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TECHNOPRENEURSHIP, ICT CAPABILITIES, STARTUP GROWTH: EVIDENCES FROM NEW TECHNOLOGY BUSINESSES IN TAMILNADU

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ABSTRACT:
One of the main drivers of technological growth in any country is technopreneurship. Its contribution to economic development and growth cannot be overstated. As a result, this study looks into the connection between technopreneurship and the expansion of new tech firms in Tamilnadu. Its goal is to propose remedies for Tamil Nadu's inadequate supply of technopreneurship. For this study, the quasi-experimental research design's cross-sectional survey method was used. A population of 376 was acquired for this study, a sample size of 132 was obtained using the Taro Yamen formula. Information from the respondents was gathered using a well-structured study questionnaire. Information was gathered from 132 respondents using a straightforward random selection procedure; 110 of these questionnaires were judged appropriate for the investigation. The Spearman rank-order correlation coefficient was the data analysis approach. One of the main conclusions of this study is that respondents strongly agree that technopreneurship through ICT optimism, flexibility, and creativity boosts the expansion of tech enterprises in Tamil Nadu. Developing ICT abilities and being able to adjust to technology advancements while producing novel software, goods, and answers to global issues are some of the recommendations made for technopreneurs.

Keywords*:*
Innovation, Self-Efficacy, Market Penetration, Technopreneurs, and Technodaptability

INTRODUCTION

The global entrepreneurial revolution is accelerating as companies and countries continue to benefit from the advantages and opportunities that entrepreneurship provides for developing and expanding economies around the world. The internet has created a wide range of opportunities and businesses, with tech companies and technopreneurs accounting for seven of the top ten corporations worldwide (Adeoti, 2019). Tamilnadu has seen its share of tech startups because of the millions of dollars that have been invested in the economy as a result of technological innovation and invention that have made notable appearances on the global scale.

Technopreneurship is essential since it boosts economic efficiency, brings innovation to the market, creates new jobs, and maintains current job levels. Some cities throughout the world have also seen an increase in technopreneurship. Since then, multinational IT corporations have started promoting new tech firms and startups, and nations are establishing tech hubs that entice business owners to engage in IT-related or, in certain situations, other high-tech endeavors. (Koe, Alias, Ismail, & Mahphoth, 2018; Harlanu & Nugroho, 2015; Machmud, Suwatno, Nurhayati, Aprilianti, & Fathonah, 2019) These tech hubs are exclusively focused on the growth of technopreneurs. Even yet, there is proof of tech clusters like Leadspace in Abuja, Riv-Tech Creek in Rivers State, the computer village in Lagos, and other locations in Tamilnadu. They exist independently of the government. It is impossible to overstate how crucial it is to build technopreneurship and employ technology in order to improve customer service, efficiency, and productivity (Prasetyo & Sutopo, 2017; Gilchrist, 2016).

In business, management, and economic sciences literature, the relationship between technology, entrepreneurship, and the subsequent expansion of Micro, Small, and Medium Enterprises (MSMEs) in a particular economy has long been given top priority. In the current world, where economic challenges have merged with heightened competition, technopreneurship has emerged as a solution to unleash creativity and maintain long-term competitive advantage, reflecting the significance of creative high-tech and entrepreneurial skills brought about by globalization (Hafezieh et al. 2011; Ngoasong 2015). The word "technopreneurship," which describes new or potential businesses that are based on technology, was later created as a result of this necessity to integrate the pursuit and need for technology

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with other aspects of entrepreneurship. As a developing country, Tamilnadu has long investigated and developed policy frameworks and tactics to encourage the establishment of technology-based innovative ventures and to provide a bright future in the global economy (Adeoti, 2019).

