

A MODEL PROPOSAL FOR THE ASSESSMENT OF THE RELATIONSHIP BETWEEN ENTREPRENEURSHIP AND SUSTAINABLE DEVELOPMENT

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Abstract: This study aims to conceptualize the linkages between sustainable development and entrepreneurship. It assesses the relationship between sustainment and entrepreneurship, between development and entrepreneurship and finally between sustainable development and entrepreneurship with a systematic approach.

The Sustainment, Development and Entrepreneurship (SDE) Model proposed in this article lays the foundations for explaining how sustainment, development and entrepreneurship are related. Predate studies focused on the relationship between sustainment and development, which presented the notion of sustainable development.

The proposed SDE Model introduces a 3 dimensional Cartesian coordinate system to localize or express any particular enterprise with respect to certain criteria and summarize its status. The model is a useful tool for the assessment of entrepreneurial activities both from the perspectives of sustainable development and motivations of entrepreneurship.

Keywords: Sustainable Development, Entrepreneurship, Entrepreneurial Sustainable Development

SÜRDÜRÜLEBİLİR GELİŞME VE GİRİŞİMCİLİK ARASI BAĞLANTILARI DEĞERLENDİRMEK İÇİN BİR MODEL ÖNERİSİ

Özet: Bu araştırma, sürdürülebilir gelişim ile girişimcilik arasındaki bağları kavramsallaştırmayı amaçlamaktadır. Araştırma sürdürülebilirlik ile girişimcilik, gelişim ile girişimcilik ve son olarak sürdürülebilir gelişim ile girişimcilik arasındaki ilişkiyi sistematik bir yaklaşımla irdelemektedir.

Bu yazıda önerilen Sürdürülebilirlik Gelişim ve Girişimcilik (SDE) Modeli, sürdürülebilirlik, gelişim ve girişimcilik kavramlarının nasıl ilişkilendiklerini açıklayacak bir altyapı oluşturmaktadır. Önceki çalışmalar sadece sürdürülebilirlik ve gelişim arasındaki ilişkiye odaklanmış ve Sürdürülebilir Gelişim kavramının ortaya çıkmasını sağlamıştır.

Önerilen SDE modeli; herhangi bir girişimciyi kriterler çerçevesinde konumlandırabilecek ve durumu özet olarak sunabilecek üç boyutlu bir Kartezyen koordinat sistemi sunmaktadır. Model girişimcilik faaliyetlerinin, hem sürdürülebilir gelişim hem de girişimcinin kendine has motivasyonları açısından değerlendirilmesine imkân sağlayan faydalı bir araçtır.

Anahtar Kelimeler: Sürdürülebilir Gelişim, Girişimcilik, Girişimci Sürdürülebilir Gelişim

I. INTRODUCTION

With some exceptions, the academic literature on entrepreneurship and sustainable development is comparatively poor [1]. Current studies on entrepreneurship for sustainable development fail to adequately consider the unique characteristics of the issue and lacks applicable and holistic conceptualizations. The objective of this paper is to enhance our knowledge in the fields of entrepreneurship and sustainable development by addressing the gap in the literature and introducing a holistic framework that conceptualizes the relationship between entrepreneurship and sustainable development.

Sustainable development is one of the few trends in society that have been growing steadily over the latest decades [2]. Since the last quarter of the 20th century significant efforts have been made in pursuit of sustainable development. However, the diverse overuse of the word "sustainable" in the literature augmented the complexity and the confusion. The term has come to

mean too much and nothing at the same time which caused sustainable development as a concept to be too largely drawn to have any particular usefulness [3]. It is believed to take some time before the technical characteristics, operational indicators and moral injunctions of sustainable development enjoy widespread consensus [4].

This complexity of the subject is exactly the answer of why most of the early studies were focused on the identification of sustainable development (e.g. [5-10]).

Although a unifying definition of sustainable development does not exist [11], one of the most prevalent definitions of sustainable development was introduced in 1987 by the The World Commission on Environment and Development, (Brundtland Commission) as "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This simple definition covers a desired balance between

the utilization of resources and the tendency of technological, economic, and social development.

Some scholars focus on the restrictive aspect of the issue and define sustainable development as the pursuit of economic growth subject to environmental constraints [12]. Another definition introduces sustainable development as a *process of achieving human development in an inclusive, connected, equitable, prudent, and secure manner* [13].

