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Research Article

Factors Affecting the Male and Female Entrepreneurial Success in India

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ABSTRACT

Purpose: The current study aims to explore the antecedents of entrepreneurial success in India by examining the impact of digital transformation, dynamic capabilities, classical factors, personal factors, and gender differences on firm performance and sustainability performance.

Design/Methodology/Approach: A quantitative approach was adopted, utilizing a cross-sectional survey method. Data were collected from 450 entrepreneurs in Uttarakhand, India, using a structured questionnaire. Structural Equation Modelling (SEM) and Confirmatory Factor Analysis (CFA) were employed to test the hypotheses and validate the measurement model respectively.

Findings: The study found that digital transformation and dynamic capabilities significantly enhance both firm performance and sustainability performance. Classical factors, including socio-economic and cultural factors, along with personal factors such as entrepreneurial education and orientation, also positively impact entrepreneurial success. Gender differences did not significantly moderate these relationships, indicating similar benefits for male and female entrepreneurs.

Research Limitations/Implications: The study is limited by its cross-sectional design and the focus on a specific geographical area. Future research should adopt longitudinal approaches and explore different cultural and economic contexts. The findings suggest that policymakers should invest in ICT infrastructure, create a supportive socio-economic environment, and promote entrepreneurial education to enhance entrepreneurial ecosystems.

Practical Implications: Businesses should prioritize digital transformation and develop dynamic capabilities to remain competitive and sustainable. Integrating sustainable practices and fostering an entrepreneurial orientation among employees can further enhance firm performance. Gender-specific support programs can address unique challenges faced by female entrepreneurs.

Originality/Value: This study provides a comprehensive framework for understanding the factors influencing entrepreneurial success in India, with a specific focus on digital transformation, dynamic capabilities, and gender differences. The findings offer valuable insights for policymakers, industry actors, and educators aiming to support and promote entrepreneurship.

Keywords: Entrepreneurial Success, Digital Transformation, Dynamic Capabilities, Classical Factors, Personal Factors, Gender Differences, Firm Performance, Sustainability Performance, India.

Introduction

Entrepreneurship plays a pivotal role in shaping the economic landscape of a nation. In India, a country known for its diversity and rich cultural heritage, entrepreneurship has gained immense traction in recent years. Kumar and Raj (2019) report that, "...entrepreneurship in India is a key contributor in the area of employment generation, innovations and product improvement and entrepreneurship promotes capital formation, increasing per capita income, improving the standard of living and balanced growth by removing regional

disparities.". Several factors have catalysed the growth of entrepreneurship in India (McKinsey & Company, 2020; NASSCOM, 2020; The Economic Times, 2022), chiefly, Demographic Dividend, Rising Education Levels, Access to quality education, Technology and Connectivity, Government Initiatives and Globalization.

Women entrepreneurship in India has been on the rise in recent years, with women breaking traditional barriers to start and lead successful businesses. According to a study by McKinsey Global Institute, advancing women's equality could add $770 billion to India's GDP by 2025, illustrating the economic potential of women entrepreneurs. The "Gender-GEDI" (Gender Global Entrepreneurship and Development Index) report of 2020 highlighted that while India ranked 29th in terms of overall female entrepreneurship, it scored lower in aspects like business risk acceptance and women's leadership roles.

The current technological landscape in the business world is embracing Industry 4.0 (Blockchain, AI, IOT, Cloud Computing, Smart Manufacturing and 3D Printing), therefore, it is imperative to study how these technologies are affecting entrepreneurs. Industry 4.0 has build peer-to-peer marketplaces that connect users with available resources efficiently (Chesbrough, 2010); Automation, enabled by robotics and AI, streamlines manufacturing processes and reduces human error (Porter & Heppelmann, 2014); digitalization and connectivity have transcended geographical barriers, enabling entrepreneurs to access global markets more easily (Bughin et al., 2018); Advanced analytics and predictive modeling provide valuable insights into consumer behavior, market trends, and product performance (Davenport, 2013).

Dynamic capabilities, a concept rooted in the resource-based view of the firm, refer to a firm's ability to sense and seize opportunities, reconfigure resources, and adapt to changing environments (Teece et al., 1997). Dynamic capabilities foster innovation by enabling firms to identify gaps in the market and develop unique solutions. This innovation-driven approach allows entrepreneurial ventures to differentiate themselves from competitors and create value for customers (Eisenhardt & Martin, 2000). Dynamic capabilities enhance a firm's ability to pivot its strategies and resources rapidly in response to market shifts. This agility is crucial for startups facing uncertain and volatile markets (Teece, 2007). By continually renewing and reconfiguring their resources, these ventures can create barriers to entry for potential competitors (Helfat, 2007). Zahra and George (2002) found that dynamic capabilities significantly influence new venture performance. Similarly, Osiyevskyy and Dewald (2015) highlighted the role of dynamic capabilities in enhancing the resilience of startups in challenging environments.

