



Forecasting A Sustainable Return On Investment In Startups: Leveraging Invention With A Sustainable Strategic Investment Model

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Abstract

Entrepreneurs, investors, accelerators, incubators, universities, government agencies, mentors, service providers, and a network of customers are usually the main elements of a strong startup ecosystem. The aim of research study on the startup ecosystem is to identify solutions for the intricate, interlinked network of individuals, institutions, resources, and procedures by working together to support the "Sustainable Strategic Investment Model", which is founded on the establishment, expansion, and scaling of new businesses. This study employs a mixed method approach that blends quantitative data analysis with quantitative data in order to investigate the analysis of the suggested model. There are two independent variables—the startup ecosystem and innovation, and the SSIM—are used to create a model that justifies the single dependent variable, "sustainable return on investment." For a dynamic and adaptable entrepreneurial ecosystem, the interaction between innovation and the startup ecosystem is very important. Therefore, the main conclusions drawn from the data analysis are 1) a strong desire for new projects and ideas, 2) investors' favourable attitudes toward startups, 3) an increase in venture capitalists, and 4) a strong use of crowd funding platforms, 5) the function of incubators and accelerators, and 6) the involvement of academic institutions and research centres.

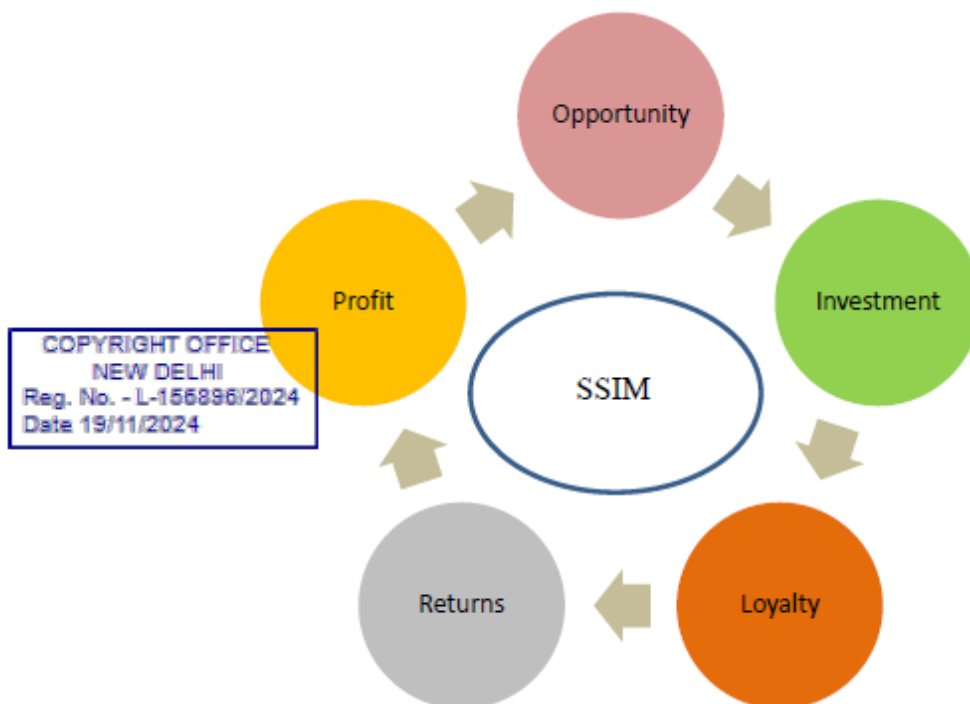
Keywords

Dynamic Change, Innovation, Startup Ecosystem, Sustainable Return on Investment, the SSIM

Introduction

The community of startups has become characterized by its constantly evolving constantly changing character, where ingenuity is crucial in establishing how firms will flourish in the future. In accordance to a study published by (Choudhari and Sinha, 2021), it supports in organizing and keeping track of the growth-driving trends and will assist potential entrepreneurs in becoming familiar with current trends, their positive and negative aspects, along with how to use them to create an income-generating startup. The desire to disrupt established sectors while creating innovative solutions frequently motivates entrepreneurs to take on initiatives which require an enormous time, resource, and financial investment. The following is an intuition scenario that may encourage the use of the "SSIM" model, which offers an organizational strategy to selecting how to launch a new business. Founders' return on investment (also known as ROI) is an elaborate concept in this setting. It is impacted by both other than financial and commercial elements.

