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Working in the Guangdong-Hong Kong-Macao  
Greater Bay Area: Hong Kong Science,  
Technology, Engineering and Mathematics  
(STEM) Undergraduates' Intention and Concerns

去粵港澳大灣區職業發展：香港科學、科技、  
工程及數學專業大學生的意願及影響因素

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## Executive Summary

### Abstract

The pilot Greater Bay Area Youth Employment Scheme (YES) was launched in 2021, and has been regularised since 1 March 2023. The YES aims to support enterprises with cross-border businesses to recruit fresh local graduates to work in other cities of the GBA, which in turn contributes to bilateral talent flow within the bay area and injects new fuel for the development of the GBA and the nation. Particularly, the pilot YES spared the considerable quotation for Innovation & Technology (I&T) talent, and the STEM (Science, Technology, Engineering and Mathematics) graduates will be a major force joining I&T companies.

Based on the Theory of Planned Behaviour (TPB), this research investigated STEM undergraduates' intention to work in I&T companies in the GBA and the influencing factors. It conducted in-depth interviews with STEM undergraduates, university career consultants, STEM academics, and Hong Kong I&T professionals working in GBA. An online survey was administered to explore the intention of Hong Kong STEM undergraduates to work in I&T companies in the GBA and the major factors influencing their intention, with comparison to non-STEM undergraduates. Descriptive statistics, *t*-tests and multiple linear regression were adopted in the data analysis.

The findings revealed significant differences in STEM undergraduates' intention to work in GBA mainland between the local and non-local students. Mainland internship and exchange experiences significant differences were also found as the most significant demographic factors causing the difference in STEM undergraduates' intention as well as the six major influencing factors highlighted in the TPB (i.e., personal values, collective values, internal conditions, external conditions, significant others and social pressure). Interviews and regression analyses of the survey data consistently indicated that students' perception of personal value, significant others, and internal conditions were the significant factors facilitating STEM undergraduates to work in the GBA. At the same time, their concern about external conditions significantly constrained their intention.

Based on the findings of this project, eight major recommendations were made at the levels of higher education, school education and government for policymakers, i.e., (1) reviewing the effectiveness of mainland internship arrangements under existing schemes; (2) strengthening the functions of the Guangdong-Hong Kong-Macao University Alliance; (3) providing more

targeted training and career guidance; (4) enhancing STEM elements in secondary students' study tours; (5) reinforcing the cooperation in school STEM curriculum development and STEM events in the GBA; (6) enriching the official online resources about working in the GBA; (7) establishing connections between employment and entrepreneurship schemes related to the GBA; and (8) leveraging the roles of student organizations and mass media.

「大灣區青年就業計劃」(YES) 試行計劃於 2021 年推出，並於 2023 年 3 月 1 日正式恆常化。YES 旨在支持具有跨境業務的企業招聘本地大學畢業生到大灣區其他城市工作，從而促進灣區之間的人才流動，為大灣區及國家發展注入新動力。YES 特別為創新科技(創科)人才預留了相當的名額，而科學、技術、工程和數學(STEM)畢業生將成為加入創科公司的主要力量。

本研究基於計劃行為理論(TPB)，探討 STEM 專業大學生在大灣區創科公司工作的意向及其影響因素。是次研究與 STEM 專業大學生、大學就業顧問、STEM 學者和在大灣區工作的香港創科專業人士進行了深入訪談。為探究香港 STEM 專業大學生在大灣區創科公司工作的意向及其主要影響因素，研究還進行了網上問卷調查，並與非 STEM 專業大學生進行比較。數據分析採用了描述性統計、t 檢驗和多元線性回歸分析。

研究結果表明，本地和非本地學生到大灣區內地城市工作的意向存在顯著差異。內地實習和交流經驗是導致 STEM 專業大生意向差異的最重要的人口統計因素，TPB 中的六個主要影響因素(即個人價值、集體價值、內部條件、外部條件、重要他人和社會壓力)也存在顯著差異。訪談和問卷調查數據的回歸分析一致顯示，學生對個人價值、重要他人和內部條件的認知是促進 STEM 專業大學生在大灣區工作的重要因素。同時，他們對外部條件的擔憂顯著限制了他們的意向。

基於研究結果，對政策制定者在高等教育、中小學教育和政府範疇的八項建議包括：  
(1) 檢視現有計劃下內地實習安排的成效；(2) 提升廣東-香港-澳門大學聯盟的功能；(3) 提供更有針對性的培訓和職業指導；(4) 增加中學生遊學團的 STEM 學習元素；(5) 加強中小學 STEM 課程開發和活動設計的大灣區合作；(6) 豐富有關在大灣區工作的官方網上資源；(7) 建立與大灣區相關的就業和創業計劃間的聯繫；以及  
(8) 發揮學生組織和社交媒體的作用。

## Layman Summary of Policy Implications and Recommendations

Recommendations for policy makers to enhance local STEM undergraduates' intention to work in the GBA are to (1) review the effectiveness of mainland internship arrangements under existing schemes so as to identify key features of effective arrangement; (2) strengthen the functions of the Guangdong-Hong Kong-Macao University Alliance to increase the communication and exchange among STEM undergraduates in the GBA; (3) provide more targeted training and career guidance to alleviate their worries about the challenges; (4) enhance STEM elements in secondary students' study tours to help students to know the latest development of I&T industries in the GBA; (5) reinforce the cooperation in school STEM curriculum development and STEM events in the GBA to establish the connections among future I&T talent in their early age; (6) enrich the official online resources about working in the GBA to help STEM undergraduates more conveniently retrieve the life and work information; (7) establish connections between employment and entrepreneurship schemes related to the GBA so that STEM undergraduates can perceive the YES and other similar schemes as a part of long-term strategies of the government to enhance their whole career and life development; (8) leverage the roles of student organizations and social media so as to more effectively design the strategies of disseminating the YES and other similar schemes to local STEM undergraduates.

為政策制定者對提升本地 STEM 專業大學生到大灣區工作意向的建議為：（1）檢視現有計劃下內地實習安排的成效，以識別有效安排的主要特徵；（2）提升廣東-香港-澳門大學聯盟的功能，以加強大灣區 STEM 專業大學生之間的交流和互動；（3）提供更有針對性的培訓和職業指導，以減輕他們對在大灣區工作的憂慮；（4）增加中學生遊學團的 STEM 學習元素，幫助學生了解大灣區創科行業的最新發展；（5）加強中小學 STEM 課程開發和 STEM 活動設計的大灣區合作，為未來大灣區創科人才早期建立聯繫創造條件；（6）豐富有關在大灣區工作的官方網上資源，以幫助 STEM 專業大學生更便捷地獲取有關大灣區的生活和工作資訊；（7）建立與大灣區相關的就業和創業計劃間的聯繫，讓 STEM 專業大學生將 YES 及其它類似計劃視為政府促進他們的整個職業生涯發展長期策略的一部分；（8）發揮學生組織和社交媒體的作用，更有效地設計宣傳 YES 和其它類似計劃的策略，以吸引本地 STEM 專業大學生的參與。



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We would like to express our gratitude to the undergraduates, STEM academics, University career consultants, and Hong Kong I&T professionals working in the GBA for their kind support of this research despite the difficulties resulting from the public health situation during the research period.

## Chapter 1 Background of Research

### 1.1 I & T as a key direction in the development of the entire GBA and Hong Kong

The appearance of the concept for the Guangdong-Hong Kong-Macao Greater Bay Area (GBA) can be traced back to China's 13th Five-Year Plan announced on 7 December 2016. Approximately half a year later, the Framework Agreement on Deepening Guangdong-Hong Kong-Macao Cooperation in the Development of the Bay Area was signed in Hong Kong. As explicitly articulated in the Development Plan Outline of GBA (State Council, 2019), this national strategic plan aims to develop a vibrant and internationally competitive world-class city cluster so as to build a role model of high-quality development for the entire country. A crucial strategy as suggested in the outline to realise this ambitious goal is to build a globally influential international innovation and technology (I&T) hub (Hui et al., 2020; Yu, 2019). The emphasis on the development of I&T in GBA is due to the consideration of regional strength and the trend of the world economy (Chow, Hua, & Hung, 2020; State Council, 2019). Firstly, Guangdong, Hong Kong, and Macao have outstanding capabilities in scientific research and development (R&D) and are home to numerous universities, scientific research institutes, high-tech enterprises and large-scale national scientific projects. These factors enable developing a globally competitive modern industrial system (Ma & Lin, 2020). Secondly, science and technology have been the fundamental force driving the development of human culture and economy. The development of I&T of a country or region can fundamentally determine its competitiveness in international society.

GBA and I&T development are the recent policy emphasis in Hong Kong government's policy-making (Berlie & Hung, 2020; Govad & Rodgers, 2019). Considering being listed as a prominent theme in the 2018 Policy Address, GBA has been continuously and repeatedly highlighted in the Policy Address every year. I&T development has also been considered a main task listed in the Chief Executive's Policy Address since 2015. As indicated in the Chief Executive's 2020 Policy Address, GBA is mentioned 44 times and I&T 34 times. President Xi Jinping prominently emphasised that "Hong Kong, with its solid foundation in science and technology and a pool of high-quality technology talent, is an important force in implementing the nation's innovation-driven development strategy and building an innovative country" (GHKSAR, 2018, p.36). To promote the I&T development in Hong Kong, a series of policies has been implemented in recent years. For example, the Innovation and Technology Bureau

was established in 2015. As planned in the 2020 Policy Address, 20 billion HK\$ will be injected into Research Endowment Fund and Technology Talent Scheme, and 8.5 billion HK\$ is reserved for expansion of Science Park and Cyberport.

## 1.2 Enhancing bilateral flow to drive the development of I&T in the entire GBA and Hong Kong

To realise the vision of building a globally competitive I&T hub in the GBA, it is necessary to strengthen the cooperation amongst different cities in this area (Chung, 2020). As explicitly articulated in its preamble, the primary goal of making up the outline is for “guiding the current and future cooperation and development of the Greater Bay” (State Council, 2019, p.1). Actually, the I&T resources are distributed unevenly amongst the 11 cities in the area, amongst which Hong Kong, Shenzhen and Guangzhou might be the core cities given its relevant concentrated I&T talent and R&D investment (Wang & Wang, 2019). Hong Kong is famous for its internationality and world-class universities. Shenzhen is an energetic young city that has incubated several large high-tech companies. Guangzhou has a matured industrial foundation and is the cultural centre of South China. Under the leading of these three cities, the entire GBA can cooperate with each other so as to generate convergent forces to make this area “become a focused area of global technological innovation and a major source of emerging industries” (State Council, 2019, p.11).

The effective I&T cooperation amongst different cities in the GBA can only be realised when the four key resources of I&T industry (i.e., talent, capital, information and technologies) can fluently and efficiently flow within the area (Chen & Wang, 2020; Yu, 2019). To date, several strategies have been adopted to strengthen the infrastructure to accelerate such a flow. For example, a rapid inter-city transport network is being constructed to reduce travelling time amongst major cities within the GBA to one hour or less. The major projects include Shenzhen-Zhongshan Bridge, the Second Cross-river Humen Bridge, Guangzhou-Shenzhen-Hong Kong Express Rail Link and the Hong Kong-Zhuhai-Macao Bridge. In addition, new boundary crossings are also being and have been established, including Liantang/Heung Yuen Wai Boundary Control Point, West Kowloon Station of the Guangzhou-Shenzhen-Hong Kong Express Rail Link, Qingmao Boundary Control Point, and Hengqin Port. Moreover, several I&T development platforms are under construction, such as the Hong Kong-Shenzhen Innovation and Technology Park, the innovation and technology base in Qingsheng of Nansha, the Traditional Chinese Medicine, and Science and Technology Industrial Park of Cooperation

between Guangdong and Macao in Hengqin. On 14 December 2018, the Hong Kong government signed the Agreement on Trade in Goods with the Mainland under the framework of the Mainland and Hong Kong CEPA. In the 2020 Policy Address, 20.8 billion HK\$ has been reserved for developing the Lok Ma Chau Loop into Hong Kong-Shenzhen I&T Park.

Apart from these infrastructural constructions, efforts should also be made to encourage interaction and exchanges between I&T talent (Liao & Meng, 2020; Peng, 2019). Higher education institutions and R&D institutes in Hong Kong and Macao are now eligible to apply for Mainland technology projects. They can use relevant funding in the Mainland, Hong Kong and Macao. Special funding schemes are also set up to support joint innovation projects by Guangdong, Hong Kong and Macau, whose cross-boundary use is allowed in the GBA. The R&D institutes established by Hong Kong and Macao in Guangdong can enjoy the same treatment as other Mainland R&D institutes. The central government will progressively open up to Guangdong's major national R&D infrastructure facilities and large-scale national R&D equipment in Hong Kong and Macao. Policies are also issued by the central government to facilitate Hong Kong and Macau residents to work and live in the Guangdong province. Example policies include tax reduction and the announcement of the regulations for Application of Residence Permit for Hong Kong, Macao and Taiwan residents.

### 1.3 Greater Bay Area Youth Employment Scheme (YES) – not just for employment

Amongst the four key elements of the I&T industry (i.e., talent, capital, information and technologies), talent is the most important (Wen, 2019; Xie, Postiglione, & Huang, 2020): technologies are invented by talent, information is disseminated by talent and capital is attracted and transferred by the talent. Therefore, in the past five years the government has adopted multiple strategies to cultivate and accumulate the I&T talent in Hong Kong (Sharif, 2020). Since 2015, popular science education was promoted in Hong Kong. In addition, STEM (Science, Technology, Engineering & Mathematics) education was put forward so as to plant the seeds for the development of I&T in the future. In 2017, 3 billion HK\$ was injected into the Research Endowment Fund to provide studentships for local students admitted to UGC-funded research postgraduate programmes. This fund incentivised more local students to engage in research work in support of the I&T development (GHKSAR, 2017). The Quality Migrant Admission Scheme has been implemented since 2006, which aims to attract highly skilled or talented persons to settle in Hong Kong to enhance Hong Kong's economic

competitiveness. On 26 November, 2020, its quota has been raised from 1000 to 2000. Technology Talent Admission Scheme was launched in June 2018 to fasttrack the admission of technology talent to undertake R&D work in the companies. The 2020 Policy Address launched a Global STEM Professorship Scheme for a period of five years at an estimated cost of \$2 billion.

In addition to the strategies to cultivate local talent and attract external talent, the government also pays attention to encouraging Hong Kong talent to work in Mainland cities of the GBA. The funding scheme of Youth Internship in the Mainland has been implemented since 2014-2015 to provide sponsorship to non-governmental organisations to organise internship programmes in the Mainland. In 2019-2020, a total of 149 youth internship projects in the Mainland have been carried out. The Youth Development Commission introduced Youth Entrepreneurship Scheme in 2019 to render better entrepreneurial support and incubation services to Hong Kong young people who intend to start their businesses in Hong Kong and the Mainland cities of the GBA.

A more recent scheme, entitled Greater Bay Area Youth Employment Scheme (YES), is announced in the 2020 Policy Address to support the companies which have operations both here in Hong Kong and across the border to recruit fresh local graduates to work in Mainland cities of the GBA. A total of 430 million HK\$ will be allocated for this scheme. Different from other schemes as introduced above, the YES spares the considerable quotation for I&T talent and sets up a specific higher salary standard. A total of 2,000 total subsidised positions will be available, amongst which twenty percent (i.e., 400 positions) will be reserved for the innovation and technology sectors. For the local graduate who will enter the I&T sectors (mainly STEM majors), the minimum salary will be 26,000 HK\$ a month, and the government will pay 18,000 HK\$. The minimum salary for other sections will be 18,000 HK\$, with the subsidy falling to HK\$10,000. The emphasis on STEM graduates in this scheme echoes the policy emphasis placed on I&T development in both Hong Kong and the entire GBA. In 2022 Policy Address, the government further announced the regularisation of the scheme to encourage more enterprises to offer jobs and support young people to work in the GBA Mainland cities although no quotations were spared specifically for I&T talent. Although the 2020 and 2022 Policy Addresses mainly discussed the values of the YES for employment purposes, the I&T part of this scheme at least has its values for four major stakeholders. The first is the companies joining this scheme, which benefit from both the government subsidy and the new local I&T talent

joining them. The development of the GBA and the nation can also benefit from this scheme. With its blend of Chinese and Western cultures, top-notch tertiary institutions and outstanding scientific research achievements, Hong Kong has its strengths to cultivate I&T talent. The talent joining this scheme will bring their connections with the local I&T talent and information about the technique and markets in Hong Kong into the GBA, which will inject new fuel for the development GBA and the nation. Moreover, the development of I&T in Hong Kong can be accelerated by the participants of this scheme, who will be the enzyme of the interaction of I&T resources between Hong Kong and Mainland cities in the GBA to generate new ideas, new connections, new technique and new industries for the I&T development in Hong Kong. As a crucial stakeholder of this scheme, the participating local talent will also benefit this cross-border experience, which will strengthen their own visions and competency. After working in the GBA for a period, they may make use of the new connections and sources acquired through this scheme to start up their own enterprise.

#### 1.4 STEM undergraduates' intention to work in the GBA - the target of this project

Despite the potential benefits that the scheme may produce, some controversies exist in Hong Kong. Just after the announcement of this scheme, a local citizen's opposing voice has been popularly reported in the newspaper and radio, accusing that "every city should make efforts to retain local young talent, instead of giving them money to become a trailblazer for other places. I have not seen any other places on earth which will do that" (Wong, 2020).

To date, the extent of the popularity of this citizen's views exist in Hong Kong is still unknown. Since such views have been so widely reported, the intention of some graduates to join this scheme may be more or less influenced by these reports. In fact, the participation of the young talent should be a crucial condition for the success of this scheme. Without their participation, it will be difficult to realise those values as discussed above. Therefore, it is compelling to investigate the intention of future STEM graduates to join in this scheme and the factors influencing their intention. Only when such information is collected, further policy can be designed to facilitate the implementation of the scheme, which is a major policy implication of the proposed study. Given the importance of I&T for the GBA and the scheme, this study will focus on STEM undergraduates, which are the major source of I&T talent from the universities of Hong Kong.

In addition to its policy implications, this study will also enrich current theories of career choice and development of STEM majors. Some recent studies have investigated the gender difference in STEM undergraduates' interest in pursuing STEM career (e.g., Cerinsek et.al, 2013), the impacts of high-school experience (e.g., Tzu-Ling, 2019), Summer Bridge Programmes (Kitchen, Sonnert, & Sadler, 2018) and university courses (e.g., Warne, Sonnert, & Sadler, 2019) on their STEM career interest, and the career development trajectories of STEM graduates, (e.g., Smith & White, 2019). However, these studies focus on the decision of choosing a job in STEM areas. This study aims to investigate the decision of working in an I&T company in the GBA, which involves both a choice of career and a choice of work place. Given the one-country-two-systems policy and the different historical development in Hong Kong and other cities in the GBA, considerable differences exist in the life style and social environment between them. Therefore, it is much more complex for thinking about working in an I&T company in the GBA than only deciding on taking a job in STEM areas. This study will contribute to the literature by exploring how STEM undergraduates make their career decisions in such a sophisticated context.

### 1.5 The Theory of Planned Behaviour - Towards a framework to investigate the factors influencing STEM undergraduates' intention to work in the GBA

The Theory of Planned Behaviour (Ajzen, 1991), the Expectancy-Value Theory (Eccles & Wigfield 2002), and the Social Cognitive Career Theory (Lent, Brown, & Haejett, 1994) are well-recognised theories that can be employed to explore career interest and development. Compared with the latter two theories, the Theory of Planned Behaviour better matches the goal of this study. The reason is that this theory (i) integrates both personal-psychological concern and social impacts which is particularly necessary to explain the more socially embedded decision on working in I&T companies in the GBA and (ii) focuses on the most direct factors influencing human behaviours so that data will be more efficiently collected and analysed for making suggestions on policy and strategies, which is the major objective of the Public Policy Research. This section will first introduce the major components of the Theory of Planned Behaviour and then will illustrate how this theory is applied in the present study of STEM undergraduates' intention to work in the GBA.

In the Theory of Planned Behaviour, human's behaviour and intention are explained in terms of three key aspects (i.e., attitude, subjective norms, and perceived behavioural control). Speaking in plain words, if people tend to evaluate the suggested behaviour as positive (*attitude*),

they believe that the behaviour is also supported by other people in the community (*subjective norms*), and they feel confident to accomplish the behaviour (*perceived behavioural control*), there will be a high *intention* of people to perform it, which will in turn enhance the possibility of conducting the *actual behaviour* in reality. As indicated in Figure 1, in addition to its impact on intention, the perceived behavioural control may also be translated into actual behaviour directly when it is rather easy to perform a behaviour (Ajzen, 1991).

Minooer, Goodrum, and Taylor (2020) suggested that the Theory of Planned Behaviour is a systematic framework to explain behavioural choices of human. This theory has been successfully applied to study the intention and behaviours in various fields such as in-App advertisement (Tapanainen, et al., 2020), educational technology (Lee, Cerreto, & Lee, 2010), healthcare (Godin& Kok, 1996), change management (Jimmieson, Peach, & White, 2008) and environmental protection (Wan, Shen, & Yu, 2014). A meta-analysis (Armitage & Conner, 2001) revealed a very high multiple correlation (approximately 0.6) of the three key elements of the Theory of Planned Behaviour with intention. A branch of studies have also used this theory in the vocation field to explore managers' intention to undertake a vocational qualification (Norman & Bonnett, 1995), women's career intention (Vincent, Peplau, & Hill, 1998), turnover intention amongst naval professionals (Van Breukelen et al., 2004), young talent's intention to pursue craft careers in construction (Minooer et al., 2020), entrepreneurial intention of business majors (Choy, Kuppusamy, Jusoh, 2005 ) and STEM majors (Roy, Akhtar, & Das, 2017), and STEM career aspiration of STEM undergraduates (Moore & Burrus, 2019).

The Theory of Planned Behaviour will guide the present project to investigate the factors influencing STEM undergraduates' intention to work in the GBA. Since STEM undergraduates can only join the scheme in the future, it is impossible to assess their actual behaviour for the time being. Therefore, this project will focus on the impacts of attitude, subjective norms, and perceived behavioural control on their intention, that is, the blue area in Figure 1.



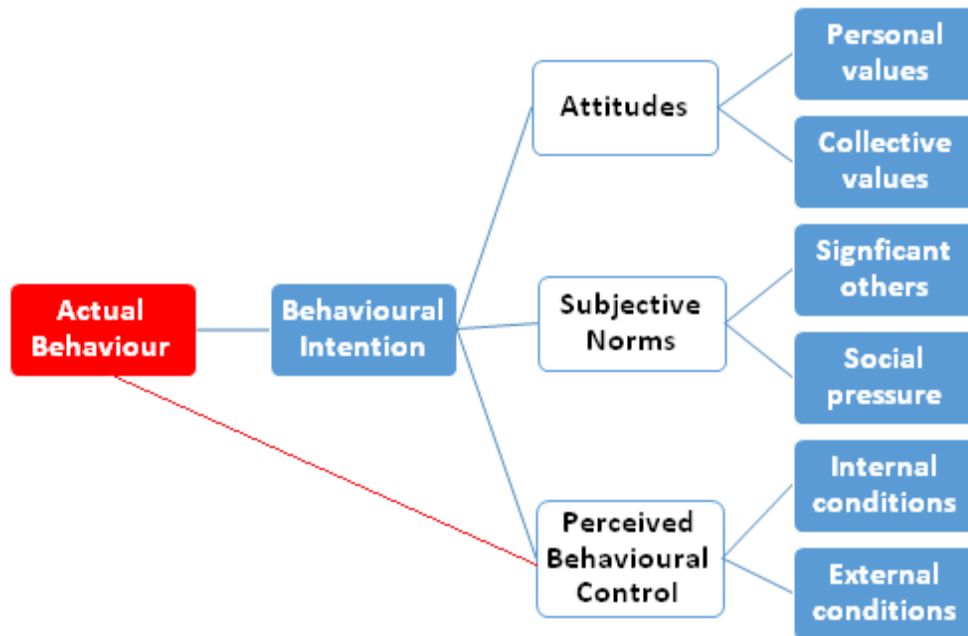


Figure 1. Model of the Theory of Planned Behaviour.

### 1.5.1 Attitude towards working in the GBA

In the Theory of Planned Behaviour, attitudes refer to the individual's perception of the importance and the awareness of the consequences of a particular action (Ajzen, 1991). These evaluations have been categorised by Fishbein and Ajzen (2010) into experiential attitudes (whether a behaviour is considered pleasant and enjoyable) and instrumental attitudes (whether a behaviour is useful and worthwhile). Although this classification can capture the major variations in the attitudes towards more individualised behaviours (such as learning and weight control), it may not be readily used to capture the major difference in the consideration of career decisions, whose instrumental values may have a higher weight. Therefore, this project intends to categorise STEM undergraduates' attitudes towards working in the GBA in terms of personal and collective values.

The *personal values* may include the following: (i) having broader options of employment, (ii) strengthening their connections with I&T talent, (iii) accessing the I&T resources in the GBA, (iv) getting familiar with I&T in the GBA, (v) getting higher payment, and (vi) laying the foundation for promotion. Then, the *collective values* may include the following: (i) bringing advanced technology back to Hong Kong, (ii) find opportunities for investment in the future, (iii) integrating the I&T resources in GBA, (iv) finding opportunities of future cooperation amongst I&T talent in the GBA, and (v) contribute to national development.

