Journal Homepage: -www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/19013
DOI URL: http://dx.doi.org/10.21474/IJAR01/19013

RESEARCH ARTICLE

ENTREPRENEURSHIP ECOSYSTEM IN SUDAN: THE ROLE OF PUBLIC POLICY

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Manuscript Info

Manuscript History
Received: 30 April 2024
Final Accepted: 31 May 2024
Published: June 2024

Key words:-
Sudan, Entrepreneurial Ecosystem, Public Policy

Abstract

The objective of this study is to examine the relationship between public policy and Entrepreneurship development in the Sudanese manufacturing sector. The current study is explanatory in nature, and is designed to be cross sectional, using a quantitative approach. Questionnaires were used to collect data from a stratified sample consisting of 10 industrial sub-sectors drawn from the total population of the study. Data are analyzed with help of exploratory factor analysis and multiple regression model.Among the major findings is a significant relationship between public policy and entrepreneurship development expressed in two factors, namely: Public policy and charges, these factors explain 64% of the variation in entrepreneurship development. The study recommends that a more effective policy for enhancing entrepreneurial development in the Sudanese manufacturing sector should be formulated.

Introduction:-

The difficulty and lack of consensus on a definition of entrepreneurship and its operationalization is a commonly accepted view. It therefore defies simple measurement. It additionally reflects the multidimensionality of entrepreneurship as a construct Edoho, (2016). Furthermore, Onwuegbuzie, (2016) stated that entrepreneurship is largely defined as the act of exploiting opportunity by individuals.

Despite the recent global economic crisis and seismic marketplace shifts, there has been surprising examples of regional economic growth in various fast-growing markets (hotspots) around the world, with entrepreneurship among their driving forces (Babson, 2016).The importance of entrepreneurship development in several economies globally cannot be overemphasized. Consequently, programs have been established by a majority of countries worldwide to support entrepreneurship within their communities (Ibeto, 2019).In the same context, Audretsch and Belitski (2016) state that Entrepreneurship plays an important role in economic development, but its decision-making does not occur in isolation from the local context in which entrepreneurs operate. As Firman(2014) points out, creating a local context that is conductive to entrepreneurship and economic development requires a myriad of public and private decisions to formulate a character of place (Arabi and Abdalla , 2020).

There is a growing literature on the positive effects of public policy on entrepreneurship development (Acs, 2016; Carree and Thurik, 2005). Researchers have largely agreed on the fact that public policy is a pillar of entrepreneurship development (Naude, 2013).Evidence suggests that policies seeking to warrant quality entrepreneurship indirectly can create jobs, promote national and international competitiveness, economic development and growth (Mason and Brown ,2013).

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In the case of Sudan, entrepreneurship faces different obstacles and problems related to the entrepreneurial environment, among them are the detrimental government policies which in turn are reflected in poor levels of entrepreneurship development. (Arabi and Abdalla , 2020).In general it is possible to regard public policy asa sponsor of entrepreneurship. However, studies on the topic of entrepreneurship development in different level of economic maturity, are quite scarce. This lack of research in this field motivates the necessity to develop an empirical study on this topic.(Amoros ,et .al ,2019).This paper provides the most influential factor in the entrepreneurial ecosystem in Sudan. The study will be among the first which focus on evaluating the existing public policy concerning the industrial sector in Sudan, given that relatively negligible systematic efforts have been devoted to examine the relationship between public policy and entrepreneurship development in the country.

The paper is structured as follows; the second part explores literature on the entrepreneurship ecosystem and public policy while developing the study's hypothesis. The section which follows specifies research methodology and is followed by data analysis and study results. Afterwards arises a discussion of the study's findings and finally concluding comments along with recommendations and future research directions are provided in the final section.

Literature Review:-

Entrepreneurship:

Entrepreneurship represents a vital engine for the economic development of any country (Ekankumo and Kemebaradikum 2011). Moreover, it is one of the most important variables in endogenous growth models (Rahman and Fatima, 2013). In the same context, (Anderson, 2009; Melnikova and Zascerinska, 2016) state that entrepreneurs have motorized the engine of economic growth by discovering new resources, finding new ways to use existing resources, and developing new products from both. According to Najmaei and Sadeghinejad (2016) the current understanding of entrepreneurship as a field of study is attributed to the works of Schumpeter et.al (1934). They were interested in the new theory of capitalism and economic prosperity which is based on change and innovation. Generally speaking, there is no commonly acknowledged definition for entrepreneur, which is a French word meaning "one who undertakes innovations, finance and business acumen in an effort to transform innovations into economic goods" (Ekankumo and Kemebaradikumo, 2011, p.198). Entrepreneurship plays a very important role in human society. It contributes to job creation; it is the key to competitiveness; it unlocks human potential; it is the driving force of the market economy, and its achievements provide social welfare (Luskova et al., 2015).The focus of economic development has seriously shifted towards entrepreneurship. Consequently, a growing body of research is endeavoring to identify the factors that promote entrepreneurship (Raposo and Paço, 2011). Thus, entrepreneurial contexts exhibit considerable novelty, given that the boundaries of these contexts also change constantly (Zahra and Wright, 2011).

