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Research Article

GOVERNMENT POLICY, TECHNOLOGICAL INTEGRATION, AND MARKET INFLUENCE: PATHWAYS TO SUSTAINABLE STARTUPS

Abhishek Rajesh Khanna

Faculty of Commerce and Business, Delhi School of Economics, University of Delhi, Delhi, India.

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Abstract

Start-ups are one of the driving forces of growth and development for developed economies, although emerging economies are now striving to encourage start-ups for the advancement of the country with the support of the startup ecosystem. However, 90 percent of the start-ups failed within a year of their establishment. This study focuses on the factor affecting the sustainability of start-ups, and it is based on primary data collected from 384 start-ups in India. This empirical study analyzed, whether factors such as government support, market orientation, and technology orientation, affected the sustainability of the start-ups by using entrepreneurial satisfaction and performance of the start-ups as the mediators. Correspondingly, the study analyzes the mediation effect of entrepreneurial satisfaction between performance and startup sustainability. The results conveyed that government support, and technology affected startup business sustainability by fostering startup enterprise performance and entrepreneurial satisfaction, while market orientation does not mediate business sustainability using startup enterprise performance as the mediator, and technology orientation affected startup business sustainability with entrepreneurial satisfaction as the mediator.

Keywords: Startups, Sustainability, Satisfaction, Performance, Market Orientation, Government Support, Technology, Incubators

INTRODUCTION

Entrepreneurship has grown as a popular domain of research by both corporates as well as academicians, there are multiple articles available to describe entrepreneurs' behaviors (Blackburn & Kovalainen, 2009; Wadhwa et al., 2011). But the present scenario focused on resource-based theories, entrepreneurial satisfaction innovation, and sustainable development of entrepreneurship unlike the past studies were focused on demand and supply, production, entrepreneurs' characteristics, etc. (Weidinger et al., 2014). "Without sustainable organizations, there is no sustainable development, thus, no future.". In the modern world, the resource-based theory is combined with the sustainability theory to move entrepreneurship toward sustainable development. According to the sustainability theory proposed by Professor Tim Waring, entrepreneurs must act to overlook the environment and society's welfare besides just economic profit (Waring et al., 2015).

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A startup is the basic step of any entrepreneurship initiatives. It is an early-stage avenue for employment and innovation (Salamzadeh & Kawamorita Kesm, 2017). The startup has paramount importance in improving environments and society, which involves critical business activity for existence and growth (Silva et al., 2021). Lean startups and business models in startups are burning topics in entrepreneurship literature (Ghezzi, 2019; Kountur et al., 2020; Lizarelli et al., 2022) (Slávik et al., 2021). Startups' ecosystem growth is visible in the past few years in India (Singh et al., 2020). India's startup ecosystem steered growth and development and has become the third largest startup ecosystem after the US and China (Basu & Virick, 2015).

India is still a growing economy with an abundance of large populations, and skilled and cheap labor (Sivathanu & Pillai, 2020). However, a large population has more demands but, due to limited resources availability resource available, alternative and substitute solutions can ease the market entry of startups in the Indian market (Scillitoe & Birasnav, 2022). Indian startup ventures fail to ensure sustainability criteria due to various reasons. The survey conducted by IBM and oxford economics displayed that around 90 percent of startups failed within the first five years of their establishment in India (Negi, 2021). And, 77 percent of venture capitalists stated that, the lack of technology is the major cause of this failure (Demming et al., 2017). But recently technological startup entrepreneurship got momentum in India with around a 10 percent annual growth rate (Sivathanu & Pillai, 2020). Technology advancement develops the technological capabilities of the firm to get competitive advantages and to improve financial performance (Rezaee, 2016). Other than technology market orientation plays a crucial role in the performance and overall sustainable development of the firm (Ismail, 2022). Customer attracts to firms that have sustainability market strategies to incorporate economic, social, and environmental sustainability (Sivathanu & Pillai, 2020). Sustainable development in industries has become a comprehensive strategy to guide the world's social and economic transformation while pursuing business activities (Shi et al., 2019). Startups are found to be uncertain regarding the acceptability of products or services in the market and disclosing their performance, but the performance and sustainability are inclined by the economic and environmental conditions of the operation area (Costa et al., 2022).

Further, this study adds dimension to the analysis, explicitly sustainable entrepreneurship along with the emphasis on the need for business satisfaction & sustainability of startups (Murphy & Callaway, 2004), it empirically analyses the effect of attributes such as government support, market orientation, and technology orientation on business sustainability through the performance of startups and entrepreneurs' satisfaction. The accelerator program initiated by the government helps startups to facilitate performance in startups (Polo García-Ochoa et al., 2020). There is a need to study internal and external factors that can impact the relationship between two variables (Caseiro & Coelho, 2018), because internal factor has a profound impact on understanding the performance indicator in startups (Behl, 2022; Furtado et al., 2017). Thereby, this study analyses the key factors to steer startups' business sustainability and survival. In this aspect, a theoretical model was prepared based on (Lee & Kim, 2019) and empirical analyses were made on 384 samples.