### 1.5.2 Subjective norms of working in the GBA

The Theory of Planned Behaviour is featured by the integration of personal psychological concern and social impacts in the interpretation of human behaviour (Ajzen, 1991). Such a feature is particularly suitable for investigating the career decisions, which is complex and high-stakes and thus normally involves the influence of family and society. All these impacts are named as subjective norms in the Theory of Planned Behaviour. The first level of subjective norms is from significant others (e.g., parents, spouse, friends, and teachers) (Cerinsek et al., 2013; Moore & Burrus, 2019). For example, parents who are doctors may expect their children to become doctors. The second level is from the social pressure. If most of members of a society discriminate a vocation, the young people may feel pressure when they intend to join it.

As from STEM undergraduates' intention to work in the GBA, the significant others can be their (i) parents, (ii) relatives, (iii) friends, (iv) classmates, (v) teachers, and (vi) career consultant. The social pressure can be (i) social media, (ii) university, (iii) student union or association, and (iv) government encouragement.

### 1.5.3 Perceived behavioural control regarding working in the GBA

Perceived behavioural control refers to “the perception of situational competence that the perceived easiness or difficulty while engaging in the behaviour of interest” (Roy, Akhtar, & Das, 2017, pp.1016-1017). This concept originates from the self-efficacy theory (Bandura, 1977). When this concept was used in the Theory of Planned Behaviour, it was named as perceived behavioural control because it involves the consideration of both internal conditions (i.e., individual competency to accomplish a behaviour) and external conditions (i.e., the presence of factors that may facilitate or hinder the performance of the behaviour) (Vall et al., 2005). Perceived behavioural control has been found as a significant factor to predict the intention to pursue people-oriented or action-oriented kinds of careers (Giles & Rea, 1999), managers' intention to undertake a vocational qualification (Norman & Bonnett, 1995), entrepreneurial intention of STEM undergraduates (Roy, Akhtar, & Das, 2017) and STEM career aspiration of STEM undergraduates (Moore & Burrus, 2019).

In terms of working in the GBA, the *internal conditions* of STEM undergraduates may include the following: (i) STEM knowledge and skills, (ii) skills of communicating with colleagues from Mainland cities, (iii) problem-solving skills, (iv) self-learning ability, and (v) research and development capacity. The *external conditions* may include the following: (i) separation

from family, (ii) cultural difference, (iii) unfamiliar living environment, (iv) uncertainty in future career development, (v) new social network, and (vi) competition and work pressure.

Notably, these items listed above about the three key aspects of influencing STEM undergraduates to work in the GBA were generated on the basis of previous research that adopted the Theory of Planned Behaviour and the researchers' examination of the context of working in the GBA. These elements should be enriched and modified in the interviews to be conducted in the study with STEM undergraduates, career consultants, STEM academics, and Hong Kong I&T talent working in the GBA (refer to the Methods section for more details of the interviews).

## 1.6 Objectives of this Study

- To examine the intention of local STEM undergraduates to work in I&T companies in the GBA, as well as their attitudes, subjective norms, and perceived control regarding working in the GBA
- To reveal the major factors influencing STEM undergraduates' intention to work in the GBA
- To generate the snapshot of STEM undergraduates' intention to work in the GBA and the major influencing factors in terms of Hong Kong permanent residency, mainland internship experience and mainland exchange experience, social-economic backgrounds of their families, gender, and majors
- To foster informed discussion on the implementation of the Greater Bay Area Youth Employment Scheme (YES) and other similar schemes in the future
- To make use of the data collected in this project to reveal future policy emphasis and possible strategies for facilitating the implementation of the YES and other similar schemes in the future so as to strengthen the bilateral flow of I&T talent in the GBA

## Chapter 2 Methods

To give the government and the public a useful reference for encouraging and facilitating Hong Kong STEM talent to join the bilateral flow between Hong Kong and Mainland cities of the GBA, a mixed-method study consisting of in-depth interviews and a large-scale survey were conducted. The interviews were conducted focusing on STEM undergraduates' intention to work in the companies in the GBA and the major factors influencing their decisions. These interviews contributed to generating the specific elements of the survey and triangulating the findings generated in the subsequent survey on the major factors influencing STEM major' intention. The survey was used to reveal the overall status and cross-group differences of these undergraduates' intention to work in the GBA, their attitudes towards, subjective norms of, and perceived control regarding working in the GBA and also the major factors influencing STEM major' intention. More specifically, three major questions were investigated in this study:

- What is the status of local senior STEM undergraduates' intention to work in I&T companies in the GBA, and their attitudes, subjective norms, and perceived behavioural control regarding working in the GBA?
- What are the major factors influencing their intention?
- Are there any differences in their intention and influencing factors in terms of Hong Kong permanent residency, mainland internship experience and mainland exchange experience, social-economic backgrounds of their families, gender, and majors?

### 2.1 Subjects

The participants of interviews were from four groups of people, including STEM undergraduates (who will graduate in 2022 or 2023), university career consultants, STEM academics in the university, and I&T talent working in the GBA. STEM majors are classified into six categories, i.e., Biological Sciences (*bio sci*), Physical Sciences (*phys sci*), Mathematical Sciences (*math sci*), Computer Science and Information Technology (*cmp/it*), Engineering and Technology (*eng/tec*), and others (e.g., environmental studies, geography, food science, architecture). For each category, two students were invited to join the interviews because they are potential participants of the YES. Since they were near graduation, they were more motivated to think about their future career. When recruiting interview participants, we considered the variation in their majors and the distribution of different universities. In addition,

5 university career consultants, 3 STEM academics in the university, and 5 I&T professionals who are now working in the GBA were also interviewed for their perspectives on local STEM undergraduates' intention to work in the GBA and the major influencing factors. As indicated in Table 2.1, a total of 33 participants were interviewed in this project on STEM majors' intention to work in the GBA.

In addition, 21 non-STEM majors were also interviewed on their intention to work in the GBA so that a comparison could be made between STEM and non-STEM majors, with which a holistic picture of undergraduates' intention to work in the GBA was generated.

Table 2.1

*Demographic characteristics of the interviewees*

		Frequency	
Year-4 STEM undergraduates	Major	Bio Sci	2
		Phy / Chem Sci	3
		Math / Data Sci	7
		Comp Sci / IT	2
		Engin / Tech	4
		Others	2
	Gender	Male	8
	Female	10	
Hong Kong residency	Local	12	
	Non-local	6	
Year-4 non-STEM undergraduates	Gender	Male	6
		Female	15
	Hong Kong residency	Local	14
		Non-local	7
Hong Kong I&T professionals working in the GBA		5	
University career consultants		5	
STEM academics		3	

In total, 1125 responses from eight local universities, 890 with STEM majors and 235 with non-STEM majors, were collected from the online survey. The respondents' demographic backgrounds are presented in Table 2.2.

Table 2.2

*Demographic characteristics of participants*

		Frequency		Percent (%)	
		STEM	Non-STEM	STEM	Non-STEM
Gender	Male	490	69	55.1	29.4
	Female	400	166	44.9	70.6
Birth place	Hong Kong	493	152	55.4	64.7
	Mainland China	392	83	44.0	35.3
	Overseas	5	0	0.6	0.0
Hong Kong Residency	Local	586	182	65.8	77.4
	Non-local	304	53	34.2	22.6
Home Area	New Territories	410	124	46.1	52.8
	Kowloon	361	85	40.6	36.2
	Hong Kong Island	119	26	13.4	11.1
Number of types of exchange experience in Mainland China	0	245	78	27.5	33.2
	1	377	93	42.4	39.6
	2	161	47	18.1	20.0
	3	67	12	7.5	5.1
	4	26	3	2.9	1.3
	5	14	2	1.6	0.9
Number of types of internships in Mainland China companies	0	581	163	65.3	69.4
	1	245	63	27.5	26.8
	2	52	7	5.8	3.0
	3	12	2	1.3	0.9
Number of times travelling to Mainland China	Never	116	26	13.0	11.1
	1-3	236	57	26.5	24.3
	4-8	138	48	15.5	20.4
	More than 9	400	104	44.9	44.3
Number of relatives in Mainland China	None	152	49	17.1	20.9
	1-3	135	34	15.2	14.5
	4-8	145	32	16.3	13.6
	More than 9	458	120	51.5	51.1

There were 890 students with STEM majors who participated in this survey. Of these students, 55.1% were male and 44.9% were female. Their ages ranged from 17 to 30 years old, with an average of 22.75 years old. About their birth place, 55.4% were born in Hong Kong, while 44.0% and 0.6% were born in Mainland China and overseas, respectively. 65.8% of them had Hong Kong residency, while 34.2% were non-locals from Mainland China, who came to study at universities in Hong Kong; 46.1% of the students' homes were in the New Territories, 40.6% were in Kowloon District and 13.4% were on Hong Kong Island. Concerning the number of types of exchange experience that students had in Mainland China, 27.5% did not have any, while 42.4%, 18.1%, 7.5%, 2.9% and 1.6% had one to five types, respectively. For the number

of types of internships in Mainland China companies that students did, 65.3% of them never did any internship, while 27.5%, 5.8%, and 1.3% did internships in one to three types of different companies in mainland China. Regarding the number of times travelling to Mainland China, 13.0% of the STEM students had no such travelling experience, 26.5% had travelled 1 to 3 times, 15.5% had travelled 4 to 8 times, and 44.9% had travelled 9 times or more. Referring to the number of relatives in Mainland China, 17.1% of them had zero, 15.2% had 1 to 3, 16.3% had 4 to 8, while 51.5% had 9 or more.

There were 235 students with non-STEM majors who responded to this survey. Of these students, 29.4% were male and 70.6% were female. Their ages ranged from 18 to 30 years old, with an average of 22.56 years old. About their birth place, 64.7% were born in Hong Kong, while 35.3% were born in Mainland China. Of these respondents, 77.4% had Hong Kong residency, while about 22.6% were non-locals from Mainland China, who came to study at universities in Hong Kong; 52.8% of the students' homes were in the New Territories, 36.2% were in Kowloon District and 11.1% were on Hong Kong Island. Concerning the number of types of exchange experience that students had in Mainland China, 33.2% did not have any, while 39.6%, 20.0%, 5.1%, 1.3% and 0.9% had one to five types, respectively. For the number of types of internships in Mainland China companies that students did, 69.4% of them never did any internship, while 26.8%, 3.0%, and 0.9% did internships in one to three types of different companies in Mainland China. Regarding the number of times travelling to Mainland China, 11.1% of the non-STEM students had no such travelling experience, 24.3% had travelled 1 to 3 times, 20.4% had travelled 4 to 8 times, and 44.3% had travelled 9 times or more. Referring to the number of relatives in Mainland China, 20.9% of them had zero, 14.5% had 1 to 3, 13.6% had 4 to 8, while 51.1% had 9 or more.

Table 2.3 shows the major and university distribution of all STEM-majored participants. Regarding majors, those majoring in technology or engineering (37.6%) were the majority. The percentages of students with a major in IT or computer, biology, physics or chemistry and mathematics were 22.7%, 16.0%, 12.1% and 9.9%, respectively. 1.7% indicated their majors as others. For university, 11.7% of them were from The University of Hong Kong, 21.8% were from The Chinese University of Hong Kong, 14.4% were from The Hong Kong University of Science and Technology, 28.3% were from The Hong Kong Polytechnic University, 4.0% were from Hong Kong Baptist University, 17.6% were from City University of Hong Kong, 0.3% were from Lingnan University and 1.8% were from The Education University of Hong Kong.

Table 2.3

*Major and university distribution of STEM graduates*

		Frequency	Percent (%)
Major	Bio Sci	142	16.0
	Phy / Chem Sci	108	12.1
	Math / Data Sci	88	9.9
	Comp Sci / IT	202	22.7
	Engin / Tech	335	37.6
	Others	15	1.7
	University	The University of Hong Kong	104
The Chinese University of Hong Kong		194	21.8
The Hong Kong University of Science and Technology		128	14.4
The Hong Kong Polytechnic University		252	28.3
Hong Kong Baptist University		36	4.0
City University of Hong Kong		157	17.6
Lingnan University		3	0.3
The Education University of Hong Kong		16	1.8

Table 2.4

*Major and university distribution of non-STEM graduates*

		Frequency	Percent (%)
Major	Social science	39	16.6
	Literature	33	14.0
	Business administration	80	34.0
	Medicine	25	10.6
	Education	18	7.7
	Law	2	0.9
	Design / visual arts	7	3.0
	Media / film	14	6.0
	Unknown	17	7.2
	University	The University of Hong Kong	15
The Chinese University of Hong Kong		13	5.5
The Hong Kong University of Science and Technology		38	16.2
The Hong Kong Polytechnic University		45	19.1
Hong Kong Baptist University		86	36.6
City University of Hong Kong		21	8.9
Lingnan University		4	1.7
The Education University of Hong Kong		13	5.5

Non-STEM students' major and university distribution is presented in Table 2.4. Concerning majors, those majoring in business administration (34.0%) were the majority. The percentages



of students with a major in social science, literature, medicine, education, media or film, design or visual arts and law were 16.6%, 14.0%, 10.6%, 6.0%, 3.0% and 0.9%, respectively; 7.2% did not specify their major. Of all non-STEM majors, 6.4% of them were from The University of Hong Kong, 5.5% were from The Chinese University of Hong Kong, 16.2% were from The Hong Kong University of Science and Technology, 19.1% were from The Hong Kong Polytechnic University, 36.6% were from Hong Kong Baptist University, 8.9% were from City University of Hong Kong, 1.7% were from Lingnan University and 5.5% were from The Education University of Hong Kong.

Table 2.5

*Background information of the families of STEM and non-STEM students*

		Frequency		Percent (%)	
		STEM	Non-STEM	STEM	Non-STEM
Father's place of birth	Hong Kong	359	108	40.3	46.0
	Mainland China	511	125	57.4	53.2
	Overseas	9	2	1.0	0.9
Mother's place of birth	Hong Kong	279	85	31.3	36.2
	Mainland China	582	146	65.4	62.1
	Overseas	18	4	2.0	1.7
Father's occupation	Non-technical worker	119	39	13.4	16.6
	Technical worker	292	82	32.8	34.9
	White-collar worker	106	43	11.9	18.3
	Professional	205	25	23.0	10.6
	Businessman / CEO / Manager	129	39	14.5	16.6
	Homemaker or others	28	7	3.1	3.0
Mother's occupation	Non-technical worker	172	51	19.3	21.7
	Technical worker	66	16	7.4	6.8
	White-collar worker	204	54	22.9	23.0
	Professional	154	34	17.3	14.5
	Businessman / CEO / Manager	46	11	5.2	4.7
	Homemaker or others	237	69	26.6	29.4
Family monthly income	Less than HKD 15,000	121	28	13.6	11.9
	HKD 15,000 - 30,000	301	91	33.8	38.7
	HKD 30,000 - 50,000	241	59	27.1	25.1
	More than HKD 50,000	216	56	24.3	23.8

Table 2.5 shows the background information of the students' families. For STEM-major students, 40.3% and 31.3% of their fathers and mothers were born in Hong Kong, while 57.4% and 65.4% were born in mainland China, respectively. Referring to parents' occupations, 13.4%

and 19.3% of their fathers and mothers were non-technical workers, 32.8% and 7.4% were technical workers, 11.9% and 22.9% were white-collar workers, 23.0% and 17.3% were professionals, 14.5% and 5.2% were businessmen / CEOs / managers, while 3.1% and 26.6% were homemakers or others, respectively. Regarding their family monthly income, 13.6% of theirs was less than HKD 15,000, 33.8% was from HKD 15,000 to HKD 30,000, 27.1% was from HKD 30,000 to HKD 50,000 and 24.3% was over HKD 50,000.

For non-STEM-major students, 46.0% and 36.2% of their fathers and mothers were born in Hong Kong, while 53.2% and 62.1% were born in mainland China, respectively. Referring to parents' occupations, 16.6% and 21.7% of their fathers and mothers were non-technical workers, 34.9% and 6.8% were technical workers, 18.3% and 23.0% were white-collar workers, 10.6% and 14.5% were professionals, 16.6% and 4.7% were businessmen / CEOs / managers, while 3.0% and 29.4% were homemakers or others, respectively. Regarding their family monthly income, 11.9% of theirs was less than HKD 15,000, 38.7% was from HKD 15,000 to HKD 30,000, 25.1% was from HKD 30,000 to HKD 50,000 and 23.8% was over HKD 50,000.

## 2.2 Methods

### 2.2.1 Interviews

A semi-structured interview was first conducted with STEM undergraduates, which roughly followed the sequence indicated in Figure 2. The interviewees were allowed to discuss the topics that they are interested in during the interview and the researchers also followed up on any details that they thought were important for them to understand STEM majors' intention of working in the GBA. During the interview, the purpose of the interview was first introduced (i.e., the 1<sup>st</sup> step in the figure). After then, two questions (b1 question in the figure) were asked to explore their intention and the major factors influencing their intention: "Have you thought about working in I&T companies in GBA when you graduate? And what are the most important factors you consider?". If the response was positive, they were further asked to explain what departments they intend to work for I&T companies and why (b2 question in the figure). Afterwards, more specific questions (c1-c6) were asked to explore the six dimensions (i.e., personal values, collective values, significant others, social pressure, internal conditions and external conditions) of the three main aspects influencing intention (i.e., their attitudes, subjective norms, and perceived control regarding working in the GBA). If the response to the b1 question is negative, the undergraduates were not asked about the b2 question and will

directly answer c1-c6 questions. After then, the interviews were similarly conducted with non-STEM majors on their intention to work in the companies in the GBA.

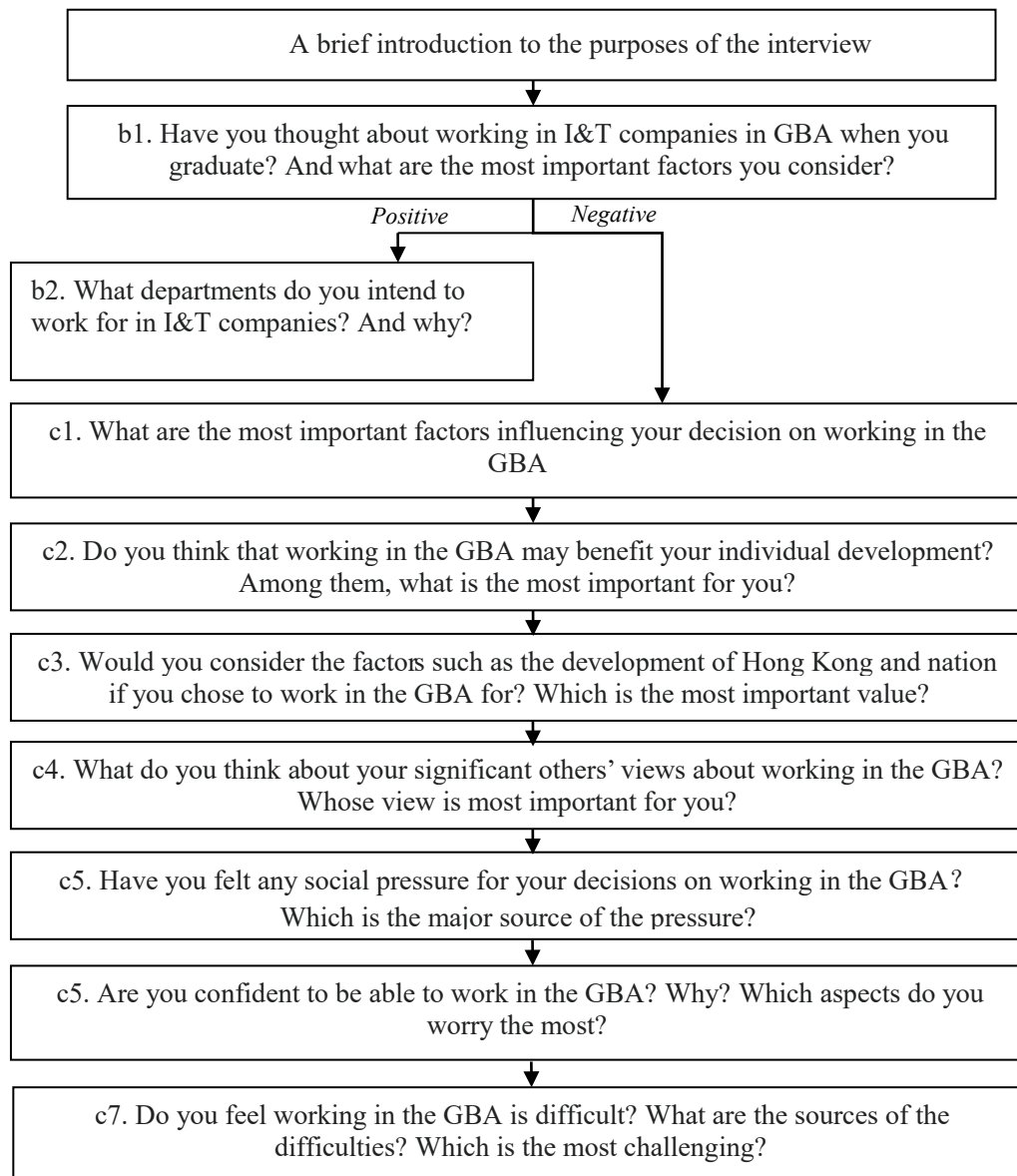


Figure 2. Interview protocol for STEM undergraduates.

Interviews were also conducted with STEM academics who were teaching these STEM undergraduates, university career consultants who were responsible for providing professional guidance to the career decisions of undergraduates, and Hong Kong I&T professionals working in the GBA who had more concrete experience of working. As for the interviews with STEM academics and university career consultants, the b1 question was rephrased into “Do you think

STEM graduates are willing to work in the GBA? And why?”. The b2 question was neglected. As for c1-c6 questions, they discussed these factors in terms of their impacts on students’ intention. As for the interviews with the Hong Kong I&T professionals working in the GBA, the b1 question was rephrased into “How do you think about working in the GBA when you made this decision?”. The b1 question was rephrased into “What sections do you think the local graduates can work in I&T companies in the GBA?”. As for c1-c6 questions, the present tense was changed into the past tense. All the interviews were conducted in the participants’ native language and were audio-recorded, which lasted 31-62 minutes.

Interviews were conducted with non-STEM undergraduates. When they were interviewed, the investigators just asked them about their intention to work in the companies in GBA, rather than the more specific I&T companies.

### 2.2.2 Survey of STEM undergraduates’ intention and views

The questionnaire was initially designed with reference to Ajzen (1991), Moore and Burrus (2019), and Roy, Akhtar and Das (2017), with due consideration of the issues of working in the GBA and the results of interviews. The questionnaire was divided into five parts: demographic characteristics, intention to work in I&T companies in the GBA, attitudes towards, subjective norms of, and perceived control regarding working in the GBA. All the items were evaluated using a six-point Likert scale (strongly agree, moderately agree, slightly agree, slightly disagree, moderately disagree and strongly disagree). The range of items includes the following.

*Demographic information.* The collection of various information (including STEM majors, gender, age, parents’ educational level, parents’ jobs, family incoming level, place of birth, living districts, and internship experience) will lay a foundation to cross-group comparisons of students’ status of their intention and the influencing factors and their relationships.

*Intention to work in the GBA.* In order to more accurately examine undergraduates’ intention to work in the GBA, the participants were required to specifically evaluate their willingness to work respectively in GBA cross-border companies and GBA mainland companies. At the same time, they were also required to report their intention to work in Hong Kong, overseas, and non-GBA mainland cities. The location of a company might also influence students’ intention, so items were also designed to assess their intention to work in Shenzhen, Guangzhou, Macau, and other Mainland cities in the GBA. Given the variations in the nature of work in different departments within companies, items were designed to probe STEM undergraduates’ intention

to work specifically in the R&D, marketing, sales, quality insurance, production, IT network, finance, and administration departments. As for the non-STEM majors, the departments of R&D, data analysis, engineering design, cyber security and information technology were replaced by the departments of law, accounting, human resources, physical distribution and logistics in the survey.

*Attitudes towards working in the GBA.* STEM undergraduates' intention can be partly attributed to their beliefs in the importance and the awareness of the consequences of working in the GBA, which include both personal and collective values. A total of 12 items were designed to assess undergraduates' perception of personal values of working in the GBA. Sample question items include "working in the GBA can strengthen my connections with various I&T professionals" and "the experience of working in the GBA can let me have more opportunities to find an ideal job". 6 items were designed to assess undergraduates' perception of collective values. Sample question items include "Hong Kong youths working in the GBA will promote the future development of I&T industry in Hong Kong", and "Hong Kong youths working in the GBA can help integrate the I&T resources in the GBA". The Cronbach's alpha reliability coefficient for the scale of personal values is .962, whose item-to-scale correlations range from .708 to .888. The Cronbach's alpha reliability coefficient for the scale of collective value is .945, whose item-to-scale correlations range from .878 to .896.