The "Sustainable Strategic Investment Model" (SSIM) (Gupta A., Zaveri B., Garg T., and Meena P.) explains that an entrepreneur should identify market opportunities based on market trends if they wish to make investments. Entrepreneurs can invest while maintaining loyalty because, in the absence of loyalty, return on investment is critical because turnover shows profitability. Opportunity, Investment, Loyalty, Return, and Profit make up the "SSIM," which shows a path for an entrepreneur in the startup environment and innovation period.



The broader value created, such as market share growth, brand recognition, intellectual property, and societal impact, is additionally quantified by Return on Investment (ROI) in the context of startups. Such is because opportunity aspect analysis is essential for assessing in monopolistic and oligopoly markets. Entrepreneurs are unsafe enterprises by the environment, and many of them deal with challenges such as scarce funding, inconsistent consumer demand, and overwhelming rivalry. Nevertheless these hurdles, the startup ecosystem supplies businesses with special opportunities including access to investment financing, acceleration programs, incubators, and an established peer and mentor network, all of which increase the chances of significant profits.

One of the main drivers of value creation in the startup ecosystem is innovation, particularly among driven by technology businesses. In emerging economies, businesses, those are specialized on innovative technologies generally reap the advantages of the advantage of being the first. The resultant return on investment (or ROI) for entrepreneurship in these kinds of circumstances, however, is contingent not only on the successful commercialization of their discoveries but also on the capacity to successfully manage risks, understand against other businesses, and make effective use of the assets at their disposal.

With an emphasis on how technological creativity influences for a long time company outcomes, the present research tries to look into the return on investment (ROI) of innovators within the startup ecosystem. Everyone seek to offer perspectives on whether entrepreneurs might maximize value in a dynamic entrepreneurial environment by analyzing the economic and operational returns they receive from their financial investments in entrepreneurs.

Objectives

1. To analyse the sustainable return on investment is enhanced effectiveness of start-ups' ecosystem by using SSIM.
2. To explore effective support of the relationship of SSIM and incubators & entrepreneurs for start-ups' ecosystem by using the SSIM.

3. To know the supportive effect of sustainable return on investment and innovation for start-ups' ecosystem by using the SSIM.
4. To find how the relationship between innovation and universities & research centers realizes solution to overcome challenges for startups in the competitive market.

Reviews of Literature

Overview on Startup Ecosystem as recognized opportunity

The expression "digital transformation" refers to the way technological advances have been integrated into numerous sectors in order to boost efficiency, promote imagination, and encourage expansion in the economy. By providing strong internet connections and creating circumstances which foster business ownership, authorities play an essential element in this process (Font-Cot et al., 2023); where (Isenberg, 2010) explained that localized procedures which are tailored to individual geographical in nature requirements have significance. This addresses that research's investigation on behalf of the Barcelona's experience serves as a prime instance to demonstrate how regional governments may utilize laws relevant to digital transformations in order to promote entrepreneurship for finding business opportunities.

For businesses to achieve success, effective internet connectivity is important. As availability of computing facilities, innovative hubs, and bandwidth accessibility are exposing essential elements supported by government initiatives (Autio et al., 2014). The vibrant nature of the financial system, (Florida, 2002) has been enhanced by institutions of learning and training programs that intended to meet the specifications of digital entrepreneurs. To expose the digital entrepreneurship, watershed models provide insights concerning the way economic results, entrepreneurial activity, and policy interventions interact effectively. These conceptual structures are used in the Barcelona case study to examine the phases of ecological growth, encompassing the globalization of goods advocating feedback loops, and inventiveness.

To find the solution of drawbacks, (Dymchenko et al., 2022), explained that additional information can be obtained through aggregating nations according to environmental efficiency. Startup environments are becoming more widely acknowledged as significant influences underpinning recovery from recession and invention. These ecological systems are defined as being interconnected and interdependent institutions which promotes the growing number of start-ups through creating an environment deemed conducive to creativity.

To enhance the creativity, a possible startup bubble is believed to have triggered by the overuse of growth-centric valuation methods. The highly valuable start-ups' employees could be given shares incentives, but they additionally risk ambiguity if the business's market value turns out to be problematic. In our present start-up circumstances, (Menon and James, 2022) explained that capitalization is frequently applied to gauge success as opposed to profitability in the long run. Still, the environment for startups presents numerous difficulties to conquer, such as numerous failures, which underscore how crucial it is to fully understand the components that help ensure startup continuity and accomplishment.

Relationship between Startup Ecosystem and Innovation as preference of investment

To find the suitable preference of investment, many investigations have investigated the conceptual framework about startup environmental systems, with contribution emphasizing on descriptions, key stakeholders, features, ranging as well as they affect the development and growth of startups. These organizations promote economic stability, innovation, and the development of jobs. (Cavallo et al., 2021) explored that relevant entities of start-ups' ecosystem bring creative business ideas and innovative technologies that have an opportunity to shake up conventional sectors. Despite nothing is known concerning the connection between innovative startups and small and medium-sized enterprises in entrepreneurial ecosystems, there are a lot of opportunities for mutual advantage.

