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Technology Incubator Program for Startups (TIPS) South Korea and Its Implications

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Executive summary

Technological innovation is perceived as a core element of national competitiveness via technological transition toward Artificial Intelligence (AI) and digitalisation across industries (Myovella et al., 2020). Many countries in the world are exploring new ways to support technology-based startups with various policies, as they believe these companies play a key role as actors, stimulating the national economy (Sala et al., 2022; Son et al., 2019). The South Korean government launched the Technology Incubator Program for Startups (TIPS) in 2013 and has produced many success stories (Ministry of SMEs and Startups South Korean government, 2024). In this paper, we address insights with various outcomes of TIPS and its implications for entrepreneurs and policymakers.

TIPS model for fostering tech-startups

TIPS is a partnership model which has two main components: one is external investment with over £70 thousands per startup raised by private investors (The South Korean government label these as TIPS partners); the other is government funding with up to £300 thousands per startup, which is a matched funding for startups selected by the governments evaluation process (Ministry of SMEs and Startups South Korean government, 2024). Table 1 highlights the outcomes of TIPS since 2013.

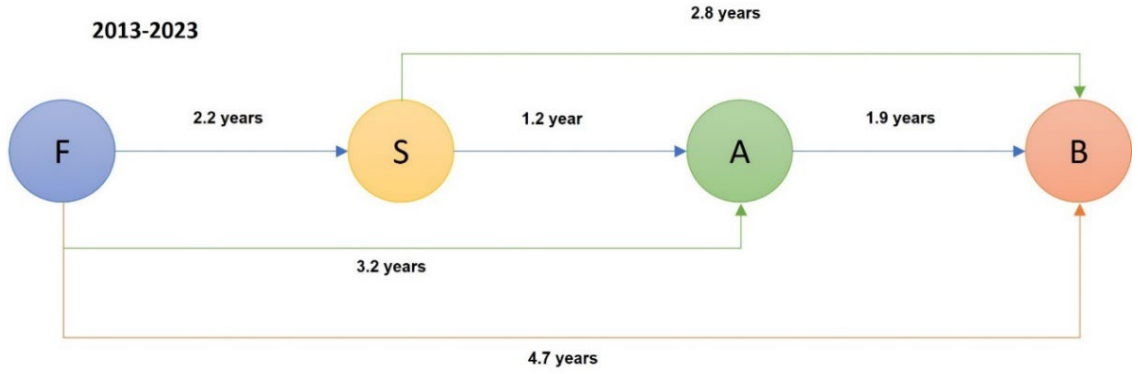
Table1. Startups supported by TIPS and partners (number of startups)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Startups	15	39	79	85	205	256	255	300	400	500	600	2,734
Partners	5	10	14	18	35	42	48	53	62	79	102	115

Source : jointips.or.kr(TIPS homepage)

TIPS has not only stimulated additional investment for startups from external investors, but also contributed to job creations and added business value in the market. For instance, startups supported by TIPS (hereafter TIPS startups) have received approximating £70 billion additional funding, which is about ten times larger than initial government funding. The valuation of startups has also increased up to about £500 billion, and these `startups have created, on average, approximately ten new jobs per company over the last decade. In addition, 19 startups have achieved Initial Public Offering (IPO), and 73 startups have been acquired through the Merger & Acquisition (M&A) model over the decade. With the outcomes of TIPS, critical evidence necessity of financial supporting for tech-startups by growth steps and industrial sectors has been confirmed in figure 1 and table 2.

Figure 1. Aspects of the Growth steps for TIPS startups



Source : Kim et al. (2024) ** F: Foundation, S: Seed, A: Series A, B: Series B. * Some TIPS startups received series A fundings or series B funding without the seed funding or series A funding. For those startups, the average years of growth step is different apart from startups who gained all funding steps. For the 56 companies receiving Series C funding, this group time span has not been considered in this diagram due to lack of representativeness.*

Table 2. Funding for TIPS startups, classified into growth steps and technology sectors
(currency: hundred million KRW = sixty thousands GBP)

Identification	Seed*	Series A	Series B	Series C
System semiconductor	5.5	34.0	210.0	315.0
Robot	1.8	40.0	92.5	190.0
Mobility	2.2	39.0	130.0	603.0
Bio and Health	2.0	40.0	93.5	152.0
Big Data and AI	2.0	35.0	100.0	210.0
Cyber security and Communication Network	2.0	32.0	111.5	197.0
Sum	2	35	100	200