*Subjective norms of working in the GBA.* Leaving home to work in I&T companies in the GBA is a complex and high-stakes decision for a STEM undergraduate, which will be influenced by significant others and social pressure. A total of 6 items were designed to assess undergraduates' perception of significant others' views on their working in the GBA. Sample question items include "my parents think I should leave home to work in the GBA" and "my boyfriend/girlfriend does not wish me to work in the GBA". 6 items were designed to assess undergraduates' perception of social pressure on their working in the GBA. Sample question items include "social media normally react negatively to the scheme", and "our student union believes it is beneficial to work in the GBA". The Cronbach's alpha reliability coefficient for the scale of significant others is .937, whose item-to-scale correlations range from .848 to .900. The Cronbach's alpha reliability coefficient for the scale of social pressure is .870, whose item-to-scale correlations range from .700 to .869.

*Perceived behavioural control regarding working in the GBA.* Even if some students know the benefits and get support from significant others, some of them may still hesitate to work in the

GBA due to their evaluation of internal and external conditions. A total of 6 items were designed to assess undergraduates' perception of internal conditions for working in the GBA. Sample question items include "I am confident that I have enough knowledge and skills to work in the GBA", "I have enough problem-solving ability to solve the problems I will encounter when working in the GBA", and "I can learn new things efficiently enough to get used to the new work environment in the GBA". 11 items were designed to assess undergraduates' perception of external condition for working in the GBA. "it is difficult to establish a new social network in the GBA", "working the GBA will give me much psychological pressure", and "it is challenging to get used to the new living environment in the GBA". The Cronbach's alpha reliability coefficient for the scale of internal conditions is .902, whose item-to-scale correlations range from .782 to .845. The Cronbach's alpha reliability coefficient for the scale of external conditions is .859, whose item-to-scale correlations range from .443 to .731.

In the formal survey, behavioural control was placed before subjective norms since the former was more individually oriented, similar to attitude. On the contrary, subjective norms were more socially oriented. It was easier for students to respond to the survey when items with similar orientations were placed together. The survey was completed in 10-20 minutes. To increase the content validity, the survey was checked by local educators. Modifications were made according to experts' feedback before piloting. Before formal distribution, the survey was piloted with 27 students to assess the time and ensure the suitability of wording in terms of students' level of understanding.

### 2.3 Data analysis

All interviews were audio-recorded and transcribed. During the transcription, all interviewees were treated anonymously by using pseudo names. Then, the data were coded in terms of the six dimensions of the factors influencing the intention to work in I&T companies in the GBA (including intention, personal value, collective value, significant others, social pressure, internal conditions and external conditions). The specific elements of the 6 dimensions were compared with the list of items tentatively generated to check how to further modify and enrich these items. In the end, the most important factors mentioned by interviewees were synthesised to triangulate the findings generated by the corresponding findings generated in the survey study.

Cronbach's alpha coefficients were first calculated for the seven constructs of this project (i.e., intention, personal values, collective values, significant others, social pressure, internal conditions, and external conditions), which are expected to be above .70, as suggested by Fink (2015). The item-to-scale correlations (Gable, 1986) were then used to estimate the validity of the seven scales, whose values are expected to be above .30 (Gable, 1986). After then, the means of the seven constructs were calculated to indicate the status of students' intention and the influencing factors. The univariate analyses by ANOVA were used to examine the differences in students' responses in terms of majors, social-economic backgrounds of their families, and gender. Afterwards, regression analyses were performed to investigate the impacts of different factors on students' intention to work in the GBA. In the end, the findings revealed in the survey were compared with the findings of the interviews to generate a whole picture of the significant factors influencing STEM majors' intention to work in the GBA.

## Chapter 3 Findings

In this section, the status of STEM undergraduates' intention to work in the GBA and the six factors influencing their intention will be illustrated in Sections 3.1-3.7. Since the difference between local and non-local students was significant almost for all the variables studied in this study, comparisons will be made between these two groups of students when reporting the status of all the variables. In addition, comparisons will be also made in terms of internship experience, mainland exchange experience, gender and family monthly income. Since the data were collected for both STEM and non-STEM majors in this study, their intention and influencing factors will be also compared. In the end, the impacts of the six factors on undergraduates' intention to work in the GBA will be further examined in Section 3.8 through analyzing interview data and regression analyses.

### 3.1 Intention to work in the GBA

Instead of generally asking undergraduates whether they were willing to work in the GBA, this study specifically probed undergraduates' intention to work in terms of different areas, different cities in the GBA, and different departments in the companies in the GBA.

#### 3.1.1 STEM undergraduates' intention to work in different areas

The undergraduates were first asked to indicate their intention to work in different areas on a 6-point Likert scale. As indicated in the yellow columns in Figure 3.1, STEM undergraduates had the highest intention to work in Hong Kong ( $M = 5.04$ ;  $SD = .99$ ), followed by overseas ( $M = 4.53$ ;  $SD = 1.23$ ). In contrast, their intention to work in non-GBA mainland cities was the lowest ( $M = 3.42$ ;  $SD = 1.56$ ). Meanwhile, they had moderate intention to work in the GBA cross-border companies ( $M = 3.99$ ;  $SD = 1.50$ ) and the GBA companies that are only operated in Mainland China (GBA mainland companies) ( $M = 3.77$ ;  $SD = 1.53$ ).

A *t*-test was conducted to examine the impact of Hong Kong permanent residency on STEM undergraduates' intention to work in different areas. As displayed in Figure 3.1, the red and blue columns represent local and non-local STEM undergraduates' work intentions respectively. The comparison revealed significant differences between these two groups of students. Local undergraduates had significantly lower intention to work in three areas in mainland China. The greatest difference was found in GBA mainland companies ( $md = -1.34$ ;  $t = -14.50$ ;  $p < .01$ ), followed by GBA cross-border companies ( $md = -1.33$ ;  $t = -14.99$ ;  $p < .01$ ). At the same time, the difference to work in non-GBA mainland cities ( $md = -1.10$ ;  $t = -10.96$ ;



$p < .01$ ) was relatively smaller. In addition, local STEM undergraduates had higher intention to work in Hong Kong ( $md = .29$ ;  $t = 4.11$ ;  $p < .01$ ) and overseas ( $md = .33$ ;  $t = 3.64$ ;  $p < .01$ ), but the mean differences were not so great.

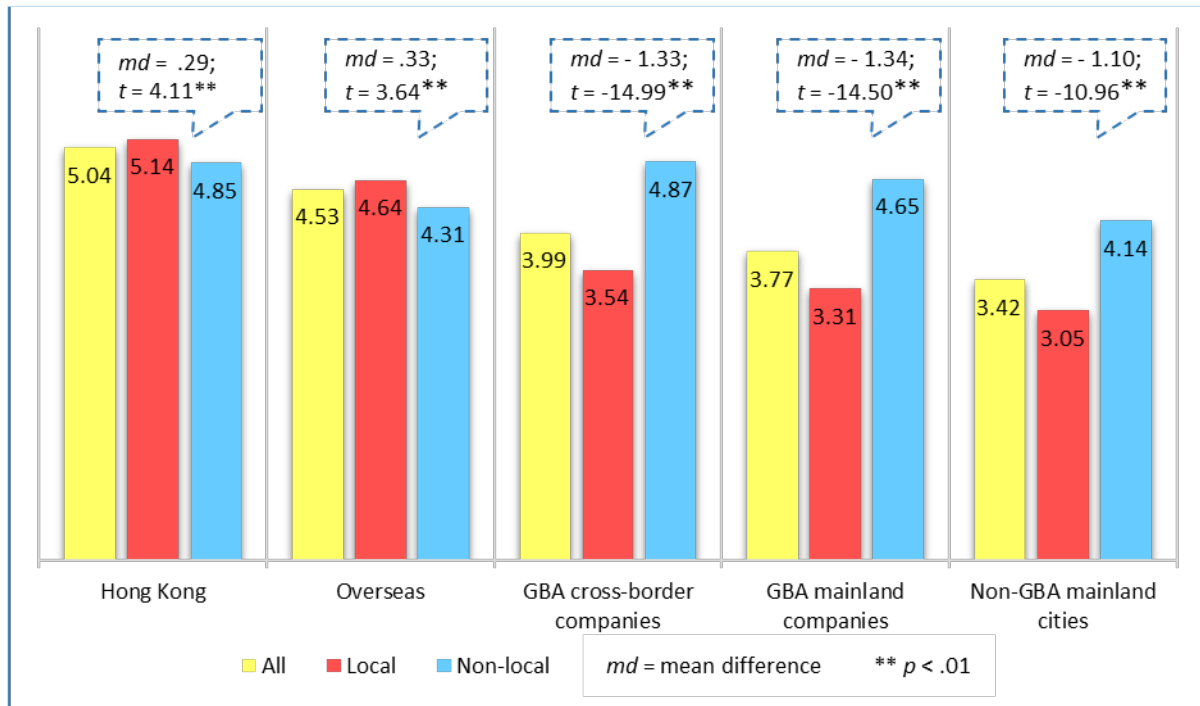


Figure 3.1. STEM undergraduates' intention to work in different areas.

### 3.1.2 STEM undergraduates' intention to work in different cities in the GBA

The undergraduates were further asked to rate their intention to work in different cities (other than Hong Kong) in the GBA. The orange columns in Figure 3.2 reveal that STEM undergraduates had the highest intention to work in Shenzhen ( $M = 4.36$ ;  $SD = 1.50$ ). In contrast, their intention to work in other cities in the GBA (other GBA cities) was the lowest ( $M = 3.50$ ;  $SD = 1.51$ ).

Afterwards, the impact of Hong Kong permanent residency on STEM undergraduates' intention to work in different areas was explored. As indicated in Figure 3.2, local undergraduates had significantly lower intention to work in Shenzhen, Guangzhou, and other GBA cities. The differences between the two groups were relatively greater in terms of working in Guangzhou ( $md = -1.06$ ;  $t = -11.61$ ;  $p < .01$ ) and Shenzhen ( $md = -1.02$ ;  $t = -11.17$ ;  $p < .01$ ). The difference ( $md = -.77$ ;  $t = -7.44$ ;  $p < .01$ ) was comparably smaller in terms of working in other GBA cities. The difference between the two groups' intentions to work in Macau was not significant.

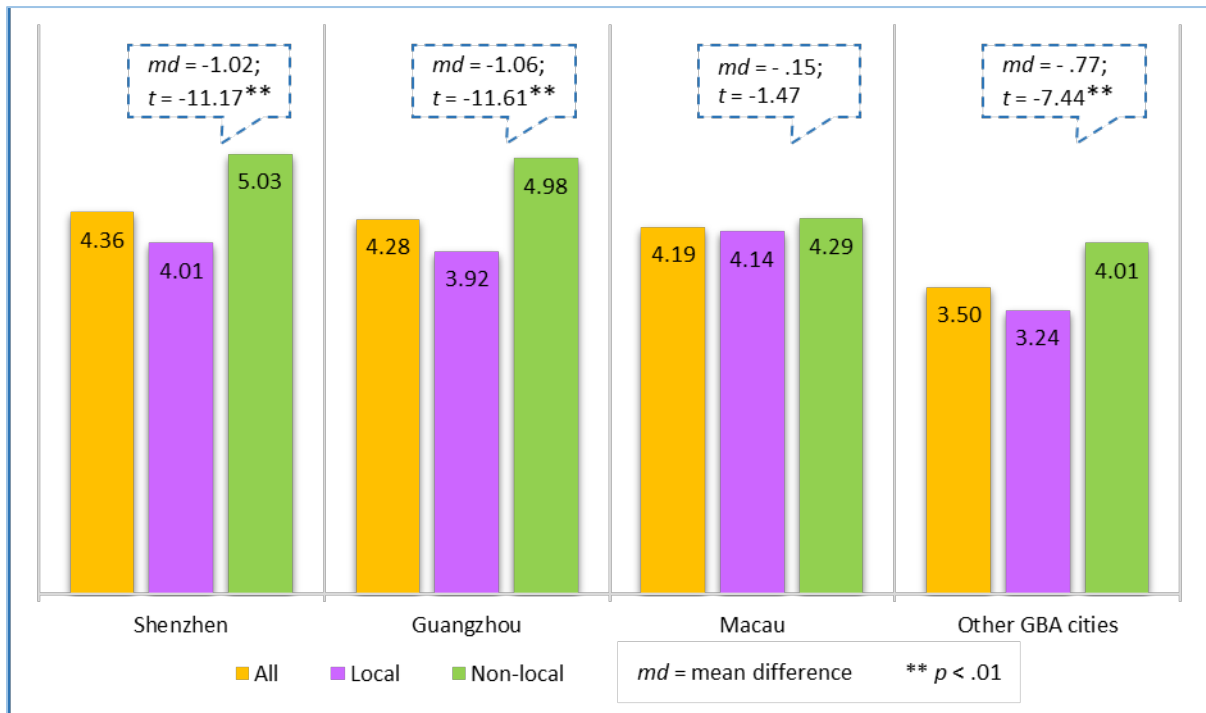


Figure 3.2. STEM undergraduates' intention to work in different cities in the GBA.

### 3.1.3 STEM undergraduates' intention to work in different departments in the I&T companies in the GBA

STEM students' intentions to work in different departments in the GBA were also explored. As indicated in Figure 3.3, they had relatively higher intention to work in the departments of research and development ( $M = 4.17$ ;  $SD = 1.53$ ), data analysis ( $M = 4.16$ ;  $SD = 1.50$ ), engineering design ( $M = 3.77$ ;  $SD = 1.54$ ) and information technology ( $M = 3.62$ ;  $SD = 1.52$ ). Comparatively, they had lower intention to work in the departments of sales ( $M = 2.90$ ;  $SD = 1.45$ ), production ( $M = 3.08$ ;  $SD = 1.44$ ), procurement ( $M = 3.17$ ;  $SD = 1.47$ ) and marketing ( $M = 3.26$ ;  $SD = 1.46$ ). Furthermore, STEM undergraduates had moderate intention to work in the departments of education ( $M = 3.59$ ;  $SD = 1.55$ ), finance ( $M = 3.52$ ;  $SD = 1.58$ ), quality control ( $M = 3.47$ ;  $SD = 1.49$ ), cyber security ( $M = 3.43$ ;  $SD = 1.50$ ) and administration ( $M = 3.36$ ;  $SD = 1.55$ ).

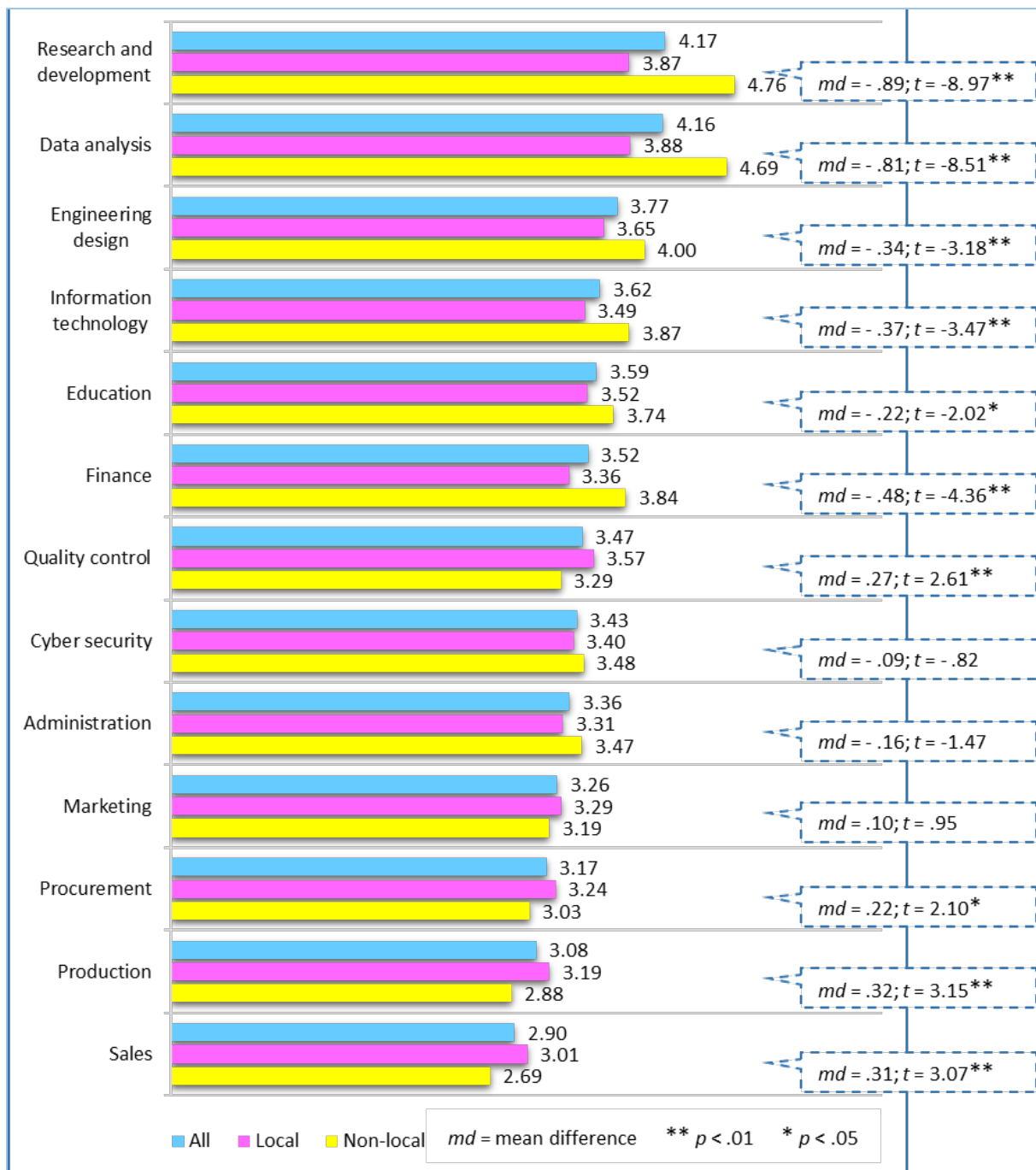


Figure 3.3. STEM undergraduates' intention to work in different departments in the GBA.

The impact of Hong Kong permanent residency on STEM undergraduates' intention to work in different departments was analysed as well. As revealed in the results in Figure 3.3, there were significant differences in 10 of 13 departments. Local undergraduates had significantly lower intention to work in 6 departments. The greatest difference was found in the department of research and development ( $md = -.89$ ;  $t = -8.97$ ;  $p < .01$ ), which was followed by data analysis ( $md = -.81$ ;  $t = -8.51$ ;  $p < .01$ ). In contrast, the difference was the smallest in the

department of education ( $md = -.22$ ;  $t = -2.02$ ;  $p < .05$ ). There were medium differences in the departments of finance ( $md = -.48$ ;  $t = -4.36$ ;  $p < .01$ ), information technology ( $md = -.37$ ;  $t = -3.47$ ;  $p < .01$ ) and engineering design ( $md = -.34$ ;  $t = -3.18$ ;  $p < .01$ ). Meanwhile, locals' intention to work in the departments of production ( $md = .32$ ;  $t = 3.15$ ;  $p < .01$ ), quality control ( $md = .27$ ;  $t = 2.61$ ;  $p < .01$ ) and procurement ( $md = .22$ ;  $t = 2.10$ ;  $p < .05$ ) were significantly higher. Nevertheless, no significant difference was discovered in the departments of cyber security, marketing and administration.

#### 3.1.4 Impacts of other factors on STEM undergraduates' intention to work in the GBA

For investigating the impacts of other factors on students' intention to work in the GBA, the two scores respectively for working in GBA cross-border and mainland companies were integrated into one through computing their means as the indicator of the overall intention to work in the GBA. *T*-tests results revealed the most significant factors were their Hong Kong permanent residency, mainland exchange experience and mainland internship experience, while no significant difference was found in terms of gender and family monthly income. Concerning the impact of Hong Kong permanent residency, students with Hong Kong permanent residency had a significantly lower intention to work in the GBA than those who had ( $md = -1.33$ ;  $t = -15.39$ ;  $p < .01$ ). In the aspect of students' mainland internship experience, those with internship experience were significantly more willing to work in the GBA than those without internship experience ( $md = 1.14$ ;  $t = 13.08$ ;  $p < .01$ ). Likewise, regarding students' mainland exchange experience, those who had such experience showed significantly greater intention to work in the GBA than those who had none ( $md = .40$ ;  $t = 3.55$ ;  $p < .01$ ).

#### 3.1.5 Comparison between STEM and non-STEM undergraduates

Subsequently, the differences between STEM and non-STEM majors were examined. *T*-test results shown in Figure 3.4 revealed that STEM majors had a significantly higher intention to work in GBA mainland companies ( $md = .23$ ;  $t = 2.02$ ;  $p < .05$ ). However, no significant difference was found in their intention to work in Hong Kong, overseas, in GBA cross-border companies and non-GBA mainland cities.

As indicated in Figure 3.5, in terms of different cities, the only significant difference between the two majors was discovered in Guangzhou. STEM majors had significantly higher intention to work in Guangzhou ( $md = .37$ ,  $t = 3.33$ ,  $p < .01$ ) than non-STEM majors. Nevertheless, no

significant difference of the intention to work in Shenzhen, Macau and other GBA cities was found.

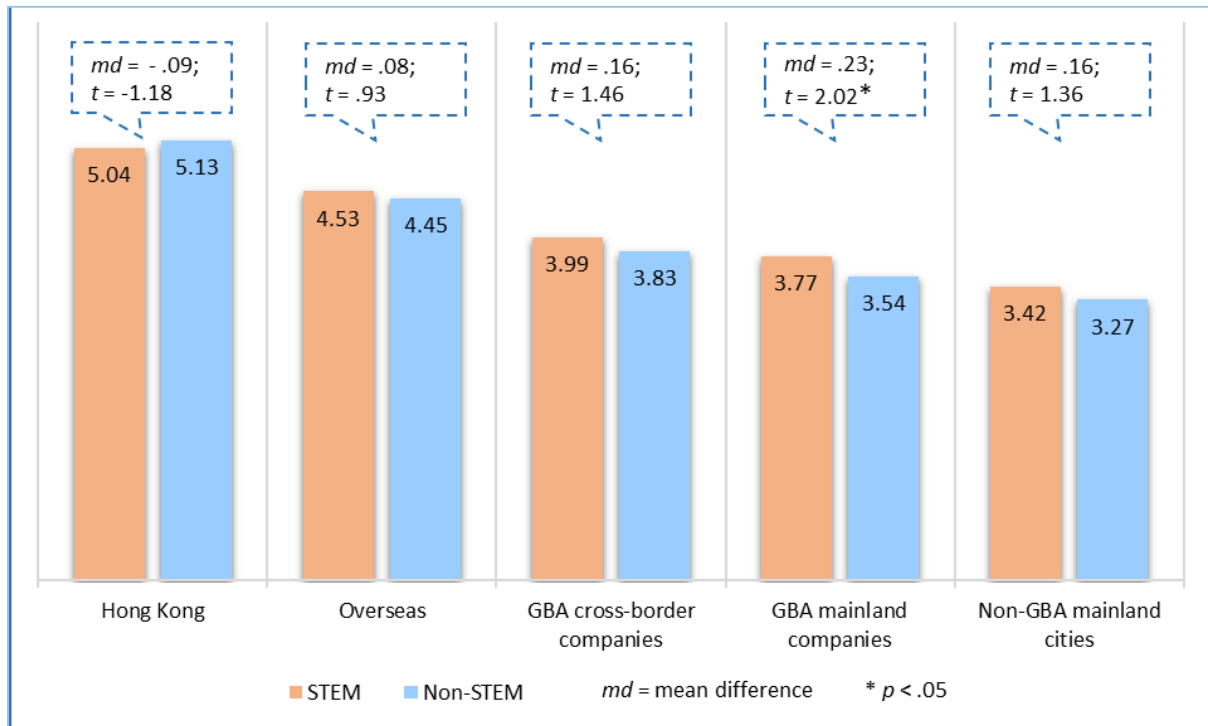


Figure 3.4. Comparison between STEM and non-STEM undergraduates' intention to work in different areas.

