

# QUASI-EXPERIMENTAL DESIGN TO UNDERSTAND THE IMPORTANCE OF GREEN ENTREPRENEURSHIP AND GREEN STARTUPS

Maria Shaikh<sup>1</sup>, Muhammad Faisal Sultan<sup>2\*</sup> and Javed Nabi Khoso<sup>3</sup>

## ABSTRACT

*The primary objective of this paper is to elucidate the significance of eco-friendly startups. Diverging from conventional approaches observed in scholarly works within this domain, the methodology employed in this study adopts a quasi-experimental design. Therefore, this study is innovative and tends to influence youth towards green entrepreneurship and improve policymaking to enhance entrepreneurial activities in Pakistan. By highlighting the symbiotic relationship between eco-friendly startups and sustainable development, this research underscores the imperative of nurturing such ventures in Pakistan. Beyond mere economic gains, these startups can potentially serve as catalysts for positive environmental change. They represent a convergence of entrepreneurial zeal and environmental stewardship, pointing towards a balanced and inclusive growth path for the nation. Data analysis hinges on insights from interviews and recommendations tendered by social entrepreneurs who serve as expert evaluators. The findings underscore that such initiatives and startups not only contribute to the economic and financial landscape of Pakistan but also cultivate an enhanced environmental consciousness among the youth. This research underscores the imperative of fostering eco-friendly entrepreneurship for sustainable development, pointing towards avenues for economic growth and environmental concerns in Pakistan's entrepreneurial landscape.*

**Keywords:** *Sustainability; Entrepreneurship; Eco-Friendly Products; Eco-Friendliness; Green Entrepreneurship.*

## INTRODUCTION

Green entrepreneurship is accompanied by sustainable development as well as sustainable entrepreneurship (Neumann, 2022) and the real purpose is to produce environmentally

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<sup>1</sup> Associate Professor IBA, University of Sindh Jamshoro, Sindh, Pakistan. Email: [maria.shaikh@usindh.edu.pk](mailto:maria.shaikh@usindh.edu.pk)

<sup>2</sup> Assistant Professor, Department of Business Administration, KASBIT, Karachi, Pakistan. Email: [mfaisal@kasbit.edu.pk](mailto:mfaisal@kasbit.edu.pk)

<sup>3</sup> Master of Urban Affairs, Boston University and Fulbright Fellow, Massachusetts Institute of Technology (MIT), USA. Email: [javednabikhoso@gmail.com](mailto:javednabikhoso@gmail.com)

\*Corresponding Author

sound products (Halдар, 2019). Concerns about protecting and preserving the natural environment are making companies & consumers pay concern to activities that are least harmful to the environment. Studies indicate there is a behavioral shift in consumer response towards recycled products. One of the major examples of behavioral shift and induced sense of social responsibility is the increase in the purchase of green products.

Studies are also conducted to investigate the consumer's willingness to pay for products that may help in preserving and saving the natural environment. However, specifically, most of the studies in this vein are conducted to investigate willingness to pay towards organic foods and renewable energy. However, recycled products are also included in the list of elements that are an indication of environmentally-consciousness behavior. It has also been postulated that environmental protection and support cannot be realized in practice without the demand for recycled products (Hamzaoui-Essoussi & Linton, 2010).

The purpose of writing this draft is to bring into the limelight the concept of paper-made pencils. That is made from wasted newspapers or magazines and the aim of bringing this idea is to save trees and protect the environment. Pakistan is in severe trouble due to the increase in the emission of CO<sub>2</sub> (Lin & Ahmad, 2017) and trees are perceived as the major element that may prevent the country from the disastrous impact of CO<sub>2</sub> (Akbari, 2002). Similar ideas are practiced in neighboring countries like India, the rare work on research and pragmatic activities related to Pakistan (Rashid, 2019). Therefore, the concept has been undertaken to produce a pleasant effect on the country's climatic conditions. This step also tends to influence the future behavior of youth as well as upcoming youth and make them more environmentally and climatically considerate (Halдар, 2019). Hence this step is especially important from the perspective of Pakistan as this may create awareness and concern towards environmental protection and safety.