Source : Kim et al. (2024)

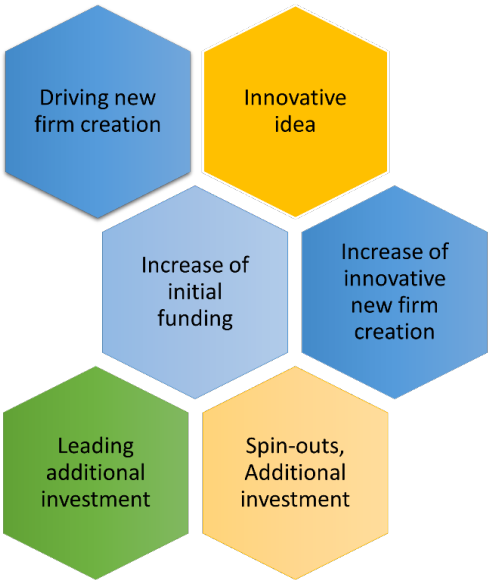
Discussion of key findings or conclusions

TIPS is a new paradigm of government-backed R&D support because the government is relying on policy which is jointly activated and evaluation via private sector investment and government funded R&D subsidy for the startups. Thus, TIPS is a private-public collaboration model for supporting startups. This is a new policy led circular transition of entrepreneurial ecosystem in South Korea, therefore, further investment has been increased to stimulate the growth of startups. Above all, this new entrepreneurial ecosystem for tech startups is motivating many pre-entrepreneurs entering the business world because the policy shows clear achievements and sustainable opportunities receiving external funding in each growth step. The figure 2 illustrates a brief overview of the TIPS impact.

R&D subsidies have been used as part of entrepreneurship policies by many governments (Cantner & Kösters, 2012; Brown & Mason, 2014; Berger & Hottenrott, 2021), yet there are some criticism of the productivity of such policies (Yim, Kim & Kim, 2024). But R&D subsidies and appropriate support of financial capital are essential components in achieving business growth (Zhao & Ziedonis, 2020). This is the reason behind the importance of collaboration between the public sector and the private sector. The government draws a big picture of what constitutes economic growth and the private sector can illustrate details of commercial needs in developing such products. Therefore, this model can provide an ideal policy aspect bringing together the public and private sectors in growth.

A ten-year record of TIPS startups provides essential information to identify investment volume between technological classifications in each investment step. Thus, it enables government to evaluate what technologies have strong potential to gain the external funding in specific growth steps. TIPS model supports the important role of external funding to achieve persistent growth of tech-startups and explains the essential roles of angels and accelerators to move tech-startups to the next step.

Figure 2. Impact of TIPS on performance of tech-startups



Policy and practice recommendations

Given the modern business environments, each government wants to understand their strength and weakness to grow the national economy. Estimation of the industrial potential provides a better opportunity to focus on those areas possessing strong competitive advantages compared to international competitors. Thus, TIPS provides the insights for government to consider identifying tech-startups by industries in each growth step corresponding to regional economic needs. In the UK, there are some core policies, such as Catapults, play as drivers supporting local startups by specific technology sectors based on regional strength, and government-backed accelerators or incubators which are key players providing offices, initial fundings, and expert's advice (Bone et al., 2017). Although these policies are also showing some good outcomes, this paper shows that the UK government would need to consider a self-activation model for the entrepreneurship. In consequence, it is possible to build a private sector centric policy with the minimum of necessary policy support. There are three recommendations as below.

- **Firstly, it is important to evaluate the financial needs of entrepreneurs and startups in each growth step. Therefore, it is able to fill the policy implementation gaps between entrepreneurs' needs and government supports.**
- **Secondly, it is worth considering industrial strengths and weaknesses in developing entrepreneurship policy. In consequence, we are not only able to provide strategic support for entrepreneurs' needs but also a better policy efficacy.**
- **Finally, it is essential to consider the development of a self-activation entrepreneurship policy model to foster sustainable collaborative relationship between the public sector and private sector. This may provide various references supporting policy implementations and improvements for the future.**

Fostering entrepreneurship and technological innovation remains key to triggering economic growth in most countries. Thus, we need to critically evaluate our policies as well as the policies of the world to prepare for the future. This insight reminds of the necessity to seek alternative investment and innovation models for our economy and suggests further discussions about this subject.

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