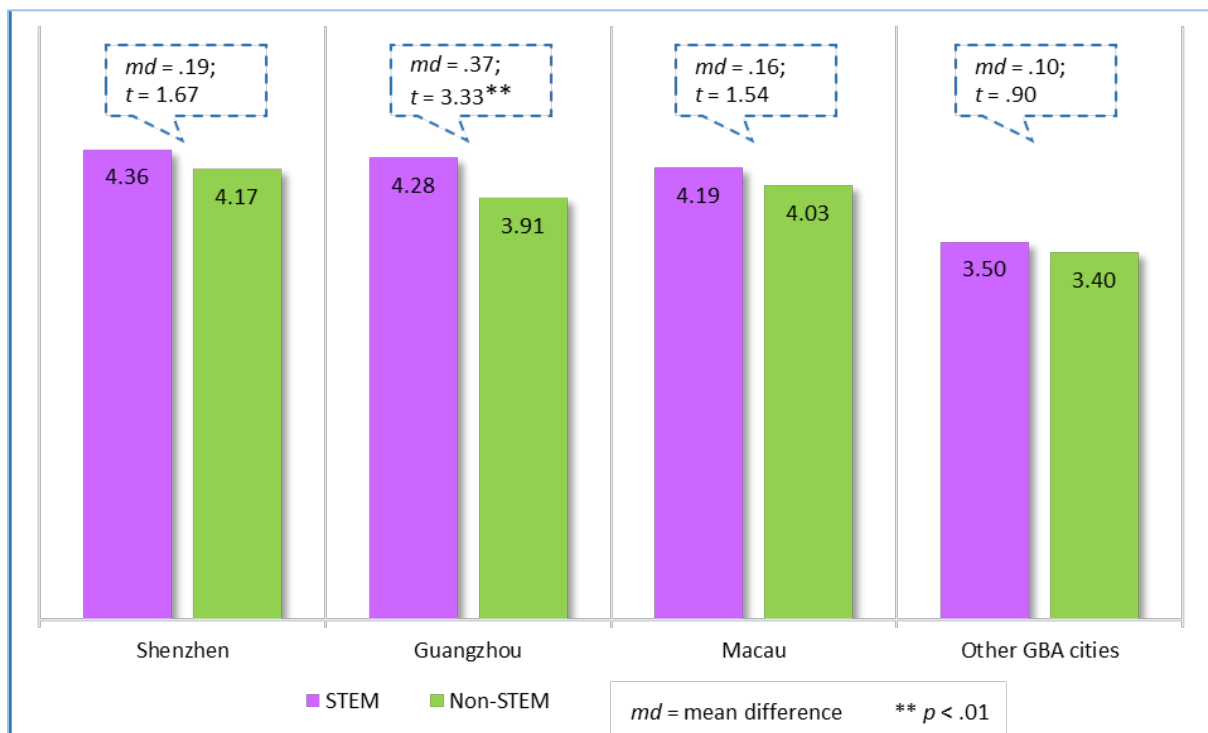


Figure 3.5. Comparison between STEM and non-STEM undergraduates' intention to work in different cities in the GBA.

After examining the impacts of other factors on STEM and non-STEM majors' intention to work in the GBA, it was found that both Hong Kong permanent residency and mainland internship experience had significant impacts on two groups of students. Students without Hong Kong permanent residency and those with mainland internship experience tended to have higher intention to work in the GBA. Nonetheless, in the aspect of mainland exchange experience, STEM majors with experience had significantly higher intention to work in the GBA, while no such difference was indicated among non-STEM majors.

## 3.2 Personal values for working in the GBA

### 3.2.1 STEM undergraduates' perception of personal values for working in the GBA

Based on the interviews with undergraduates, a total of 12 items were generated to assess how they perceive the importance of working in the GBA in terms of individual benefit on a 6-point Likert scale as follows. The keywords of the items were listed in the blankets following the items, which will be used as their labels when they are reported in tables and figures. The subsequent paragraphs will introduce the status of STEM undergraduates' perception of these items, and the impacts of demographic information on their perception.

- My major has better prospects of development in the GBA. (*Better development prospects*)
- I can get a higher salary if I work in the GBA. (*Higher salary*)
- Working in the GBA can improve my professional skills. (*Skill improvement*)
- The work experience in the GBA makes me more competitive when applying for jobs. (*Being more competitive*)
- Working in the GBA will help with my promotion in the future. (*Getting a promotion*)
- Working in the GBA can improve my quality of life. (*Better life quality*)
- Working in the GBA can improve my living environment. (*Better living environment*)
- The employment situation of our major can be improved if Hong Kong youths can find jobs in the GBA. (*Improving employment situation*)
- Working in the GBA can help to expand my connections with I&T talents. (*Expanding connections*)
- Working in the GBA can let me know the latest developments in the I&T industry. (*Knowing latest developments*)
- Working in the GBA can help me familiarize myself with the market in mainland China. (*Knowing mainland market*)
- Working in the GBA will help me to start a business in the future. (*Starting a business*)

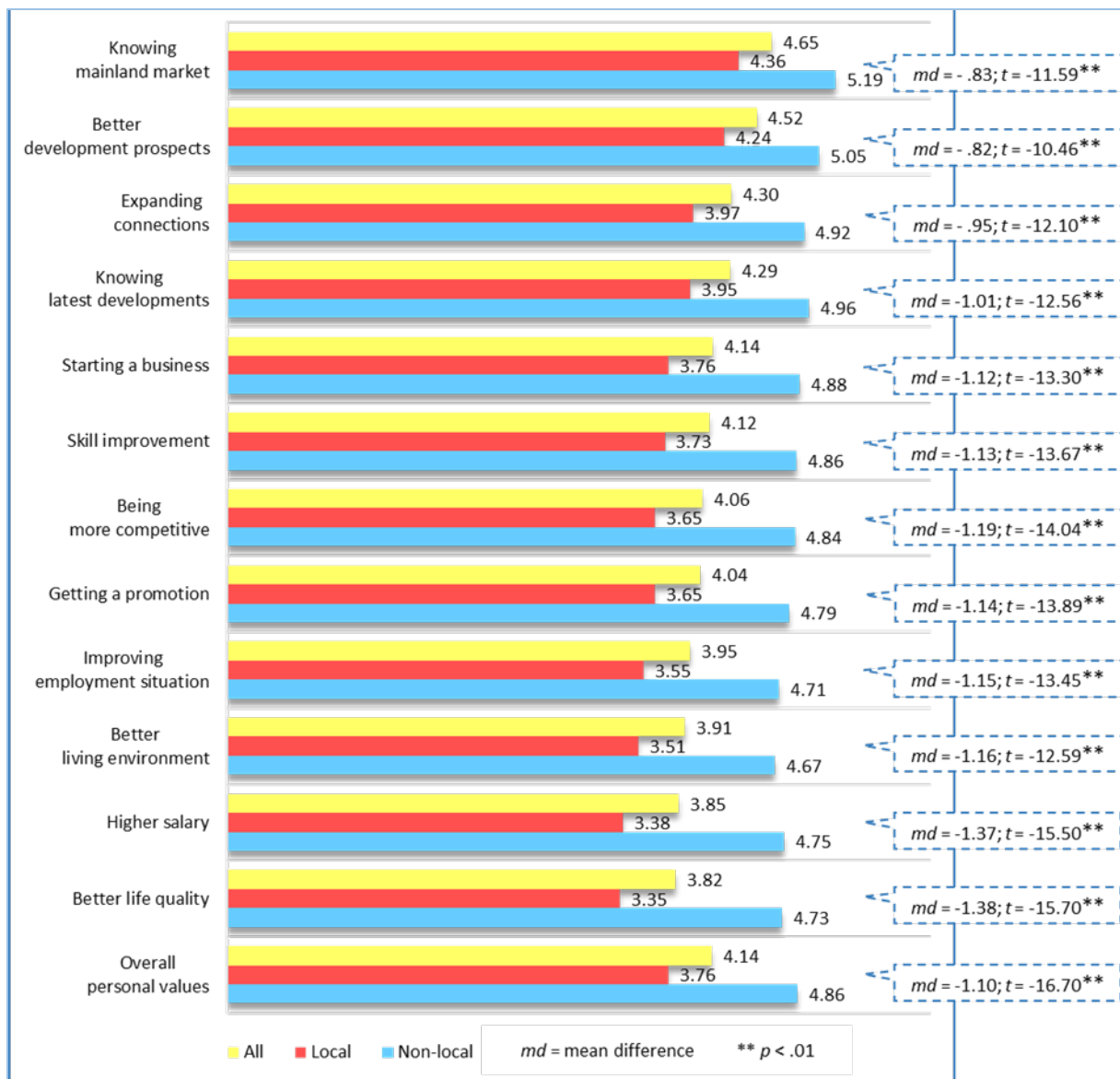


Figure 3.6. STEM undergraduates' perception of personal values for working in the GBA.

As indicated in the yellow columns in Figure 3.6, STEM undergraduates perceived the highest personal values of working in the GBA in terms of knowing mainland market ( $M = 4.65$ ;  $SD = 1.24$ ), followed by better development prospects ( $M = 4.52$ ;  $SD = 1.28$ ), expanding connections ( $M = 4.30$ ;  $SD = 1.31$ ) and knowing latest developments ( $M = 4.29$ ;  $SD = 1.32$ ). In contrast, they perceived relatively lower values regarding better life quality ( $M = 3.82$ ;  $SD = 1.51$ ), higher salary ( $M = 3.85$ ;  $SD = 1.49$ ), better living environment ( $M = 3.91$ ;  $SD = 1.50$ ) and improving employment situation ( $M = 3.95$ ;  $SD = 1.43$ ). Meanwhile, the perceived values were medium in the aspects of starting a business ( $M = 4.14$ ;  $SD = 1.40$ ), skill improvement ( $M = 4.12$ ;  $SD = 1.38$ ), being more competitive ( $M = 4.06$ ;  $SD = 1.42$ ) and getting a promotion ( $M = 4.04$ ;  $SD = 1.37$ ).

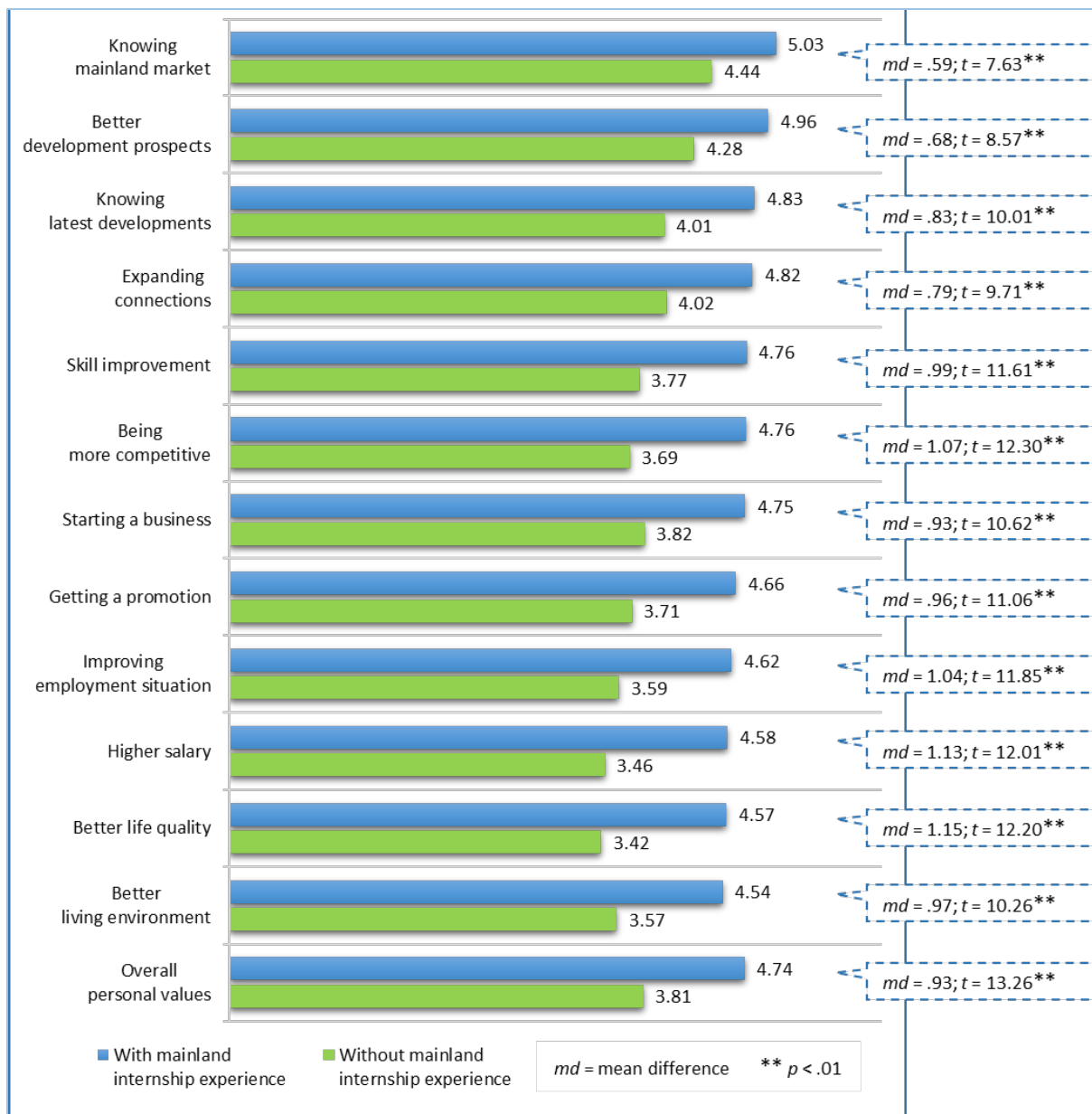


Figure 3.7. Comparing perceptions of personal values for working in the GBA between STEM undergraduates with and without mainland internship experience.

Figure 3.7 shows the impacts of students' mainland internship experience on their personal values. STEM undergraduates who had mainland internship experience perceived significantly higher values than those who had none ( $md = .93$ ;  $t = 13.26$ ;  $p < .01$ ). The mean differences were significant in all 12 items, ranging from .59 to 1.15. The differences in better life quality ( $md = 1.15$ ;  $t = 12.20$ ;  $p < .01$ ) and higher salary ( $md = 1.13$ ;  $t = 12.01$ ;  $p < .01$ ) were the greatest, while there were comparably smaller differences in knowing mainland market ( $md = .59$ ;  $t = 7.63$ ;  $p < .01$ ) and better development prospects ( $md = .68$ ;  $t = 8.57$ ;  $p < .01$ ).



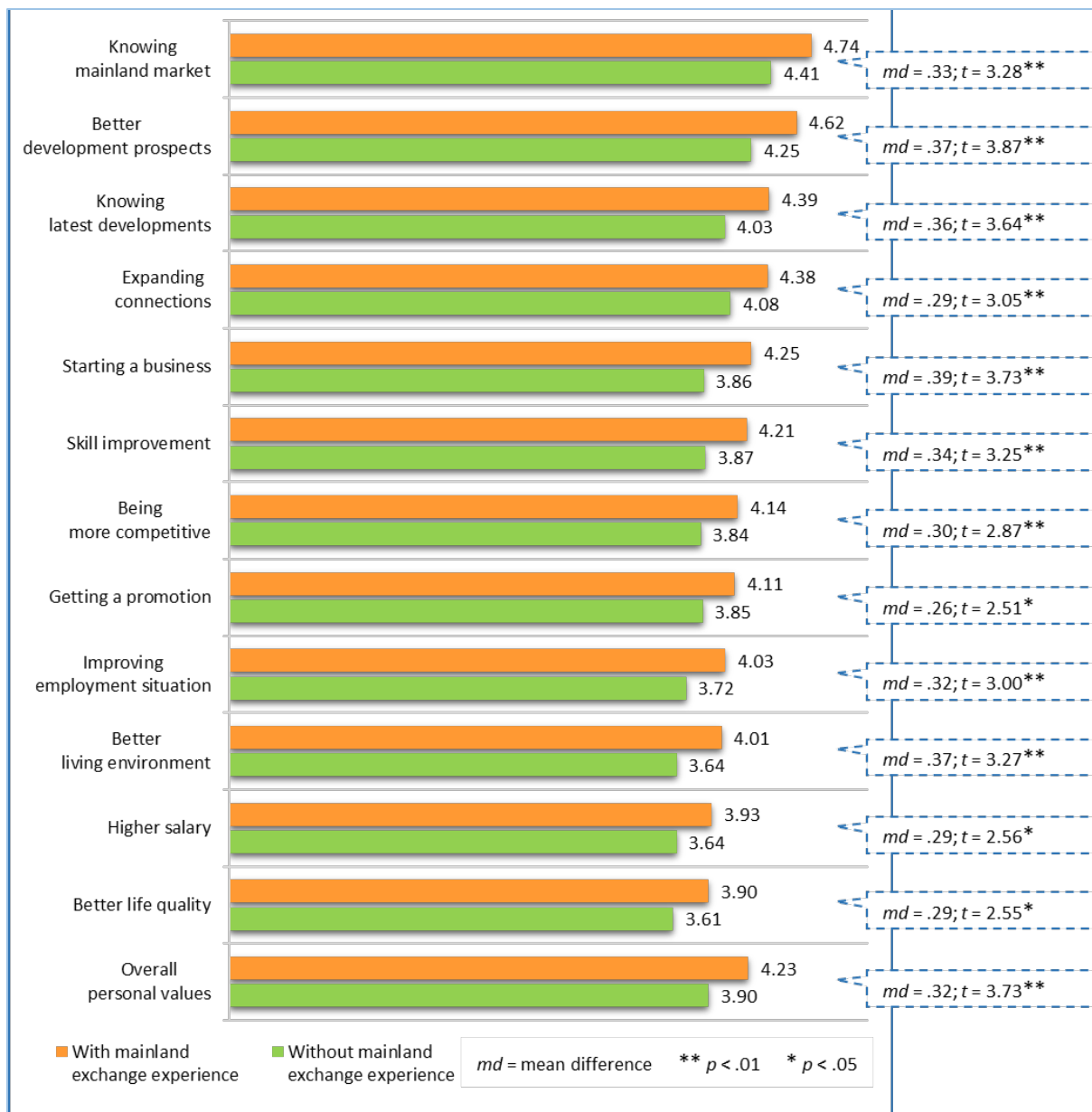


Figure 3.8. Comparing perceptions of personal values for working in the GBA between STEM undergraduates with and without mainland exchange experience.

As illustrated in Figure 3.8, the results also revealed significant differences in terms of mainland exchange experience. STEM undergraduates with mainland exchange experience perceived significantly higher personal values than those without exchange experience ( $md = .32; t = 3.73; p < .01$ ). The mean differences were significant in all 12 items, ranging from .26 to .39. Relatively greater differences were found in starting a business ( $md = .39; t = 3.73; p < .01$ ), better development prospects ( $md = .37; t = 3.87; p < .01$ ) and better living environment ( $md = .37; t = 3.27; p < .01$ ).

### 3.2.2 Comparison between STEM and non-STEM undergraduates' perception of personal values for working in the GBA

Afterwards, the differences between STEM and non-STEM majors were examined. As displayed in Figure 3.9, STEM majors' perception of overall personal values was significantly higher than non-STEM majors' ( $md = .32$ ;  $t = 3.72$ ;  $p < .01$ ). The greatest difference was revealed in better development prospects ( $md = .63$ ;  $t = 6.53$ ;  $p < .01$ ), followed by higher salary ( $md = .42$ ;  $t = 3.91$ ;  $p < .01$ ) and skill improvement ( $md = .40$ ;  $t = 3.97$ ;  $p < .01$ ). There were relatively smaller differences in knowing mainland market ( $md = .21$ ;  $t = 2.31$ ;  $p < .05$ ), better living environment ( $md = .23$ ;  $t = 2.12$ ;  $p < .05$ ) and being more competitive ( $md = .25$ ;  $t = 2.40$ ;  $p < .05$ ). However, no significant difference was found in getting a promotion.

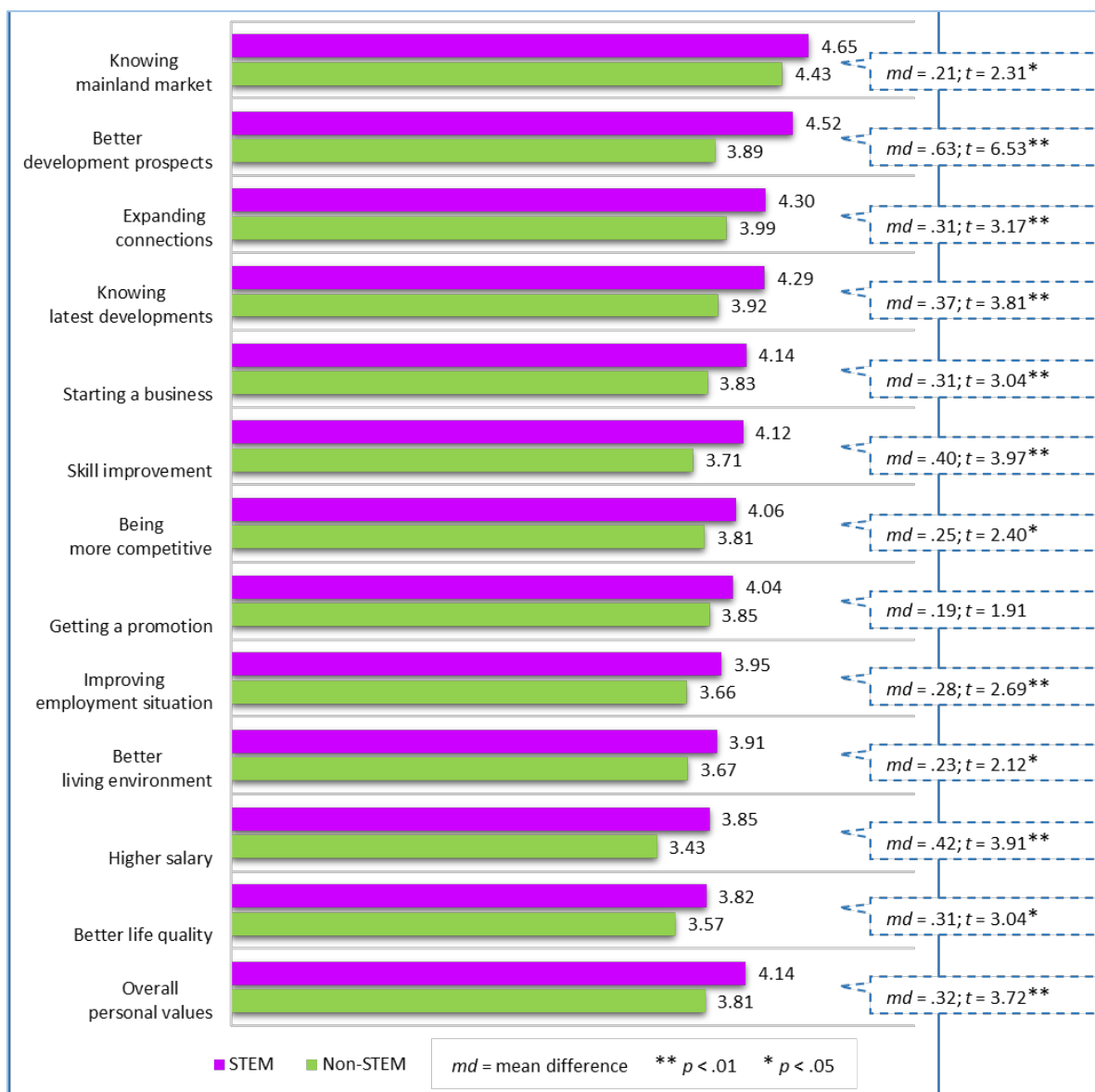


Figure 3.9. Comparing perceptions of personal values for working in the GBA between STEM and non-STEM undergraduates.

### 3.3 Collective values for working in the GBA

#### 3.3.1 STEM undergraduates' perception of collective values for working in the GBA

A total of 6 items were designed to assess how undergraduates perceived the importance of working in the GBA in terms of collective benefits. The keywords of the items were listed in the blankets following the items, which will be used as their labels when they are reported in tables and figures. The subsequent paragraphs will introduce the status of STEM undergraduates' perception of these items, and the impacts of demographic information on their perception.

- Hong Kong youths working in the GBA will promote the future development of the I&T industry in Hong Kong. (*Promoting HK development*)
- Hong Kong youths working in the GBA can help Hong Kong to obtain more investment in the future. (*Obtaining investment*)
- Hong Kong youths working in the GBA can create more cooperation opportunities for I&T talents in the GBA. (*More cooperation opportunities*)
- Hong Kong youths working in the GBA can promote the integration of Hong Kong with other cities in the GBA. (*Promoting GBA integration*)
- Hong Kong youths working in the GBA can facilitate the internationalization of enterprises in the GBA. (*Facilitating enterprise internationalization*)
- Hong Kong youths working in the GBA can help integrate the I&T resources into the GBA. (*Integrating GBA resources*)

In Figure 3.10, the yellow columns represent all STEM undergraduates' perception of the collective values of working in the GBA. Results suggested that the highest values they perceived were in more cooperation opportunities in GBA ( $M = 4.40$ ;  $SD = 1.29$ ) and promoting GBA integration ( $M = 4.39$ ;  $SD = 1.31$ ). Nevertheless, their perceived values were relatively lower in terms of obtaining investment in HK ( $M = 4.18$ ;  $SD = 1.37$ ) and promoting HK development ( $M = 4.18$ ;  $SD = 1.37$ ).

Further analyses were also conducted to examine the impacts of demographic information on STEM undergraduates' perception of the collective values of working in the GBA. The results revealed significant differences in terms of Hong Kong permanent residency, mainland internship experience and mainland exchange experience. On the other hand, no significant difference was found in terms of gender and family monthly income. As indicated in the *t*-test

results shown in Figure 3.10, local STEM undergraduates perceived significantly less value than local STEM undergraduates ( $md = -1.09; t = -15.92; p < .01$ ). The mean differences were significant in all 6 items, ranging from -1.15 to -.98.