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The research Objectives of the study are as follows:

- To develop a theoretical framework for linking GS, TOR, MOR, SEP, ES, and SBS in the context of Indian startups.
- To evaluate the mediation effect of SEP and EG between GS and SBS on the startups.
- To assess the mediation effect of SEP and EG between TOR and SBS on the startups.
- To measure the mediation effect of SEP and EG between MOR and SBS on the startups.
- To determine the intervention effect of EG between SEP and SBS on the startups.

LITERATURE REVIEW

Starting a new firm has the objective to grow into a valuable firm to benefit society, through the creation of employment opportunities and innovations (Harlin & Berglund, 2021). India's startup has experienced significant growth over the past years (Scillitoe & Birasnav, 2022). Startups have been seen as drivers of change and innovation (Palmié et al., 2021) A startup is defined as a temporary organization in search of working under a scalable, repeatable, and profitable business model (García-Gutiérrez & Martínez-Borreguero, 2016). According to DPIIT startup is defined as any firm not formed by reconstruction and mergers, as established less than 10 years ago, and has a turnover under 100 rupees crore shall be considered a startup (startupindia.gov.in). Startups exhibit the potential to enable the transition of local areas, and economies with progress, competitiveness, and industrial transformations through new technologies and innovations (Passaro et al., 2020). Factors that are related to startup success such as customer value proposition, government schemes, marketing, technology, and operations affect the performance of the new venture (Eisenmann, 2020). The introduction of new products and technological innovation are of paramount importance in ensuring the success and growth of a business startup (Hazudin et al., 2015). Some factors such as human resources, technological support, management system, relationship with government, finance, and marketing, were found to affect entrepreneurial satisfaction in e-commerce startups (Gide & Wu, 2007).

The need for sustainability along with profit must include social, ecological, and economic aspects has catalyzed the trend toward a paradigm shift in the business world (Sarango-Lalangui et al., 2018a). Sustainability encompasses both environmentally oriented and socially oriented practices, and rather than distinguishing between different types of sustainability goals, it is more general to pursue sustainability goals through corporate means. Sustainability entrepreneurship embodies the concept of shared value in business.

Sustainability in financial performance is essential (Filser et al., 2019). A number of studies reported performance as the comparative indication based on economic and non-economic criteria, economic measures include sales, profitability, financial return, and turnover of the business (Inmyxai & Takahashi, 2011; Seo et al., 2018; Soeryo Prayogo et al., 2019). (Brush, 1992) Suggested future businesses should not measure the performance in growth terms, but also different ways such as the growth of skills, knowledge, and business satisfaction of the entrepreneurs. Moreover, (Bamgbade et al., 2022) have found the mediating role of organizational capacity and

performance on business sustainability. This is essentially the creation of economic value, and being involved in it, also creates value for society (Reynolds et al., 2018). This study believes to address the research gap related to the experience of entrepreneurs of startups about stainability and performance of the business together, (Lauto et al., 2020) specified the need of examining factors that can impact the entrepreneurial experience and decisions.

Attributes of Startup (GS, MOR, TOR), and Startup Enterprise Performance (SEP)

Start-up enterprise performance reflected in growth rate, sales growth, business stability, customer satisfaction, and entrepreneurial satisfaction (Rompho, 2018). Many studies explain that government support positively impacts entrepreneurship (Fonseca et al., 2018). Firms that received support from the government relatively survived for a longer period than the firms that did not get. Government support resulted in the greater performance of start-ups (Lee & Kim, 2019). Market orientation is the process that emphasizes not only customer satisfaction but also other functional areas of the organization (Eric et al., 2017.). "A market orientation appears to provide a unifying focus for the efforts and projects of individuals and departments within the organization" (Kohli & Jaworski, 1990.) Market orientation includes the external environment to measure the competitive business environment of the firm, it is a culture placed focused on customer needs or satisfaction along with watching the capabilities of the competitor (Pelham, 1999). Several studies show a positive direct relation between MOR and performance. MOR is associated with superior performance in the form of profitability, sales growth, and new product development (Mastorakis et al., 2020.). Some studies emphasized that a business can only grow if it can maintain market orientation in an external business environment with severe dynamics where the customer's demands are diversified and subdivided (Lee & Kim, 2019).

Technology orientations are often understood as collecting resources and formulating strategies to avail opportunities with the technical system, it shows an organization's devotion to research and development, accepting and applying the latest technologies to meet customers' needs (Sala et al., 2022). The technology orientation refers to a set of organizational decisions regarding the aggressive use of technology position, Process innovation and automation, and new product development. Technology innovation is deemed an important enabler of perceived performance and sustainable development through business activities (Soeryo Prayogo et al., 2019) (D'Amato et al., 2020).

Hypothesis 1. (H1) Government support for start-ups will positively affect startup enterprise performance.

Hypothesis 2. (H2) The market orientation of start-ups will positively affect startup enterprise performance.