In all these definitions sustainable development basically suggests development to consider both protection of natural resources and maintenance of environmental quality [12] which has not been a habit in the past [14].

As illustrated in Fig.1 initially sustainment (or protection of environment and resources) and development were two discrete concepts.

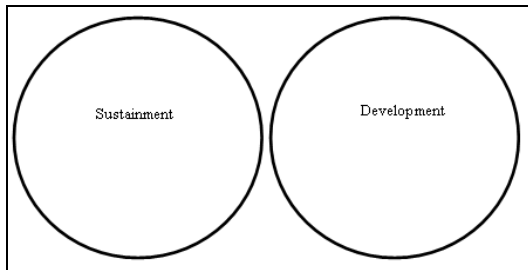


Figure.1 Illustration of Sustainment and Development

With the escalated global awareness and the notion of one world over recent decades, numbers of successive but overlapping concerns are emerged: *population growth, environmental change, inequalities in development and political fragmentation and instability* [15]. These concerns have been the infra-structure of the sustainable development phenomenon and forced sustainment and development circles to converge towards each other. The intersection of sustainment and development lead to the area of sustainable development as shown in Fig.2.

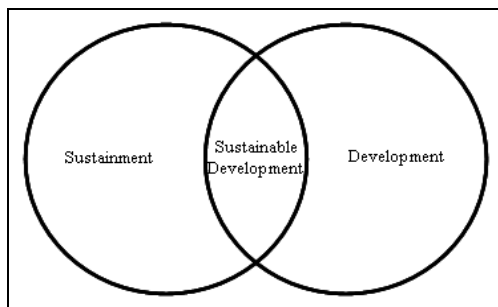


Figure.2 Illustration of Sustainable Development

The efforts in the field of sustainable development are basically focused on the determination and establishment of the balanced interaction between sustainment and development. This interaction happens where sustainment and development intersects.

A total overlap between sustainment and development would be too optimistic and utopian. However we might conclude that the main purpose of all individual and institutional endeavors is probably to broaden this intersection as much as possible as demonstrated in Fig.3.

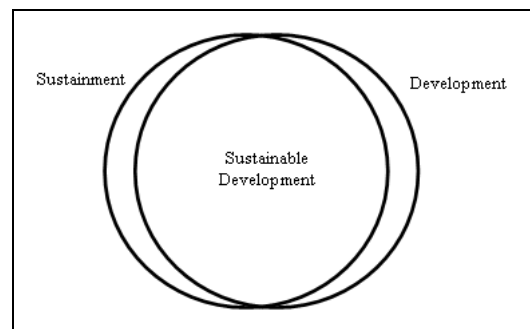


Figure.3 Illustration of Broadened Sustainable Development

Due to the popularity of the term "sustainable development" and speculations about its role [16], various models are developed in the literature to explain and simplify the complex relationship between sustainment and development (e.g. [16-20]).

The first step of our study is also focused on the assessment of the connection between sustainment and development. Our study premises four major alternatives to classify this link: Sustainment with development, sustainment without development, development without sustainment, and neither development nor sustainment.

The second part of our study aims to embody entrepreneurship in the phenomenon sustainable development. The motivations of entrepreneurs and enterprises vary from those individuals and organizations who are or who feel responsible for sustainable development.

Entrepreneurs generally have command over resources [21]. Although their contribution is used to be underestimated [22] entrepreneurs affect the course and the rate of development. Thus entrepreneurs are separately influential on sustainment, development, and sustainable development. Although they might feel sympathy or engagement towards sustainable development, entrepreneurs or enterprises are generally motivated by the expectation of profit [23] and/or the need for a kind of achievement [21]. One of the most momentous goals of this study is to (provide a tool to) discover a case where the requirements of sustainment,

development and entrepreneurship are fulfilled simultaneously. This case is illustrated in Fig. 4 and may be coined as Entrepreneurial Sustainable Development.