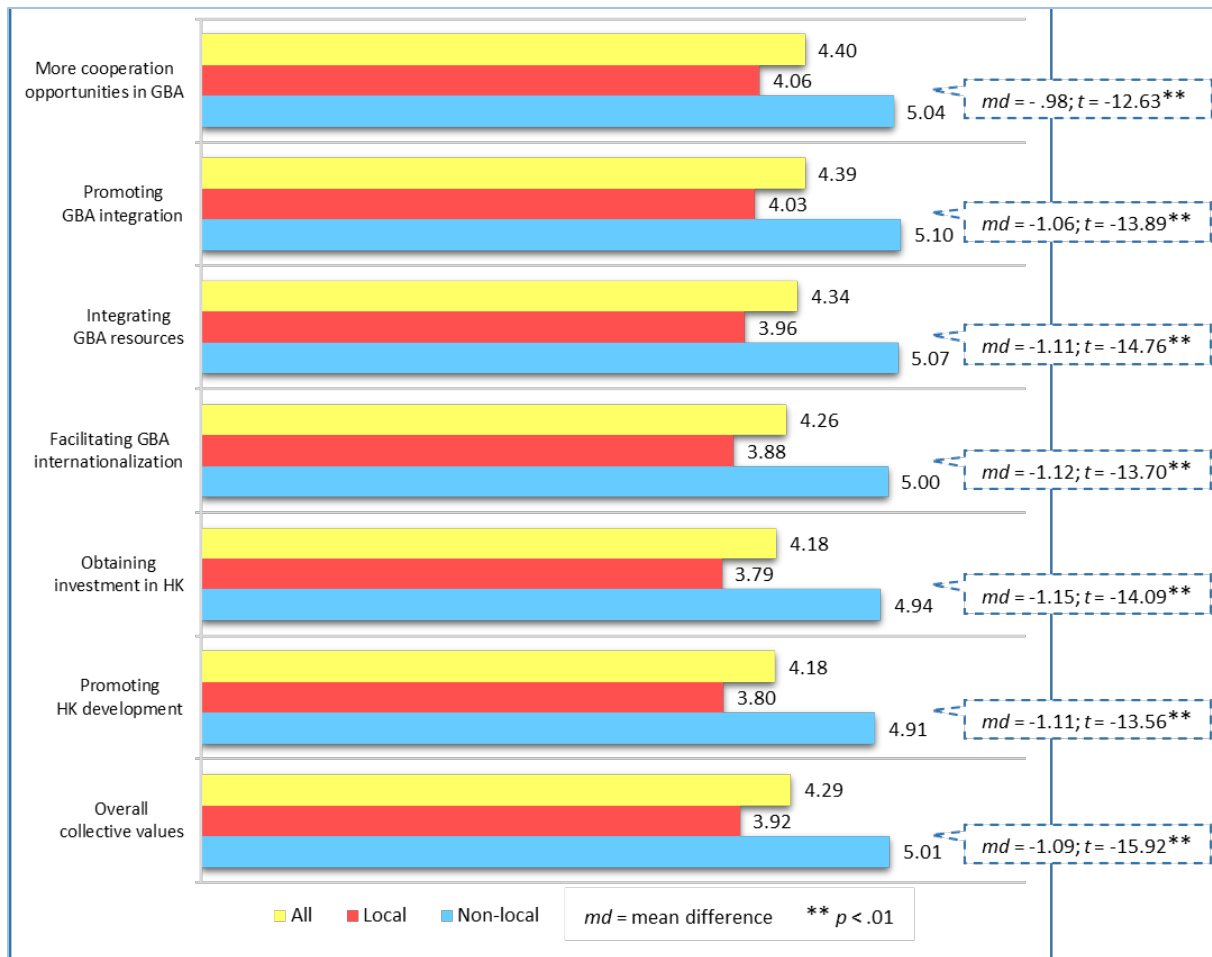


Figure 3.10. STEM undergraduates' perception of collective values for working in the GBA.

Figure 3.11 shows the impacts of students' mainland internship experience on their collective values. STEM undergraduates who had mainland internship experience perceived significantly higher values than those without such experience ( $md = .92; t = 12.82; p < .01$ ). Mean differences were significant in all 6 items, ranging from .79 to 1.04. The difference in the items about obtaining investment in HK ( $md = 1.04; t = 12.34; p < .01$ ) and promoting HK development ( $md = .95; t = 11.31; p < .01$ ) was the greatest. Meanwhile, there were comparably smaller differences in promoting GBA integrations ( $md = .79; t = 9.68; p < .01$ ) and more cooperation opportunities in GBA ( $md = .85; t = 10.46; p < .01$ ).

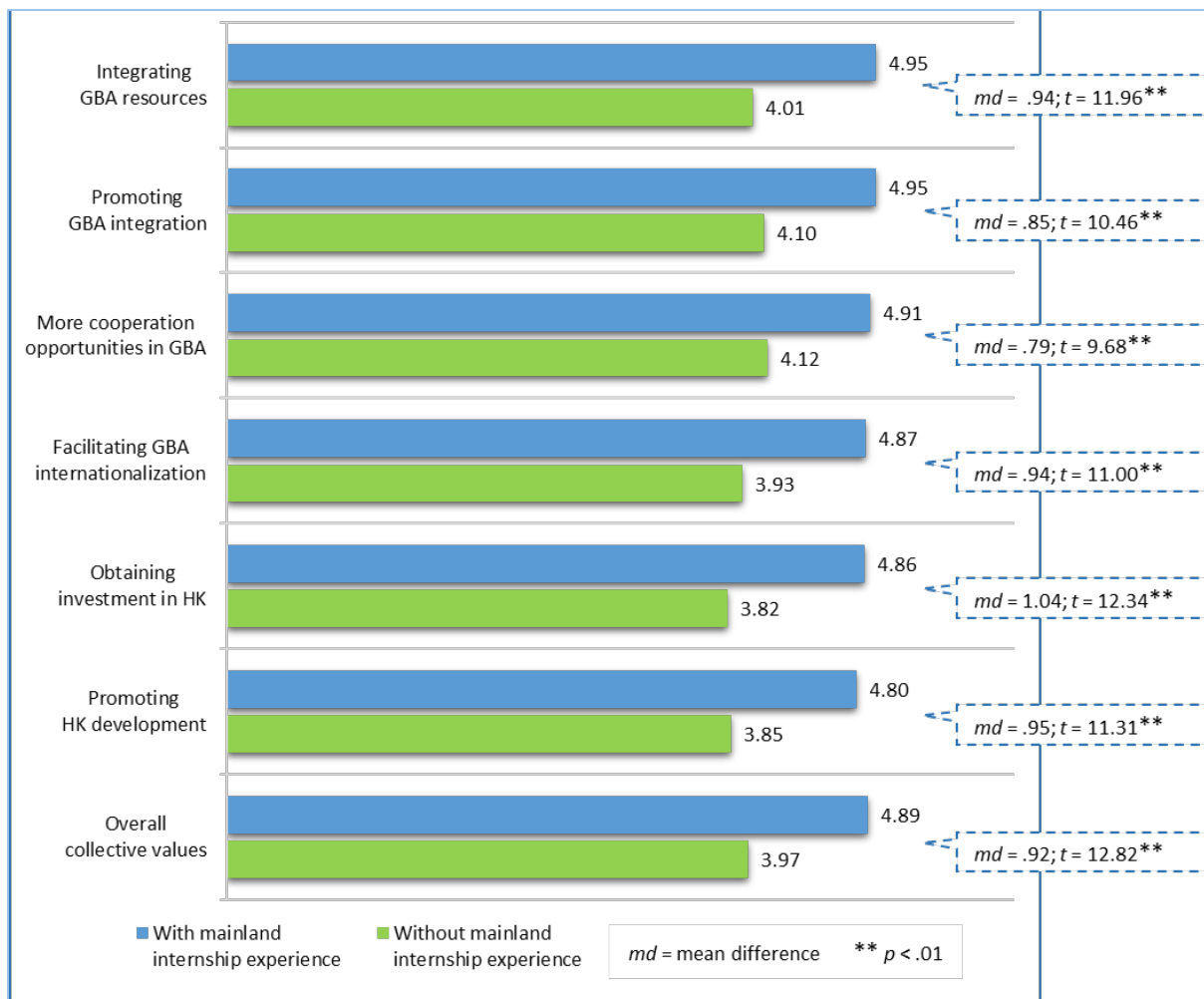


Figure 3.11. Comparing perceptions of collective values for working in the GBA between STEM undergraduates with and without mainland internship experience.

As illustrated in Figure 3.12, significant differences in terms of mainland exchange experience were also found. STEM undergraduates with mainland exchange experience perceived significantly higher collective values than those without such experience ( $md = .34$ ;  $t = 3.58$ ;  $p < .01$ ). Mean differences were significant in all 6 items, ranging from .25 to .39. There were relatively greater differences in items about more cooperation opportunities in GBA ( $md = .39$ ;  $t = 3.81$ ;  $p < .01$ ), promoting GBA integration ( $md = .38$ ;  $t = 3.66$ ;  $p < .01$ ) and integrating GBA resources ( $md = .38$ ;  $t = 3.59$ ;  $p < .01$ ).

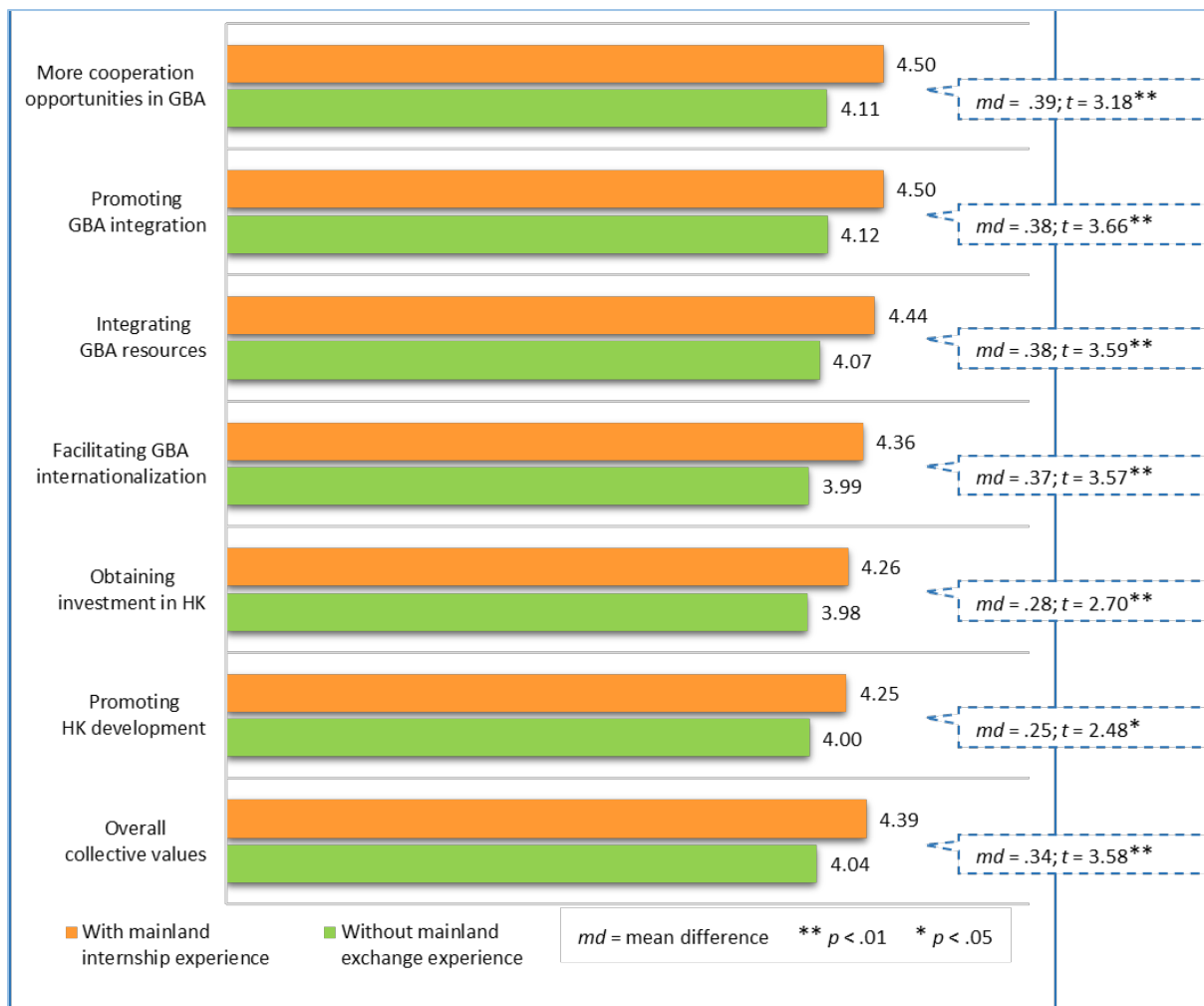


Figure 3.12. Comparing perceptions of collective values for working in the GBA between STEM undergraduates with and without mainland exchange experience.

### 3.3.2 Comparison between STEM and non-STEM undergraduates' perception of collective values

Furthermore, the differences between STEM and non-STEM majors were explored. As displayed in Figure 3.13, STEM majors' perception of overall collective values was significantly higher than non-STEM majors ( $md = .25$ ;  $t = 2.81$ ;  $p < .01$ ). The mean differences in the 5 items ranged from .22 to .32. All these differences were significant, except for facilitating GBA internationalization.

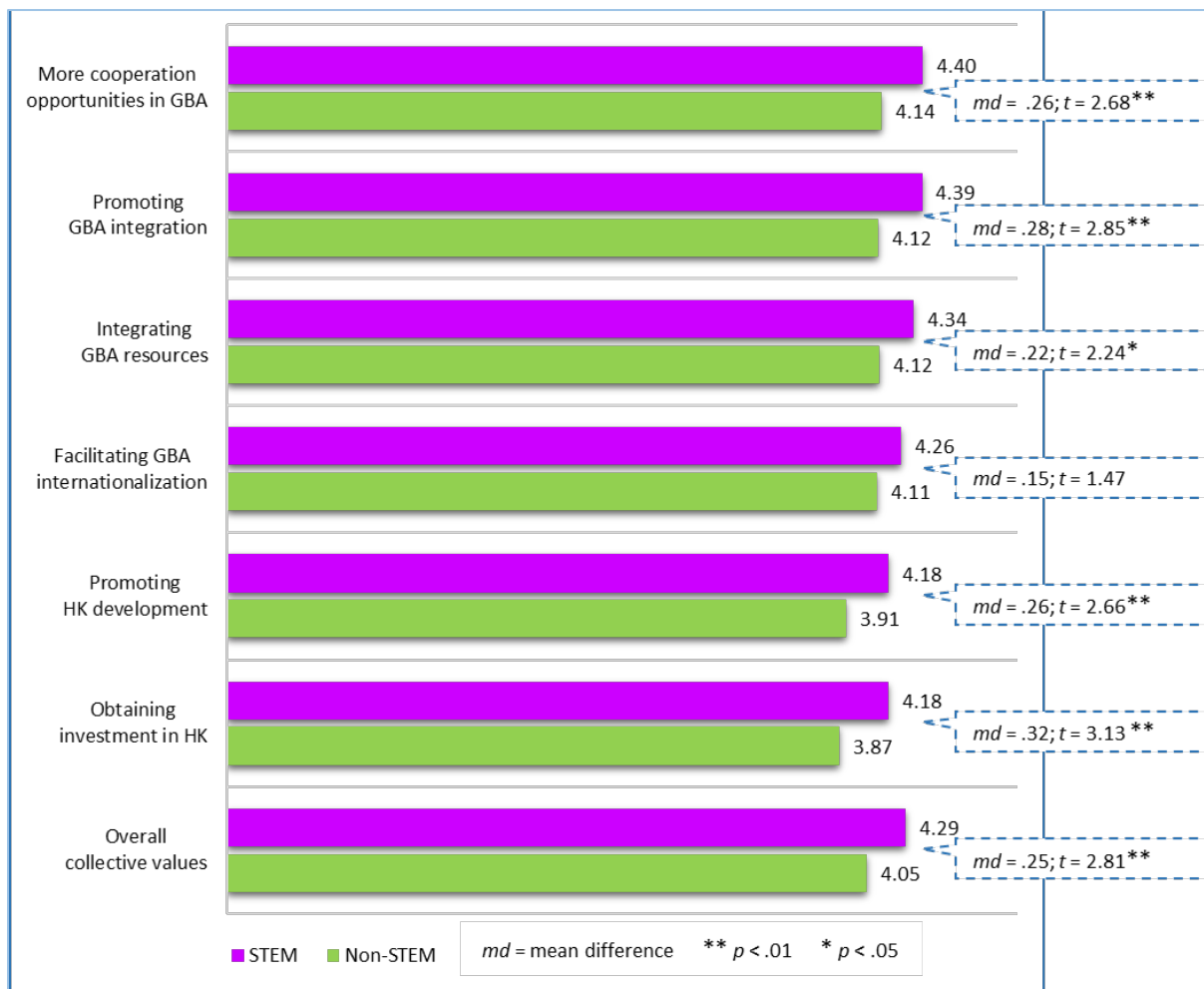


Figure 3.13. Comparing perceptions of collective values for working in the GBA between STEM and non-STEM undergraduates.

### 3.4 Internal conditions for working in the GBA

#### 3.4.1 STEM undergraduates' perception of internal conditions for working in the GBA

In order to evaluate STEM undergraduates' perception of their internal conditions for working in the GBA, 6 items were developed as follows. The keywords of the items were listed in the blankets following the items, which will be used as their labels when they are reported in tables and figures. The subsequent paragraphs will introduce the status of STEM undergraduates' perception of these items, and the impacts of demographic information on their perception.

- I believe I have sufficient professional knowledge and skills to work in the GBA. (*Being professional*)
- I can deal with the problems I encounter when working in the GBA. (*Dealing with problems*)
- I can communicate well with my colleagues in mainland China. (*Communicating well*)

- I have sufficient R&D capability to do the job in the GBA. (*R&D capability*)
- I can learn new things effectively to adapt to the new working environment in the GBA. (*Learning new things*)
- I have confidence in adapting to the new living environment in the GBA. (*Adapting to new environment*)

As indicated in the yellow columns in Figure 3.14, STEM undergraduates' evaluation of their internal conditions for working in the GBA was relatively higher in the items about learning new things ( $M = 4.59$ ;  $SD = 1.15$ ) and being professional ( $M = 4.58$ ;  $SD = 1.11$ ). The average scores were relatively lower in the items about R&D capability ( $M = 4.34$ ;  $SD = 1.26$ ) and adapting to the new environment ( $M = 4.36$ ;  $SD = 1.38$ ).

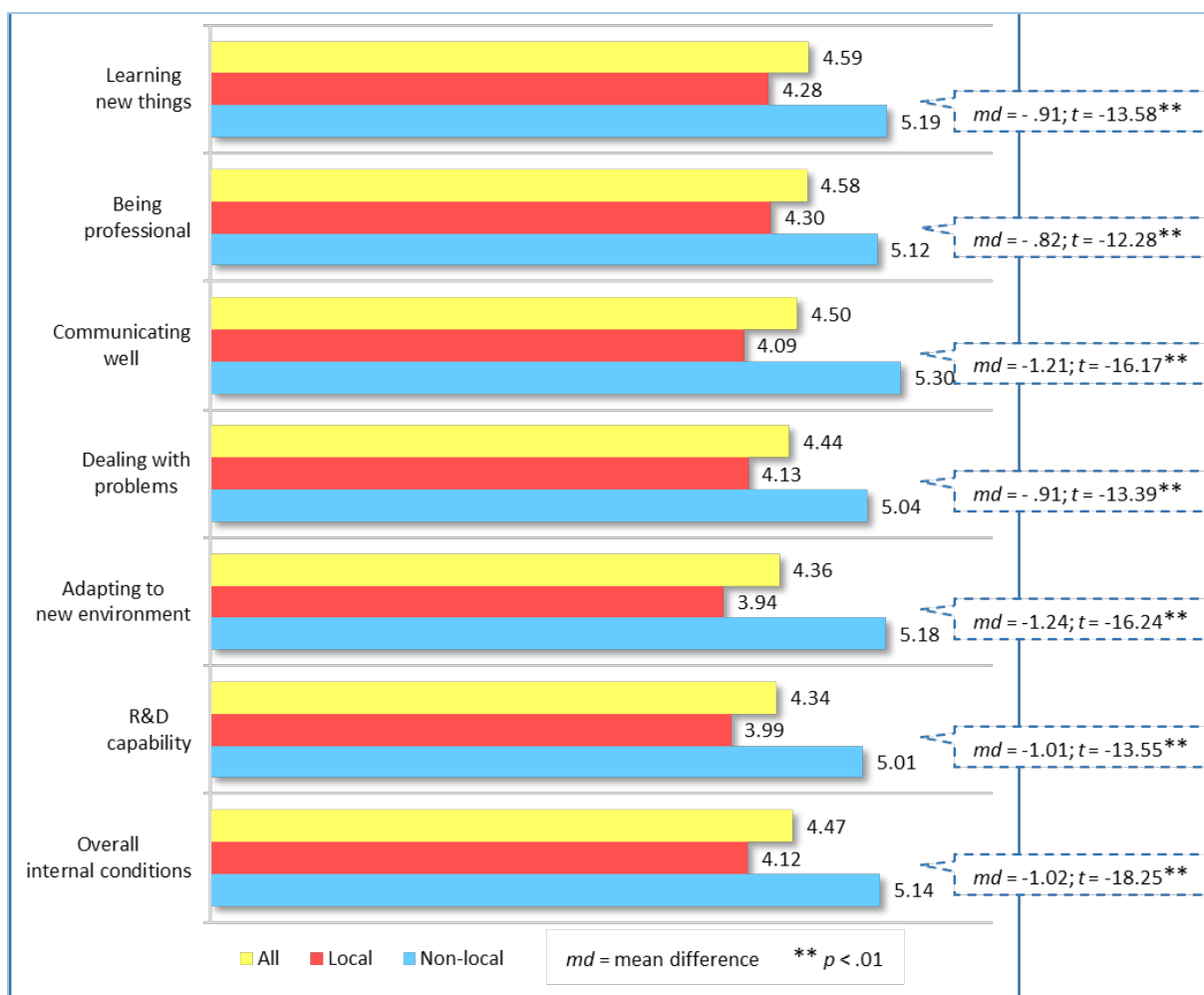


Figure 3.14. STEM undergraduates' perception of internal conditions for working in the GBA.

Afterwards, the impacts of demographic information on STEM undergraduates' perception of the internal conditions of working in the GBA were explored. The results revealed significant



differences in terms of Hong Kong permanent residency, mainland internship experience and mainland exchange experience. However, no significant difference was found in terms of gender and family monthly income. As indicated in the *t*-test results in Figure 3.14, the means of local STEM undergraduates were significantly lower than non-local STEM undergraduates ( $md = -1.02$ ;  $t = -18.25$ ;  $p < .01$ ). Mean differences were significant in all 6 items, ranging from -1.24 to -.82. The greatest differences were found in the items about adapting to new environment ( $md = -1.24$ ;  $t = -16.24$ ;  $p < .01$ ) and communicating well ( $md = -1.21$ ;  $t = -16.17$ ;  $p < .01$ ). The differences were relatively smaller in the items about being professional ( $md = -.82$ ;  $t = -12.28$ ;  $p < .01$ ), learning new things ( $md = -.91$ ;  $t = -13.58$ ,  $p < .01$ ) and dealing with problems ( $md = -.91$ ;  $t = -13.39$ ;  $p < .01$ ).