Sustainability has evolved from a peripheral concern to a critical aspect of modern business practices. Sustainability performance involves integrating environmental, social, and governance (ESG) factors into business strategies. Sustainable practices contribute to resilience by mitigating risks associated with environmental regulations, resource scarcity, and shifting consumer preferences (Hart, 1995). A study by Kassinis and Vafeas (2006) found a positive relationship between corporate social performance and financial performance. Additionally, Nath and Agrawal (2020) highlighted that companies pursuing sustainability achieved higher profits and better long-term value creation.

Thus, from the above cross sectional discussion on entrepreneurship, digital transformations, dynamic capabilities and sustainability, we formulate the following objectives of our research:

1. To study the new age antecedents of entrepreneurial success (Sustainability and Financial Performance) namely Digital Transformation (Industry 4.0) and Dynamic Capabilities.
2. To study the impact of traditional variables of entrepreneurial success (Personal, socio-economic factors).
3. To do a comparative study of the success of male and female entrepreneurs.
4. To propose certain courses of action for policy and industry actors based on the results of the study.

Literature Review

A preliminary review of the available literature (Literature reviewed from 2012 to 2022) suggests that Entrepreneurial Success (ES) is determined by the following factors:

- **Digital Transformation (DT)** According to McKinsey and Company (2023), digital transformation can be defined as, "the rewiring of an organization, with the goal of creating value by continuously deploying tech at scale." Sadeghi et al. (2021) have reported that Digital Transformation is one of the key factors which influences entrepreneurial value creation, and it is also reported that DT translates into superior firm performance for startup firms (GHI et al., 2021). Sadeghi et al. (2021) have conceptualized Digital Transformation in the context of entrepreneurship as a multi-dimensional concept which has three sub constructs, viz., Digital Technology Readiness, Digital Technology Exploration, Digital Technology Exploitation.
  - Parasuraman and Colby (2015) have defined technology readiness, "as the people's propensity to embrace and use new technologies for accomplishing goals, both at home and the workplace." Porter (1985) have also posited that investments in Information Communication Technologies (ICT) leads a firm to acquire competitive advantage and superior firm performance.
  - Digital technology exploration (DTE) and Exploitation (DTEX): Argyres (1996) have defined these terms as "Exploration as technological capability broadening; exploitation as technological capability deepening.", in addition Atuahene-Gima (2005) report that, "Exploration is to invest resources to refine and extend its existing product innovation knowledge, skills and processes. Exploitation is to invest resources to acquire

entirely new knowledge, skills and processes." Hou et al., (2019) report that technology entrepreneurs that align themselves towards exploration and exploitation activities enjoy better firm performance in the long run.

Gil-Gomez et al. (2020); GOMEZ-TRUJILLO and GONZALEZ-PEREZ (2021) have pointed that digital transformation is a key element towards organization being more sustainable (environmentally, socially and financially).
Thus, on the basis of the above discussion, we hypothesize that:
H1: *Digital Transformation has a positive impact on entrepreneurial success (Firm Performance Sustainability Performance)?*

- **Dynamic Capabilities (DC)** Peteraf et al. (2003) define DC as, "Dynamic capabilities do not directly affect output for the firm in which they reside, but indirectly contribute to the output of the firm through an impact on operational capabilities" (2003, p. 999). Further, Zahra et al.'s (2006) defined DC as, "as the processes to reconfigure a firm's resources and operational routines in the manner envisioned and deemed appropriate by its principal decision makers. Dynamic capabilities are illustrated through a firm's activities which may involved product development, strategic decision making, and alliance management (Eisenhardt and Martin, 2000). Scholarship over the years have give many constructs to measure dynamic capabilities of a firm, such as Teece (2007) proposed sensing, seizing, and reconfiguration as constructs of dynamic managerial capabilities, while (Wang and Ahmed, 2007) have proposed Adaptive, Absorptive and Innovative Capabilities as the constructs of dynamic capabilities which have validated and measured by Khan et al. (2018) for Chinese SMEs. Thus, the current research uses the conceptualization of dynamic capabilities by Khan et al. (2018). The sub constructs are defined and conceptualized as follows:

– Adaptive Capability: Can be deined as a firm's ability to identify and commercialize new business opportunities (Hooley et al., 1998; Chakravarthy 1982; Miles et al., 1978).
– Absorptive Capabilities are about collecting external information, evaluate, and apply for commercial purposes (Cohen and Levinthal, 1990). Organizations that have a higher degree of ABC learn from their trading partners, collect information from the external operating environment, and convert this into firm-specific knowledge.
– Innovative Capability: IC is about developing new goods and services based on market demand (Wang and Ahmed, 2004). IC has many aspects, such as the development of new goods and services through new production methodologies, developing new market and supply sources. However, four issues that are considered critical by Miller and Friesen (1983) are the development of new goods and services, developing new production processes that produce new goods and services, risk-taking attitude of managers, and generating solutions.