Hypothesis 3. (H3) The technology orientation of start-ups will positively affect the startup enterprise performance

Attributes of Startup (GS, MOR, TOR), and Entrepreneurial Satisfaction (ES)

MOR has a mediating role in the performance and entrepreneurial orientation of startups (Ruzgar et al., 2014). Also, the higher government supports enhance higher satisfaction among entrepreneurs. Government certification

is important for startups indicating that a government-funded program of research and development is directly associated with the quality performance of the firm (L. Li et al., 2019). In general, "satisfaction" in business management is a variable used for customer satisfaction and is measured as a non-financial performance of consumer products and corporate brands. However, satisfaction with business can be considered in terms of companies rather than consumers, where financial and non-financial performance can be considered. Entrepreneurial satisfaction is a scale that measures the overall satisfaction that a business owner obtains while accomplishing its requirements and expectations from the business (Seco Matos & Amaral, 2017). Entrepreneurs should be asked how satisfied they are with their performance and business doing (Kerr, 2017). Since, it is difficult to estimate the quantitative indicators necessary in measuring the company's performance in the initial stages of a start-up, objective performances such as the sales and earnings rate, or subjective performances such as the expected achievement and satisfaction are measured. Moreover, (Chakraborty et al., 2019) stated that non-financial satisfaction is related to markets, technologies, and human resources after business start-up as entrepreneurial satisfaction. The concept of entrepreneurial satisfaction is a subjective feeling about the business field in which entrepreneurs started their businesses, and satisfaction is the state of being that is contentment without deficiency (Cooper & Artz, 1995). Thus, entrepreneurial satisfaction can be measured by non-financial factors such as the pleasantness of business operation, enthusiasm about business, sense of achievement in business, and attainment of sustainable development.

Hypothesis 4. (H4) The government support for start-ups will positively affect entrepreneurial satisfaction.

Hypothesis 5. (H5) The market orientation will positively affect the entrepreneurial satisfaction of startupreneurs.

Hypothesis 6. (H6) The technology orientation will positively affect the entrepreneurial satisfaction of startupreneurs.

Mediation and Significance in Business Research

The mediation effect measures the causal relationship between two variables in the presence of the third variable called as mediating variable (Demming et al., 2017; MacKinnon, 2001; MacKinnon et al., 2007). A mediating variable can totally or partially transmit the impact of the antecedent on the result (Aguinis et al., 2017). According to (Namazi & Namazi, 2016) in the mediation process "the independent variable first influences the mediator variable, and then the mediator influences the dependent variable". Several researcher has used mediation analysis in the field of business and management and mediating variable were R&D, innovations, performance, customer engagement, business models, corporate culture, etc. (Chen, 2022; Ferreras-Méndez et al., 2021; Garg et al., 2020; Zhao et al., 2022). Mediation is a statistical technique to examine whether the impact of (X → Y) where causal variable 'X' and outcome variable 'Y' is at least partly explained through a series of impacts of the 'X' on an intermediating variable Z and then on the intermediating variable on the 'Y' (i.e., X → Z → Y) (Fiedler et al., 2011).

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Mediation Process

Start-up Enterprise Performance (SEP) and Entrepreneurial satisfaction (ES) as Mediators

Start-up enterprise performance can be used as synonymous with business performance, operational performance, business growth, etc. The study (Haryono & Paminto, 2015,) explains the mediating effect of performance on the relationship between corporate value and financial risk, and performance revealed a positive relationship between corporate value and financial risk. Also, it was identified (Wahba & Elsayed, 2015) that the financial performance of the firm positively mediated the relationship between ownership structure dimensions and corporate social responsibility. Most of the research are concerned with the mediation effect of a firm's performance in the sector of finance (Al-Slehat, 2020). The authors (Namazi & Namazi, 2016) highlighted a framework to use performance as the mediator between CSR and stakeholder perception. Moreover, some studies have emphasized the role of financial performance as a mediator between the size of the firms and corporate value or corporate governance, and on capital structure and corporate value as well as risk on the value of the firm (Al-Slehat, 2020; Author et al., 2014; Haryono & Paminto, 2015).

The study carried by (Lee & Kim, 2019; Zhao et al., 2022) used the satisfaction of entrepreneurs and performance as a mediating variable in the analysis of environment and sustainability through entrepreneurial activities. (Iskamto & Ghazali, 2021) has examined mediation analysis through the satisfaction and performance of MSEs. Hmieleski and Corbett

(2008) presented interaction effect on self-efficacy and entrepreneur's satisfaction of startups. Nonetheless, the empirical findings of (Lauto et al., 2020) also suggested the relationship between economic performance and the satisfaction of entrepreneurs.

Startup Enterprise Performance (SEP), Entrepreneurial Satisfaction (ES), and Startup Business Sustainability (SBS) Among the various business studies, most studies measure effectiveness and efficiency of startup by a focus on the financial performance of business operations (Seo et al., 2018), but now there is more stress on the importance of non-financial performance or intangible assets based on the current environment uncertainty (Hoque, 2005). For start-ups and SMEs, business sustainability practice is a critical factor that must be considered, along with performance (Sarango-Lalangui et al., 2018). The theory of sustainability states that the sustainable development of the organization mainly depends on the goals and objectives of the organization and sustainable organizations can operate consistently and stably despite various difficulties in the market (Shi et al., 2019). Sustainability needs should emphasize sustained natural resources, sustained technology, sustained employment, and sustained performance of the firm (Sha, 2022). Good doing of the enterprise and entrepreneur's caliber in the process of business start-up may serve as a key variable in the sustainability of entrepreneurial intention and behaviors (Harlin & Berglund, 2021; Tur-Porcar et al., 2018). The intention to sustain a business can be related to positive attitudes among entrepreneurs, which makes them more satisfied with their business.