### ***Problem Statement***

There is massive room to study and understand the socio-economic issues concerning Southeast Asia, particularly Pakistan (Fatima et al., 2019). However, a significant lack of studies regarding green entrepreneurship is reported in Pakistan (Rashid, 2019). On the other hand, Pakistan is now under a red zone and perceived as one of the most vulnerable countries to climatic change. The prime reason for listing Pakistan in the red zone is the increase in the rate of emission of CO<sub>2</sub> (Lin & Ahmad, 2017). However, recycled products are even priced above than counterparts and therefore there is a significant need to understand the difference in consumers' willingness to purchase recycled products & new

products (Hamzaoui-Essoussi & Linton, 2010). Although awareness about the use of green products is mandatory as awareness may induce customers' willingness to purchase. Moreover, an increase in the level of awareness may help in the reduction of problems faced by humankind as well environment (Kaur & Bhatia, 2018).

Adding to the significance of these forms of initiatives may also be beneficial to transform markets into green markets through green entrepreneurship and green innovation. Recent studies have also tested the phenomenon statistically (Soomro et al., 2023). However, experimentation is perceived as the best source to validate impacts, as in experimentation there is always a variable exogenous source (Meyer, 1995). Previously, quasi-experimental design was used to understand the impact of entrepreneurial education e.g., Rauch and Hulsink (2015). Hence, this study is used to check the effect of innovative products through waste newspapers for forming pencils.

### **SIGNIFICANCE OF THE STUDY**

The involvement of youth in activities that are directed towards environmental sustainability will not only increase financial worth but also contribute to the attainment of SDGs. Hence the significance of this study is massive and directed towards multiple stakeholders as this study is linked with the responses from entrepreneurs. Therefore, this study tends to push inhabitants of Pakistan towards entrepreneurship (Cao et al., 2022) by capitalizing on easily available and minimal resources (Hameed et al., 2021) to flourish in green markets (Soomro et al., 2023). Therefore, it is valid to declare this study as pervasive as it intends to produce a positive impact on the country's economy as well as the development & growth of the youth and entrepreneurship in Pakistan.

This paper is grounded upon the concept of Sustainable Product and Service Development (SPSD) to discuss the pragmatic approach to developing sustainable products (Maxwell & Van der Vorst, 2003).

For the past twenty years, research has highlighted that the industry is under massive legal and environmental pressure to produce sustainable products and service development. To achieve sustainable products and eco-design industry tried several concepts and tools (Maxwell & Van der Vorst, 2003). The job of entrepreneurial leaders is to develop and manage an innovative supply chain that can provide innovation either through products or processes (Larson, 2000).

However, the process of transition to sustainable life not only takes time but also requires collaboration from stakeholders like NGOs and policymakers (Veleva, 2021) past studies from Malaysia highlighted that micro-level green entrepreneurs attracted the attention of the industry as the demand for recycled products was significantly increased in Malaysia (Yacob,2010). Similar to be true in India, where green startups are in pursuit of attaining green goals (Gaurav et al., 2019). To attain a green economy, it is necessary to strive for sustainable development which requires investment in natural capital, solving social problems & efficient resource management (Bobkova et al., 2020).

These measures will provide sustainable solutions, reduce emissions of greenhouse gases, and overcome issues of resource depletion. In recent times the highest percentage of green entrepreneurship can be observed in the energy sector, but water management, food, and agriculture sectors also experience high percentages of green entrepreneurship. The major goal of these activities is not only to earn profit but also to provide sustainability to humans, the environment, and the overall planet (Bobkova et al., 2020). However, the opportunity of green entrepreneurship favors small firms and startups more in comparison to traditional firms. Hence, it is optimal to believe that firms that are born green may gain more customer accessibility & loyalty (Muo & Azeez, 2019).

However, the transformation needs change in behavioral change to gear up the society, economy, and environment in a required way (Muo & Azeez, 2019). Therefore, the investor may find green startups more favorable for investment in fact; investment in green startups may not only provide investors with a high probability of earning but also enhance the social reputation of the investor. Moreover, there is a need to conduct more research on the role and significance of green startups especially in Asia and developing sides to flourish green startups as well as the ecosystem (Sadma, 2021). The postulation is legitimate as research e.g., Laroche et al (2001) indicated there is a need for a workable population size that is willing to purchase environmentally friendly products at premium prices. In fact, without a workable population, there is no scope for this form of product. Similar points are indicated by Guagnano (2001) that the existing market for recycled products is the prerequisite to environmental goals.