Recent literature shows that dynamic capabilities positively influence firm performance Khan et al. (2018); Khalil and Belitski (2020). Also, Eikelenboom and Gjalt de Jong (2019); Nath and Agrawal (2020) have highlighted that dynamic capabilties have a postive impact on sustainability performance of a firm.
Thus, on the basis of the above discussion, we hypothesize that:
H2: *Dynamic Capabilities have a positive on impact entrepreneurial success (Firm Performance and Sustainability Performance).*

- Classical factors (CF) (Socio-Cultural and Economic Factors): Castaño et al. (2015) have reported that social, economic and cultural factors impact entrepreneurship activity. Shivangi and Bhatia (2023) have reported that for Indian entrepreneurs, socio-cultural factors are major factors that influence entrepreneurship success. In addition, CUERVO (2005) have also mentioned that economic environment (macro economic environment, financial environment, industry type) and Institutional environment (Govt. polices, Institutions) are also important determinants of entrepreneurship activity (performance and wealth creation). On a macro economic level, it has been reported by Roy and Goll (2005) that a nation's sustainability can be very well predicted by its socio-cultural and economic factors. We extent this finding to the case of entrepreneurship and we want to test the hypothesis that whether socio-cultural and economic factors influence the sustainability performance of entrepreneurs.

Thus, we posit that:
H3: *Classical factors (Socio-Cultural and Economic Factors) have a positive on impact entrepreneurial success (Firm Performance and Sustainability Performance).*

- Personal Factors (PF) (Entrepreneurial Education, Entrepreneurial Orientation, Personal Characteristics)

– Dickson et al. (2008) have reported that education programs directed towards entrepreneurial education have favourable outcomes for such businessmen in the form of improved firm performance. In addition, Rashid (2019) have reported that entrepreneurial education has positive outcomes for sustainability (environmental and social sustainability). Therefore, we would like to test this preposition in context of Indian entrepreneurs.

- Frese et al. (2002); Martens et al. (2018) have reported a positive association between Entrepreneurial Orientation and entrepreneurial success. Also, Nuseir and Aljumah (2022) have reported that entrepreneurial orientation plays a critical role in an SMEs' success in implementing sustainable entrepreneurship. Therefore, we would like to test this preposition in context of Indian entrepreneurs.
- Gomezelj and Kusˇce (2013) in their detailed review of literature on entrepreneurship report that founding reasons; and personality traits as important determinants of entrepreneurial performance. Therefore, we would like to test this preposition in context of Indian entrepreneurs. We also propose Personal characteristics also influence entrepreneurs sustainability performance, adoption of sustainability requires risk taking and being proactive when comes to adopting new practices and identifying new opportunities. Therefore, we would like to test this preposition in context of Indian entrepreneurs.

H4: *Personal factors (Entrepreneurial Education, Entrepreneurial Orientation, Personal Characteristics) have an impact on entrepreneurial success (Firm Performance and Sustainability Performance).*

Gender Differences

Sullivan and Meek (2012) and Artz (2016) have reported that gender differences play an important role in influencing entrepreneurship outcomes. Therefore, in light of these findings we would like to test the moderating role of gender between the relation of between the identified factors of entrepreneurship success.

H5: *Gender plays a moderating role between entrepreneurial success factors (digital transformation, dynamic capabilities, classic factors and personal factors) and Firm Performance and Sustainability Performance.*

Sustainability (SP) and Firm Performance (FP)

Goyal et al. (2013) and Goyal and Rahman (2014) have reported a positive association between sustainability performance and firm performance. Thus, in case of entrepreneurship we also posit that an entrepreneurs sustainability performance has a positive impact on their firm performance.

H6: *Sustainability performance of an entrepreneur impacts their firm performance.*

Entrepreneurial Success

We have conceptualized entrepreneurial success through two dimensions, Sustainability performance and firm performance. These two will be dependent variable of our study.