By encouraging connections among an assortment of actors, including new businesses, acceleration devices, government agencies, and global stakeholders, open technology can have a transformative influence on the world of entrepreneurship. By their role as intermediaries, incubators are frequently

used as collaborative innovation accelerators through facilitating collaboration between businesses as well as different parties. The ability of them to link provincial enterprises with multinational ecosystems of innovation strengthens an ecosystem's comprehensive competency and attractiveness presented by (Pustovrh et al., 2021). Because to an abundance of difficulties, governmental supporting must be obtained to get in addition to the challenges and maximize the potential benefits of this approach, which includes encouraging reasonable and environmentally friendly development.

In the framework of startup's relationships with other the ecosystem of innovation stakeholders all through multiple lifecycle phases, (Marcon and Ribeiro, 2021) examined the concept of resources management perspective. More specifically, startups rely on other participants in the environment of innovation to allow them access to essential tools like relationships, money, and competence. Entrepreneurs usually interact with non-market-oriented organizations such as government organizations, incubators and institutions all through their development phase. During the creation stage, business owners interact with an assortment of centred on markets and non-market-oriented customers, among them acceleration devices, commercial partners, and investment funders. Entrepreneurs mainly communicate with marketplace-oriented actors, particularly vendors, clientele, and company shareholders and through their commercial phase.

Programmes like dormitories and invention categories, for instance, have been excellent at constructing startup-supporting communities. According to (Noelia and Rosalia, 2020), the fostering sustainable growth among entrepreneurs requires an understanding of the changing nature of these limitations and the significance that entrepreneurial communities have in reducing them. Because, innovative companies frequently confront a variety of obstacles to innovation, which fall into three different groups: collaborative, leadership, and economical challenges. It will be essential for establishing measures that strengthen new businesses' access to investment, advancement of leadership, and collaboration.

The way an organization operates has an important effect on how creative it can be. In outbound innovative thinking (OI), inside knowledge is utilized for external purposes, while inbound OI involves the gathering and integration of outside knowledge. OI relies heavily on information administration methods because these approaches allow for the pursuit and continued accumulation of understanding that must be acquired for invention (Scaliza et al., 2022). As there already has been significant study on the association between organizational cultures (OC) and innovative how they perform, further investigation is still needed to understand specifically how OC corresponds to open innovation (OI) practices.

Retention of significant sustainable return on investment to assess loyalty

Many research investigations have looked at the relationship between VC (venture capital) investments and startup organization achievement; however, there are nevertheless numerous unresolved inquiries concerning the exact impact of VC on the eventual expansion and market worth of these companies. A business's capability to perceive and acquire fresh information from outside is recognized at the potential capacity to absorb (PAC), but what it can do to respond and exploit that understanding is recognized as its realized capacity to absorb information (RAC).

In most cases, innovators know more regarding their organization than potential financiers perform, which renders assessment and choice-making difficult. (Jeong et al., 2020) explained that entrepreneurial participation is crucial for the continued prosperity and development of newly formed businesses, particularly while in the beginning stages. The strongest intellectual foundation for appreciating whether funding from venture capitalists enhance startup achievement has been offered by the concepts of signaling along with information disparity.

Entrepreneurs without humanitarian goals are frequently creating innovative approaches to issues facing society, but they additionally encounter specific challenges with obtaining financing, navigating unfamiliar markets, and finding the right equilibrium between economic success and societal effect. The notion of "social entrepreneurship", a term directly correlated with "communal creative thinking", describes these individuals or associations that spearhead social innovation. Strategic planning associations and startup effectiveness have a beneficial association, as demonstrated by empirical research that's proposed by (Cacciolatti et al., 2020). For the purpose of shed light on the circumstances

controlling cooperative agreements in the backdrop of entrepreneurs exploring innovative social technologies, this research project renders use of global corporation theory. Furthermore, a key component of social enterprises' success is their capacity to strike a balance between social effect and performance (financial results).

According to (Mazzucato, 2018), self-sufficient ecosystem may be created by encouraging collaboration and mentorship among subsequent generations of proprietors of businesses, which is able to bring in international capital and highly skilled workers, strategies which promote communities as hubs that foster worldwide invention need essential. Driven by policies ecosystems require being constantly updated to cope with such challenges to continue keep being successful.