## **RESEARCH METHODOLOGY**

The methodology is part of research that not only clarifies the use of various measures but also highlights the authenticity, control, and reason for the use of any particular measure (Kothari, 2004). Therefore, for this paper, the section on methodology has been

divided into two parts, i.e., the method to develop the product and the method to trace the impact of the product on the economy, environment, and youth entrepreneurship.

The research is grounded upon the presentation of pencils that are formulated with the waste newspapers to make society creatively pursue business education. Therefore, to add validity and rigor to the process of research the idea was presented to experts who evaluated it in terms of price, and sustainability use and recommended the use of the product for school and higher school students.

### ***Design and Experimentation***

To assess the impact, we have invited four well-known entrepreneurs who have been pursuing their careers as professional entrepreneurs for five or more years. In fact, among the four entrepreneurs who evaluated the project, two are associated with social welfare and green startups. Therefore, the methodology is linked with a Quasi-Experimental design that is based on the creation of experimental groups. In short, it is based upon evaluation based on comparison of two groups for analysis (White et al., 2014). Previously, this method has been used in qualitative studies like Gopalan et al (2020) and Namey et al (2020). The design is also valid for entrepreneurial education (Hsu et al., 2017; Longva & Foss, 2018). Therefore, this study takes the leverage of the above-mentioned scholar to conduct the study in which a cluster of entrepreneurs is the control group, and the other cluster includes entrepreneurs that may not have a thorough understanding of social welfare activities and social entrepreneurs' form an experimental group.

Initially, the discussion was initiated about green entrepreneurship and its impact and requirements for the betterment of society. Then both the groups were allowed to check products and discuss them with the research. After discussion and question-answer continued again on specific products i.e., pencils developed through waste newspapers. Hence, it is appropriate to declare that the research methodology of this research is working on the point posited by Meyer (1995) to justify the use of green entrepreneurship, green startups, and recycling environmental conditions.

Therefore, the philosophy of this research is aligned with Saunders et al (2007) which reflected that epistemology is the philosophy of knowledge. This statement is justified by some other reputed studies e.g., Bunge (2015). However, there is a need to use a philosophical stance to link the philosophy of research with the research approach and

strategy. Hence, post-positivism is used to relate the philosophy of research with the research approach (Saunders et al., 2015), that is deductive, the research strategy is a focus group, and the time horizon is cross-sectional (Saunders et al., 2007)

## **DATA ANALYSIS**

Initially, the discussion was started to make entrepreneurs aware of entrepreneurship, green entrepreneurship, and green startups. Panels were also provided with sufficient information about the purpose of the research and the product that has been formulated from waste newspapers.

### ***Pre-Examination Discussion with Control Groups***

**Question:** What is your understanding of green entrepreneurship? What is the scope of green entrepreneurship in countries like Pakistan?

**Response:** Green Entrepreneurship is a noble act, and it is required to be pursued especially in countries like Pakistan. However, the youth of Pakistan may not have proper knowledge about the significance and scope of green entrepreneurship. However, if the youth of Pakistan start capitalizing on these forms of opportunities, then it may not only improve environmental and ecological conditions but also provide massive earning opportunities to the youth.

**Question:** Do you think green startups by youth may flourish in Pakistan?

**Response:** Yes! The extent of success may not be the same as the rate of success in developed parts of the world. However, with the passage of time and increase in the level of awareness green startups may also gain success in Pakistan. However, to attain the dream of a green economy we may not only rely on startups but there is also a need for green entrepreneurship on a large scale to overcome environmental issues and hazards.

### ***Pre-Examination Discussion with Experimental Groups***

**Question:** What is your understanding of green entrepreneurship? What is the scope of green entrepreneurship in countries like Pakistan?

**Response:** We do not know much about green entrepreneurship. However, as far as the discussion is concerned our country needs these forms of entrepreneurship to make our youth self-sufficient. This form of entrepreneurship will also be useful to make youth confident in their skills and will for skill enhancement to compete more effectively. The competition would be a healthy one and would affect the growth of the country and its well-being positively.

Question: Do you think green startups by youth may flourish in Pakistan?

