

Innovation, ecosystem support key to startup growth, job creation

NUS study presented at The Business Times Leaders' Forum also says job-creating startups have spent more on R&D and have higher IP ownership than non-creators

By **Jacquelyn Cheok**
jaccheok@sph.com.sg
@JacCheokBT

Singapore

INNOVATION and ecosystem support positively impact startup growth and job creation in Singapore, according to a new National University of Singapore (NUS) study, findings of which were exclusively presented at The Business Times Leaders' Forum 2017 on Wednesday.

Titled "Growth and Job Creation Dynamics of High-tech Startups in Singapore", the study polled 530 local tech startups between May and December last year.

The study first made a distinction between two groups of startups: "job creators" and "non-creators". While the former comprise the top 25 per cent of startups that create the most number of jobs per year, the latter are startups that create zero or negative jobs. The mean age of job creators is four, while that of non-creators is 3.5.

Going by the study, job creators were more innovative than non-creators. A higher percentage of job creators (56.5 per cent) were found to have introduced products or services that were "completely new to the world and ahead of competitors" in the last one to three fiscal years. In comparison, only 35.3 per cent of non-creators did.

Job creators were also found to have spent more on R&D (research and development) than non-creators. Mean R&D spending as a percentage of total sales came up to 98.3 per cent for job creators, while that for non-creators was 35.5 per cent.

Notably, about half the number of startups that were found to have spent more than 75 per cent of their total sales on R&D were among the top job creators, suggesting that R&D spending "has a strong correlation" to job creation.

Intellectual property (IP) ownership was found to be higher among job creators than non-creators. For one thing, 25.6 per cent of job creators owned patents, versus 12.4 per cent of non-creators. While 52.6 per cent and 36.8 per cent of job creators owned some form of trademark and copyright respectively, only 16.1 per cent and 18.8 per cent of non-creators did.

Aside from innovation, startup ecosystem support – comprising government funding schemes, university incubation programmes and venture

Startups: Important agents of disruption

Innovation, ecosystem support key drivers of startup growth and job creation

IP ownership

	JOB CREATORS	NON-CREATORS
	—— % ——	
Patents	25.6	12.4
Trademarks	52.6	16.1
Copyright	36.8	18.8

Mean R&D spending as % total sales

Job creators	98.3%
Non-creators	35.5%

Ecosystem support

	JOB CREATORS	NON-CREATORS
Government scheme	72.9%	55.4%
University incubation programme	20.3%	11.8%
Venture capitalists, business angels or corporate investors	62.4%	17.7%

Source: "Growth and Job Creation Dynamics of High-tech Startups in Singapore" study

capital funding – was found to be another key driver for startup growth and job creation.

Job creators were found to have engaged such ecosystem support more than non-creators did. Nearly 73 per cent of job creators participated in a government scheme, compared to 55.4 of non-creators. Some 20 per cent of job creators graduated from a university incubation programme, versus 11.8 per cent of non-creators.

About 62 per cent of job creators were found to have raised funding from venture capitalists, business angels or corporate investors. Notably, this figure was more than thrice that (17.7 per cent) of non-creators.

According to the study, job creators and non-creators were found to face dissimilar challenges. Those faced by the former include recruiting and retaining key personnel, and expanding to overseas markets, while those faced by the latter include obtaining financing for working capital, and operating in a small domestic market. Both were found to have difficulty in hiring employees, in general.

In terms of sales, job creators were found to have registered a 76.3 per cent growth over the last three years, and non-creators a 30.2 per cent growth. Job creators also reported that 40.1 per cent of sales came from overseas, while the figure for non-creators was 25.7 per cent.

In other findings, the number of startups in Singapore had risen steadily from 22,819 in 2004 to 54,983 in 2014, but slipped to 48,071 in 2015. Employment by Singapore startups had risen steadily from 156,537 in 2004 to 345,367 in 2014, but fell marginally to 345,304 in 2015.

Startups were found to hire more staff as they get older. Those that were five years old and younger were found to have an average headcount of 9.2. Startups aged between six and nine were found to hire about 14.8 employees, while startups that were 10 years old or older were found to have 25.2 employees. On average, the startups were found to employ 11.6 staff.

Wong Poh Kam, a professor at the NUS School of Business and the director of NUS Entrepreneurship Centre, who presented the findings at the Forum, said: "Startups are an important agent for disrupting existing businesses and seeding the emergence of new industries. While startups destroy some traditional jobs, they create new, high-value ones too."

Startups, disruption and transformation were among topics that featured strongly in The Business Times Leaders' Forum 2017, for which Standard Chartered Singapore was the presenting sponsor and Land Rover the official car sponsor.