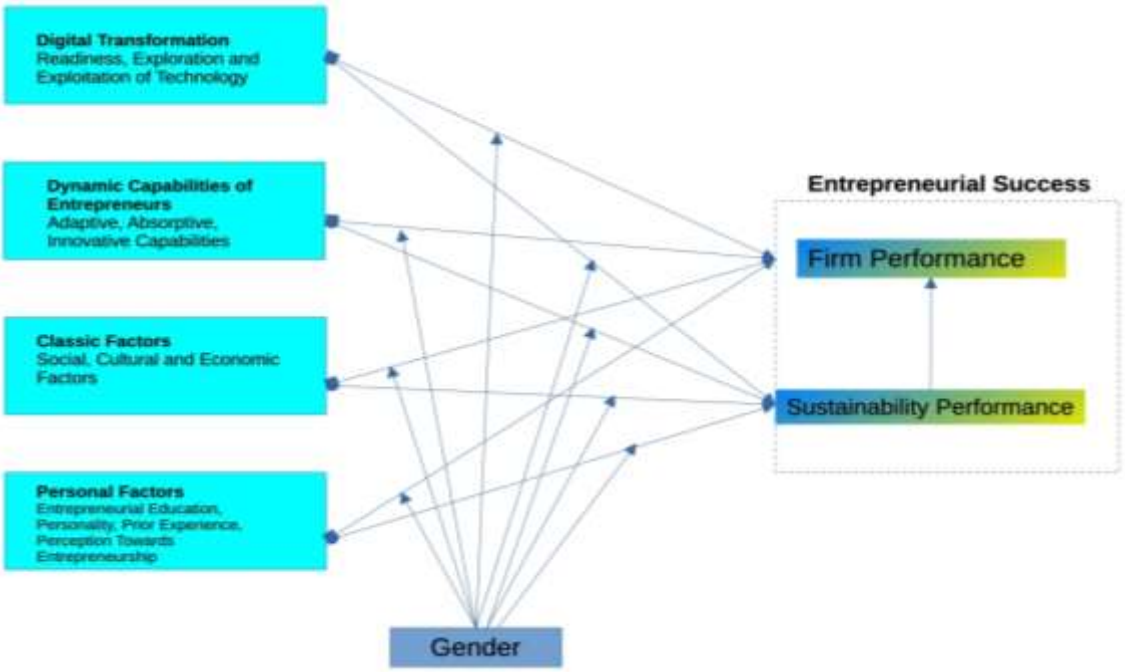

Fig. 1: Proposed Research Framework of the Study.

Research Methodology

The Survey

The research adopted a quantitative approach to assess entrepreneurial success among a targeted group of entrepreneurs. A cross-sectional survey method was employed to gather data from participants. The target

population comprised entrepreneurs operating in the Indian state of Uttarakhand with an annual turnover of at least 1 million Indian rupees. A purposive sampling technique was utilized to ensure that only entrepreneurs meeting the turnover criterion were included in the survey. This criterion was chosen to focus on entrepreneurs who have achieved a significant level of business activity and are inclined towards adoption of new technologies for improving business performance.

Potential participants were identified through various channels including business directories, industry associations, personal and profession contacts of the researcher as well as the host university and online platforms catering to entrepreneurs. Invitations to participate in the survey were sent via email or direct messaging, providing information about the research objectives and the eligibility criteria for participation. The participation was strictly voluntary and the respondents can withdraw anytime they like from the survey. The survey period lasted from the first week of August 2023 to the mid of December 2023. The respondents were ensured that their individual responses would be kept confidential and data their data would only be used to academic purposes. The collected data was treated as per the data management best practices. The respondents were asked to give their answers from the point of view of the proprietor of the business instead from a personal perspective.

A structured questionnaire was developed to collect data on various dimensions of entrepreneurial success (see literature review). The questionnaire was designed based on scales adapted for measuring in entrepreneurship from the available literature literature and was pre-tested with a small sample of entrepreneurs and academic experts to ensure clarity, relevance, and reliability of the measures.

The survey was administered electronically using Google Forms. Participants were provided with a survey link and were requested to complete the questionnaire at their convenience within a specified timeframe. Reminder messages were sent to non-respondents to maximize response rates (reminders sent at the end of September, Oct and Nov 2023).

Despite efforts to ensure the representativeness of the sample, the findings may be subject to certain limitations including self-reporting bias, sample homogeneity, and generalizability to broader populations. These limitations were acknowledged and discussed in the interpretation of the research findings. A valid sample of 450 responses were collected from the survey. In the sample, there were 255 males and 195 female entrepreneurs.

Measures Used

Table 1 summarizes the measures used and their sources.