As organizations in every sector, finding the right equilibrium among ecological and economic success is an important challenge, but it is especially noticeable when it comes to crowd fundraising efforts that utilize the technology of blockchain. Environmental perspective has an increasingly complicated link with post-funding economic performance; nevertheless it may have an advantageous impact on the valuation of businesses. (Mansouri and Momtaz, 2022) explained that multiple research investigations have indicated that, especially with early-stage organizations, a priority on environmental sustainability may not always translate into instantaneous financial success. The processes behind these relationships need to be investigated further in order to identify the techniques that business owners might use to optimize both their monetary and social consequences.

Significant contribution of academic institutions and research centres to assurance return on investment in startup

As research study of (Audretsch et al., 2020), it is underlined that studying on innovative companies indicates that a complex interplay of internal and external factors affects their creation, growth and development, and social effect. Startups are moulded through the founders' traits and motives, the assets that are at their command, and their decisions about strategy. Because the majority of new businesses perish and just a small minority are able to have an essential societal or economic influence, the road from idea to impact is paved with obstacles. The founder's inventiveness and risk tolerance also play a big role in their decision to innovate and their abilities for recognizing market prospects.

A key factor in determining the course and success of new businesses is the entrepreneurs' professional experience, especially whether they have academic or non-academic credentials. A lot of research has been done on educational entrepreneurship in connection with based on science companies and school sequels. Access to ground breaking studies, intellectual property rights, and collaborations with research institutions tend to be advantageous for academic startups (Roche et al., 2020). Researchers function as the connection among innovation and commercialization, frequently outscoring other than academic entrepreneurs upon the exit market. The wide range of academic founders—in particular, the significance of celebrity professors—offers profound perspectives into the ways that institutional certification, acknowledgment, and previous experience affect the success of entrepreneurs.

In accordance with the theory of endogenous growth, among the main forces driving for a long time growth in the economy is the generation of knowledge, especially through scientific and technological advancement (R&D). (Veugelers, 2014) expressed that colleges serve as centers of knowledge by producing new concepts, fostering creativity, and passing along knowledge via transferring technology and personnel development. By providing opportunities to organizations and investigators to secure patents and distribute their concepts, transparent and effective intellectual property rights (IPRs) regimes encourage the industrialization of academic research. Investigators are given incentives to take on programs that have implications associated with the business sector by awarding money based on performance and appreciation for their professional involvement with enterprise. Experimental evidence highlights the important nature of customized guidelines that confront particular challenges to engagement between enterprise and science.

Especially in rapid-fire, high-tech sectors like information and communication technologies (ICT), academic start-ups and spin-offs have become increasingly recognized as vital elements of both university sustainability and sustainable economic development. The interconnected themes of creative thinking, academic start-ups' position in ICT, and their impact on sustainable development are all examined in this review of the scientific literature given by (Vekic et al., 2020). One important method

that educational institutions support regional as well as local economic growth is by encouraging academic entrepreneurial activity in particular. University-founded spin-offs and start-ups frequently enjoy access to institutional networks, qualified graduates, and their own intellectual property. The findings of studies, these kinds of endeavours support the regional development ecosystem, the revenue generation of scholarly research, and the creation of high-value jobs.

Major role play of incubators and accelerators to receive optimum profit

The interaction between incubators, accelerators, co-working spaces, mentors, and events is central to the vibrancy of startup ecosystems. Startup-focused events, such as hackathons, pitch competitions, and networking meetups, play a significant role in fostering connections within the ecosystem. As described by (Tripathi & Oivo, 2020) mentorship within accelerators and incubators has been shown to accelerate decision-making, improve investor readiness, and enhance startup survival rates. Co-working spaces also act as a conduit for accessing other ecosystem resources, such as mentors and funding opportunities. Accelerators play a pivotal role in equipping startups with the skills, market access, and visibility needed to achieve scalability and attract venture capital. University-based incubators often focus on technology transfer and commercialization of research, while non-profit incubators aim to stimulate local economic development. Studies highlight that incubators contribute significantly to reducing the survival risks of startups by offering tailored support in the critical early stages.

(Leitão et. al., 2022) examined the typologies, taxonomies, and contributions of BIs and BAs to entrepreneurial ecosystems, with a focus on their impact on innovation and venture performance. Business incubators (BIs) and business accelerators (BAs) play critical roles in fostering the growth of technology-based ventures, particularly through their facilitation of open innovation practices. Increasingly, BIs and BAs are specializing in sectors such as healthcare, clean energy, and fintech, aligning resources and expertise with industry-specific needs. The adoption of digital tools and virtual platforms is expanding the reach and efficiency of incubation and acceleration programs. There is a growing emphasis on supporting ventures that address societal challenges, aligning with sustainable development goals (SDGs). The uneven distribution of BIs and BAs across regions poses challenges for equitable access to resources and opportunities.