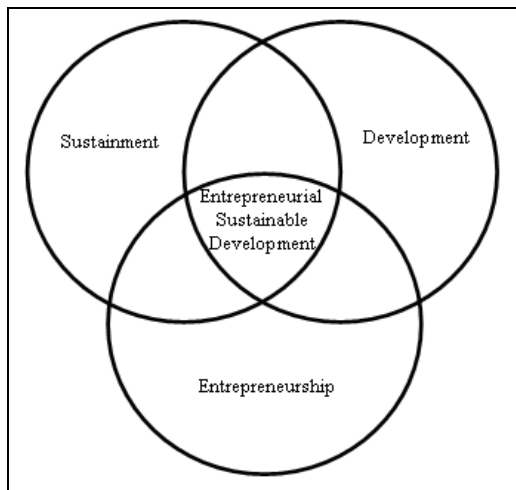


Figure.4 Illustration of Entrepreneurial Sustainable Development

Entrepreneurial behavior manifests itself in the creation of new ventures [13], similarly entrepreneurial sustainable development includes new ventures which has valuable contribution both to sustainable development and the enterprise.

II. LITERATURE REVIEW

Sustainable development emphasizes the inseparability of some factors such as population, environment and development [24] and as a worthwhile concept it represents the latest step in a long evolution of public concerns with respect to these factors [12].

However sustainable development can not be used as a basis for action or theory [25]. Rather it is more of a oxymoronic slogan that has taken on a life of its own, becoming a screen behind which resources are being allocated and decisions made, regardless of the forcing term is understood or not [25]. This slogan or notion was first developed in the industrialized countries about conserving nature in the face of global economic and demographic pressures [26].

In our study we used three variables to evaluate the relationship between sustainable development and entrepreneurship: Sustainment, development and motivation of entrepreneurs.

II.1. Sustainment

Sustainment implies the maintenance or improvement of the environmental conditions, to allow future generations the use of natural resources for their

own survival and well-being [27]. From the perspective of sustainable development, conservation of environment, cultures and community are also encompassed [12] in the definition of sustainment.

Sustainment is based on the relationship between dynamic human economic systems and but relatively slower changing but much larger ecological systems and is a vision of community that respects and makes prudent use of all its natural, human, human-created, social, cultural, scientific resources [4]. Successful sustainment requires broad agreeing, participation and dedication of individuals and communities.

II.2. Development

From the perspective of sustainable development, the term "development" emphasizes improvement, income distribution and health, as well as education and employment levels [28]. It is basically the process of enhancing individual and collective quality of life [29].

As a complex of interrelated factors [21], development involves very complicated systems, *composed of many interconnected aspects, and structured across temporal and spatial scales* [18]. Focusing on a single aspect - for example viewing development solely as economic development as it is widely done [20] - or ignoring the longitudinal dimensions of development will prevent us from understanding its real influence and value. Development is much more than the measurement of the levels of material production [18].

The necessity to make development sustainable has been a significant issue [12] since the genesis of sustainable development stream.

In contrast to the expectations, the development which includes extensive economic growth and increases in the quality of life expanded the concerns especially over the last century [30].

II.3. Motivation of Entrepreneurs

Entrepreneurship is a kind of perspective which is about challenging the status quo and finding new ways of doing things [31] and can be viewed as a form of risk taking in uncertain circumstances [32]. It is based on the study, discovery, evaluation and exploitation of sources of opportunities [33] and *involves the discovery and creation of new ends-means frameworks rather than the allocation of given and known means* [34].

Entrepreneurship, which is the innovative aspect of business formation [35] may be at various levels, ranging from individual entrepreneurs, entrepreneurial organizations, to sectors or regions, or entire nations [31].

Traditionally, entrepreneurship is accepted to be related to filling market gaps [36]. At first their profit or gain expectations are hypothetical only because they cannot know for certain what the results will be [34]. A lot of empirical (e.g. [35,37]) and theoretical (e.g. [31,38-40]) studies have contributed to understanding entrepreneur and entrepreneurship.

It would be a mistake to say that enterprises are only profit-oriented. Of course, profit is one of the drivers of business enterprises however the motivation of entrepreneurs may also be some other factors, such as independence and sense of personal achievement [41]. In other words, entrepreneurship is about personal commitment to certain kinds of achievement [31].

Entrepreneurs are individuals who direct attention to the dynamic entrepreneurial activities. They differ from business executives who carry on more or less routine operations [22]. Being different from others might be considered as another motivation of the entrepreneurs for their risky entrepreneurial activities especially in foggy business atmospheres.