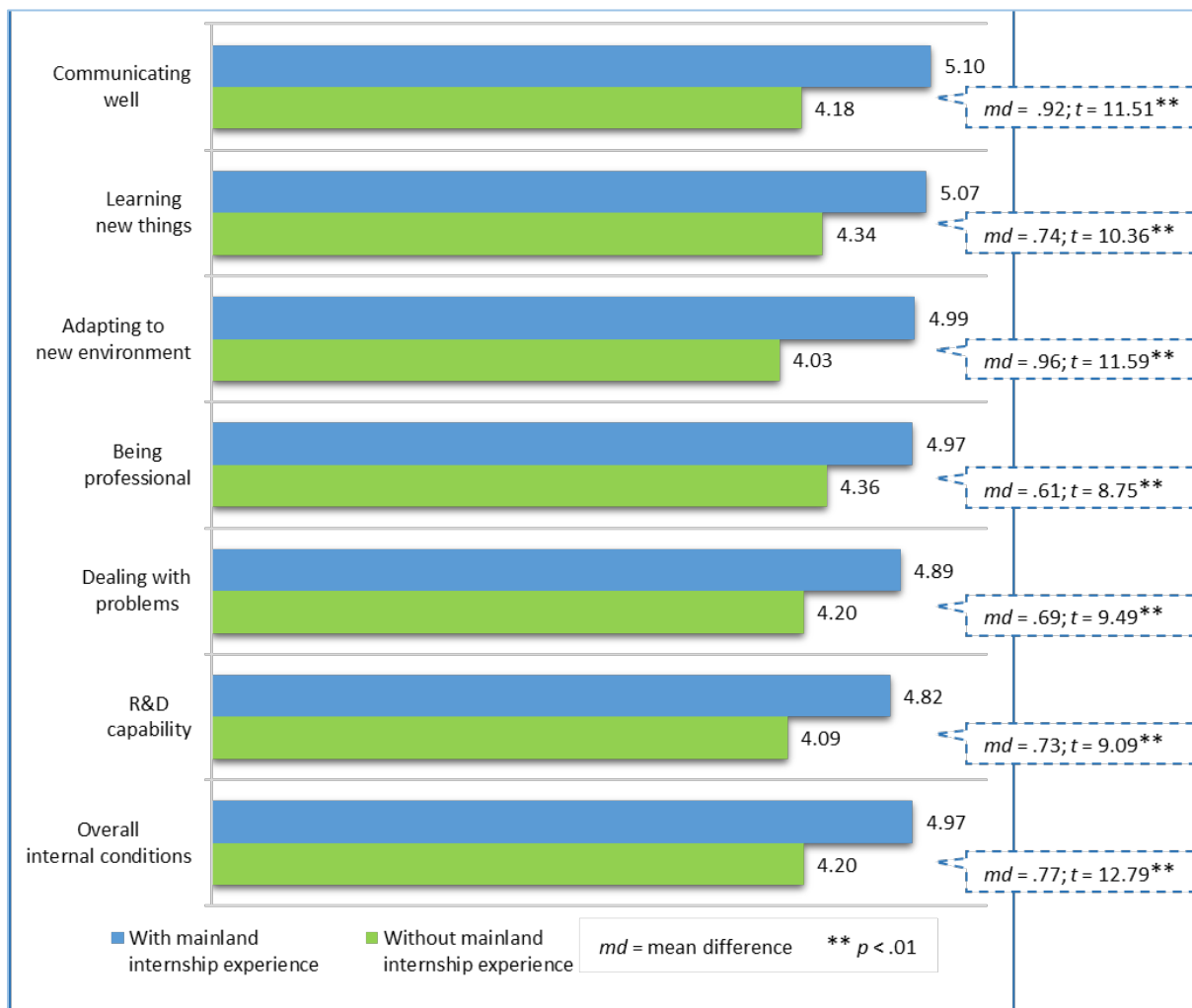


Figure 3.15. Comparing perceptions of internal conditions for working in the GBA between STEM undergraduates with and without mainland internship experience.

Figure 3.15 presents the influences of students' mainland internship experience on their perception of internal conditions. The means of STEM undergraduates with mainland internship experience were significantly higher than those without such experience ( $md = .77$ ;  $t = 12.79$ ;  $p < .01$ ). Mean differences were significant in all 6 items, ranging from .61 to .96. The differences in the items about adapting to the new environment ( $md = .96$ ;  $t = 11.59$ ;  $p < .01$ ) and communicating well ( $md = .92$ ;  $t = 11.51$ ;  $p < .01$ ) were the greatest, while there were comparably smaller differences in the items about being professional ( $md = .61$ ;  $t = 8.75$ ;  $p < .01$ ) and dealing with problems ( $md = .69$ ;  $t = 9.49$ ;  $p < .01$ ).

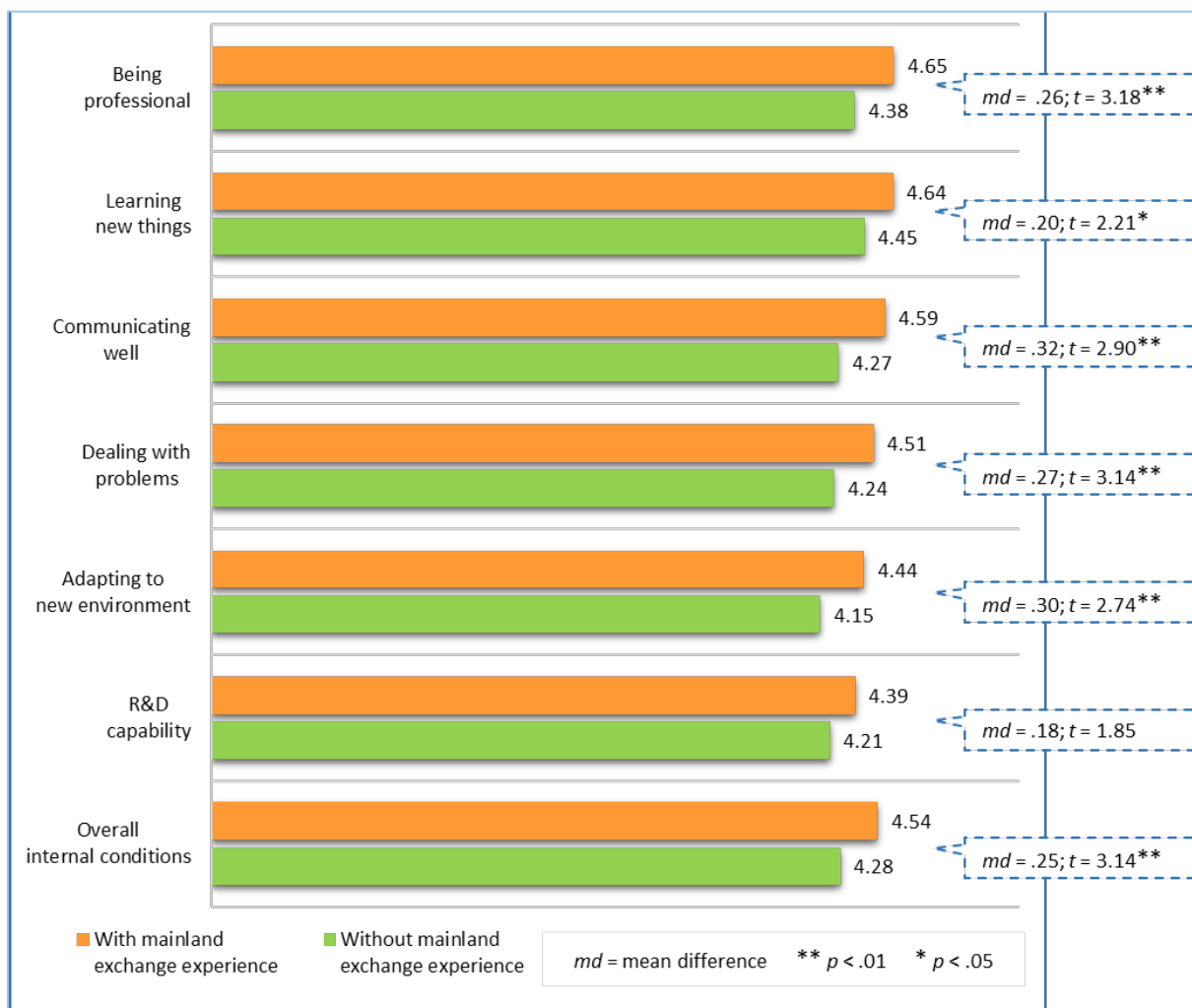


Figure 3.16. Comparing perceptions of internal conditions for working in the GBA between STEM undergraduates with and without mainland exchange experience.

As illustrated in Figure 3.16, significant differences could be found in the perceptions of internal conditions for working in the GBA between STEM undergraduates with and without mainland exchange experience. As for the overall score of internal condition, the mean of STEM undergraduates with mainland exchange experience was significantly higher than those without such experience ( $md = .25$ ;  $t = 3.14$ ;  $p < .01$ ). The mean differences were significant

in 5 items, ranging from .20 to .32. There were relatively greater differences in the items about communicating well ( $md = .32; t = 2.90; p < .01$ ) and adapting to new environment ( $md = .30; t = 2.74; p < .01$ ). The difference in item about learning new things ( $md = .20; t = 2.12; p < .05$ ) was comparably smaller. Nevertheless, no significant difference in R&D capability ( $md = .18; t = 1.85; p > .05$ ) was discovered.

### 3.4.2 Comparison between STEM and non-STEM undergraduates' perception of internal conditions for working in the GBA

The differences between STEM and non-STEM majors were also compared. As indicated in Figure 3.17, the means of STEM majors perceived were significantly higher values of internal conditions than non-STEM majors ( $md = .24; t = 3.11; p < .01$ ). Mean differences were significant in all 6 items, ranging from .20 to .32. The greatest difference was revealed in terms of R&D capability ( $md = .32; t = 3.43; p < .01$ ), followed by being professional ( $md = .29; t = 3.57; p < .01$ ). There was no significant difference in the item about communicating well.

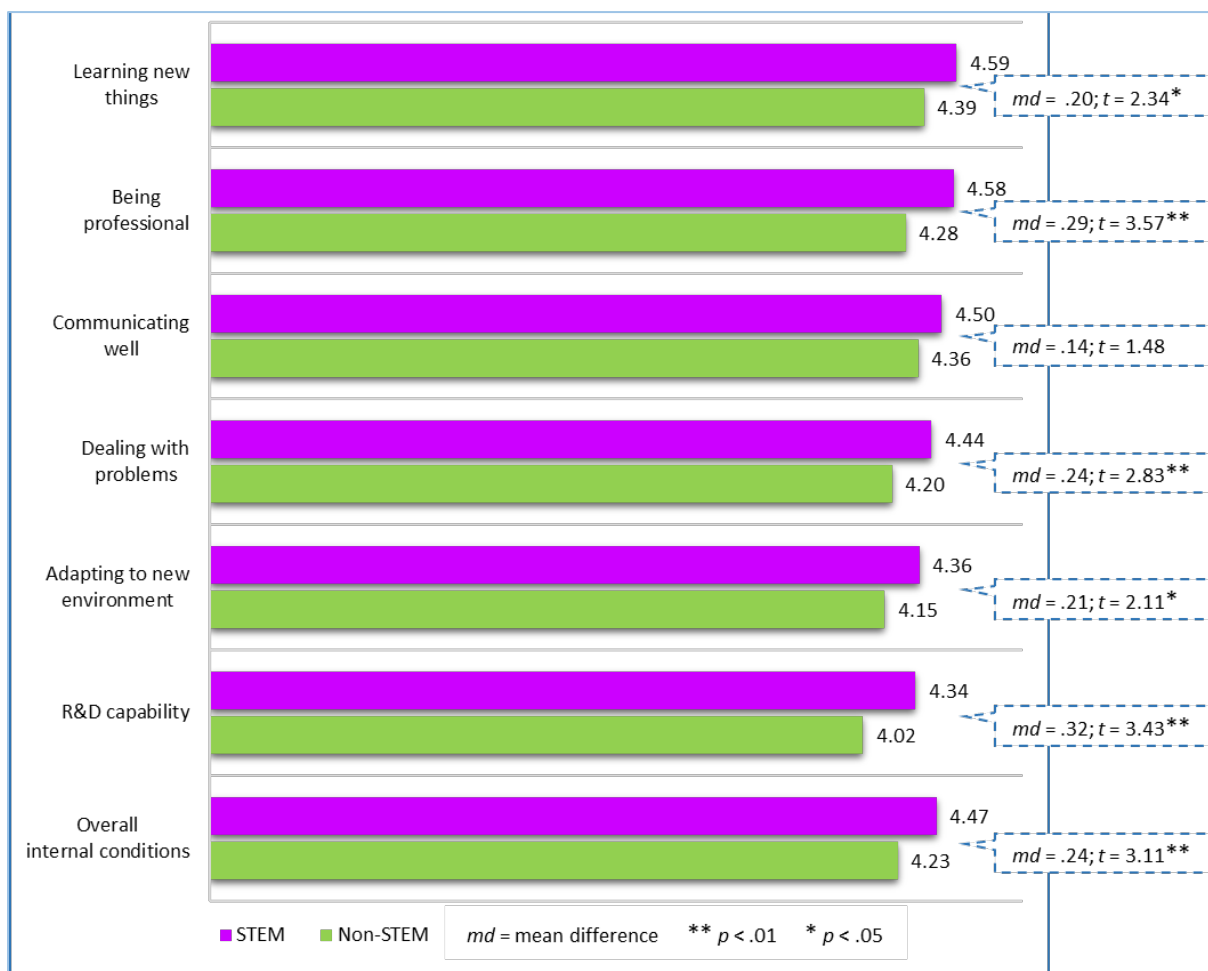


Figure 3.17. Comparing perceptions of internal conditions for working in the GBA between STEM and non-STEM undergraduates.

## 3.5 External conditions for working in the GBA

### 3.5.1 STEM undergraduates' perception of external conditions for working in the GBA

The following 11 items were designed to assess undergraduates' perception of the external conditions for working in the GBA. The keywords of the items were listed in the blankets following the items, which will be used as their labels when they are reported in tables and figures. The subsequent paragraphs will introduce the status of STEM undergraduates' perception of these items, and the impacts of demographic information on their perception.

- I am unfamiliar with the working environment in the GBA. (*Unfamiliarity of working environment*)
- I am unfamiliar with the living environment in the GBA. (*Unfamiliarity of living environment*)
- I worry about leaving my family in Hong Kong. (*Worrying about leaving family*)
- It is difficult to make new friends in the GBA. (*Difficulty of making friends*)
- I am worried about my Putonghua. (*Worrying about Putonghua*)
- I think the working hours in the GBA is long. (*Long working hours*)
- There is more intense competition for jobs in the GBA. (*More intense competition*)
- I am unclear about the career development path in the GBA. (*Unclearness of career path*)
- The industry standards in the GBA are different from Hong Kong. (*Different industry standards*)
- The terminology used in the GBA is quite different from Hong Kong. (*Different terminology*)
- It is difficult for me to obtain professional certificates in mainland China. (*Difficulty of obtaining professional certificates*)

As presented in the yellow columns in Figure 3.18, the means were highest in the items about more intense competition ( $M = 4.37$ ;  $SD = 1.27$ ), followed by different industry standards ( $M = 4.31$ ;  $SD = 1.20$ ) and different terminology ( $M = 4.29$ ;  $SD = 1.29$ ). In contrast, the means were lower in the items about worrying about Putonghua ( $M = 2.90$ ;  $SD = 1.64$ ) and difficulty of obtaining professional certificates ( $M = 3.45$ ;  $SD = 1.36$ ). Meanwhile, 6 items had medium mean values, including the perspectives of long working hours ( $M = 4.08$ ;  $SD = 1.33$ ), unclearness of career path ( $M = 3.98$ ;  $SD = 1.31$ ), unfamiliarity with working environment ( $M = 3.86$ ;  $SD = 1.40$ ), worrying about leaving family ( $M = 3.75$ ,  $SD = 1.52$ ), unfamiliarity with

living environment ( $M = 3.66$ ;  $SD = 1.43$ ) and difficulty of making friends ( $M = 3.62$ ,  $SD = 1.47$ ).

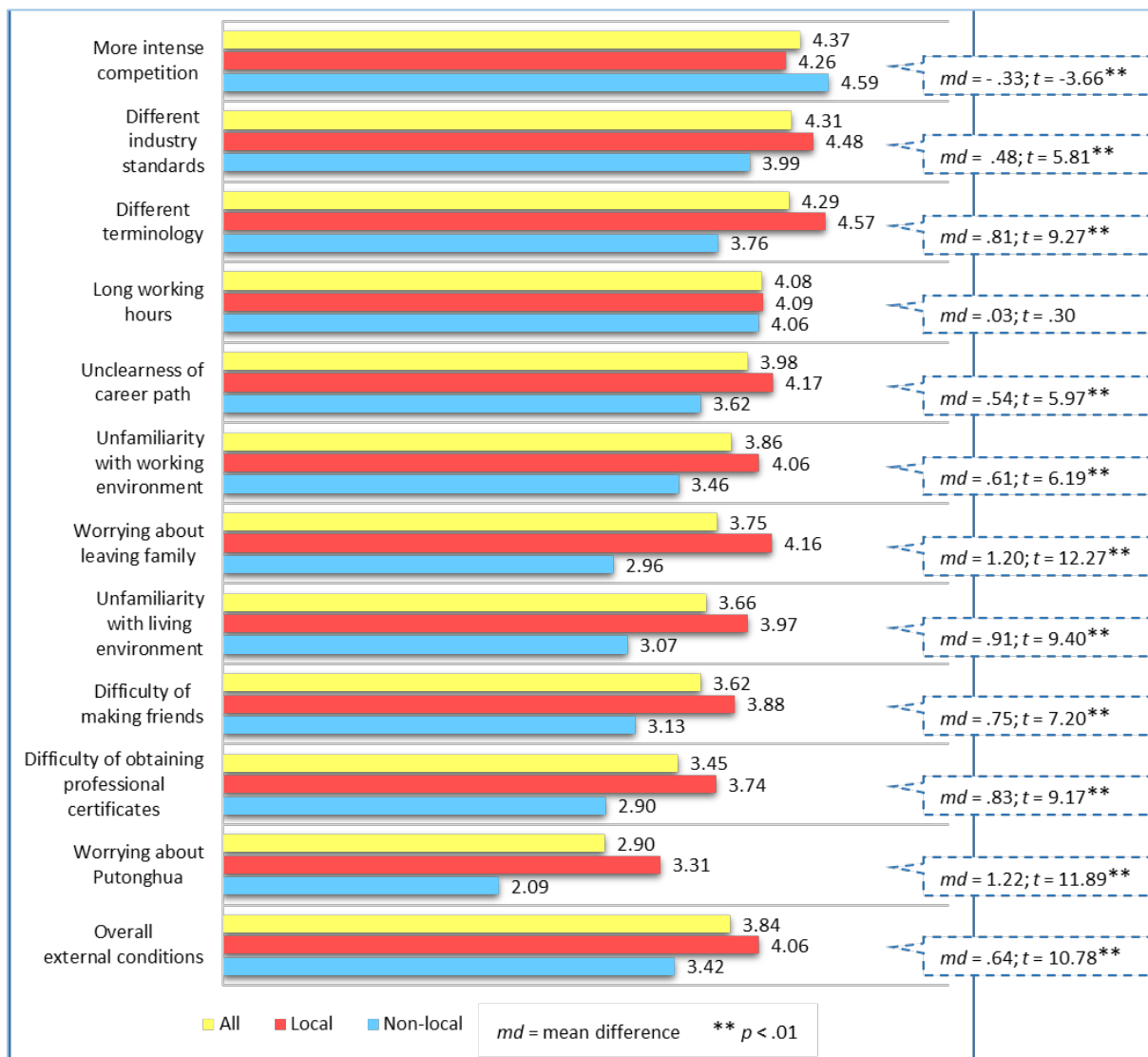


Figure 3.18. STEM undergraduates' external conditions for working in the GBA.

Analyses were also conducted to explore the impacts of demographic information on STEM undergraduates' perception of the external conditions of working in the GBA. Significant differences in terms of Hong Kong permanent residency, mainland internship experience and mainland exchange experience were revealed. However, no significant difference was found in terms of gender and family monthly income. As indicated in Figure 3.18, the mean of local STEM undergraduates' overall scores in this dimension was significantly higher values than non-local STEM undergraduates ( $md = .64$ ;  $t = 10.78$ ;  $p < .01$ ). The means differences were significant in 9 of 11 items, ranging from .48 to 1.22. The greatest differences were revealed

in worrying about Putonghua ( $md = 1.22$ ;  $t = 11.89$ ;  $p < .01$ ) and worrying about leaving family ( $md = 1.20$ ;  $t = 12.27$ ;  $p < .01$ ). The differences in the items about different industry standards ( $md = .48$ ;  $t = 5.81$ ;  $p < .01$ ) and unclearness of career path ( $md = .54$ ;  $t = 5.97$ ;  $p < .01$ ) were relatively smaller. Nevertheless, the mean of local students in the item about more intense competition was significantly lower than non-local students ( $md = -.33$ ;  $t = -3.66$ ;  $p < .01$ ). Meanwhile, no significant difference was found in terms of long working hours.

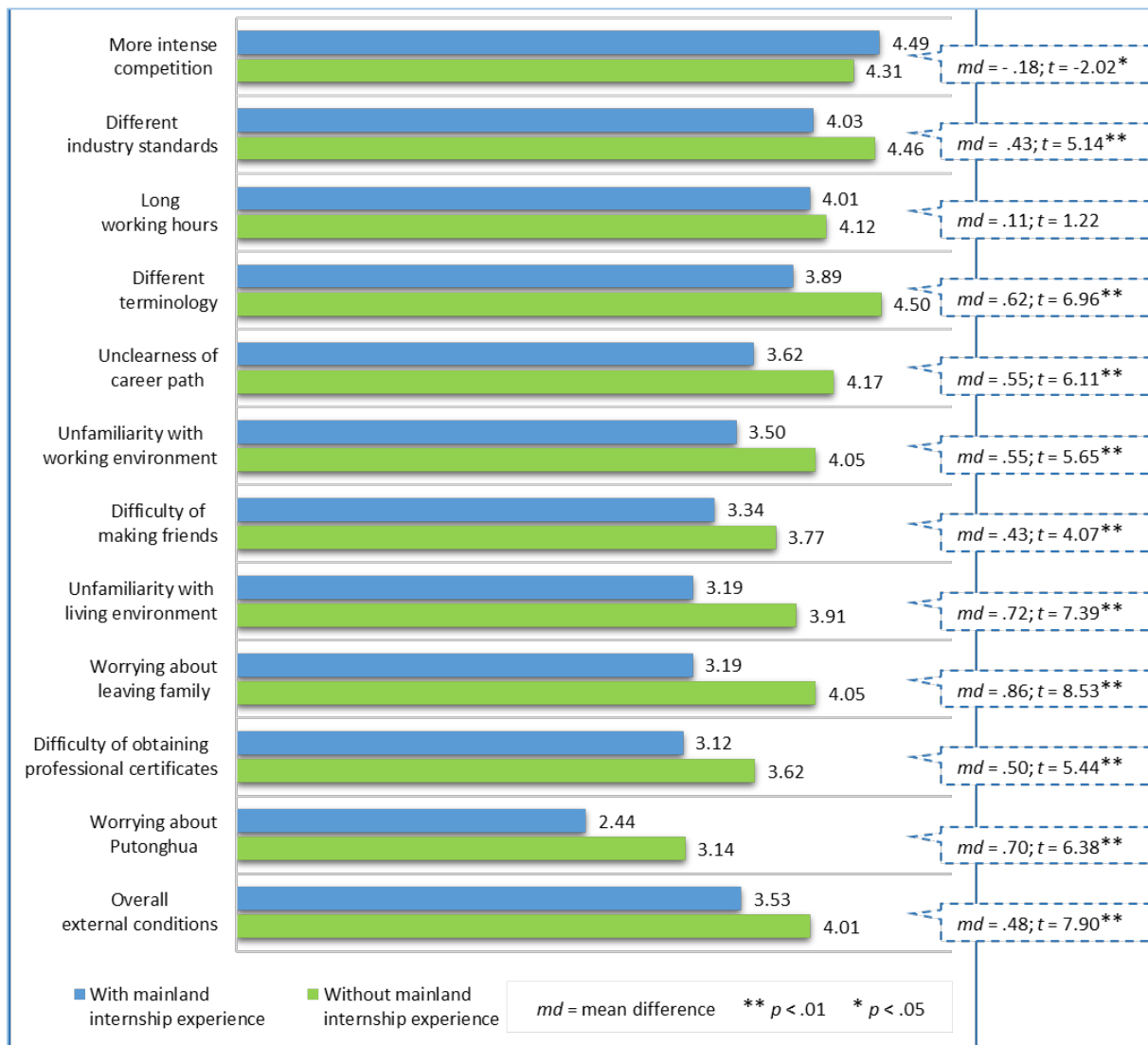


Figure 3.19. Comparing perceptions of external conditions for working in the GBA between STEM undergraduates with and without mainland internship experience.

Figure 3.19 indicates the impacts of students' mainland internship experience on their perception of external conditions for working in the GBA. The mean of the overall score of STEM undergraduates without mainland internship experience perceived significantly higher

values than those with such experience ( $md = .48$ ;  $t = 7.90$ ;  $p < .01$ ). The mean differences were significant in 9 of 11 items, ranging from .43 to .86. The greatest differences were in the items about worrying about leaving family ( $md = .86$ ;  $t = 8.53$ ;  $p < .01$ ), unfamiliarity with the living environment ( $md = .72$ ;  $t = 7.39$ ;  $p < .01$ ) and worrying about Putonghua ( $md = .70$ ;  $t = 6.38$ ;  $p < .01$ ). In contrast, there were relatively smaller differences in the items about the difficulty of making friends ( $md = .43$ ;  $t = 4.07$ ;  $p < .01$ ) and different industry standards ( $md = .43$ ;  $t = 5.14$ ;  $p < .01$ ). Meanwhile, students without mainland internship experience perceived significantly lower competition than those with such experience ( $md = -.18$ ;  $t = -2.02$ ;  $p < .05$ ). However, no significant difference was found regarding long working hours.