Table 1: Measures Used

Construct and Sub-Constructs	Source
Digital Transformation	Jafari-Sadeghi et al., 2021
Dynamic Capabilities	Wang and Ahmed, 2007
Classical Factors	Castaño et al., 2015
Personal Factors	Kaseorg and Raudsaar, 2013 Dickson et al., 2008 Hallam and Zanella, 2017; Ajzen, 2002
Sustainability Performance	Nath and Agrawal, 2020
Firm Performance	Khan et al., 2018; Li et al., 2009

Data Analysis

Structural Equation Modelling (SEM) was initially utilized to conduct Confirmatory Factor Analysis (CFA) to establish the validity and reliability of the measurement model. CFA was performed to assess the fit of the observed variables to their respective latent constructs as specified in the theoretical framework. Model fit indices such as Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) were examined to evaluate the goodness-of-fit of the measurement model (Bryne, 2009). Following the validation of the measurement model, the scores of each latent variable were imputed using regression imputation, these imputed scores were used in the linear regression analysis to test the proposed research framework.

Validity and Reliability- CFA

Firstly, we want to assess the validity and reliability of the measurement model. CFA was performed to examine the extent to which the observed variables (indicators) adequately represented their respective latent constructs (factors) as hypothesized in the theoretical framework. DMC is taken as a second order construct with adaptive, absorptive and innovative capabilities as its first order constructs. Digital Transformation is also taken as a second order construct with technology readiness, exploration and exploitation as its first order constructs. Classical factors of entrepreneurship is also a second order construct with social, economic and cultural as its first order constructs. Lastly, personal factor is also a higher order construct with entrepreneurial education, prior experience and perception towards entrepreneurship as its first order constructs.

The following tables show the results of the CFA. The “std.all” column shows the standardized factor loadings as well as the standardized covariances between the variables.

Table 2: Factor Loadings

Construct	Item	Loadings
tech_readiness	tr1	0.814
tech_readiness	tr2	0.8262
tech_readiness	tr3	0.8256
tech_explor	tp1	0.797
tech_explor	tp2	0.7908
tech_explor	tp3	0.7857
tech_explo	te1	0.7888
tech_explo	te2	0.7986
tech_explo	te3	0.8374
DT	**tech_readiness**	**0.7806**
DT	**tech_explor**	**0.7079**
DT	**tech_explo**	**0.6855**
adaptive	ad1	0.8244
adaptive	ad2	0.8388
adaptive	ad3	0.8381
adaptive	ad4	0.8133
absorptive	ab1	0.778
absorptive	ab2	0.8052
absorptive	ab3	0.8092
innovative	i1	0.8021
innovative	i2	0.8308
innovative	i3	0.8525
dmc	**adaptive**	**0.7309**
dmc	**absorptive**	**0.617**
dmc	**innovative**	**0.7362**
social	s1	0.8105
social	s2	0.8213
economic	e1	0.8171
economic	e2	0.8114
economic	e3	0.8121
cultural	c1	0.8238
cultural	c2	0.7782
CF	**social**	**0.7488**
CF	**economic**	**0.7195**
CF	**cultural**	**0.7342**
education	ed1	0.8475
education	ed2	0.7893
education	ed3	0.8163
perception	pp1	0.8396
perception	pp2	0.7749
perception	pp3	0.8177
experience	ex1	0.8077
experience	ex2	0.791
experience	ex3	0.8095
PF	**education**	**0.725**
PF	**perception**	**0.7602**
PF	**experience**	**0.6965**
SP	sp1	0.7958
SP	sp2	0.8021
SP	sp3	0.8258
SP	sp4	0.7841
FP	f1	0.8974
FP	f2	0.8682
FP	f3	0.8725
FP	f4	0.9009

Validity and Reliability

From the table above we can see that all the first order factor loadings are statistically significant (p< 0.05). The Average Variance Extracted (AVE) for all the first order constructs is greater than (0.5). Internal consistency reliability of the latent constructs was evaluated using Cronbach's alpha coefficient (alpha > 0.7) and composite reliability (CR > 0.7). These reliability coefficients provided insight into the extent to which the items comprising each latent construct were internally consistent and reliable measures of the underlying concept. Also, we can see in the loadings table, the standardized covariances between the constructs do not exceed +-0.85, indicating no discriminant validity issues.

Table 3: AVE, CR (rhoC) and Alpha

	tech_readiness	tech_explor	tech_explo	adaptive	absorptive	innovative	social	economic	cultural	education	perception	experience	sus_performance	financial
alpha	0.8615	0.8337	0.8493	0.89976	0.8391	0.8671	0.7989	0.8544	0.7808	0.8579	0.8518	0.8446	0.8779	0.9335
CR	0.8617	0.834	0.8497	0.89975	0.8391	0.8662	0.7991	0.8545	0.7808	0.8593	0.8521	0.8447	0.8785	0.9353
AVE	0.6751	0.6263	0.6536	0.6887	0.6357	0.6845	0.6654	0.6618	0.6405	0.6672	0.6581	0.6446	0.6443	0.7835

Model Fit

The fit indexes such as CFI, TLI and RMSEA were used to judge the over all fir of the CFA model. From the tables below we can see that CFI obtained is 0.993, TLI is 0.992 and RMSEA is 0.0135. All these indexes are within their acceptable limits for a satisfactory fitting model (Byrne, 2009)*.