Numerous problems affect the idea and development of technopreneurship. The organizational creativity technique, according to Okorie, Kwa, Olusunle, Akinyanmi, and Momoh (2014), is a process of mainstreaming innovation in order to solve numerous problems and put the ideas into practice in order to satisfy the worldwide market. It also stresses combining entrepreneurship with technology. Because they leverage cutting-edge technology to create innovative products through commercialization, the majority of technopreneurs start technology- based firms (Alahakoon & Somaratne, 2018a). These technopreneurs may possess the technological know-how required for the business to succeed. According to Dutse, Ningi, and Abubakar (2013), technopreneurs are technology-based business owners that combine their entrepreneurial abilities with technological know-how and production aspects to create profitable ventures.

Generally speaking, technopreneurship is entrepreneurship. The distinction is that technopreneurship involves delivering a cutting-edge, high-tech product in a sophisticated manner (Aldrich & Jennings, 2003; Tung, 2011). Globally, new tech firms are recognized as crucial elements needed for every country's socioeconomic transition (Kamarudin and Sajilan, 2013). New tech companies in Tamilnadu are well-positioned to raise capacity utilization in major industries, boost value addition to the supply of raw materials, improve per capita income, and absorb up to 80% of jobs. Based on the aforementioned, this study was carried out to offer trustworthy and dependable insights into the dynamics of the elements that might be in charge of the sector's expansion and development in Tamilnadu.

Statement of the problem

It is impossible to overstate the importance of technopreneurship in any country. They play a significant role in every country's technological development, which creates jobs for the unemployed graduates in third-world countries like Tamilnadu. There had been a dearth of technoprenuership in Tamilnadu. When compared to what is occurring in the advanced economy, this was determined to be the result of insufficient technical know-how (Sjoer & Goossens 2014). Due to numerous obstacles, Tamilnadu has been a developing country, which contributes to its underdevelopment. In order to create jobs and raise the standard of living for the majority, Tamilnadu needs to see a rise in technopreneurship (Wang, 2014). It is regrettable that the digital ecosystem in Tamilnadu seems to be facing obstacles that hinder its expansion, given that the expansion of tech companies can help address many of the state's social issues. The development of technopreneurs in the nation is also being hampered by a number of problems, including inadequate power supplies, bad infrastructure, a lack of skilled labor, restricted access to markets and financing, low absorption of research and technology, and poor infrastructure (Dutse, Ningi, & Abubakar, 2013). To thrive in the difficult Tamilnadu business environment, aspiring technopreneurs must be well-prepared.

Any country's economic progress greatly depends on the expansion and development of new technology businesses. The low degree of technopreneurship and the rise of new tech businesses in Tamilnadu, however, may be the reason why the state's tech ecosystem has not yet realized its full potential (Dessyana & Riyanti, 2017; Nwankwere, Akpa, Ojo, et al., 2021). Technopreneurship typically requires a large initial investment, and the majority of Tamilnadu's tech enterprises lack the technical know-how to use cutting-edge technologies. Finally, despite the fact that technopreneurship has been the subject of numerous studies, not a single one has attempted to identify the relationship between technopreneurship and the expansion of new tech enterprises. The study's foundation is the significance of technopreneurship in the development of new tech firms in Tamilnadu.

Research Objective

1. Define the connection between market penetration and ICT self-efficacy.
2. Determine how market penetration and adaptability are related.
3. Ascertain how innovation and market penetration are related.

Research Question

1. What connection exists between market penetration and ICT self-efficacy?
2. What connection exists between market penetration and adaptability?

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3. Do market penetration and innovation have a connection?

Research Hypotheses

Ho1. ICT self-efficacy and market penetration do not significantly correlate. Ho2. Adaptability and market penetration do not significantly correlate.
Ho3. Innovation and market penetration do not significantly correlate.