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As mentioned above, satisfaction immerses the best emotions, the ultimate pleasant experiences, and a happy mental state of the entrepreneurs that are encouraged by enterprise well performance thus, they both are critical success factors of sustainable development of entrepreneurship and society (Eriksson Muyu Li Supervisor et al., 2012). Moreover, (Lee & Kim, 2019) argued that entrepreneurial satisfaction can be related to non-financial factors such as the congenial environment of business operation, enthusiasm about business, sense of achievement in business, and attainment of business stability (Gupta & Muita, 2012). Accordingly, this study provides the following hypothesis that is based on startup performance and satisfaction with the motivation of bringing sustainability to new ventures.

Hypothesis 8. (H8) The startup enterprise performance of start-ups will have a positive effect on startup business sustainability.

Hypothesis 9. (H9) The entrepreneurial satisfaction of start-ups will positively affect startup business sustainability.

MATERIALS AND METHODS

This study examines the key attributes to promote the business sustainability of nascent venture and startup to convert the short survival rates into long-sustained startup firm, factors such as market orientation, technology orientation, and government support are taken as the causal variable to empirically verify the effect on start-up performance, entrepreneurial satisfaction, and business sustainability. Accordingly, this study surveyed Indian start-ups to verify the effects of government support, market orientation, and technological advancement on the sustainable development of entrepreneurship, and the startup performance and entrepreneurial satisfaction as mediators bring novelty in the field of sustainable entrepreneurship. The research model as shown in figure 1 is designed with the research hypotheses provided

Based on the literature review.

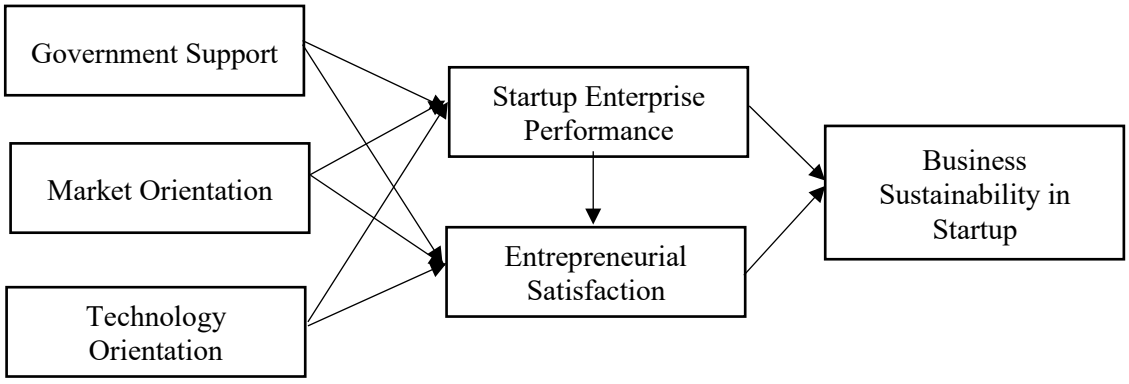

Figure 1. Research Model

Source: Authors' compilation

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Variables and Analytical Approach

Based on an extensive literature review on business, startups, and entrepreneurship, the research instrument for this study was developed. The measurement scale for entrepreneurial satisfaction was adopted from the literature for technological, government support, market orientation, financial and non-financial performance, satisfaction and motivation of entrepreneurship, and other relevant area presented in table 1.

Table 1. Variables and Operational Definition

Variables	Factor	Definition	Items	Reference
Independent Variable	Government Support (GS)	The support from the government has benefitted start-ups	3	(Joanne L. Scillitoes 2021) (Hazudin et al., 2015)
	Market Orientation (MOR)	The attitudes and strategies of satisfying customer need, competitiveness, and acquiring market knowledge for achieving customer satisfaction	3	(O ´ Scar 2007) (Mastorakis et al., 2020.)
	Technology Orientation (TOR)	The technology support availed by the start-ups for ease of their business activities	4	(Zahra and Covin, 1993.) (Deshpande et al 2013) (Urban & Heydenrych, 2015) (Bamgbade et al., 2022)
	Startup Enterprise	The financial performance of the start-ups acquired by their operation	4	(Sivathanu & Pillai,

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Parameter/ Mediator	Performance (SEP)		2020) (Rompho, 2018) (Zahra and Covin, 1993)
	Entrepreneurial Satisfaction (ES)	Satisfaction with business activities and acknowledgment of doing something owned by the entrepreneur regarding start-up activities.	7 (Seco Matos & Amaral, 2017; StJean & Mathieu, 2015)
	Startup Business Sustainability (SBS)	The possibility is that the business activities of start-ups are enough to sustain business economically, socially, and environmentally in the long run.	8 (Karani et al., 2018a) 2021) **Dependent Variable**

Source: Literature

Sampling and Data Collection

This research follows quantitative methodology with the use of primary data collected through the questionnaire, the data was collected from more than 400 startups operating in Madhya Pradesh, India. The sample was considered using the stratified random sampling technique and the key respondent of the questionnaire survey were owners/founders, partners, executives, and other key persons of the startups. The data was collected from the respondents through surveyed by visiting their work areas or offices and gathering all the details about technology and digitalization, government support through policies and programs for startups, startup perceived performance, market and market difficulties, satisfaction level through entrepreneurship and practice of business sustainability, questions was explained to the respondents and their confidentiality and annoying reassured. The sample size of 384 was calculated by using Cochran's formula of indefinite population and a startup the total revenue for startups must be under Rs. 25 crores, situated in India as prescribed by DPIIT, GOI was used as the eligibility criteria for the selection of startup.