Table 4: CFA Model Fit

Fit Index.	Obtained Value.	Cut Off Value*
CFI.	0.993	0.90
TLI.	0.992	0.90
RMSEA.	0.0135	0.07

Hypothesis Testing

The paths of framework were analyzed using linear regression analysis to test the hypothesis of the current study also keeping in mind to study the gender differences. The identified and validated construct such as Digital Transformation, Dynamic Capabilities, Classical Factors, Personal Factors and Gender of the respondent were taken as independent variables, which Sustainability Performance and Firm Performance were the dependent variables. Gender acted as a moderator between the Independent variables and the dependent variables. The following two tables provide the results of the hypothesis testing. Firstly, all the independent variables Digital Transformation, Dynamic Capabilities, Classical Factors, Personal Factors and Gender were regressed on sustainability performance and then Digital Transformation, Dynamic Capabilities, Classical Factors, Personal Factors and Gender and sustainability Performance were regressed on Firm Performance.

Table 5: Regression of Digital Transformation, Dynamic Capabilities, Classical Factors, Personal Factors and Gender on sustainability Performance

Observations	Residual Std. Error	R^2	Adjusted R^2
450	0.7529	0.6505	0.6434

Predictors and Interactions	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	-0.09268	0.05448	-1.701	0.08962
DT	0.3956	0.06083	6.503	2.146e-10
Gender: male	0.1576	0.07223	2.181	0.02968
DMC	0.7109	0.06181	11.5	6.021e-27
CF	0.2923	0.06278	4.656	4.266e-06
PF	0.3926	0.06122	6.414	3.666e-10
Gender: DT	0.06125	0.07668	0.7988	0.4248

Predictors and Interactions	Estimate	Std. Error	t value	Pr(>|t|)
Gender: DMC	-0.02439	0.07975	-0.3058	0.7599
Gender: CF	0.09088	0.08205	1.108	0.2686
Gender: PF	-0.03623	0.07956	-0.4554	0.6491

Table 6: Regression of Digital Transformation, Dynamic Capabilities, Classical Factors, Personal Factors, sustainability Performance, gender on Firm Performance

Observations	Residual Std. Error	R^2	Adjusted R^2
450	1.018	0.6972	0.6896

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	-0.06533	0.07419	-0.8806	0.379
DT	0.3918	0.09084	4.313	1.988e-05
Gender: male	0.1058	0.0982	1.077	0.2819
DMC	0.4368	0.1086	4.021	6.812e-05
CF	0.07581	0.08952	0.8468	0.3976
PF	0.4079	0.09119	4.473	9.831e-06
SP	0.5904	0.09764	6.047	3.173e-09
Gender: DT	0.0427	0.1173	0.3639	0.7161
Gender: DMC	0.1035	0.1411	0.7338	0.4634
Gender: CF	0.01069	0.1191	0.08974	0.9285
Gender: PF	-0.08394	0.1182	-0.7103	0.4779
Gender: SP	0.07815	0.13	0.6014	0.5479