Theoretical Review Resource-Based Theory

According to this theory, resources that are unique, non-replaceable, implicit, and synergistic lead to sustained corporate performance (Al Ansari, 2014). The internal sources of a company's long- term competitive advantage are explained by the resource-based theory; hence, managers must be able to pinpoint the essential resources that propel performance (Kraaijenbrink, Spender & Groen, 2010). Human traits, knowledge, abilities, and skills, as well as organizational technology, procedures, patents, networks, and social ties with customers, can all be considered forms of intellectual capital, which is a resource that can enhance business success. These are all crucial strategic assets or resources that the company requires in order to be creative and boost its skills and talents (Dorf & Byers, 2008; Martinez-Roman, Gamero & Tamayo, 2011).
Additionally, these organizational capabilities are developed by ongoing research and development and can be used to enhance future production possibilities. With continual use, these capabilities become more robust and challenging for competitors to copy (John, Maurice & Joseph, 2013). According to Teece (2010), the resource-based view contends that in order to meet customer needs by expanding current endeavors or starting new ones, businesses must use resources (i.e., capabilities and competencies) and complete tasks quickly and effectively in order to seize new opportunities and threats.

Conceptual Review Technopreneurs

The process of combining technological expertise with entrepreneurial abilities is known as technopreneurship. By establishing a new organizational structure and using technology to utilize new raw materials, a technopreneur disrupts the current economic order and goes one step further to launch new goods and services (Paramasivan, 2016; Adeoti, 2019). Technopreneurship is a relatively recent term that is seen as a genuine source of economic power in both emerging and knowledge- based nations today. There is a vast amount of literature on the idea of entrepreneurship that explains the various opinions of various academics. Most people agree that the idea portrays an entrepreneur who makes unconventional choices, is fiercely competitive, innovative in technology, and takes risks in order to generate a product by combining resources like land, labor, and capital (Machmud et al., 2019). In the context of this study, entrepreneurs who integrate technology and entrepreneurial skills are referred to as technopreneurs. Nwankwere et al. (2021) and Nwaobi (2012) define them as "high technology entrepreneurs," "technical entrepreneurs," and "technology-based entrepreneurs." Because of its strong connection to technology, technopreneurship is important and can contribute significantly to a country's competitive edge. Today's world has changed due to technology, which has greatly simplified living. Utilizing tools, systems, and organizational techniques to solve issues or deliver services is known as technology. From entrepreneurship for financial gain to social entrepreneurship, entrepreneurship has evolved throughout time to become technopreneurship. Combining technological expertise with entrepreneurial abilities is known as technopreneurship (Ajjan et al., 2019; Moemenam et al., 2017). To put it simply, a technopreneur is a tech-savvy businessperson who uses technology to further their business. One could think of technopreneurship as a branch of entrepreneurship. Technopreneurship, according to Selladurai (2016), is the process of combining entrepreneurial abilities and skills with technological know-how. In order to achieve satisfactory economic performance, technopreneurship is a method that uses organizational creativity and innovation to solve organizational problems (Fowosire, Idris, & Elijah, 2017). Accordingly, technopreneurs are people who operate like entrepreneurs and think like engineers (Paramasivan & Selladurai, 2017). Technopreneurship was defined by Jusoh and Halim (2006) as technical entrepreneurs or technology-based entrepreneurs who are represented by start-ups, small and medium-sized businesses (SMEs), and seed level businesses in the multimedia and information and communication technology (ICT) sectors. Thus, technopreneurship can be defined as the fusion of entrepreneurship with technology for sustainability and economic growth. Finding contemporary technologies and even generating technical opportunities through the promotion of for-profit goods and services are both components of technopreneurship (Blanco, 2007). Both freshly started and established businesses use technopreneurship equally, and it is also essential to the growth, differentiation, and competitive advantage of businesses. (Bailetti, 2012). According to Tajeddini (2010),

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technopreneurship is a tactic used by businesses to maintain and improve the sustainable aspects of their competitive advantages.