Instrument/ Scale Used

All the variables were measured by using the 5 Likert scales. The independent variables were measured using the scale representing strongly disagree=1, Disagree=2, Neutral=3, Agree=4, and strongly agree=5. The startup firm's performance was represented as extremely declined=1, Declined=2, Average=3, Improved=4, and extremely improved=5.

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Analysis of Reliability and Validity

A pilot study was conducted to inspect the validity and reliability of the questionnaire before collecting the final data. The reliability of the model was tested and the result has shown as .917 which should be more than the required value of 0.7 to get the reliability of the instrument.

To ensure the reliability and validity of the research model, the constructs of this study were analyzed by using Exploratory analysis as the result is presented in Table 2.

The result of the standard loading value when scored 0.6 or more, can be used as a latent variable. All the constructs of this study scored more than 0.6 or more. The composite reliability of all the constructs should be close to or more than 0.7, as all constructs of this study score 0.9 or higher thus, meet the standard set by (Bhattacharya et al., 1998) and (J. J. Li & Zhou, 2010). The AVE should be 0.5 or more as the standard set by (Frare & Beuren, 2021), and all the constructs in this study scored AVE more than 0.8 (See Table 2). Thus, ensuring the validity of this study model.

Table 2. Results of reliability and convergent validity test

	Factor Loading	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
ES	0.898	0.947	0.948	0.96	0.826
	0.882				
	0.924				
	0.919				
	0.921				
GS	0.901	0.923	0.924	0.952	0.868
	0.958				
	0.935				
MOR	0.929	0.92	0.923	0.95	0.863
	0.947				
	0.911				
	0.901				
	0.898				
	0.917				
	0.935				
	0.909				
SEP_	0.961	0.934	0.941	0.958	0.884
	0.957				
	0.901				
TOR_	0.927	0.909	0.909	0.943	0.846
	0.912				
	0.92				

Source: Compiled from primary data using PLS-SEM

Discriminant validity

The off-diagonal values (see Table 3) show the correlation between the latent constructs. The discriminant validity is verified by comparing the inter-correlations of the constructs with AVE, as displayed (see Table 3). As the shared variance values were lower than the corresponding AVE, discriminant validity between the constructs in the study was proved as per (Ab Hamid et al., 2017) the required criteria.

Table 3. Correlation matrix and average variance extracted (AVE)

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	ES	GS	MOR	SBS	SEP_	TOR_
ES	**0.909**					
GS	0.378	**0.932**				
MOR	0.372	0.558	**0.929**			
SBS	0.667	0.402	0.459	**0.912**		
SEP_	0.626	0.395	0.367	0.465	**0.94**	
TOR_	0.403	0.469	0.657	0.466	0.409	**0.92**

Note: The numbers in bold are AVE square root values of each variable.
Source: Primary data

Common Method Bias

The single-factor Harmen test (Podsakoff et al., 2003) was conducted to check the existence of common method bias. The result was 40.082% which is less than 50%, justifying that there is no concern of common method bias for this study.

RESULTS AND DISCUSSIONS

Demographic Characteristics of the Respondents

The survey results showed from the total of 384 respondents, 77.60 percent were male and 22.13 percent were female, in case of age concerned 12.8 percent of total less than 25 years, and 55.7 percent were aged between twenty-five to thirty five, 24.9 percent were between thirty-five to forty-five, and only 6.8 percent were older than forty-five years, that show more start-up entrepreneurs are in the age of twenty-five to thirty-five years. In case business ideas of current start-ups showed that seminars and conferences are the most idea-genic source has 26.6 percent of ideas came from there, the next vital source of start-up ideas are found to be friends and relatives as 14.6 percent of ideas came from there, and 13.5 percent were from newspapers, and 37.5 percent is from other sources. (Table 4).

Table 4. Demographic profile of respondents

Category		**Frequency**	**Percentage**
Ages	Less than 25	49	12.8
	25 to 35 years	214	55.7
	35 to 45 years	95	24.7
	More than 45	26	6.8
	Total	**384**	**100.0**
Gender	Male	298	77.60
	Female	85	22.13

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	Total	**384**	**100.0**
Marital Status	Unmarried	136	35.4
	Married	225	58.6
	Divorced	23	6.0
	Total	**384**	**100.0**
Business Idea	Newspaper	52	13.5
	Seminar/Conferences	102	26.6
	Bank/ Financial institutions	30	7.8
	Friends/ Relative	56	14.6
	Other	144	37.5
	Total	**384**	**100.0**

Source: Compiled from primary data.

Measurement Model

The SmartPLS 3.0 software was applied for primary data analysis as many businesses used it for analyzing measurement models (Hwa et al., 2017). The measurement properties in the final model was calculated for the latent constructs, reflective and formative in nature having multiple indicators. There are two methods for structural equation analysis; one is covariancebased and the other is partial least square based (Moqbel et al., 2020), and the study of (Sarstedt et al., 2020) (Carrión et al., 2017) suggested the use of PLS-SEM for mediation analysis.