Entrepreneurial Ecosystem

Literature review reveals several definitions for entrepreneurial ecosystems. The concept of an entrepreneurial ecosystem dictates that entrepreneurship takes place in a community of interdependent actors (Arabi and Abdalla, 2020).

Mason and Brown (2014) define the entrepreneurial ecosystem as:"a set of interconnected entrepreneurial actors, entrepreneurial organizations, institutions and entrepreneurial processes which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment".

Different writers proposed different components for entrepreneurial ecosystem, although there are some similarities among all of them. However the same writer sometimes delivers different components such as Isenberg whose first model is composed of six factors including: finance, support services, policy, markets, human capital, infrastructure, culture and research and development, but he also developed eight pillars later.Nevertheless, an efficient entrepreneurship ecosystem, according to Simatupang et.al, (2015), depends on the integration of activities of various stakeholders at three different levels, namely: the strategic level (policy making), the institutional level (support institutions), and the enterprise level (entrepreneurs and business entities).Thus, the entrepreneur and the ecosystem cannot be separated in understanding the positioned, dynamic process of resource-based opportunity formation. Rather, co-evolution of the entrepreneur and the ecosystem is a necessary condition to support this process (Bjorklund, and Krueger, 2016).Thus, interest in start-up ecosystems has grown because of the necessity for high-growth firms and the fact that they are responsible for a significant portion of new job creation (Sipola et al., 2016).

The Role of Public Policyin entrepreneurship development

Dye (1992, p.2) conceptualizes public policy as "whatever governments choose to do or not to do". In other words, both actions and inactions of governments on any given issue of public concern constitute public policy (as cited by Edoho , 2016).For Anderson (2009), a public policy is "a purposive course of action followed by an actor or a set of actors in dealing with a problem or matters of concern." Thus, public policy comprises courses or patterns of action developed and implemented by public officials to achieve particular goals (Edoho, 2016).

As far as policy is concerned Berger and Kuckertz, (2016) say that governments increasingly direct public policies aiming to stimulate entrepreneurial activity in metropolitan regions or areas because those areas can foster the creation of an entrepreneurial society.Similarly the World Economic Forum (2014) reported that the more policy-makers understand what entrepreneurs consider important, the greater the potential for policies to be better aligned with the actions of companies.

On the other hand, Abubakar (2015) mentions that angel capital and crowd funding are slowly finding their way in Africa through some reputable non-governmental organizations (NGOs), with the aim of supporting start-upson the micro level; yet this initiative is not sufficient to accelerate the quick development of entrepreneurship without adequate policy support from the government.

Hence policies, according to Kasseeah (2016), could potentially be devised to improve entrepreneurial skills through structured training and institution building programs. For example, many scholars attribute the success of Taiwan to the role of the government as first implemented in its science and technology policy, and then in the formation of research and development institutes and technology parks, and in determining the development strategies of Taiwan's semiconductor industry (Ding and Abetti, 2003).

However, Edoho (2015) argues that misalignments occur when existing public policies in other domains are in conflict with policies intended to encourage entrepreneurship development. Further, Edoho (2016) said that "Policy-makers would be better advised to shift focus from encouraging job creation in the low-value-added informal sector for helping entrepreneurs identify and exploit opportunities that would boost economic development".

Hypotheses development

Public policy comprises courses or patterns of action developed and implemented by public officials to achieve particular goals (Edoho, 2016). To this effect, the World Economic Forum (2014) reported that the more policy-makers understand what entrepreneurs consider important, the greater the potential for policies to be better aligned with the actions of companies. Therefore, drawing upon these concepts is the study's hypothesis:There is a statistically significant relationship between public policy and entrepreneurship development.