Response: Yes. Due to the increase in education and the percentage of youth these forms of startups will flourish. The level of education will make us understand the potential of green entrepreneurship. Therefore, the chances of success are also on the higher side

***Post-Examination Discussion with Control Groups***

Question: What do you think about the use of this product and its success?

Response: The product looks nice. The idea is awesome, previously these forms of ideas have also been developed by other students. Although the idea to pitch this for further research is a good initiative, after getting some improvement this form of product will become successful. Their association with sustainability will be one of the major reasons for success. Youth with more inclination towards sustainability, environment, and climate will prefer these forms of products. Hence the issue of costing and pricing will be resolved.

Question: What are some recommendations that may improve the impact of this idea?

Response: Obviously, there is room for improvement as this is a purely handmade product therefore using of machine to wrap or cut newspapers may add more quality to the product. Similarly, customization as per the requirement of the order may also add value for the customer.

Question: Do you think this form of product may help in achieving environmental goals?

Response: Yes! This type of product will help us in attaining sustainable development goals. The use of recycled products will protect the environment and move our economy toward a green economy. This is the major reason why entrepreneurs are required to push these forms of ideas so the role of entrepreneurs may also move towards the environmental welfare of the country.

***Post-Examination Discussion with Experimental Groups***

Question: What do you think about the use of this product and its success?

Response: Yes, we are positive. Let us launch these forms of products through online portals or exhibitions in schools and colleges. Education expos may also be one of the better ways to provide users with firsthand experience and make them inclined towards this form of product. However, the price of these forms of products will be the major area of concern as the price would be higher and the product would be purely handmade. Hence

there must be some communication or way through which entrepreneurs may inform and motivate users about these forms of products and their advantage over the ordinary products that are easily available in the market.

**Question:** What are some recommendations that may improve the impact of this idea?

**Response:** There is a need for improvement in the design as well as the quality of the pencil. Enhancement is required to make users feel valued. Only emphasizing environmental benefits may not provide the desired results for the startups. Hence it is better to use computer-aided design to understand the changes that may be incorporated in the shape of the product.

**Question:** Do you think this form of product may help in achieving environmental goals?

**Response:** After success, these forms of products will help Pakistan and other countries like Pakistan that are suffering from environmental and climatic issues. However, this is a challenging task as the population is increasing day after another and in addition to the launch of these forms of products, there is also a need to make people understand the use and benefits of these products over ordinary products. Therefore, informing, and motivating consumers to purchase is a real or entrepreneurial activity.

## **CONCLUSION AND DISCUSSION**

The findings of the study indicated that the use of green entrepreneurship and green startups is beneficial for the country. It may provide multiple benefits like economic and environmental stability. These points are even confirmed after post-experimental questions and therefore initially this study became successful in working on the points marked by Meyer (1995) as studies e.g., Soomro et al. (2023) are verifying the use of recycled products and green entrepreneurship statistically. Still, experimentation is the best way to analyze the impact (Meyer, 1995). Hence through the findings of the study, other researchers and entrepreneurs may devise better models and quantitative approaches to understand the scope of their offerings from consumers and other stakeholders.

Other than these elements, this research also confirms the indications of Bobkova et al., (2020) as the findings indicate that the persuasion of green startups may not only fulfill the economic and financial requirements of individuals and the country but also provide social and environmental welfare to the country. Other than these points, the findings of the experiment also indicated that the chances of growth for green startups are remarkably high. Investment in green startups may not only provide financial incentives but also



provide a way to achieve a green economy and produce a positive impact on the well-being of entrepreneurs. These points are consistent with Sadma (2021). Thus, overall, the significant testing of this study looks optimal, and the findings are consistent with the prior studies.

***Acknowledgements:***

The research is based on interviews, discussion, and experimentation through a quasi-experimental design. The panel was composed of four entrepreneurs who were divided into two groups. One group was the control group which was comprised of entrepreneurs who have some knowledge about green entrepreneurship and its impact. The other group is comprised of entrepreneurs who are continuously involved in entrepreneurial activities but not specifically focused on green or sustainable entrepreneurship. The control group comprised respondents from Green Hands Pakistan and the Tooba Foundation. Similarly, the experimental group was comprised of respondents from HR ways. Panelists (entrepreneurs) participated in the session voluntarily & provided views to the best of their knowledge after understanding and assessing the product and relevant elements.

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