Model Fit

The standards for the goodness-of-fit index (GFI) of the revised model were verified to check the fit of the model. The model is considered fit if the NFI will 0.9 or higher (Hwa et al., 2017). This model showed significant results, i.e., NFI = 0.91, SRMR = 0.037, as per the standard set by (Hair et al., 2011) (see Table 5).

Table 5. Model fit

	Saturated Model	**Estimated Model**
SRMR	0.037	0.073
d_ULS	0.341	1.332
d_G	0.442	0.465
Chi-Square	1026.155	1097.575
NFI	0.91	0.878

Source: Compiled from primary data by using PLS-SEM

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Table 6 has shown the results of the hypotheses tested showed that GS (T value = 3.423, β= 0.240) and TOR (T value = 2.787, β=0.253) had a positive and significant effect on SEP, but MOR have an insignificant effect (T value= 0.274, β= 0.067) on SEP. Thus, we fail to accept hypothesis two, but fail to reject hypotheses one & three. For the hypothesis four, the significant impact of GS on ES has been identified, with findings (T value = 3.448). Similarly, for the hypothesis five the impact of TOR on ES is positively significant (T value = 2.582), but hypothesis six was rejected due to the insignificant effect of MOR on ES.

Moreover, the hypothesis seven was accepted as the result revealed a significant and positive impact of SEP on ES (T value = 9.744, β= 0.526).

Finally, both the hypotheses eight and nine were accepted with a significant impact of SEP (T value = 4.462, β=0.334) and ES high impact (T value = 10.606, β= 0.618) SBS. Further, table 6 also, shows MOR does not find a significant effect on SEP as well as ES, whereas GS had a greater effect on ES, and ES has a greater positively significant effect on SBS than SEP (see Table 6).

Table 6. Results of the hypothesis test

Hypothesis Channel	**Path Coefficient**	**T value**	**Decision**	**R^2**
Hypothesis 1(GS - SEP)	0.240	3.423	Accepted	0.223
Hypothesis 2 (MOR - SEP)	0.067	0.274	Rejected	
Hypothesis 3 (TOR -SEP)	0.253	2.787	Accepted	
Hypothesis 4 (GS- ES)	0.375	3.448	Accepted	0.427
Hypothesis 5 (MOR -ES)	0.061	0.548	Rejected	
Hypothesis 6 (TOR- ES)	0.215	2.582	Accepted	
Hypothesis 7 (SEP - ES)	0.526	9.744	Accepted	
Hypothesis 8 (SEP - SBS)	0.334	4.462	Accepted	0.449
Hypothesis 9 (ES - SBS)	0.618	10.606	Accepted	

Notes: t-values for two-tailed test: ***t-values 2.58 (sig. level = 1%), (Sivathanu & Pillai, 2020)

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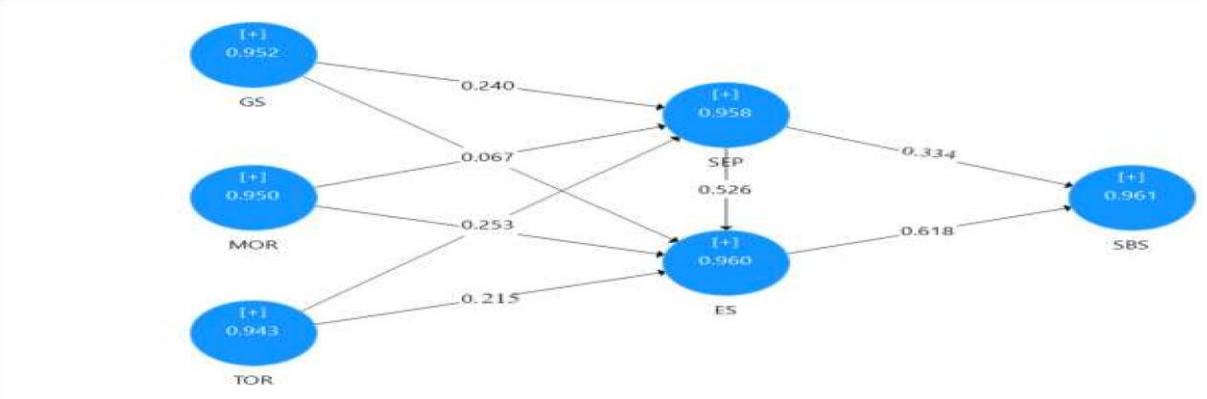

Figure 3. SEM (structural equation model) analysis of the research model Source: Compiled from primary data

Mediation Effect

We are concerned with evaluating whether the effects of the causal variables; GS, MOR, and TOR on SBS are mediated by ES and SEP. To examine the mediation effect of the ES and SEP through these pathways we used the SmartPLS algorithm.

The result (see Table 7) revealed that the total effect of GS (β= 0.150) and TOR (β=0.169) on SBS was significant with the inclusion of mediating variables of SEP and ES, whereas, MOR has insignificant relation on SBS (β=0.037, T= 0.515) in presence of SEP and ES.