ICT Self-Efficacy

ICT self-efficacy refers to an entrepreneur's capacity to use information technology to impact how their business is run. According to Ajjan, Crittenden, and Goneos-Malka (2019), an entrepreneur can have a significant impact on users' adoption of such information platforms. A person's assessment of his or her computer and internet skills is known as ICT self-efficacy (Crittenden, Crittenden, & Ajjan, 2019; Alahakoon & Somaratne, 2018a, 2018b.). Computer and internet self-efficacy are the two capability areas that make up ICT self-efficacy (Papastergiou, Gerodimos, & Antoniou 2011). According to Dorf and Byers (2008), ICT self-efficacy is a crucial component of successful technopreneurs' behavior that promotes entrepreneurial learning. It also has a significant impact on business performance and growth and motivates people to pursue knowledge in order to accomplish their objectives (Papastergiou et al., 2011). ICT Self-Efficacy has a significant impact on learning. outcomes in technopreneurship

According to He and Freeman (2010a), ICT self-efficacy is a collection of beliefs about one's competence to use a computer to accomplish tasks; these beliefs can influence behavioral intention directly or indirectly through attitude. It has been discovered that people's views are influenced by their level of ICT self-efficacy, especially when it comes to information systems (He & Freeman 2010a).

Applying this to our situation, people who are able to work with a variety of software programs and manage typical computer issues are more likely to think well of themselves and have a positive attitude about starting a new company.

ICT self-efficacy may predict opportunity recognition and self-employment intention, according to Krueger, Reilly, and Carsrud (2000). Thus, it can be claimed that entrepreneurial intention is influenced by ICT self-efficacy (Ajjan et al 2019). People with strong ICT knowledge and abilities, for example, are more inclined to believe in their capacity to launch a new business. According to a different viewpoint, entrepreneurial intention can be explained by perceived feasibility, which is strongly related to self-efficacy and refers to an individual's ability to complete a particular activity (Xiao & Fan, 2014). This idea can be broadened to encompass those who are proficient with computers and a variety of software programs. One's job interests and decisions are also frequently influenced by general ICT self-efficacy, a subset of computer self-efficacy (He & Freeman, 2010a).

Adaptability

Searching for new technologies, concepts, and techniques that could enhance or modify a process routine to meet the demands of the technological world is a necessary part of adaptability. Processes that are founded on knowledge gained from an earlier activity are a component of adaptability. Although adaptability aids in reproduction, it also aids in enhancing current models to satisfy customer requests and expectations (Zaheer, Yvonne, & John, 2019). Adaptability emphasizes how crucial it is to research trends and technology in relation to goods and services in order to provide creative solutions to satisfy present demands. According to Stellios, Dimosthenis, Angeliki, and Katerina (2020), adaptability is the capacity to confidently and fearlessly learn and understand new technologies.

To thrive in this technologically evolving world, one must be adaptable. In today's job, it is a highly valued ability. While proficiency with modern technology is necessary, people also need to be more up to date on the newest trends. They must have the flexibility to quickly adjust to new technologies (Kuratko, Jeffrey, & Jeffrey 2015). In order to stay up with the rapid advancements in technology, people need to become increasingly adaptive. Technological adaptability is something that may be studied, taught, learned, and expanded. There are other markets with room to expand in this area because Technodaptability has only touched on it in passing (Suryaningrum, Billy, & Corry, 2019).

The recovery of the economy will be fueled by entrepreneurial abilities. In order to engineer the future of an individual, an organization, a country, and the planet, technopreneurship is a process of synthesis rather than a product. Decision-making procedures and strategic directions are become increasingly complicated and demanding. This calls for on-site training and professional development programs to create strategic thinkers who will possess the abilities and adaptable tactics need to thrive in a world that is changing quickly

Innovation

The use of new technologies within an organization is known as innovation. Since both are thought to

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have an impact on technological advancement in the design, manufacture, and marketing of goods and services, academics typically discuss innovation in connection with entrepreneurship (Jonsson & Rudberg 2017). Innovation is the process of developing new procedures and methods that may not be immediately apparent to consumers but add substantial value to the provision of the goods and services that they need. "Innovation consists of the generation of a new idea and its implementation into a new product, process, or service," according to Ndofirepi (2020), "which leads to the creation of pure profit for the innovative business enterprise as well as the dynamic growth of the national economy and the increase of employment." It is crucial to remember that while creativity entails coming up with new ideas, innovation entails bringing those ideas to market. Innovation is a lengthy and cumulative process that encompasses many organizational decision-making processes, from the ideation phase to the implementation phase (Ahlin, Drnovšek, & Hisrich, 2014).