(Banka et. al., 2023) identified various types of accelerators, including corporate, university-affiliated, and independent accelerators, each tailored to specific startup needs. Corporate accelerators are increasingly prevalent, offering startups access to industry-specific resources while enabling corporations to leverage startup innovation for their strategic goals. Their role in regional innovation systems has been particularly noted, with research showing their capacity to attract talent and investment, thereby strengthening local entrepreneurial ecosystems. Research identifies several drivers of successful acceleration, including program quality, mentor expertise, and network effects. However, gaps remain in understanding the long-term impacts of acceleration on startup sustainability.

Hypotheses

H1₀: There is no significant to sustainable return on investment is enhanced effectiveness of start-ups' ecosystem by using relationship between the SSIM and innovation.

H1_a: The sustainable return on investment is enhanced effectiveness of start-ups' ecosystem by using relationship between the SSIM and innovation.

H2₀: There is no significant to relationship between SSIM and incubators & entrepreneurs support effectiveness for start-ups' ecosystem by using the SSIM.

H2_a: The relationship between SSIM and incubators & entrepreneurs support effectiveness for start-ups' ecosystem by using the SSIM.

H3₀: There is no significant to relationship between sustainable return on investment and innovation support effectiveness for start-ups' ecosystem by using the SSIM.

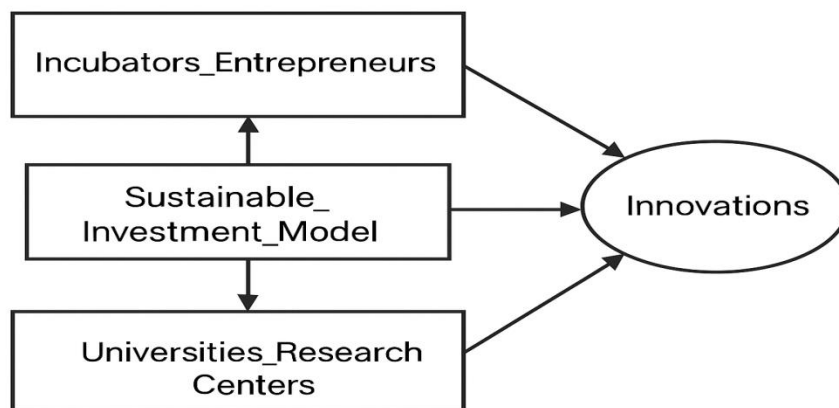
H3a: The relationship between sustainable return on investment and innovation support effectiveness for start-ups' ecosystem by using the SSIM.

H4₀: There is no significant to relationship between innovation and universities and research centers are not enhanced effectiveness by using the SSIM.

H4_a: The relationship between innovation and universities and research centers are not enhanced effectiveness by using the SSIM.

Research Design

Research Model



Source: Authors' own constructed model

Research Methodology

Research Methods

The Sustainable Strategic Investment Model (SSIM) is being examined using a mixed-methods approach, which integrates quantitative and qualitative techniques to provide comprehensive insights and looks for ways to promote the ecosystem of start-ups and increase entrepreneurship. This hybrid approach allows for a more thorough knowledge of the elements of SSIM to impact its effective use by examining both statistical trends and people's perceptions of its acceptability.

As part of the quantitative phase, a research survey was utilized to get insightful responses from participants on the use of SSIM in order to determine its dependability for use in the ecosystem of start-ups. Incubators and entrepreneurs, return on investment, the function of research facilities and universities, inventions, the ecosystem of start-ups, and the usage of SSIM to promote entrepreneurship are all significant elements. Using statistical analysis (e.g., regression analysis, correlation), five constructs of used variables were discovered to exhibit patterns and linkages.

Empirical research papers have been used from 2014 onwards to support the credibility of data concerning start-ups' ecosystem. The SSIM are prompted to support to make a dynamic strategy for predicting the sustainable return on investment. Therefore, a relationship between SSIM and Others variables' constructions which follows by Incubators and entrepreneurs is mentioned for the purpose to deal with and conquer the difficulty.

Cities	Respondents
Ahmedabad	132
Gandhi Nagar	24
Vadodara	59
Total	215

Through the research survey, I collected samples data from 3 cities of Gujarat: Ahmedabad, Gandhi Nagar, and Vadodara. On behalf of data collection total 215 valuable respondents' responses have been collected to do technical analysis.

