	0.00
_Cons	1.7517	11.00	0.00
Cost <-			
Motivation	0.6566	8.53	0.00
_Cons	1.8962	11.34	0.00
Need <-			
Motivation	0.6518	8.74	0.00
_Cons	1.8535	11.24	0.00
Prolusion <-			
Motivation	0.1448	1.31	0.00
_Cons	2.1767	11.86	0.00
Compet <-			
Motivation	0.4550	4.87	0.00
_Cons	2.0244	11.59	0.00

Table 3 depicts the standardized factor loadings for the motivational variables. Most of the variables' factor loadings are significant. This is also confirmed by a study conducted in India (Mathur & Tandon, 2016). The variables such as "creativity", "pollution" and "compet" are considered insignificant due to the fact the value of their factor loadings are not 0.5 or above. To ensure the goodness of fit, an equation-level goodness of fit is estimated on the motivational factor. The table represents the R-squared for every equation. As a result, the overall R-square of the model is 80%. This shows that relatively fine goodness of fit. The same procedure is applied to the key drivers and barrier to green entrepreneurship in Afghanistan.

Table 5.
Factor Loadings for Key Drivers

Variables	Std. Factor Loadings
Potential economic benefits	0.66
Knowledge of local entrepreneurs on green entrepreneurship	0.46
Local certified schemes	0.53
Cooperation with NGO	0.59
Employment in "green" professions	0.66
Existence of environmentally protected areas	0.64
Existence of appropriate natural resources	0.63

Table 4 shows the standardized factor loadings of key drivers for green entrepreneurship in Afghanistan. As it is obvious in the mentioned table, only the factor loadings for the knowledge of local entrepreneurs on green entrepreneurship has low value. Furthermore, the goodness of fit for this model is also acceptable. The overall R-squared for the model of key drivers is 72%.

Table 6.
Factor Loadings for Barriers

Barriers to Green Entrepreneurship	Std. Factor Loadings
Absence of green society cooperation	0.65
Absence of green funds	0.63
Limited existing green infrastructure	0.44
High investment costs	0.27
Limited knowledge of green technology	0.46
Absence of appropriate institutional factors	0.56
Low demand for green products	0.35
Limited knowledge of green entrepreneurship	0.20

Nonetheless, looking to the results of the barriers to the green entrepreneurship in Afghanistan table 5 it can be concluded that limited existing green infrastructure, high investment costs, limited knowledge of green technology, Low demand for green products, limited knowledge of green entrepreneurship have a low value of the standardized factor loadings. The goodness of fit for the equation of barriers to green entrepreneurship in Afghanistan looks acceptable. The overall R-squared for this model is calculated 72%. In general, most of the observed variables in all three models have a higher value than 0.5, which shows the standardized factor loadings for the respective observed variable and equation. However, there are few observed variables, which does not have strong enough standardized factor loadings. Therefore, the items with a lower value of factor loadings could be ignored and excluded from the proposed model. The goodness of fit for all three models was acceptable.

5. Conclusion

Afghanistan is an emerging economy. Most of the modern business concepts were introduced in the last decade. Green entrepreneurship is also one such concept. Afghanistan has a good potential for green entrepreneurship. Therefore, factors such as growing awareness and demand for organic products amongst consumers, the feeling of business as socially responsible towards protecting the environment, and green products, as the need of the time and thus a business can be profitable are significant. Accordingly, the mentioned statements

indicate the motivational factors for green entrepreneurship in Afghanistan. Nevertheless, factors such as the absence of green society cooperation, the absence of green funds, and the absence of appropriate institutional factors are the key barriers to adopting green entrepreneurship in Afghanistan. The government of Afghanistan has to conduct mass communication and raise public awareness about the green products and its advantages to the society and environmental protection. This will generate new opportunities for entrepreneurs and will encourage them to fulfill the newly raised needs of consumers. There are certain international organizations such as The World Bank and United Nations whose financial supports can be obtained by the Afghan government.

The findings of this study also show that government does not assist the entrepreneurs who want to establish green businesses. Therefore, funding green entrepreneurship could be a vital step in enhancing green entrepreneurship and encouraging the potential entrepreneurs to found their business with the aim of green production. Furthermore, the government has to establish a green society cooperation and develop the appropriate institutional factor in order to encourage the entrepreneurs for green business. Besides, these innovations in government policies will help to reduce the current barriers along the way to green entrepreneurship in Afghanistan.

The limitation of this research is the lack of literature in this context as it is a relatively new concept and much exploration has not taken place especially in the context of Afghanistan. This research will help the government officials to have clue about what motivates entrepreneurs for green entrepreneurship. Furthermore, it will also help the government to eliminate the barriers in the way of green entrepreneurship. This research can serve as a base for future research in this area considering a specific business, which applies this theory.

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