Research Methodology:-

The study uses descriptive and explanatory designs to conduct quantitative analysis. The population in this study is all Sudanese manufacturing firms (Private manufacturing with an active membership of the Federation of Sudanese Manufacturing [2018]. The method of Stratified sampling is employed, and a survey is conducted among manufacturing firms in Sudan (10 industrial sub-sectors). A total of 106 firms completed the survey. Both primary and secondary data were collected. A structured questionnaire was designed to gather data. Top level managers were identified as the key informants.

Data Analysis and Results:-

A factor analysis is performed; the hypotheseswere tested using multiple regression analyses. Firstly, bivariate correlations were calculated among public policy and entrepreneurship development variables. Afterwards, a factor analysis is performed for public policy and entrepreneurship development. The hypotheses are tested using multiple regression analyses.

Table (1):- Pearson Correlation Coefficient for All Variables.

Variables	DV	CHG	POL
DEVALL(DV)	1	.566**	.458**
Charges (CHG)	.566**	1	.505**
POLICE (POL)	.458**	.505**	1

Notes: Level of significance: *p<0.05, **p<0.01, N= 106(2-tailed).

Factor analysis

A factor analysis is performed to outline the most important policy factors which significantly influence entrepreneurship development in Sudanese manufacturing firms. Factor analysis was conducted using the principal component extraction method to classify data into major components.

Factor analysis indicates that these factors explain (63.98%) of the total variance. Only factors with eigenvalue loading greater than 1.0 were extracted since these are the ones expected to be more reliable (Hair 2010). Factor analysis was applied on the 7 items used to measure public policy constructs, loaded on two components, namely; public policy, and government charges (tax and fees). Factor analysis was similarly utilized on the eleven items relevant to the entrepreneurial development, upon which the impact of three components, with Eigen values exceeding 1.0, is inspected. These three factors cumulatively captured 58.3% of the total variance in the data. For the purpose of this study, the three factors were considered as one construct, and accordingly computed to form one variable.Based on the modified theoretical framework, the hypothesis related to public policy needs to be restated. The restated hypotheses reflect the addition of chargesas new variables related to the Public Policy construct.

Reliability Analysis

To examine reliability, this study used Cronbach's alpha as a diagnostic measure. Satisfactory levels of reliability are those in for which Cronbach's alpha exceeds its minimum acceptable value of 0.6 (Sekaran, 2009).

Table (2):- Cronbach's Alpha for Study Variables.

Construct	Variable	Number of items	Cronbach's alpha
Public Policies		7	.827
Entrepreneurship Development	Entrepreneurship Development	11	.928

Source: prepared by the researcher

Descriptive Analysis

Descriptive statistics such as the mean and standard deviation are calculated to describe all variables (Independent, dependent) under study. Data collection implies a normal distribution which is convenient for analysis using the methods administered in this study. Table (3) demonstrates the mean and the standard deviation of the public policies'two components. The table reveals Sudanese manufacturing firms' dependence falls mostly on government charges (mean=3.53, standard deviation=1.295), and least on public policies (mean=2.6, standard deviation=1.07). Given that the scale used in this study is a 5-point scale in which one represents no obstacle, and five represents a severe level of obstruction, it can be concluded that Sudanese manufacturing firms are highly dependent on government charges.

Table (3):- Descriptive Analysis of public policy.

Variables	Mean	Standard Deviation
Government charges	3.5330	1.295
Public places	2.6434	1.0665

Note: All variables used a 5-point scale (1= No obstacle, 5= severe obstacle) except research and development and innovation (yes/no).

Table (4) presents the mean and the standard deviation values of entrepreneurship development. The table shows that the mean scores of entrepreneurship development are outstandingly over the mid-point with a low level of variance (mean =2.73, standard deviation=.607).

The results indicate that on average, during the last three years, the Sudanese manufacturing firms sampled have achieved stable average development.

Table (4):- Descriptive Analysis of entrepreneurship development.

Variables	Mean	Standard Deviation
entrepreneurship development	2.7298	.60647

Note: All items used a-5 point scale with (1≡highly decreased, 5= highly increased)

Model formulation and estimation

This study adopts a linear model grounded on knowledge from reviewed literature on the relationship between entrepreneurship development and public policy. Entrepreneurship development was assumed to be a function of public policy factors;as follows:

PP = (Public policy factors); $\gamma = f(\chi i, \beta)$ Where; $\beta$is the intercept;χi =the independent variables;γ =the dependent variable

$\beta 0$ is y - intercept andε = is the random errorThus, the regression model is as follows:ED $=\beta 0 + \beta 1\ \chi 1 + \beta 2\ \chi 2 + \varepsilon$…… (1)

Table (5):-Multiple Regression Result: The Relationships between Public Policy and Entrepreneurship Development.