Sampling:

- Population: Respondents are concerning persons as innovators, faculties, entrepreneurs, and research scholars.
- Sample Size: A statistically meaningful sample size that is established via power analysis in order to guarantee accurate and broadly applicable findings.

Tools and Software:

Google Form: for data collection, Google form created by structured questionnaire and floated to the respondents.

MS. Excel: to collect the data from Google form and for further analysis and state the objectives of the study.

SPSS 25: For statistical analysis.

Data Integration

The results of the two phases will be integrated following separate analysis, with qualitative data aiding in the interpretation of quantitative patterns and offering additional understanding of the intricate role of SSIM in conjunction with other start-up ecosystem variables to forecast the long-term ROI. This mixed-methods approach aims to fully understand how SSIM can be applied in connection to the ecosystem of start-ups.

Ethical Consideration

Obtaining informed consent, safeguarding confidentiality and anonymity, preventing harm, encouraging voluntary involvement, and preserving integrity and transparency are all ethical considerations in study process. It complies with regulatory approval, guarantees fair participant selection, honours cultural norms, reduces environmental impact, and truthfully reports findings while abiding by relevant laws and regulations.

Data Analysis

Respondents' residential City and State.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Ahmedabad	132	61.4	61.4	61.4
	Gandhi Nagar	24	11.2	11.2	72.6
	Vadodara	59	27.4	27.4	100.0
	Total	215	100.0	100.0	

Highest Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Graduation	73	34.0	34.0	34.0
	Less than Graduation	7	3.3	3.3	37.2
	PhD or Post PhD Degree	13	6.0	6.0	43.3
	Post-Graduation	122	56.7	56.7	100.0
	Total	215	100.0	100.0	

Reliability Test

Case Processing Summary			
		N	%
Cases	Valid	215	100.0
	Excluded ^a	0	.0
	Total	215	100.0
a. Listwise deletion based on all variables in the procedure.			

In the above table, it is shown that there are 215 responses, these all are 100% valid to perform further analysis.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.890	.891	20

As using the reliability test, obtained Cronbach's Alpha value is 0.890 which shows very good reliability of the respondents' data on behalf of the research survey.

Descriptive Statistics			
Mean	Variance	Std. Deviation	N of Items
76.24	114.483	10.700	20

Intraclass Correlation Coefficient of Constructs							
	Intraclass Correlation ^b	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.567 ^a	.507	.627	7.551	214	856	.000
Average Measures	.868 ^c	.837	.894	7.551	214	856	.000
Two-way mixed effects model where people effects are random and measures effects are fixed.							
a. The estimator is the same, whether the interaction effect is present or not.							
b. Type C intraclass correlation coefficients using a consistency definition. The between-measure variance is excluded from the denominator variance.							
c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.							

The above table is related to the Intraclass Correlation Coefficient test on the constructs of the variable which are using to justify the above given hypothesis and research objectives. As applied test, significant p- value < 0.05 which shows perfect correlation among five constructs.

Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.891
Bartlett's Test of Sphericity	Approx. Chi-Square	1607.359
	Df	190
	Sig.	.000

To check the validity of factors of the research study, the p-value < 0.05 as we got 0.891 which is shown the excellent using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test.

The communalities summary is given below, where all variables value is greater than 0.50 which shown good extraction values.

Communalities		
	Initial	Extraction
Attributes of National Innovation System	1.000	.618
Entrepreneurial Behaviour	1.000	.600
Entrepreneurial Innovation	1.000	.520
Exploiting opportunity	1.000	.533
Industry Incumbents	1.000	.716
Influence of Innovation	1.000	.492
outcomes of entrepreneurial innovation	1.000	.566
Patentable Technological Innovation	1.000	.531
Performance	1.000	.677
Private Actors	1.000	.558
Psychological Traits	1.000	.628
Public Actors	1.000	.632
Financing	1.000	.575
Global Entrepreneurship Monitor Survey	1.000	.571
Return on Investment	1.000	.698
Understanding of Policy Implication	1.000	.676
Small Business Innovation Research	1.000	.822
Small Business Technology Transfer	1.000	.626
Social Context	1.000	.555
University Based start-ups'	1.000	.580
Extraction Method: Principal Component Analysis.		