New concepts are created and marketed through the implementation phase, leading to the creation of a new process or marketable product with associated cost savings and productivity gains. "Entrepreneurial firms are an engine of innovation and technological progress, and they are likely to be responsible for a substantial portion of productivity and employment growth," according to Caggese (2012). Technopreneurs are thought to have access to capital-intensive technology that generates output and is vulnerable to external idiosyncratic shocks to its profits (Gundry & Kickul, 2014; Dessyana & Riyanti, 2017). Technological innovation, product innovation, process innovation, and business innovation are some of the subcategories of innovation.

Since entrepreneurial businesses are a driving force behind innovation and technical advancement and are probably accountable for a significant amount of productivity and job growth, this is the essence of technopreneurship. In technopreneurship, innovation is essential. According to Lee and Narjoko (2015), innovation is the process or system of introducing products, business endeavors, or organizational processes. After discovering that an entrepreneurial mindset helped bring technology and products to market more quickly (Petti & Zhang, 2011; Dolatabadi & Mohammad, 2013), Korneliussen and Clausen (2012) suggested that entrepreneurship aids in the development and commercialization of technology and products through venture incubation.

Growth

Since the earliest writings on entrepreneurship and economic development, there has undoubtedly been discussion in the literature over the idea that technopreneurship and business growth are strongly and favorably correlated. Increasing the number of technopreneurs, according to experts, boosts business growth because of their abilities and propensity for innovation (Dejardin, 2000; Nunes, Zélia, & João, 2013). In a given economy, their capacity to innovate is typically demonstrated by the introduction of new, unfamiliar goods and services, new quality, a new production method, the opening of a new market, and the acquisition of a new source of raw material or other input supply (Wainaina, & Oloko (2016). In spite of market uncertainties and other obstacles, entrepreneurs who base their business on technology are clearly able and willing to practically perceive and create new business opportunities. This ability and willingness ultimately affects and renews business activities, not only within their business units and industries but also within the economy in which they are located (Alvarez & Barney, 2007).

Growth is defined as the result of an organization's efforts to expand and improve quality. According to Dobbs and Hamilton (2007), it is described as a change in size over a given time period. Growth is the outcome of rising consumer demand for goods and services, which boosts sales and, in turn, leads to expansion through the purchase of new goods in response to market demand. Achtenhagen, Naldi, and Melin (2010) state that an increase in revenue, work strength (number of people), profit, assets, enterprise value, internal development, etc., can all be used to gauge growth. Additionally, according to Davidsson, Achtenhagen, and Naldi (2010), expansion in the context of technological enterprises may not be associated with new markets.

Moreover, growth can also take the form of vertical growth, the integration of a portion of the value chain, or non-related diversification, where a company enters a market unrelated to the technology it uses (Wainaina & Oloko, 2016; Njomo & Margaret, 2016). The coupling of market and product through market entry may be associated with another form of growth. According to Brush, Ceru, and Blackburn (2009), growth includes branch expansion, expansion into new markets and clientele, expansion into new product and service categories, fusions, acquisitions, and geographic expansion.

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These authors contend that growth is mostly the result of specific dynamics that entrepreneurs create in order to continuously build and rebuild their businesses and the market. Growth is a socially created component; expansion or development in the environment is the outcome of ongoing dynamism because entrepreneurs' growth intents fluctuate due to their ongoing assessments and reassessments as agents. It can lead to the company moving to a different location and then relocating there. The "growth dilemma" is what it is (Davidsson et al., 2010).