III. PROPOSED MODEL

The purpose of this study is to develop a simple, applicable and holistic model for the elucidation of the interaction between sustainable development and entrepreneurship. The proposed model, developed and coined as SDE (Sustainment Development and Entrepreneurship) Model by authors, introduces a 3D Cartesian coordinate system where “sustainment”, “development” and “benefit” are used as the dimensions of the system.

In mathematics, the Cartesian coordinate system is used for the uniquely localization of each point through 3 numbers, usually called X- coordinate, Y-coordinate and Z-coordinate. To define these coordinates three perpendicular directed lines are specified.

As in Cartesian coordinate system, in SDE model each enterprise or a kind of entrepreneurship has a unique point in the space - in terms of sustainment, development and entrepreneurship - and this point may be measured and plotted on the graphical 3D display of the model.

In SDE model “sustainment”, “development” and “benefit” are used to express X, Y and Z coordinates respectively as illustrated in Fig.5.

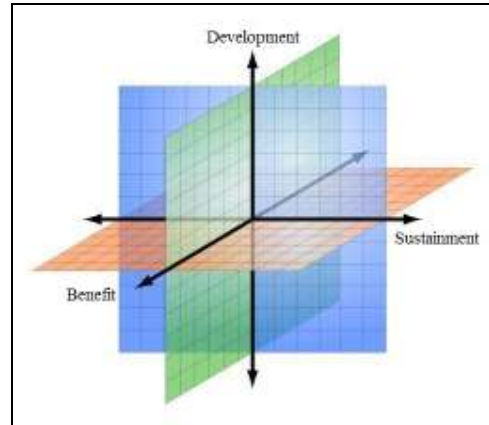


Figure.5. 3D Cartesian Coordinate System of SDE Model (3D Graphic is Adapted from Wikipedia.com)

III.1. Sustainment vs. Development

“Sustainment” and “development” are believed to be interpenetrated (e.g. [42-43]). It is even claimed that sustainability is a fundamental issue and is tacitly included in development [44]. However, SDE model introduces them as two independent dimensions of sustainable development and aims to visualize the relationship between them.

Although the outcomes of the endeavors for sustainment and development influence the life standards of human beings in a similar way these two factors are not dependent. Sustainment does not necessarily result development. Moreover in some cases sustainment may emerge as an obstacle for development. Thus interpreting sustainment and development will be an appropriate approach as we did in this study.

The Board on Sustainable Development of The U.S. National Academy of Sciences (1999) sought to bring some order to the broad literature in this field and in addition to the relationship between sustainment and development the board also focused on the determination of “what is to be sustained” and “what is to be developed” as illustrated in Fig.6.

The board identified three major categories under headings “what is to be sustained” and “what is to be developed” as well as intermediate categories for each major category, such as earth, environment, cultures, child survival, wealth, and institutions.

In SDE model all major and intermediate categories of distinct ideas about what is to be sustained are clustered under an umbrella term named “sustainment”. Similarly the term “development” is used as an umbrella concept to cover all development related categories.

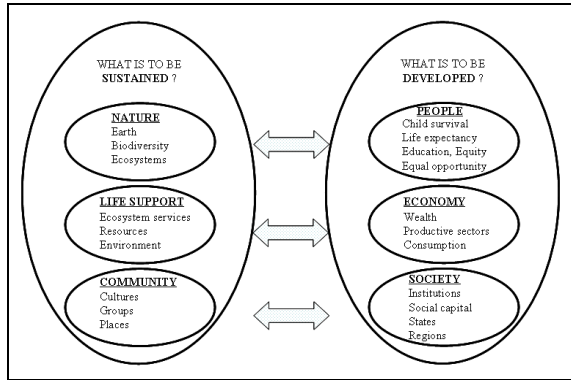


Figure.6. 3D Comparison of Sustainment and Development (Adapted from [45])

This simplification helped us to develop an apprehensible demonstration of the complex relationship between sustainment and development by using the first two dimensions of SDE Model as shown in Fig. 7.