Correlation Test

Correlations						
		SSIM	Innovations	Incubators and Entrepreneurs	Sustainable Return on Investment	Universities and Research Centers
SSIM	Pearson Correlation	1	.665	.474	.589	.346
	Sig. (2-tailed)		.000	.000	.000	.000
	N	215	215	215	215	215
Innovations	Pearson Correlation	.665	1	.564	.642	.451
	Sig. (2-tailed)	.000		.000	.000	.000
	N	215	215	215	215	215
Incubators and Entrepreneurs	Pearson Correlation	.474	.564	1	.652	.635
	Sig. (2-tailed)	.000	.000		.000	.000
	N	215	215	215	215	215
Sustainable Return on Investment	Pearson Correlation	.589	.642	.652	1	.645

	Sig. (2-tailed)	.000	.000	.000		.000
	N	215	215	215	215	215
Universities and Research Centers	Pearson Correlation	.346	.451	.635	.645	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	215	215	215	215	215

To see the association among the constructions of the variables, as per Pearson's correlation test, this is good at all because p-value < 0.05 that's shown the significant between one construction to another construction on the behalf of variables which are using to the research study.

Regression Test

R1: SSIM and Innovations

H1₀: The sustainable return on investment is not enhanced effectiveness of start-ups' Ecosystem by using relationship between the SSIM and Innovation.

H1_a: The sustainable return on investment is enhanced effectiveness of start-ups' Ecosystem by using relationship between the SSIM and Innovation.

Variables Entered/Removed^a			
Model	Variables Entered	Variables Removed	Method
1	Innovations ^b	.	Enter
a. Dependent Variable: SSIM			
b. All requested variables entered.			

Model Summary^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.665 ^a	.443	.440	1.917	.443	169.082	1	213	.000	1.933
a. Predictors: (Constant), Innovations										
b. Dependent Variable: SSIM										

ANOVA^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	621.667	1	621.667	169.082	.000 ^b
	Residual	783.143	213	3.677		
	Total	1404.809	214			
a. Dependent Variable: SSIM						
b. Predictors: (Constant), Innovations						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.080	.795		5.134	.000
	Innovations	.649	.050	.665	13.003	.000
a. Dependent Variable: SSIM						

Each coefficient represents the change in the dependent variable for a one-unit change in the independent variable, holding other variables constant.

The F-statistic p-value of 0.000 indicates that the overall model is statistically significant.

Since the p-value for the coefficient is less than 0.05 and the overall model is significant, we reject the null hypothesis and conclude that there is a significant relationship between SSIM and Innovation.

R2: SSIM and Incubators and Entrepreneurs

H2₀: The relationship between SSIM and Incubators & Entrepreneurs do not support effectiveness for start-ups' ecosystem by using the SSIM.

H2_a: The relationship between SSIM and Incubators & Entrepreneurs support effectiveness for start-ups' ecosystem by using the SSIM.

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Incubators and Entrepreneur ^s ^b		Enter
a. Dependent Variable: SSIM			
b. All requested variables entered.			

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.474 ^a	.225	.221	2.261	.225	61.719	1	213	.000	1.586
a. Predictors: (Constant), Incubators and Entrepreneurs										
b. Dependent Variable: SSIM										

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	315.608	1	315.608	61.719	.000 ^b
	Residual	1089.201	213	5.114		
	Total	1404.809	214			
a. Dependent Variable: SSIM						
b. Predictors: (Constant), Incubators and Entrepreneurs						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.596	.864		8.791	.000
	Incubators and Entrepreneurs	.437	.056	.474	7.856	.000
a. Dependent Variable: SSIM						

As to check the relationship between SSIM and Incubators & Entrepreneurs, it is focused that each coefficient represents the change in the dependent variable for a one-unit change in the independent variable, holding other variables constant.

The F-statistic p-value of 0.000 indicates that the overall model is statistically significant.

Since the p-value for the coefficient is less than 0.05 and the overall model is significant, we reject the null hypothesis and conclude that there is a significant relationship between SSIM and Incubators & Entrepreneurs.

R3: Sustainable Return on Investment and Innovations

H3₀: The relationship between sustainable return on investment and innovation do not support effectiveness for start-ups' ecosystem by using the SSIM.

H3_a: The relationship between sustainable return on investment and innovation support effectiveness for start-ups' ecosystem by using the SSIM.

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Innovations ^b	.	Enter
a. Dependent Variable: Return on Investment			
b. All requested variables entered.			

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.450 ^a	.202	.198	.901	.202	53.999	1	213	.000	1.927
a. Predictors: (Constant), Innovations										
b. Dependent Variable: Return on Investment										

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	43.794	1	43.794	53.999	.000 ^b
	Residual	172.745	213	.811		
	Total	216.540	214			
a. Dependent Variable: Return on Investment						
b. Predictors: (Constant), Innovations						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.187	.373		3.181	.002
	Innovations	.172	.023	.450	7.348	.000
a. Dependent Variable: Return on Investment						

To prove the significant relationship between the Sustainable Return on Investment and Innovations, there is obtained the significant value (p-value < 0.05). This shows each coefficient represents the change in the dependent variable for a one-unit change in the independent variable, holding other variables constant.