Variables	DV: Entrepreneurship Development	
Model variables:	Std. Beta	t
Charges	.450***	4.926
Public Policy	.231**	2.533
F Value	29.056***	
Durbin Watson	1.667	
R^2	.361	
Adjusted R^2	.348	

Note: Level of significance: *p<0.10, **p<0.05, ***p<0.01

Table (5) presents the results obtained when entrepreneurial ecosystem were regressed on entrepreneurship development. The results indicate that, overall, the main hypothesis is partially supported.

ED= $\beta 0 + .4\ \chi 1 + .2\ \chi 2 + \varepsilon$…… (2)

Where; $\chi 1$ is the government charges,; $\chi 2$ is public policy

$\beta 0$ is the intercept and ε is the random error.

Discussion:-

This study expects that public policies have a significant relationship with the entrepreneurship development in Sudanese manufacturing companies. The results show that the study's hypothesis is supported, i.e. there is a significant relationship between public policy and entrepreneurship development. The results reveal that the regression model is significant (F= 29.056, p<0.001). Two variables have significant effects on entrepreneurship development. The variables in unison explain approximately 64% of the total variation in entrepreneurship development and the remaining 36% is due to other factors, potentially macro-economic conditions and other entrepreneurial ecosystem factors.

The findings indicate that suitable public policy does encourage the entrepreneurship development of Sudanese manufacturing firms. This coincides with the results of World Economic Forum, (2014)andBergerandKuckertz, (2016) who found a significant relationship between policy and entrepreneurship development. This is also consistent with the research, which hypothesized that the public policy significantly correlates with the entrepreneurship development; and supports in starting initiatives. In fact it is not enough to accelerate the quick development of entrepreneurship, without adequate policy support from the government (Abubakar, 2015).This relationship is obvious because misalignments occur when existing public policies in other domains are in conflict with the policies to encourage entrepreneurship development (Edoho , 2015).

Government chargeshave the most significant effect on entrepreneurship development (ß=0.450, p<0.01), followed by public policy (ß=0.231, p<0.05). This goes in line with the conclusions of this Study and emphasizes the importance of favorable public policy toencourage the entrepreneurship development of Sudanese manufacturing firms.

In the Sudanese context, there are some polices that hinder the development of entrepreneurship. For example, regarding taxation, there is a distortion in the application of the value added tax (duplication). Localities' fees are in the same boat, oftentimes collected without actual services rendered. Generally, laws affecting entrepreneurship take prolonged periods of time awaiting approval or changes (Gorashi, 2010). Therefore, reducing the negative side-effects of policies and increasing favorable policies through government regulation is expected to lead to better entrepreneurship development in the Sudanese manufacturing sector.

Conclusions:-

The study concludes that the relationship between public policy and entrepreneurship development was found to be significant when it comes to 2 factors, namely: public policy and charges. Based on the findings of this study, it can be said that public policy remains the major driver of entrepreneurship development in Sudan. Unfortunately, policy options and directions have failed to stimulate development. Based on said findings, the study recommends that a more effective policy for enhancing entrepreneurial developmentin the Sudanese manufacturing sector should be formulated. The formulation of an effective policy for entrepreneurial development requires the active involvement of the government, working with entrepreneurs so as to shape and empower policies and programs. Such policy should be developed in a holistic manner, so as to prevent contradictions or conflict in policies. Further, policy makers should develop an optimized structure for supporting entrepreneurial programs within the country and addressing it to the concerned bodies. Finally, financial allocations should be made to support the manufacturing sector by various concerned bodies (e.g. government, business owners' union, and finance institutions).

While this study contributes to the understanding of the importance of public policy for entrepreneurship through testing the relationships between public policy and entrepreneurship development, the results obtained must be interpreted with caution as a consequence of certain limitations. Such as: The cross-sectional nature of the study entails that its conclusions be limited to relevant parties. This study represents an early attempt to build and test a theoretical framework of the impact of public policy on entrepreneurship development. However, based on the limitations of the study examined above, it provides some suggestions for future research. These suggestions are as follows: Although it could be costly and time-consuming, a longitudinal study is better suited for a clearer understanding of the dynamic, interactive and reversible nature of the relationship between public policy and entrepreneurship development. Conducting studies which individually examine multiple policies and their individual levels of impact on the state of entrepreneurship development in the country will also prove beneficial.

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