Market Penetration

The goal of market penetration is to increase a company's sales of its current goods and services in an existing market. Nathan (2013). Increasing the usage or purchase rate of current consumers and drawing in new ones are both components of market penetration. It is frequently accomplished by stepping up efforts through aggressive promotion, more thorough distribution, and competitive pricing. As a result, customers choose the company's products over those of its rivals. One benefit of this is that it keeps a business from depending too much on its current products (Dugguh, Isaac, & Oke, 2018; Susmitha, 2014). It can help the company grow and expand, and in the event of significant environmental changes, it can also serve as insurance against possible catastrophes. It includes the opening introducing new items into market segments that are unfamiliar to the business, or the product may be new to the business but existing on the market (Okundaye, Fan, & Dwyer, 2019).

The focus of market penetration is on current items for current markets. This entails the company trying to boost sales in its current market. A company needs to understand what initially made the product effective in order to successfully penetrate the market (Okundaye et al., 2019). This focuses more on sales of current products and markets. According to Ajagbe & Ismail (2014), value creation is achieved by a coordinated effort that results in increased market penetration or faster expansion of innovative products and services using technology capacity. Technopreneurs draw innovation and high-tech companies, build a brand for the company and the area in which it operates, and aid in economic growth and market penetration, both domestically and internationally.

The process of mainstreaming innovation in resolving various issues and putting the ideas into practice to satisfy the global market is what Okorie, Kwa, Olusunle, Akinyanmi, and Momoh (2014) define as the market penetration technique. It also stresses combining entrepreneurship with technology. Because they leverage cutting-edge technology to create innovative products through commercialization, the majority of technopreneurs start technology-based firms. The technological expertise needed for the company's success may be possessed by these technopreneurs. They continuously strive to redefine the dynamic digital economy and go through an organic process of perpetual progress. Technopreneurship aims to assure the growth and survival of a firm by supplying its product in an innovative, high-tech manner (Aldrich & Jennings, 2003; Tung, 2011).

Empirical:

Yusuf, Lawal, and Festus (2019) evaluated the relationship between business purpose and technopreneurship education. Undergraduate students enrolled in Kwara State's postsecondary educational institutions make up the study's population. 367 students were chosen using two sample strategies: stratified sampling and multi-stage sampling. To gather pertinent data for the study, instruments called the "Technopreneurship Education and Business Intention Questionnaire (TEBIQ)" were modified. The data was analyzed using Partial Least Square (PLS) software and the Statistical Packages for Social Sciences (SPSS) software. In particular, PLS was utilized to assess the relationship between the study's independent and dependent variables, while SPSS was utilized for data screening. The findings indicate that while the utilization of internet resources favorably impacted students' business ambition, entrepreneurship courses positively benefited students' Yusuf, Lawal, and Festus (2019) evaluated the relationship between business purpose and technopreneurship education. Undergraduate students enrolled in Kwara State's postsecondary educational institutions make up the study's population. 367 students were chosen using two sample strategies: stratified sampling and multi-stage sampling.

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while SPSS was utilized for data screening. The findings indicate that while the utilization of internet resources favorably impacted students' business ambition, entrepreneurship courses positively benefited students'. One of the suggestions is that the government implement a flexible strategy to support the growth of technopreneurship in Tamilnadu. In order to boost the economy and raise living standards in Tamilnadu, they should try to recoup all of the money that was taken from dishonest leaders and use it to expand the supply of technopreneurship.

Using multivariate analysis of variance to demonstrate causal effects and Pearson correlation to establish the relationship between the variables, Dutse, Ningi, and Abubakar (2013) investigated the role microfinance banks can play in fostering technopreneurship and growth among micro, small, and medium-sized enterprises in Tamilnadu. There is a high positive correlation between the variables, according to the coefficient results as well as a noteworthy causal relationship between the two criterion variables and the predictor variable. Therefore, it is advised that establishing advantageous financial conditions for business owners will accelerate the growth of technopreneurship and the ensuing expansion of Tamilnadu's firms.