The indirect effect of GS on SBS was significant (β= 0.053, T= 3.185, P=0.002) in presence of mediator ES. Additionally, GS also has a significant impact on SBS in presence of mediator SEP (β=0.019, T= 3.185, P=0.002). Further, the indirect effect of TOR on SBS was identified through ES as a mediator between them (β=0.067, T= 2.884, P= 0.004) it is more significant than the indirect effect of TOR on SBS through SEP (β=0.020, T=2.884, P=0.004). However, no significant indirect impact of MOR is found on SBS through both the mediators; ES and SEP.

Table 7 also indicates, the impact of SEP on SBS through ES being a mediator, the result was significant with direct effect (β= 0.334), indirect effect (β= 0.325), and total effect (β= 0.659). Moreover, the impact of ES on SBS was the significant direct and total effect (β=0.618), and the null indirect effect was assessed.

Table 7. Results of Direct, Indirect, and Total effects

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Dependent variable	Independent variables/ Mediator	Direct Effect	Indirect Effect		Total Effect	T- value
Startup Business Sustainability	GS	-	**0.019**	GS->SEP->SBS	**0.150**	**3.185**
			0.053	GS -> ES -> SBS		
	MOR	-	**0.005**	MOR->SEP->SBS	**0.064**	**0.515**
			0.037	MOR->ES->SBS		
	TOR	-	**0.020**	TOR->SEP- >SBS	**0.169**	**2.884**
			0.067	TOR->ES- >SBS		
SEP		0.334	**0.325**	SEP-> ES -> SBS	**0.659**	
ES		0.618			**0.618**	**10.606**

Source: Primary data collected through questionnaires analyzed using PLS-SEM

Note: GS= Government support, MOR= Market orientation, TOR= Technology orientation, SEP= Start-up enterprise performance, ES= Entrepreneurial satisfaction, BSB= Start-up business sustainability

DISCUSSIONS

This study is conducted to empirically determine the factors affecting business sustainability and the survival rate of startups, as recognized since global government support in an attempt to secure new growth engines and create jobs. The results of the data analysis showed that start-ups based on GS, and TOR had a positive effect on business sustainability through mediator's startup enterprise performance (SEP) and entrepreneurial satisfaction (ES). The findings show that the government assistant program (GS) has a significant association with the performance of the start-up and were validated by the study of (Musa et al., 2017) which suggested a significant government role in the performance of nascent ventures. The findings of the present study indicate that technology orientation (TOR) has a significant impact on the performance of startups, with a similar result to the findings of (Holgersson & Granstrand, 2021) revealing the importance of technology such as patenting, digital innovations, R&D has a significant positive impact on the performance including cost reductions, productivity, sales growth. Ultimately, factors such as innovativeness, digitalization, and information symmetry of entrepreneurs had a positive impact on the performance of the start-ups as well as business sustainability.

The previous empirical investigation of (Gibson et al., 2014; Gupta & Muita, 2012) is also revealed similar results That there is a positive significance in enterprise performance on the entrepreneurial satisfaction of startups. The development of technology significantly impacts on the satisfaction of entrepreneurs in nascent ventures this result is similar to the previous literature (Lee & Kim, 2019). Additionally, the government support has been identified as a significant factor in this study to foster business satisfaction among entrepreneurs of the start-up,

this result is consistent with (Reddick & Roy, 2013; Sharma et al., 2021) that show government support including development programs, websites, and e-portal, etc. are boost the satisfaction of the startupreneurs.

Caseiro and Coelho (2018) stated that GS has unique competitiveness in start-ups that are difficult to imitate, thus Entrepreneurship can serve as a critical factor in terms of mid/long-term growth and sustainable development for start-ups. On the other hand, market orientation positively impacted business sustainability with startup enterprise performance as the mediator, but not on entrepreneurial satisfaction.

Previous studies on startups stated that start-up sustainability is affected by variables such as the entrepreneur's satisfaction and the start-up ecosystem consisting of government and society and there is a positive association between satisfaction and sustainability in entrepreneurship of new ventures (Lee & Kim, 2019; Ziakis et al., 2022).

The role of the performance of the startups is found significant to the sustainability of the business which can be Validated by the study of (Deslatte et al., 2021; Lee & Kim, 2019). This shows that when the performance is a key factor of start-ups that connects with sustainable practices, it means if startup performed well, it motivates the entrepreneurs to implement sustainable business practices.

It is observed from the study that market orientation is insignificant in obtaining satisfactory performance and satisfaction among startupreneurs, this finding is similar to the study of (Lee & Kim, 2019), A company must maintain its market orientation in the dynamic market environment for sustainable growth (Scillitoe & Birasnav, 2022). Accordingly, start-ups should encompass the marketing environment to analyze customer values and to adapt good market fit for ultimate sustainability (Ruzgar et al., 2014). Moreover, MOR positively impacted on business sustainability with entrepreneurial satisfaction as the mediator, which is contrary to (González-Benito et al., 2009; Huang, 2016).

The present study is also identified that performance has a significant impact on sustainability through mediator satisfaction, this comprehensively indicates that performance brings satisfaction among entrepreneurs which motivates them to sustainable business practices (Deslatte et al., 2021).