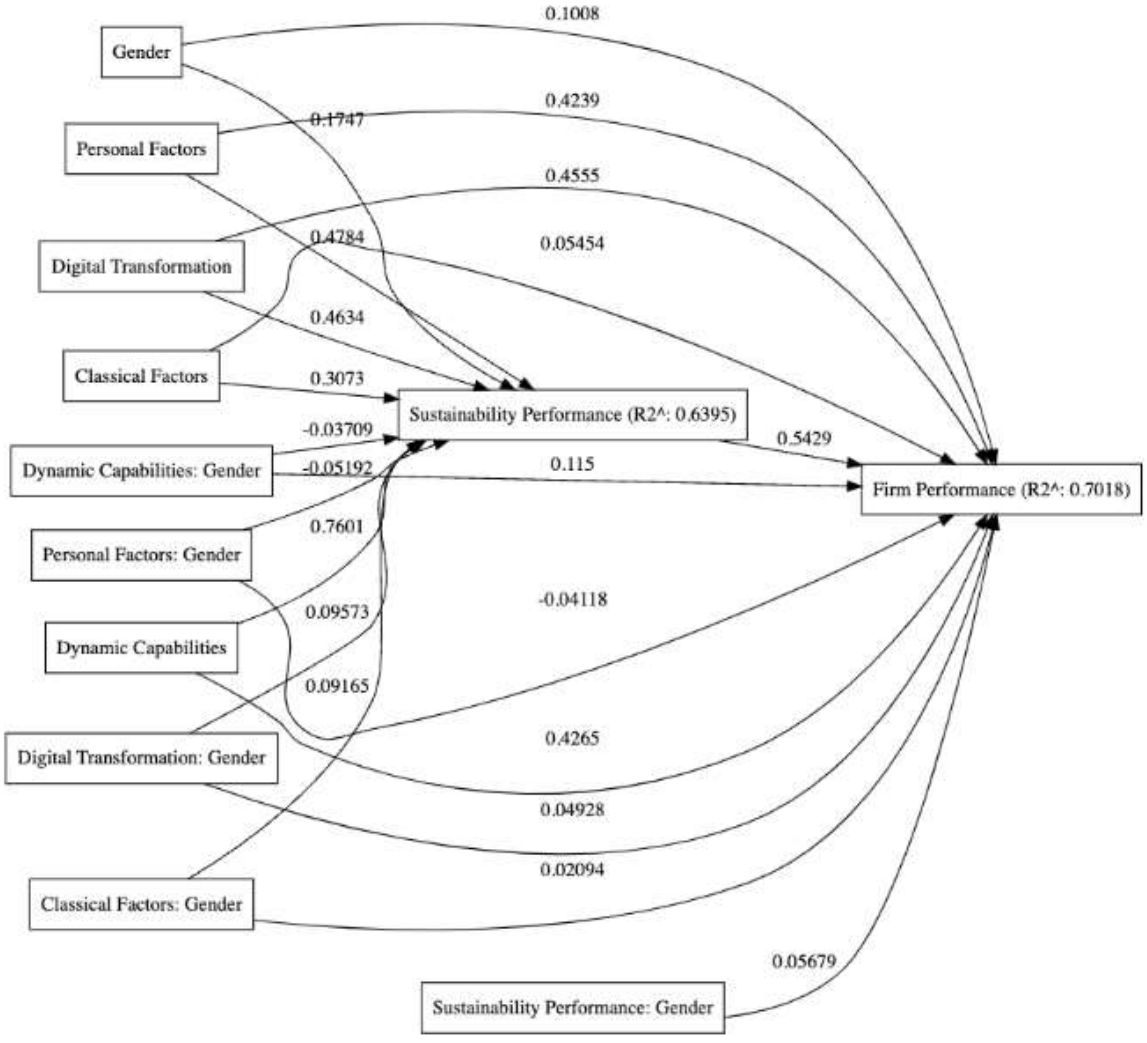

Fig. 2: Research Framework with Path Estimates.

Discussion

The present study explored the antecedents of entrepreneurial success, focusing on the impacts of digital transformation, dynamic capabilities, classical factors, personal factors, and gender differences among entrepreneurs in India. The findings provide a comprehensive understanding of how these variables influence sustainability performance and firm performance, contributing to the broader discourse on entrepreneurship in emerging markets.

Digital transformation (DT) is a critical driver of entrepreneurial success. The study confirms that substantial investments in ICT infrastructure, digital technology readiness, exploration, and exploitation significantly enhance firm performance and sustainability performance. These findings align with previous research (Sadeghi et al., 2021; GHI et al., 2021) that emphasizes the role of digital transformation in value creation and competitive advantage. Entrepreneurs who effectively leverage digital technologies can streamline operations, innovate product offerings, and expand market reach, thereby achieving superior performance.

Dynamic capabilities (DC) refer to a firm's ability to sense opportunities, seize them, and reconfigure resources to adapt to changing environments. The study supports the hypothesis that dynamic capabilities positively impact both firm performance and sustainability performance. Adaptive, absorptive, and innovative capabilities enable entrepreneurs to remain agile, innovate continuously, and respond to market shifts effectively (Wang & Ahmed, 2007; Teece, 2007). These capabilities are particularly crucial in volatile markets, allowing firms to maintain resilience and create barriers to entry for competitors.

Classical factors, including socio-cultural and economic factors, also play a significant role in entrepreneurial success. The study highlights that a conducive socio-economic environment, favourable government policies, and supportive cultural attitudes towards entrepreneurship enhance firm performance and sustainability. This finding is consistent with Castaño et al. (2015) and Shivangi and Bhatia (2023), who emphasize the importance of these factors in fostering entrepreneurship. In the Indian context, improving these classical factors could lead to more robust entrepreneurial ecosystems and higher rates of success.

Personal factors, such as entrepreneurial education, orientation, and personal characteristics, significantly impact entrepreneurial success. The study finds that entrepreneurial education enhances both firm performance and sustainability performance, corroborating findings by Dickson et al. (2008) and Rashid (2019). Entrepreneurial orientation, which includes risk-taking, proactiveness, and innovation, is crucial for the success and sustainability of entrepreneurial ventures (Frese et al., 2002; Martens et al., 2018). Personal characteristics, such as prior experience and perception towards entrepreneurship, also influence success, highlighting the need for targeted educational programs and support systems.