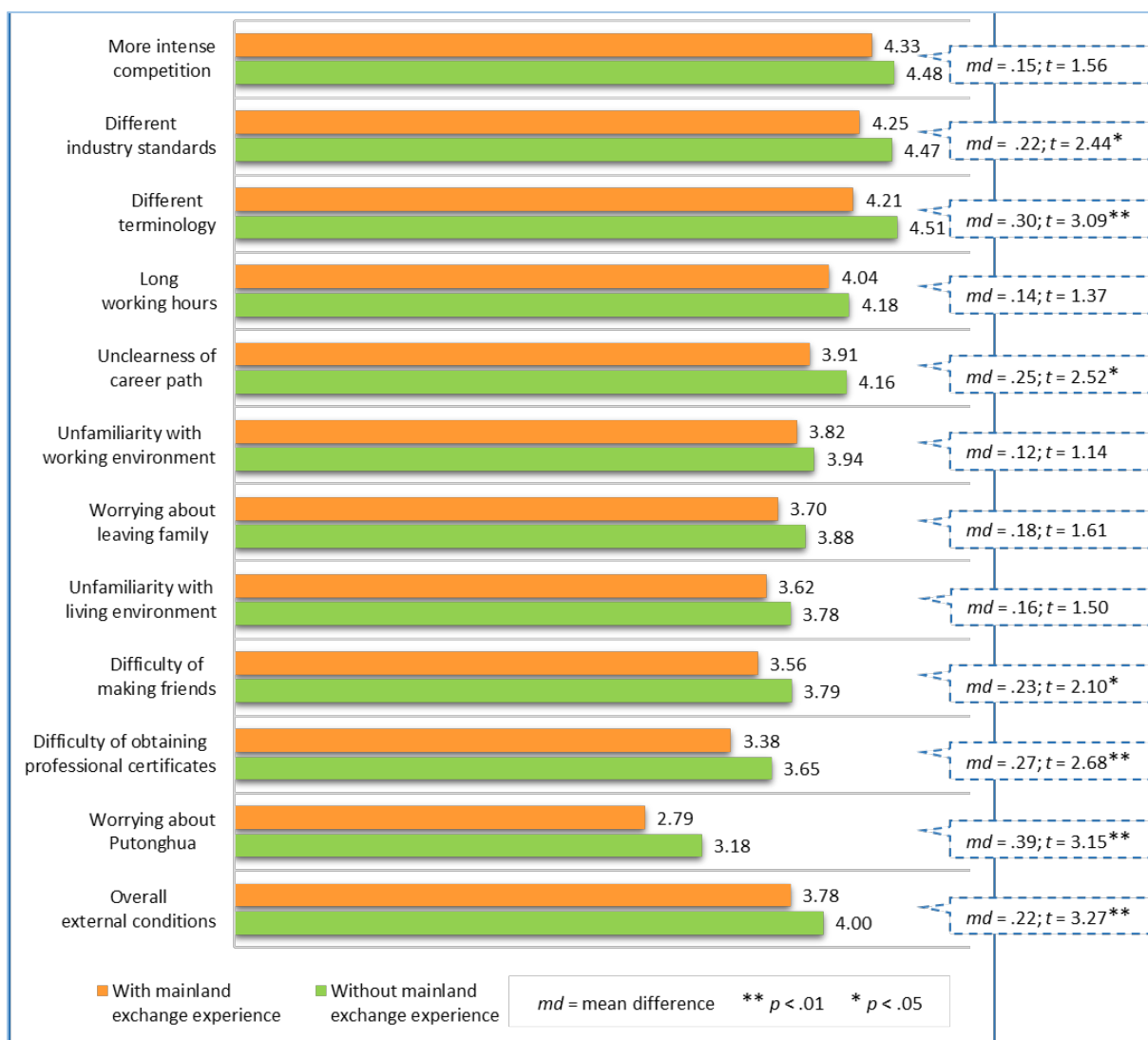


Figure 3.20. Comparing perceptions of external conditions for working in the GBA between STEM undergraduates with and without mainland exchange experience.

As indicated in Figure 3.20, *t*-test results also revealed significant differences in terms of mainland exchange experience. The means of STEM undergraduates with mainland exchange experience were significantly higher values than those without exchange experience in the items about worrying about Putonghua ( $md = .39; t = 3.15; p < .01$ ), different terminology ( $md = .30; t = 3.09; p < .01$ ) and difficulty of obtaining professional certificates ( $md = .27; t = 2.68; p < .01$ ). In contrast, students without mainland exchange experience perceived more challenges in the unclearness of career path ( $md = .25; t = 2.52; p < .05$ ), difficulty of making friends ( $md = .23; t = 2.10; p < .05$ ) and different industry standards ( $md = .22; t = 2.44; p < .05$ ). Meanwhile, no significant difference was revealed in the items about unfamiliarity with the working environment, unfamiliarity with the living environment, worrying about leaving family, long working hours and more intense competition.

### 3.5.2 Comparison between STEM and non-STEM majors' perception of external conditions for working in the GBA

The mean values of the overall external conditions of STEM and non-STEM majors were compared as well. Nevertheless, no significant difference was discovered in terms of majors.

## 3.6 Significant others for working in the GBA

### 3.6.1 STEM undergraduates' perception of significant others for working in the GBA

The following 6 items assessed how STEM undergraduates perceived the views of their significant others about working in the GBA. The keywords of the items were listed in the blankets following the items, which will be used as their labels when they are reported in tables and figures. The subsequent paragraphs will introduce the status of STEM undergraduates' perception of these items, the impacts of demographic information on their perception, and the difference between STEM and non-STEM undergraduates.

- My parents support me to work in the GBA. (*Parents' support*)
- My boyfriend/girlfriend supports me to work in the GBA. (*Boyfriend's / girlfriend's support*)
- My relatives hope I can work in the GBA. (*Relatives' support*)
- My best friend is willing to work in the GBA. (*Best friend's willingness*)
- My classmates are willing to work in the GBA. (*Classmates' willingness*)
- My teacher supports me to work in the GBA. (*Teacher's support*)



As shown in Figure 3.21, the yellow columns reveal STEM undergraduates' overall perceptions of their significant others' views about to working in the GBA. The means were relatively higher in terms of parents' support ( $M = 4.12$ ;  $SD = 1.48$ ), teachers' support ( $M = 4.01$ ,  $SD = 1.45$ ), and relatives' support ( $M = 3.89$ ,  $SD = 1.48$ ). The means were relatively lower in terms of the best friend's willingness ( $M = 3.60$ ;  $SD = 1.61$ ), classmates' willingness ( $M = 3.65$ ;  $SD = 1.61$ ) and boyfriend's / girlfriend's support ( $M = 3.68$ ;  $SD = 1.62$ ).

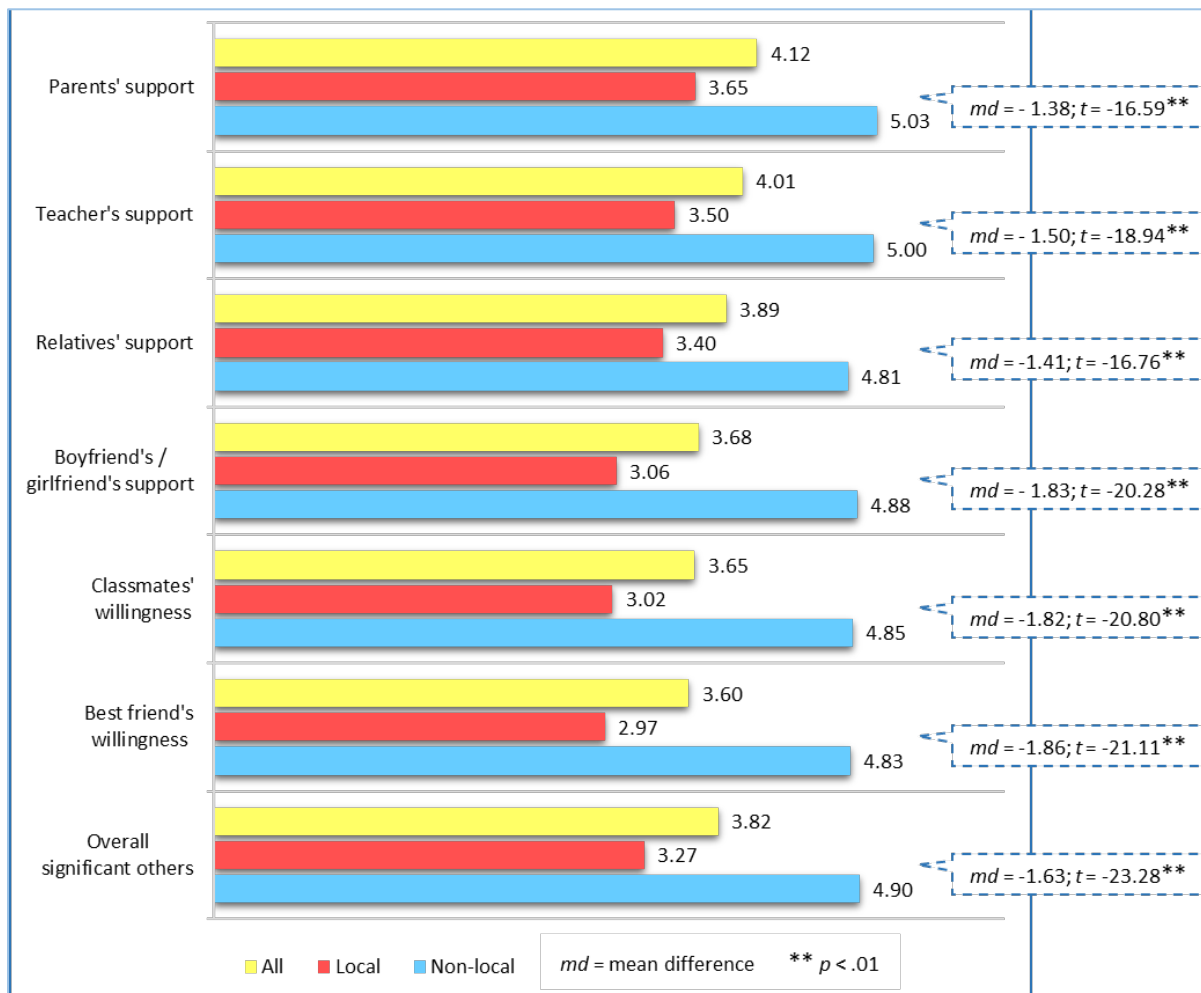


Figure 3.21. STEM undergraduates' perception of significant others for working in the GBA.

Further efforts were also made to explore the impacts of demographic information on STEM undergraduates' perception of the views of their significant others about working in the GBA. The results revealed significant differences in terms of Hong Kong permanent residency, mainland internship experience, mainland exchange experience and family monthly income. However, no significant difference was found in terms of gender. As indicated in the  $t$ -test results in Figure 3.21, the means of local STEM undergraduates' overall score in this dimension was significantly lower than non-local STEM undergraduates ( $md = -1.63$ ;  $t = -23.28$ ;  $p < .01$ ).

Mean differences were significant in all 6 items, ranging from -1.86 to -1.38. The greatest difference was revealed in best friend's willingness ( $md = -1.86$ ;  $t = -21.11$ ;  $p < .01$ ), followed by boyfriend's / girlfriend's support ( $md = -1.83$ ;  $t = -20.28$ ;  $p < .01$ ) and classmates' willingness ( $md = -1.82$ ;  $t = -20.80$ ;  $p < .01$ ). In contrast, the differences found in parents' support ( $md = -1.38$ ;  $t = -16.59$ ;  $p < .01$ ) and relatives' support ( $md = -1.41$ ;  $t = -16.76$ ;  $p < .01$ ) were relatively smaller.

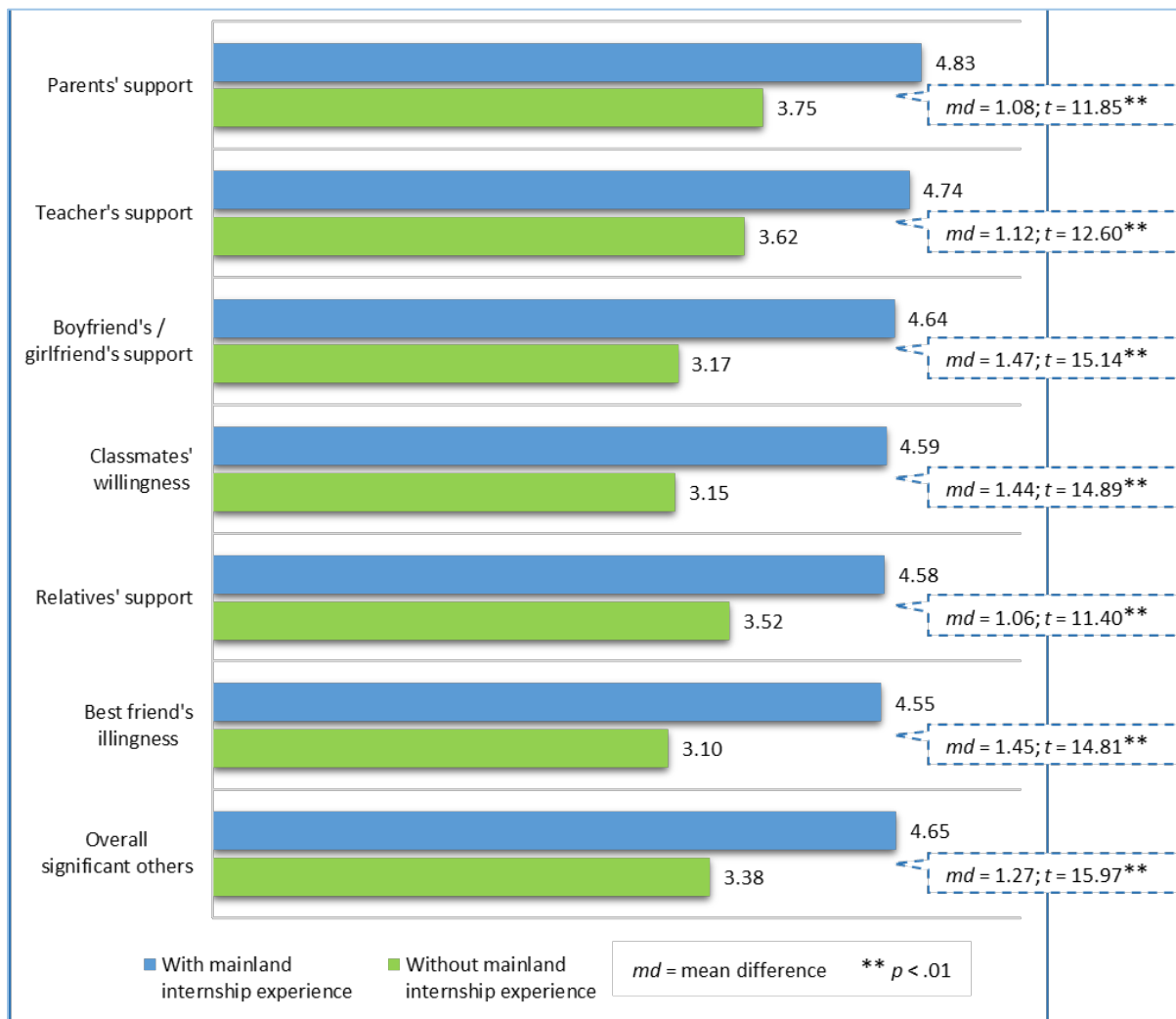


Figure 3.22. Comparing perceptions of significant others for working in the GBA between STEM undergraduates with and without mainland internship experience.

Figure 3.22 indicates the impacts of students' mainland internship experience on their perception of the views of their significant others on working in the GBA. As for the overall score of this dimension, the mean of STEM undergraduates with mainland internship experience perceived was significantly higher than those who had no such experience ( $md = 1.27$ ;  $t = 15.97$ ;  $p < .01$ ). Mean differences were significant for all 6 items, ranging from 1.06 to 1.47. The greater difference was found in their boyfriend's / girlfriend's support ( $md = 1.47$ ;

$t = 15.14; p < .01$ ), while there were comparably smaller differences in relatives' support ( $md = 1.06; t = 11.40; p < .01$ ) and parents' support ( $md = 1.08; t = 11.85; p < .01$ ).

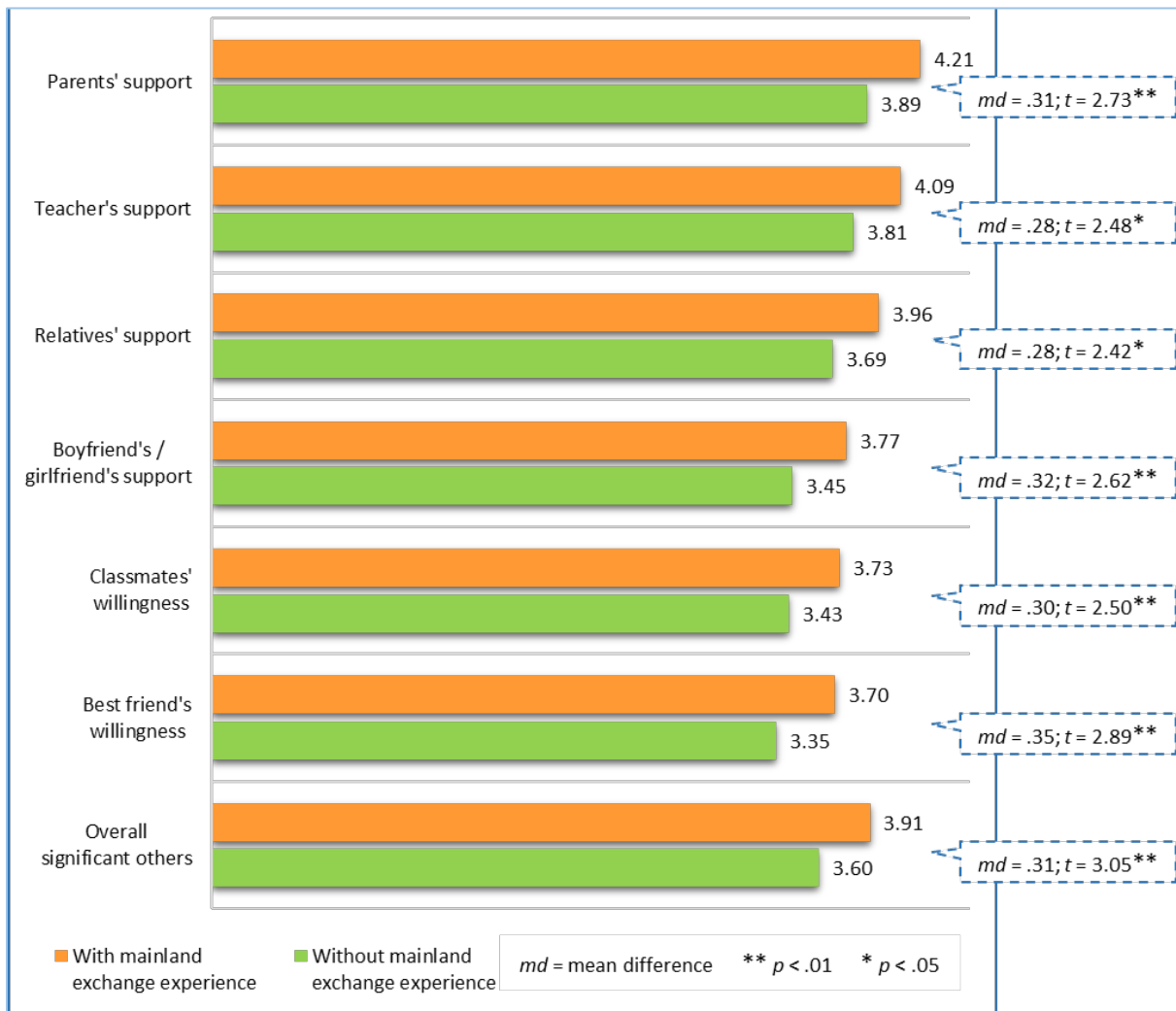


Figure 3.23. Comparing perceptions of significant others for working in the GBA between STEM undergraduates with and without mainland exchange experience.

As illustrated in Figure 3.23,  $t$ -test results revealed significant differences regarding mainland exchange experience as well. As for the overall score of this dimension, the mean of STEM undergraduates with mainland exchange experience was significantly higher than those without such experience ( $md = .31; t = 3.05; p < .01$ ). The mean differences were significant in all 6 items, ranging from .28 to .35.

Notably, significant differences in terms of family monthly income were discovered and indicated in Figure 3.24. As for the overall score of this dimension, the mean of STEM undergraduates with a family monthly income less than HKD30,000 was higher than those whose income was HKD30,000 or more ( $md = .19; t = 2.06; p < .05$ ). Mean differences were

significant in 3 of 6 items, ranging from .21 to .33. The greatest mean difference was in classmates' willingness ( $md = .33$ ;  $t = 3.05$ ;  $p < .01$ ). And there were relatively smaller differences in relatives' support ( $md = .21$ ;  $t = 2.13$ ;  $p < .05$ ) and best friend's willingness ( $md = .22$ ;  $t = 2.07$ ;  $p < .05$ ). Nevertheless, no significant difference was revealed in terms of parents' support, boyfriend's /girlfriend's support and teacher's support.

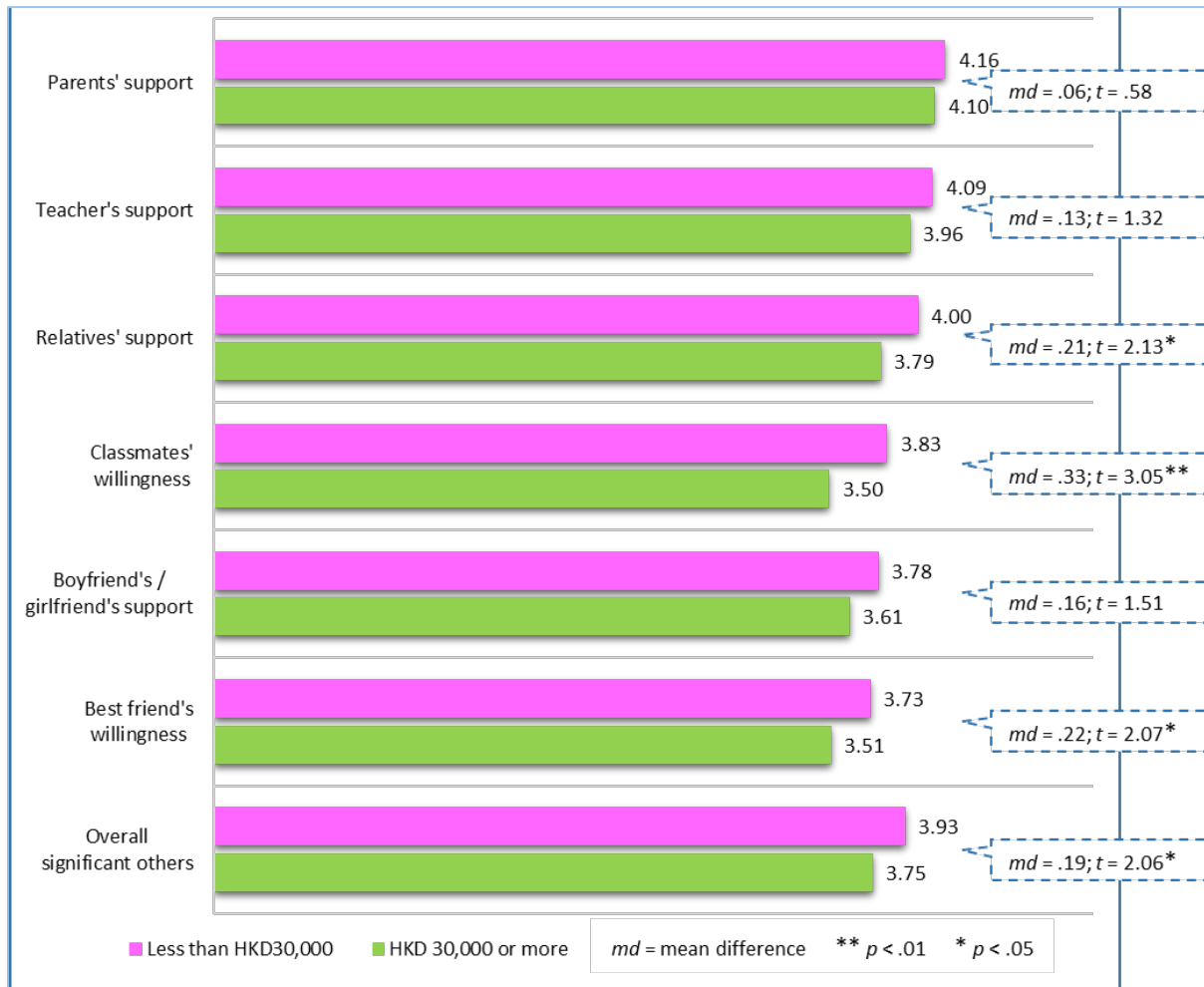


Figure 3.24. Comparing perceptions of significant others for working in the GBA between STEM undergraduates' family monthly income less than and more than HKD30,000.

### 3.6.2 Comparison between STEM and non-STEM majors' perception of significant others

The differences between STEM and non-STEM majors' perception of significant others were examined. As indicated in Figure 3.25, as for the overall score of this dimension, the mean of STEM majors was significantly higher than non-STEM majors' ( $md = .41$ ;  $t = 4.10$ ;  $p < .01$ ) Mean differences were significant in all 6 items, ranging from .33 to .51. The greatest

difference was revealed in classmates' willingness ( $md = .51$ ;  $t = 4.30$ ;  $p < .01$ ), followed by boyfriend's / girlfriend's support ( $md = .47$ ;  $t = 3.93$ ;  $p < .01$ ). Comparatively, there were smaller differences in terms of parents' support ( $md = .33$ ;  $t = 3.00$ ;  $p < .01$ ) and teacher's support ( $md = .35$ ;  $t = 3.26$ ;  $p < .01$ ).