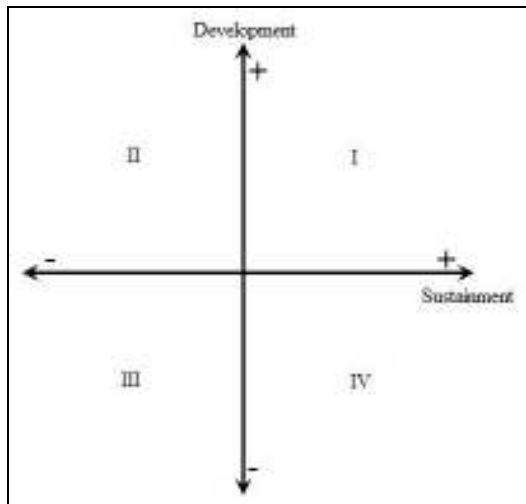


Figure.7. Relationship between Sustainment and Development

The literature of sustainable development highlights the link between “what is to be sustained” with “what is to be developed” however the emphasis of the predate studies *has often differed from extremes of “sustain only” to “develop mostly” to various forms of “and/or”* [20]. SDE Model aims to solve this ambiguity.

The four quadrants of Fig.7 signify different aspect of the correlation between sustainment and development. The first quadrant “I”, for example, expresses a case where development and sustainment are achieved at the same time whereas quadrant “IV” states sustainment without development.

III.2. Entrepreneurship vs. Sustainable Development

Entrepreneurship may be accepted as one of the main drivers of economic growth [35, 46]. Some scholar even claimed that business - or entrepreneurship - is the only institution which powerful enough to ensure sustainable development [47].

The entrepreneurship activities are enabled and constrained by the sources of opportunity identified and the structured processes of the venturing process and the act of entrepreneurship occurs as the entrepreneurs specify, interpret, and act upon these sources of opportunity [36]. Thus opportunity may also be considered as one of the stimulators of enterprises.

We propose the term “benefit” as an eclectic umbrella concept which conjoins all kinds of achievements that are expected from an investment by the entrepreneurs.

As well as the opportunities entrepreneurship is also about the resources [48] thus it is closely related with sustainment. Entrepreneurship is about investments and innovations for the people [31] and is closely related with development.

SDE Model introduces a 3D Cartesian coordinate system to express the status of a particular enterprise from the perspectives of sustainable development and entrepreneurship. The coordinate system has three perpendicular axes (sustainment, development, and benefit) and eight octants where each octant represents a different combination of the sustainment, development, and benefit.

The first four octants represent the situations where enterprises have profit or a kind of benefit. In these areas entrepreneurship is triggered with its own dynamics no external support is required.

Each octant has its unique meaning. For example the first octant of the coordinate system conveys the situation where sustainable development is accomplished and there is positive benefit for the enterprise operating at this stage. A special term, “sustainable entrepreneurship” is used to express the enterprises at the first octant and means a synthesis stemming from the concept of business entrepreneurship and sustainable development. In other words sustainable entrepreneurship is only achieved in the octant where sustainment, development and benefit have positive values.

The second octant refers to the state which lacks sustainment whereas development is achieved and entrepreneurship is motivated. Similarly in the fourth octant, sustainment is achieved without development and

there is benefit for entrepreneurs. Similar explanations are valid for the other octants.

The location of any entrepreneurship, enterprise or a particular entrepreneurial activity on the SDE coordinate system is expressed with three numbers indicating sustainment, development and benefit respectively. The values may be between minus and plus 10. As an example Fig. 8 illustrates two different entrepreneurs as A (3, 5, 0) and B (-5, 7, 5).

The location of enterprise A, (3, 5, 0) represents an enterprise (or a particular entrepreneurial activity) which has positive contribution to sustainment and development. The value of sustainment is 3 and the value of development is 5 where higher value of positive numbers indicates higher contribution.

The last number in the row, 0 indicates that there is no benefit for the enterprise. The value zero means there is neither benefit nor cost for the enterprise. Such an enterprise has limited chance to survive if it is not supported (by governments or other organizations).

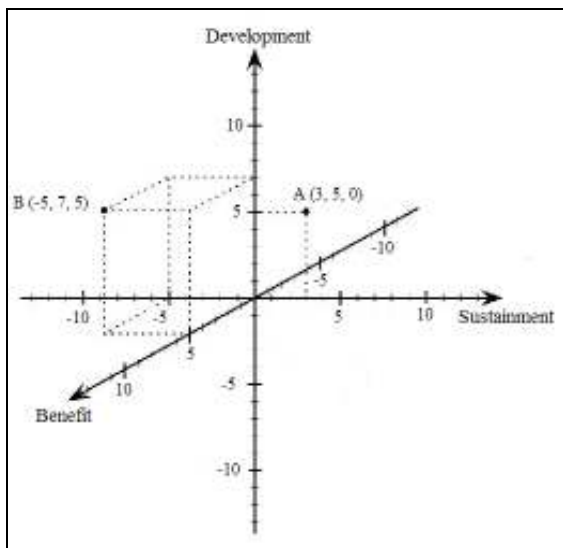


Figure.8. Samples of SDE Demonstration
(Graphic is adopted from Wikipedia.com)