The study examines the moderating role of gender in the relationship between entrepreneurial success factors and outcomes. While digital transformation, dynamic capabilities, classical factors, and personal factors positively influence sustainability and firm performance, gender differences do not significantly moderate these relationships. This finding suggests that male and female entrepreneurs benefit similarly from these factors, although gender-specific challenges and opportunities may still exist. Addressing these nuances could further enhance the support for female entrepreneurs and promote gender equality in entrepreneurship.

The positive relationship between sustainability performance and firm performance underscores the importance of integrating sustainable practices into business strategies. Entrepreneurs who prioritize sustainability not only contribute to environmental and social goals but also achieve better financial outcomes. This aligns with the findings of Goyal et al. (2013) and Nath and Agrawal (2020), emphasizing that sustainable practices lead to long-term value creation and competitive advantage.

Implications

Investment in ICT Infrastructure: The study highlights the critical role of ICT infrastructure in entrepreneurial success. Policymakers should prioritize investments in digital infrastructure, ensuring widespread access to fast and reliable internet. This will enable entrepreneurs, especially in remote areas, to leverage digital tools for business operations.

Supportive Socio-Economic Environment: Creating a conducive socio-economic environment is essential. Government policies should focus on reducing bureaucratic hurdles, providing financial incentives, and fostering a culture that supports entrepreneurship. This includes improving access to funding, offering tax breaks, and facilitating easier business registration processes.

Promotion of Entrepreneurial Education: The positive impact of entrepreneurial education on firm performance and sustainability suggests that educational institutions should incorporate comprehensive entrepreneurship programs. These programs should cover not only business fundamentals but also the latest technological advancements and sustainability practices.

Gender-Specific Support Programs: While the study found that gender does not significantly moderate the relationship between entrepreneurial success factors and outcomes, gender-specific challenges still exist.

Policymakers should develop support programs that address these challenges, such as mentorship programs for female entrepreneurs, access to funding, and training programs that cater specifically to women's needs.
Emphasis on Digital Transformation: Businesses should prioritize digital transformation initiatives. This includes investing in ICT infrastructure, adopting new digital technologies, and fostering a culture of innovation. By doing so, firms can improve their operational efficiency, product offerings, and market reach.
Development of Dynamic Capabilities: Firms should focus on enhancing their dynamic capabilities, particularly adaptive, absorptive, and innovative capabilities. This can be achieved through continuous training and development programs, fostering a culture of agility and innovation, and maintaining a proactive approach to market changes.
Integration of Sustainable Practices: The positive correlation between sustainability performance and firm performance underscores the importance of integrating sustainable practices into business strategies. Firms should adopt environmentally friendly practices, engage in corporate social responsibility initiatives, and ensure good governance to enhance long-term value creation.
Encouraging Entrepreneurial Orientation: Companies should cultivate an entrepreneurial orientation among their employees, encouraging risk-taking, proactiveness, and innovation. This can lead to the development of unique solutions, new market opportunities, and a competitive edge in the industry.
Curriculum Development: Educational institutions should develop curricula that cover the latest trends in digital transformation, dynamic capabilities, and sustainability. This will equip future entrepreneurs with the knowledge and skills needed to succeed in a rapidly evolving business environment.
Practical Training Programs: Incorporating practical training programs, such as internships, workshops, and live projects, can provide students with hands-on experience. This exposure to real-world challenges and opportunities will better prepare them for entrepreneurial ventures.
Research and Development: Academic institutions should encourage research in the fields of digital transformation, dynamic capabilities, and sustainable practices. Collaborative research initiatives with industry partners can lead to the development of innovative solutions and best practices.

Conclusion

This study provides valuable insights into the antecedents of entrepreneurial success in India, focusing on digital transformation, dynamic capabilities, classical factors, personal factors, and gender differences. The findings highlight the critical role of digital transformation and dynamic capabilities in enhancing firm performance and sustainability. Socio-cultural and economic factors, along with personal attributes and education, also significantly contribute to entrepreneurial success. The study's implications are manifold. Policymakers should focus on improving ICT infrastructure, fostering supportive socio-economic environments, and promoting entrepreneurial education to enhance entrepreneurial ecosystems. Industry actors should prioritize digital transformation and dynamic capabilities to remain competitive and sustainable. Future research could explore the specific challenges faced by female entrepreneurs and develop tailored interventions to support their success. Additionally, longitudinal studies could provide deeper insights into the long-term impacts of these antecedents on entrepreneurial success.
In conclusion, fostering a supportive environment for entrepreneurship through strategic investments in technology, education, and dynamic capabilities is crucial for enhancing entrepreneurial success and achieving sustainable economic growth in India.

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