The study shows that business leads to entrepreneurial satisfaction and performance with aid of government, and technology with sustainability. Moreover, as mentioned, government and technological support are useful to perceive opportunities that will accelerate entrepreneurial success and sustainable business growth.

CONCLUSIONS

Based on the results, this study can provide inferences to set the direction for sustainable growth and development of startups. First, as indicated by the results, startup performance is a key variable for the business sustainability of start-ups. Previous studies based on performance confirmed that it is only possible when it is supported by an entrepreneurial ecosystem. Furthermore, startup performance promotes the more explorative activities of start-ups and improves their capacity to implement sustainable ideas. Thus, entrepreneurs must immerse themselves in innovative ideas and sustain events to develop their capabilities. Accordingly, entrepreneurs can be satisfied in

the early stages of a business when they focus on both financial and non-financial performance and entrepreneurial satisfaction. Moreover, the government support programs must be intended for safeguarding various challenges and obstacles of startups, and further technology should encompass entrepreneurship programs for start-ups to support at early-stage.

Besides, start-ups have different environments and ecosystems depending on the business field, which is why more detailed research must be conducted when considering types of business such as manufacturing, IT, or service. Startups in the area of automobile and IT and fashion industries should adopt sustainable marketing strategies to enhance customer satisfaction (Ejovwokeoghene OGBARI et al., 2022; Jung et al., 2020). Correspondingly, the government should collaborate with startups (specifically with cleantech and energy) to increase the financial benefits of the startups. Technology advancement should be encompassed to reduce the information asymmetry that not only benefits startups but all the participants of the industry (Kim et al., 2020).

Limitations and Further Scope area

The study has found a link between government, technology, and market support, along with the mediation effect of entrepreneurial satisfaction and startup performance on startup sustainability. It has many limitations that create opportunities for future research such as the survey of this study has geographic limitations as samples are collected from the startup of Madhya Pradesh, India, to generalize the results. In Addition to limitations, the data for the present study were collected in a one-time frame, longitudinal studies can be incorporated in the future. It is a quantitative analysis further studies may incorporate a qualitative method for a better understanding of entrepreneurial behaviors on sustainability.

Implications

This research is a theoretical background of sustainability in start-ups in the context of India to provide inclusive factors required for sustainability building in startups the proposed theoretical model validate empirically.

This study serves academicians by contributing to the entrepreneurship domain by providing a research framework for business sustainability. This study contributes managerial implications to suggest strategic planning a scaling of the startup for sustainable growth, sustainability in business is not simple to attain and retain, and this research contributes to startup entrepreneurs developing healthy customer relations and better implementation of the start-up ecosystem for sustainable growth of the firm.

From the perspective of government implications, this research suggests that the government should provide more Training to entrepreneurs for sustainable practices, and there must be more involvement of the government in increasing the performance of start-up companies. And it will prove better if the government encourages marketing training and platforms, especially for start-ups.

REFERENCES

Aguinis, H., Edwards, J. R., & Bradley, K. J. (2017). Improving Our Understanding of Moderation and Mediation in Strategic Management Research. Organizational Research Methods, 20(4), 665–685.

Author, C., Purnomosidi, L., Siregar, H., & Dzulkirom, M. (2014). Mediating Effect of Financial Performance on the Influence of Size of Company, Capital Structure, Good Corporate Governance and Macro Fundamentals on Corporate Value. In Quest Journals Journal of Research in Business and Management, 2(10).

Bamgbade, J. A., Nawi, M. N. M., Kamaruddeen, A. M., Adeleke, A. Q., & Salimon, M. G. (2022). Building sustainability in the construction industry through firm capabilities, technology and business innovativeness: empirical evidence from Malaysia. International Journal of Construction Management, 22(3), 473–488.

Basu, A., & Virick, M. (2015). Silicon Valley's Indian diaspora: networking and entrepreneurial success. South Asian Journal of Global Business Research, 4(2), 190–208.

Behl, A. (2022). Antecedents to firm performance and competitiveness using the lens of big data analytics: a cross-cultural study. Management Decision, 60(2), 368–398.

Bhattacharya, R., Devinney, T. M., & Pillutla, M. M. (1998). A formal model of trust based on outcomes. Academy of management review, 23(3), 459-472.

Blackburn, R., & Kovalainen, A. (2009). Researching small firms and entrepreneurship: Past, present and future. International Journal of Management Reviews, 11(2), 127–148.

Brush, C. G. (1992). Research on Women Business Owners: Past Trends, a New Perspective and Future Directions.

Carrión, G. C., Nitzl, C., & Roldán, J. L. (2017). Mediation analyses in partial least squares structural equation modeling:

Guidelines and empirical examples. In Partial Least Squares Path Modeling: Basic Concepts, Methodological Issues and Applications (pp. 173–195). Springer International Publishing.

Caseiro, N., & Coelho, A. (2018). Business intelligence and competitiveness: the mediating role of entrepreneurial orientation. Competitiveness Review, 28(2), 213–226.

Chakraborty, T., Ganguly, M., & Natarajan, A. (2019). Predicting entrepreneurial satisfaction: The role of non-financial incentive factors and quality of life among women digital entrepreneurs. Journal for Global Business Advancement, 12(3), 328–355.