METHODOLOGY

This study used a cross-sectional survey research design. This is due to the fact that it is a fact-finding method that emphasizes people. Those who are technopreneurs in Tamilnadu's technology sector are part of the target population. Three IT businesses were chosen from each of the six geopolitical zones, totaling eighteen. A total of 376 chief operating officers, chief technical officers, and staff were chosen from these businesses. The Taro Yamane formula was used to determine a sample size of 132. A variety of existing literature was used to adapt the questionnaire. The Likert scale rating model was used as the data analysis technique, and the questions were organized using a five-point rating system of 2.5 Bench Mark, with 5 points for strongly agreeing (SA), 4 points for agreeing (A), 3 points for being undecided (U), 2 points for disagreeing (D), and 1 point for strongly disagreeing (SD). Therefore, a mean of 2.5 or higher indicates agreement, whereas a mean of less than 2.5 indicates disagreement. The association between the aspects of technopreneurship and the expansion of new tech enterprises was evaluated using SPSS Version 27.

4.0 RESULT

Of the 132 surveys that were issued, 110 were correctly completed, representing 89%, and 124 were retrieved, or 94%. These 110 (89%) were therefore legitimate and appropriate for the study. Others that weren't filled out correctly were thrown away as invalid. According to the demographic distribution of survey participants, 77.8% of them were men and 22.3% were women. This suggests that men predominate in the tech sector. Additionally, the age distribution of the respondents showed that the majority of those in the tech business are between the ages of 26 and 35 (31.3%), followed by those between the ages of 36 and 45 (28.0%), and those under or equal to 25 years old representing 22.4% and, finally, 18.1% of people over or equal to 46 years old. This demonstrates how young people control Tamilnadu's tech sector. Finally, the distribution of educational qualifications reveals that a significant portion of respondents—49.6%—have a bachelor's or high school diploma as their highest degree. These are followed by those with an OND or its equivalent, who make up 20.7% of the sample, those with an O-level, who make up 16.3%, and those with an MSc or its equivalent, who make up 13.3%. This suggests that young people (as shown by their age) still aspire to enter the IT ecosystem regardless of their level of education.

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Respondents Demographic Information

Variable	Item	Frequency	Percent (%)
Gender	Male	189	77.8
	Female	64	22.3
Age	<= 25 years	33	22.4
	26 – 35 Years	88	31.3
	36 – 45 Years	44	28.2
	>= 46		18.1
Educational Qualification	O'Level	39	20.8
	OND	134	16.3
	BSC/HND	80	49.6
	MSc		13.3

Test of Hypotheses

Ho1: There is no significant relationship between ICT Self- Efficacy and Market Penetration.

Correlations

ICT Self-Efficacy Market Penetration

Spearman's rho	ICT Self-Efficacy	Correlation Coefficient	1.000	.581**
		Sig. (2-tailed)		.001
		N	110	110
	Market Penetration	Correlation Coefficient	.581**	1.000
		Sig. (2-tailed)	.001	.
		N	110	110

**. Correlation is significant at the 0.01 level (2-tailed). SPSS output, Version 27

The findings indicate a strong correlation between market penetration and ICT self-efficacy. A statistically significant moderately positive correlation coefficient value (rho =.581**, p =.001 < 0.05) was found between the variables, indicating a substantial association between them. We conclude that there is a strong correlation between ICT self-efficacy and market penetration, rejecting the null hypothesis (Ho1).

Ho2: There is no significant relationship between Adaptability and Market Penetration

Adaptability and Market Penetration Correlations

Spearman's rho	Adaptability	Correlation Coefficient	1.000	. 467**
		Sig. (2-tailed)		.000
		N	110	110
	Market Penetration	Correlation Coefficient	.467**	1.000
		Sig. (2-tailed)	.000	.
		N	110	110

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**. Correlation is significant at the 0.01 level (2-tailed). SPSS output, Version 27
The findings indicate a strong but somewhat favorable correlation between market penetration and adaptability. Adaptability and market penetration were found to have a strong positive correlation coefficient value that was statistically significant (rho =.467**, p =.000 < 0.05), indicating a substantial association between the variables. We conclude that there is a substantial correlation between safety adaptability and market penetration, rejecting the null hypothesis (Ho2).

