

Executive Summary

Innovation and technology are driving forces that foster economic development and are crucial factors in enhancing Hong Kong's competitiveness. In recent decades, the Government of the Hong Kong Special Administrative Region (HKSAR) has put much effort into promoting the development of innovation and technology in different areas, including by investing in related infrastructure, providing financial support and nurturing talent. However, the performance of innovation and technology in Hong Kong is still weak in comparison to other cities or countries.

According to analysis by the Census and Statistics Department of the HKSAR Government, in 2013 the value added by the innovation and technology industry was HK\$147 billion, which contributed 0.7% to Hong Kong's gross domestic product (GDP). As for employment in Hong Kong, the industry employed only 32,000 people in 2013 (0.9% of total employment)¹. Although the Government of the HKSAR has been putting much effort into the development of innovation and technology, the industry still needs further improvement.

Currently, around 6,000 university students graduate from science faculties or engineering and technology faculties every year. Of these graduates, however, those who participate in the innovation and technology industry are unexpectedly few. What should be done to attract young people to participate in this industry and stem the outflow of talent? What are the crucial factors hindering the development of innovation and technology? What are young people's concerns about participating in this industry? How do the nurturing of talent, the attitudes in society and policymaking affect young people's incentives to pursue careers in this industry? The above questions are worth an in-depth analysis.

This research study used an online survey of universities, focus-group interviews and interviews with industry experts and academic specialists in order to explore the participants' perspectives on, and expectations of, young people's participation in the innovation and technology industry. This study

¹ Census and Statistics Department of the HKSAR Government, 'The Four Key Industries and Other Selected Industries in the Hong Kong Economy', Hong Kong Monthly Digest of Statistics, April 2015, pp. FA9-FA10

targeted current undergraduate students from science faculties and engineering and technology faculties as well as participants from the innovation and technology industry. The aim was to understand young people's concerns about choosing to work in this industry, thereby facilitating the formulation of recommendations to encourage them to pursue careers in the industries involved.

Key Figures

1. Young respondents find insufficient practical elements in university programmes, which provide only moderate support for their future engagement in the innovation and technology industry.

The online survey of universities revealed that young respondents thought that university programmes provided only moderate opportunities for them to come to grips with innovation and technology. On a scale of 0-10, with 10 being the most positive, the average score for the statement 'The programmes provide opportunities for me to come to grips with innovation and technology' was 5.43. Moreover, they believed the programmes provided them only moderate support for their future engagement with innovation and technology (average score 4.17).

Further, young people in focus-group interviews also stated that the university programmes were not as diversified as expected. The programmes generally had too much emphasis on theoretical foundations and academic knowledge, with insufficient practical elements.

2. Young respondents believe their innovative ability to be moderate. They do not fully understand innovation and technology, and feel pessimistic about youth engagement in this industry.

Young respondents believed that they had only moderate innovative ability. On a scale of 0-10, with 10 being the most positive, their average score was 5.41. This shows that young people lack confidence in their talent for innovation. Meanwhile, the study shows that young people do

not fully understand innovation and technology, with their average score being 4.58. A score of 5 or less was registered by over two-thirds (67.1%) of the young respondents. A lack of understanding of innovation and technology would naturally deter young people from engaging in this industry.

This study shows that young people do not feel optimistic about youth engagement in innovation and technology in the future, with an average score of 3.78. A score of 3 or less was registered by as much as 46.1% of the young respondents. In focus-group interviews, young respondents stated that jobs related to innovation and technology lacked stability, with a long period of substantial risk and a long wait for returns. In addition to their concerns about limited market size, young people's wider perspective on their future engagement in this industry was not optimistic.

3. Young respondents find the government's emphasis on innovation and technology insufficient. They believe there is a lack of policies and resources promoting this industry, and feel dissatisfaction with current performance.

The study shows that young people believe the government's emphasis on innovation and technology is insufficient, with their average score being 3.31. Moreover, they strongly agree that Hong Kong lacks adequate policies to promote the development of this industry, with their average score being 7.56.

At the same time, young people are dissatisfied with the overall performance of the innovation and technology industry. On a scale of 0-10, with 10 being the most positive, the average level of satisfaction was only 3.6. This reflects the fact that young people nowadays believe Hong Kong's performance in innovation and technology is unsatisfactory and needs further improvement.

4. Young respondents believe the attitudes in society, investment support and the high rental rate are the crucial factors affecting Hong Kong's innovation and technology development.

Young respondents believed that the attitudes in society (64.2%), investment support (50.6%) and high rental rate (38.5%) are the crucial factors affecting the development of innovation and technology.

In the focus-group interviews, young respondents pointed out that the lack of favourable attitudes in society was a key factor hindering the development of innovation and technology. They believe that Hong Kong society emphasises pragmatic conservatism and lacks an adventurous outlook. This makes the development of innovation and technology more challenging.

5. A majority of respondents agree that there is a need to strengthen the development of innovation and technology in Hong Kong, and believe that an increase in investment, market expansion and more internship opportunities would facilitate the development of this industry.