Similarly enterprise B is located at (-5, 7, 5). In this case the enterprise is profitable or beneficial and the value of benefit for the enterprise is 5. The value of development is also positive and is 7 which tell that enterprise B has a significant contribution to development. However sustainment is -5 and it demonstrates the harmful influence of the enterprise on environment and resources.

IV. DISCUSSION AND CONCLUSIONS

IV.1. Implications

The enterprises have the ability to monitor their profits and other kinds of benefits either as a whole or as a result of their particular entrepreneurial activities. Similarly there are various kinds of world wide indexes to measure sustainable development. However a holistic model to conjoin the criteria of sustainable development and entrepreneurship is missing.

SDE Model may be used for indexing enterprises or entrepreneurial investments according to their status in sustainable development and their benefit. Agreements and policies for the government of resources and products/processes that are harmful to the environment or the control of pollution affect trade and entrepreneurship [43].

IV.2. Conclusions

The leitmotif of sustainable development definitions accentuates our liabilities. Sustainable development entails a kind of altruism for governments, public organizations, enterprises and individuals. To ensure a pleasant future, every government, every organization, every enterprise and moreover every individual in the world is basically responsible to establish and support sustainable development by using all the means at his/her disposal – social, political and economic.

In some enterprises it is possible to observe a kind exceptional voluntary responsibility for sustainable development [49]. However, on the whole, contributing to sustainable development is not in the direct interest of the enterprises.

In most of the cases, enterprises seek to obtain profit or a kind of benefit from their endeavors. Sustainable development, merely, may not be a competent motivation for entrepreneurs. This approach is a natural outcome of the profit-oriented point of view and is the reward for entrepreneurial activities, *indicating the efficient use of society's limited resources* [31].

Although it will be injustice to expect entrepreneurs to be solely philanthropic there is extensive anticipation for corporate responsibility. Luckily, corporate profits and sustainable development may be compatible goals. Turning economic growth into sustainable development will prevent a range of inequalities of race, income, gender, urban bias and others [14].

Policies used to see people as a threat however they now regard people as potential partners in

sustainable development strategies [50]. Policies need to be adjusted to support sustainable development and to encourage entrepreneurship by gaining the support of individuals and communities. Alignment of policies is very crucial to attract the interest of enterprises or in other words for the co-optation of entrepreneurs to the field of sustainable development.

Although policies usually introduce new restrictions and burden, some entrepreneurs are expecting governmental interventions on a range of sustainable development issues. The supportive interference of the governments may shift the origin of “benefit” axis in SDE Model backwards so the benefits of enterprises will increase. Or, public policies including environmental regulation or economic instruments would reinforce the competitive position of some companies by pushing other companies to internalize more of their environmental costs which, also means a kind of benefit for some enterprises.

Entrepreneurial choice is accepted to be a kind of deviation from the routine application of standard rules and it is neither deterministic nor algorithmic decision-making [34]. We agree with this definition however we also claim that SDE Model might be useful tool to explicate entrepreneurial decisions from the perspective of sustainable development in a deterministic and algorithmic approach.

Entrepreneurs are characterized as opportunist and imitator [22]. By emphasizing the opportunities in entrepreneurial sustainable development and advertising successful enterprises in the fields sustainable development representatives may attract the attention of entrepreneurs. If adequately informed entrepreneurs will take advantage of the opportunities aroused in this new field. Similarly if prosperous samples are introduced entrepreneurs will imitate them. Our proposed model may be used as a simple model to demonstrate and highlight opportunities and success stories.

IV.3. Future Research

Since the future is ambiguous, entrepreneurs must be flexible and dynamic in order to react to emerging market demands over time thus the status of enterprises and its locations on SDE Model will change. This study may be extended to cover the longitudinal aspects of the relationship between sustainable development and entrepreneurship.

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