The F-statistic p-value of 0.000 indicates that the overall model is statistically significant.

Since the p-value for the coefficient is less than 0.05 and the overall model is significant, we reject the null hypothesis and conclude that there is a significant relationship between Sustainable Return on Investment and Innovations.

R4: Innovation and Universities and Research Centers

H₀: The relationship between innovation and universities and research centers are not enhanced effectiveness by using the SSIM.

H_a: The relationship between innovation and universities and research centers are not enhanced effectiveness by using the SSIM.

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Universities and Research Centers ^b	.	Enter
a. Dependent Variable: Innovations			
b. All requested variables entered.			

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.451 ^a	.204	.200	2.348	.204	54.515	1	213	.000	1.476
a. Predictors: (Constant), Universities and Research Centers										
b. Dependent Variable: Innovations										

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	300.570	1	300.570	54.515	.000 ^b
	Residual	1174.378	213	5.514		
	Total	1474.949	214			
a. Dependent Variable: Innovations						
b. Predictors: (Constant), Universities and Research Centers						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.678	.965		8.996	.000
	Universities and Research Centers	.456	.062	.451	7.383	.000
a. Dependent Variable: Innovations						

To identify the significant relationship between the Universities and Research Centers and Innovations, there is obtained the significant value (p-value < 0.05). This shows each coefficient represents the change in the dependent variable for a one-unit change in the independent variable, holding other variables constant.

The F-statistic p-value of 0.000 indicates that the overall model is statistically significant.

Since the p-value for the coefficient is less than 0.05 and the overall model is significant, we reject the null hypothesis and conclude that there is a significant relationship between Universities & Research Centers and Innovations.

Discussion and Result

This analysis employing the mixed method approach justifies the highly positive outcomes of the relative. The great desire for new initiatives is justified by the leadership of entrepreneurship, as highlighted by (Bagheri et al., 2022), where regression analysis testing yields a significant result with a p value less than 0.05. According to Hegeman and Sorheim (2021), sustainable enterprises can contribute to a greener future, which is why investors have positive views on startups. Because of the potential for greater returns in the future due to speculation and market dynamism, technology firms entice investors to finance them with high venture capital. Additionally, the questionnaire indicates that it is significant, with a p-value of 0.05 for the association between SSIM and the suitable return on investment based on data analysis.

In the opinion of (MacMillan et al., 2022), the explanation for a surge in venture capitalists has to do with they demonstrated varying degrees of engagement with venturing operations, from limited to more aggressive. The relationships between how they participated in particular areas, such as monetary contributions or managerial selection, and the success of the venture varied, demonstrating that proactive involvement catered to the type of initiative that might improve results.

Funding from the crowd is crucial to the venture financiers' backing. Following to studies conducted by Kleinert et al. (2022), equities crowd the funding mechanisms (ECFPs) interpret signals of quality in different ways considering the income structures and co-investment criteria. Venture selection is determined by the signal effectiveness, which varies by substrate country along with industry knowledge. Accessible imaginative thinking, community assets, and resource-based approaches are all integrated into an investigation on incubated by researching new models such as accelerated (Hausberg and Korreck, 2021). It highlights prospective study directions and demonstrates significant investigation channels.

Conclusion

In the opinion of Tula et al. (2024), several of interconnected components contributing to a thriving independent an ecosystem, which includes an intense need for creativity, investor assistance, and the implementation of platforms for crowd funding, are vital regarding the growth of fresh firms and the success of persistent beginnings with significant returns on their investments (ROI). In the opinion of Doyle et al. (2022), the ongoing involvement of venture capitalists, incubators, and accelerates assures that startups obtain the direction and resources essential to scale successfully, resulting in a direct impact on long-term business success and earnings.

Assistance from scientific centers and colleges and universities additionally speed accelerate invention through providing enterprises the chance to utilize innovative knowledge and devices to improve their level of competition in the market. Each of these features collaborate to help organizations construct efficiently while minimizing hazards, and (Aldianto et al., 2021) research exactly these characteristics specifically affect their return on investment. The advantageous venture ecosystem stimulates investors, investors expect to advantage more from winning enterprises, and especially those complemented by substantial connections and experienced advice.

Moreover, long-term stability and profitability are more likely to be assured by sustainable companies that retain strong business models, cultivate ethically, and strive to make the most of the assets they possess. The collaborative effort of such components should not only accelerate the accomplishments of people's undertakings but will additionally support the development and long-term viability of the field of startups across all sectors as its ecosystem improves.

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