Over 90% (92.5%) agreed that there is a need to strengthen the development of innovation and technology, showing that young people believe there is an urgent need to develop this industry in Hong Kong. The main reasons given included the narrowness of current development of the industry (41.8%) and a need to upgrade Hong Kong's competitiveness (23.0%).

Moreover, young respondents thought that increasing investment (53.2%), market expansion for innovation and technology products (38.7%) and providing more internship opportunities for young people (32.0%) could help foster the development of innovation and technology.

Main Discussion

The following discussion emerged from the study, after integration of the data from the online survey, the focus-groups and the interviews with experts and academic specialists.

1. Hong Kong needs further improvements in the development of

innovation and technology. Concrete and detailed policies, infrastructure support, the nurturing of talent, sufficient investment, a larger market size and more favourable attitudes in society are the crucial factors.

There is a strong need to create a favourable environment in order to successfully promote the development of innovation and technology. Concrete and detailed policies, infrastructure support, the nurturing of talent, sufficient investment, a larger market size and more favourable attitudes in society are the crucial factors. Nowadays, innovation and technology contributes less than 1% of GDP and plans to establish an Innovation and Technology Bureau have not yet been confirmed. The market size is also limited, and Hong Kong society lacks an encouraging and supportive atmosphere in which to develop innovation and technology. As for the issues of education and labour resources, the problem of talent outflow is getting serious. In order not to lose Hong Kong's competitiveness, the government needs to put more effort into providing resources, infrastructure support and nurturing, as well as attracting talent.

- 2. Most of the young people who have received related training and education are not willing to take up careers in the innovation and technology industry. There is great concern over the problem of talent outflow.**

Although Hong Kong has nurtured many extremely talented people in this area, only a few go on to take up careers in the innovation and technology industry. The main reasons leading to this include young people's dissatisfaction with the future prospects and a lack of confidence in their innovative ability. Due to the pragmatic concerns of earning a living, young people prefer more stable jobs. They avoid choosing jobs related to innovation and technology, which involve a long period of substantial risk and a long wait for returns.

- 3. Young people feel the need to gain practical experience during learning. Increasing the opportunities to come to grips with innovation and technology would strengthen their understanding and interest in related areas.**

In order to encourage young people to participate in the innovation and technology industry, pull and push factors need to be taken into consideration. The study reveals that a majority of young people think that university programmes provide only moderate opportunities to come to grips with innovation and technology. Around 67% of the young respondents did not understand innovation and technology; this shows that a lack of understanding is an obstacle to attracting them to take up careers in this industry.

Young people in the focus-group interviews also stated that the science and engineering programmes at universities were not as diversified as expected, with insufficient practical elements. This shows that there is a gap between what is learned in university programmes and applications in everyday life. If young people had sufficient opportunities to apply what they learn it would help strengthen their confidence to participate in the innovation and technology industry.

4. Young people are dissatisfied with the current performance of innovation and technology in Hong Kong and find the government's emphasis on innovation and technology insufficient. There is a need to strengthen the input of resources and support.

There is a gap between the government's actual performance and young people's expectations of its performance. The study shows that a majority of the young respondents believed that the government did not pay sufficient attention to promoting the development of innovation and technology. This gap also reveals that young people have a certain level of misunderstanding of, or misconceptions about, some government policies. In the focus-group interviews, some young respondents pointed out that Hong Kong people are short-sighted, focusing more on pecuniary gain and often ignoring the benefits brought to society by innovation and technology.

Besides launching more detailed programmes to encourage active participation in the innovation and technology industry, the government should strengthen its promotion through a wide variety of channels. This would allow the public to see that the government is determined to

promote innovation and technology.

- 5. Young people have expectations regarding the Innovation and Technology Bureau's role in facilitating communication and co-operation among the government, industry, academia and the research sector.**

The study shows that around 65% of the young respondents expected the Innovation and Technology Bureau to be able to arouse the public's interest in innovation and technology. If the government can act as a middleman to foster co-operation and connections between the government, industry, academia and the research sector, it may be possible to reinforce the cohesiveness needed to promote the development of innovation and technology. Society as a whole would also benefit.

Moreover, the government should co-operate with different kinds of enterprises in order to create an energetic and favourable environment for developing innovation and technology. In the meantime, there could be more communication and co-operation with countries or cities nearby, in order to expand the market.

Recommendations

This study proposes the following recommendations.

- 1. There should be more provision of local and overseas internship opportunities for undergraduates from science faculties and engineering and technology faculties; these would enrich the undergraduates' lives.**
- 2. Co-operation between universities and private enterprises should be encouraged, and young people at universities should be helped to commercialise their innovative ideas and R&D deliverables.**
- 3. The government needs to set a lead by using innovative**

technological products from local enterprises, in order to provide these enterprises with official recognition and encouragement.

- 4. Possessing a globalisation mindset should be encouraged and the overseas market should be expanded, thereby creating more job opportunities in innovation and technology industry within Hong Kong.**

- 5. Promoting and drawing attention to innovation and technology at school and in the public at large is called for. This includes launching more cross-programme courses, diverse innovative activities (including competitions) and setting up huge exhibitions to promote the latest innovative technological products, as well as promoting examples of success in developing innovation and technology business through various social media.**