Ho3: There is no significant relationship between Innovation and Market Penetration

Correlations

Innovation				Market Penetration
Spearman's rho	Innovation	Correlation Coefficient	1.000	. 574**
		Sig. (2-tailed)		.000
		N	110	110
	Market Penetration	Correlation Coefficient	.574**	1.000
		Sig. (2-tailed)	.000	.
		N	110	110

**. Correlation is significant at the 0.01 level (2-tailed). SPSS output, Version 27
The results show that there is a significant relationship between the variables. A positive significant relationship between innovation and market penetration was reported, and this relationship was statistically significant (rho =.574**, p =.000 < 0.05 alpha value). As a result, we declare that there is a substantial correlation between innovation and market penetration and reject the null hypothesis (Ho3).

Discussion of findings

Examining the relationship between technopreneurship and the expansion of new tech enterprises is the second research goal. Three hypotheses were developed in order to accomplish the research goal. According to the first hypothesis, there was no correlation between market penetration and ICT self-efficacy. The first hypothesis's results show that ICT self-efficacy in technopreneurship affects new tech companies' growth and market penetration. The present findings contradict the resource-based-human capital theory of entrepreneurship, which suggests that two fundamental perspectives—education and experience—can be used to understand entrepreneurship (Clausen & Korneliussen 2012; Shane & Eckhardt, 2003). This is because it is expected that the knowledge gained from both experiences will and formal ICT education implies a resource that is widely dispersed among attributes and is, in fact, essential to comprehending changes and the use of technology in business. According to the second hypothesis, market penetration and adaptability did not significantly correlate. The second hypothesis's findings indicate that technopreneur adaptability affected their degree of market penetration, which is a factor in growth. This is consistent with the findings of Mursityo, Astuti, and Suharsono's (2017) study, which found a link between business growth, innovation, and adaptability. The results also support the findings of Selvarany and Venusamy (2015) and Kamarudin and Sajilan (2013), who found that technology utilization increases participation in technopreneurship and ensures business sustainability.
According to the third hypothesis, there was no connection between market penetration and innovation. The findings show how market penetration, a gauge of company expansion, and technopreneur innovation are related. It specifically suggests that innovative technopreneurs who stay abreast of current technological advancements have a higher probability of seeing their businesses flourish. The results are consistent with a research by Suzuki et al. (2002) that found two nations have embraced new technology to expand their enterprises. Similarly, Rothschild and Darr (2003) demonstrated that technology has created synergy in the pursuit of entrepreneurial activities.

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CONCLUSION AND RECOMMENDATIONS

The study determined the three main components of technopreneurship—ICT self-efficacy, adaptability, and innovation—and reaffirmed how they affect the development of new tech firms. According to the study's findings, technopreneurs must be ICT worthy—that is, possess a working knowledge of ICT, be ready for technological adaptability, and be creative to keep up with the rapid advancements in technology—if they hope to create high-value jobs, stimulate export activity, create new jobs, increase productivity, and experience growth. The study also found that technopreneurship activities, including starting a cybercafé or developing software to address global concerns, constitute the foundation of tech enterprises. According to the findings, men are more likely than women to engage in technopreneurship, which in turn leads to a greater degree of economic empowerment for men. The only prerequisite for effective technopreneurship engagement and empowerment is a moderate level of education (O'level). The study's conclusions served as the foundation for the suggestions. The creation of technologically advanced goods is the focus of technopreneurs.

Technopreneurs should so concentrate on creating domestic technology and bringing technical innovation to market. Learning ICT maintenance techniques and working with accomplished international technopreneurs are crucial. Technopreneurship endeavors should be the focus of ICT-Skills Incubation Centers.

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