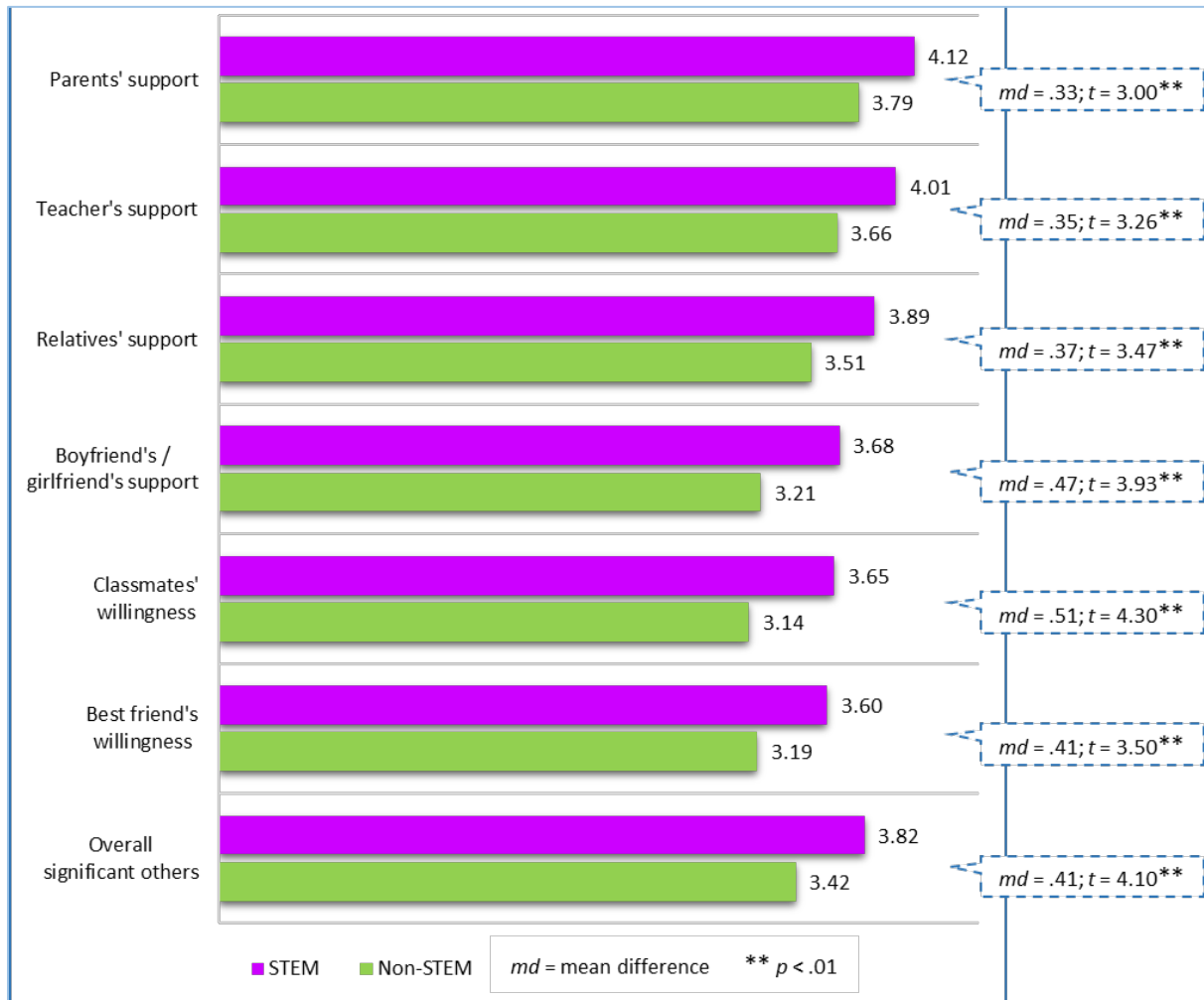


Figure 3.25. Comparing perceptions of significant others for working in the GBA between STEM and non-STEM undergraduates.

### 3.7 Social pressure on working in the GBA

#### 3.7.1 STEM undergraduates' perception of social pressure

6 items were designed to assess how STEM undergraduates perceived social pressure on working in the GBA. The keywords of the items were listed in the blankets following the items, which will be used as their labels when they are reported in tables and figures. The subsequent paragraphs will introduce the status of STEM undergraduates' perception of these items, and the impacts of demographic information on their perception.

- The career development department of my university encourages us to work in the GBA. (*Encouragement of career development department*)
- The mass media have a positive attitude towards Hong Kong youths working in the GBA. (*Positive attitude of mass media*)
- My university encourages students to work in the GBA. (*Encouragement of university*)
- Student clubs/organizations support members to work in the GBA. (*Support of student clubs / organizations*)
- The Hong Kong Government encourages Hong Kong youth to work in the GBA. (*Encouragement of HK Government*)
- The Central Government pays attention to encouraging Hong Kong youths to work in the GBA. (*Encouragement of Central Government*)

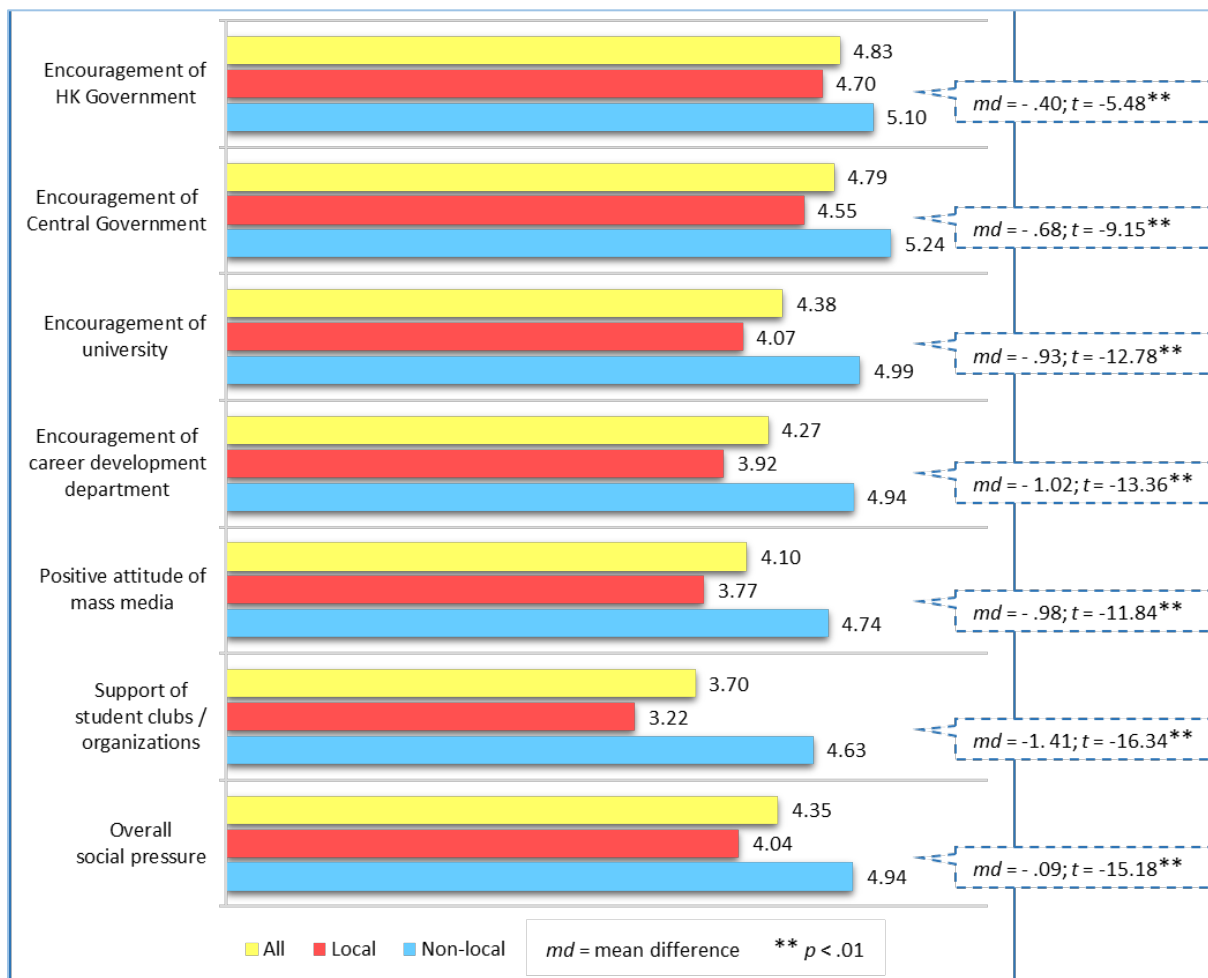


Figure 3.26. STEM undergraduates' perception of social pressure for working in the GBA.

As indicated in the yellow columns in Figure 3.26, the mean of the item about encouragement of HK Government ( $M = 4.83, SD = 1.18$ ) was the greatest, followed by encouragement of Central Government ( $M = 4.79, SD = 1.26$ ). In contrast, the mean of the items about the support of student clubs / organizations ( $M = 3.70, SD = 1.48$ ) was the lowest. In addition, the means were medium for items regarding encouragement of university ( $M = 4.38, SD = 1.25$ ), encouragement of career development department ( $M = 4.27, SD = 1.30$ ) and positive attitude of mass media ( $M = 4.10, SD = 1.33$ ).

Further efforts were also made to explore the impacts of demographic information on STEM undergraduates' perception of the social pressure of working in the GBA. The results revealed significant differences in terms of Hong Kong permanent residency, mainland internship experience and mainland exchange experience. However, no significant difference was found in terms of gender and family monthly income. As indicated in the  $t$ -test results in Figure 3.26, as for the total score of this dimension, the mean of local STEM undergraduates was significantly lower than non-local STEM undergraduates ( $md = -.90; t = -15.18; p < .01$ ). Mean differences were significant in all 6 items, The ranged from -1.41 to -.40. The greatest difference was found in the support of student clubs/organizations ( $md = -1.41; t = -16.34; p < .01$ ). Meanwhile, the differences in the encouragement of HK government ( $md = -.40; t = -5.48; p < .01$ ) and the encouragement of central government ( $md = -.68; t = -9.15; p < .01$ ) were comparably smaller.

Figure 3.27 indicates the impacts of students' mainland internship experience on their social pressure., STEM undergraduates who had mainland internship experience perceived significantly higher values than those who did not have any ( $md = .69; t = 11.01; p < .01$ ). Mean differences were significant in all 6 items, ranging from .23 to 1.24. The differences in the support of student clubs / organizations ( $md = 1.24; t = 13.96; p < .01$ ) was the greatest, while relatively smaller differences were in encouragement of HK Government ( $md = .23; t = 2.95; p < .01$ ) as well as encouragement of Central Government ( $md = .55; t = 6.99; p < .01$ ).

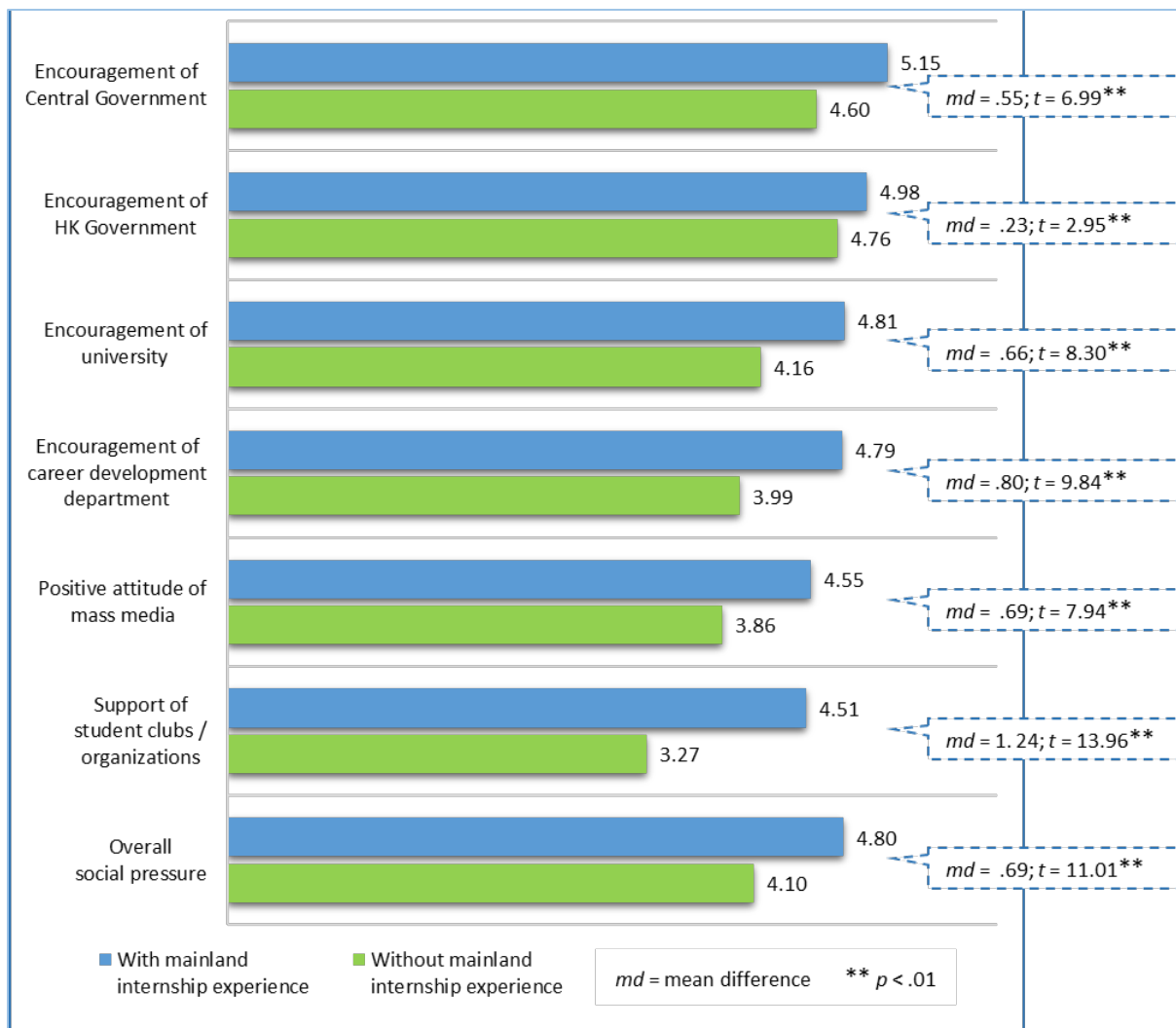


Figure 3.27. Comparing perceptions of social pressure for working in the GBA between STEM undergraduates with and without mainland internship experience.

As presented in Figure 3.28, this study also revealed significant differences in terms of mainland exchange experience. The mean of STEM undergraduates with mainland exchange experience was significantly higher than those with no experience ( $md = .23$ ;  $t = 3.01$ ;  $p < .01$ ). Mean differences were significant in 5 out of 6 items, ranging from .23 to .28. Relatively greater differences were found in the encouragement of career development department ( $md = .28$ ;  $t = 2.85$ ;  $p < .01$ ) and the encouragement of central government ( $md = .27$ ;  $t = 2.68$ ;  $p < .01$ ). However, there was no significant difference in terms of the encouragement of HK Government.



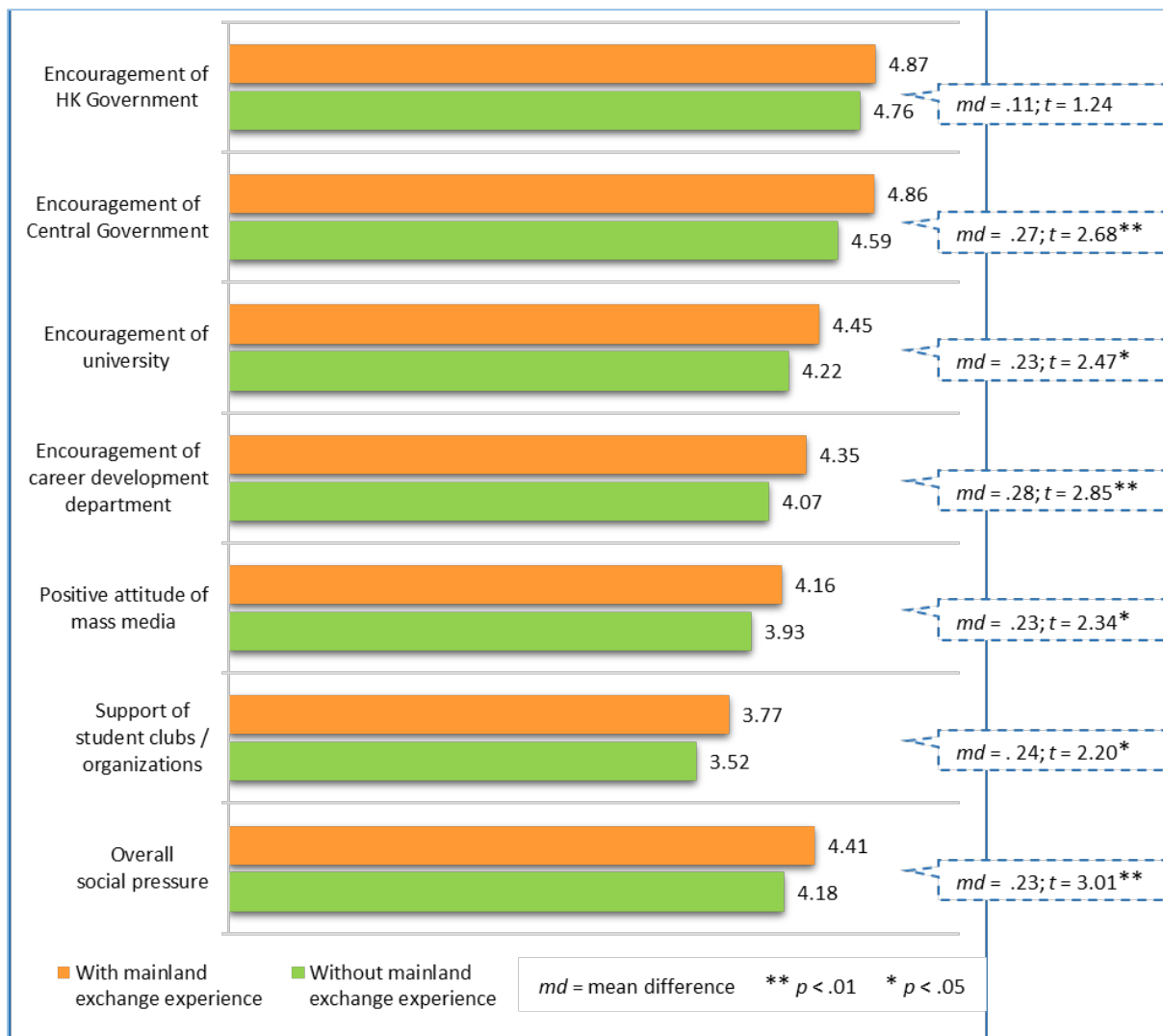


Figure 3.28. Comparing perceptions of social pressure for working in the GBA between STEM undergraduates with and without mainland exchange experience.

### 3.7.2 Comparison between STEM and non-STEM undergraduates' perception of social pressure

The differences between STEM and non-STEM majors were compared. As indicated in Figure 3.29, STEM majors' perception of overall social pressure was significantly higher than non-STEM majors' ( $md = .27$ ;  $t = 3.60$ ;  $p < .01$ ). Of the 4 items with significant differences, the greatest difference was revealed in support of student clubs / organizations ( $md = .43$ ;  $t = 3.92$ ;  $p < .01$ ), followed by positive attitude of mass media ( $md = .38$ ;  $t = 3.84$ ;  $p < .01$ ). There was a relatively smaller difference in the encouragement of university ( $md = .26$ ;  $t = 2.82$ ;  $p < .01$ ). Nevertheless, no significant difference was found in terms of encouragement of Central Government as well as encouragement of HK Government.

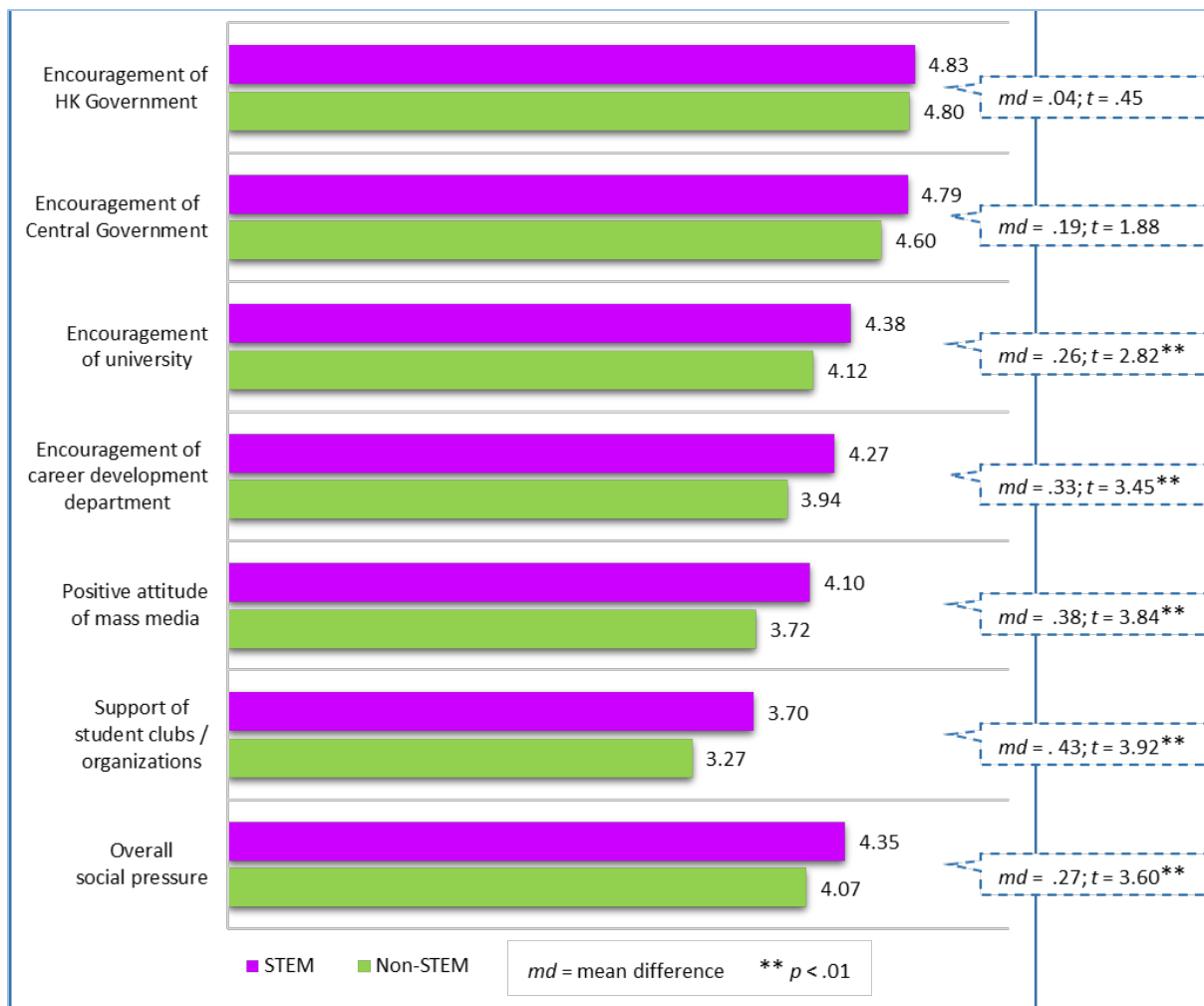


Figure 3.29. Comparing perceptions of social pressure for working in the GBA between STEM and non-STEM undergraduates.

### 3.8 Factors influencing the intention to work in the GBA

The factors influencing undergraduates' intention to work in the GBA were explored through both interviews and regression analyses of the survey data. This section will first report the interview findings about the major factors (as indicated by the frequency of statements) influencing undergraduates' intention to work in the GBA. After then the results of regression analyses will further be described about the major factors (as indicated by the statistically significant coefficients) influencing undergraduates' intention to work in the GBA. In the end, the comparison will be made between these two parts of the findings to generate a holistic picture of the major factors influencing the intention to work in the GBA.

### 3.8.1 Interview findings on significant factors influencing the intention of working in the GBA

A total of 33 participants were interviewed about STEM undergraduates' intention to work in the GBA, including 20 Year-4 STEM undergraduates, 5 Hong Kong I&T professionals working in the GBA, 5 university career consultants and 3 STEM academics in the university. In addition, 21 Year-4 non-STEM undergraduates were also interviewed. During the interviews, the participants were asked about both the most important factors and other factors that they felt were important.

Table 3.1

*Frequency of influencing factors about attitudes towards working in the GBA*

	<i>STEM undergraduates' intention</i>		<i>Non-STEM undergraduates' intention</i>	
	<i>Factors</i>	<i>Key factors</i>	<i>Factors</i>	<i>Key factors</i>
<i>Personal values</i>				
Better development prospects	30 (90.91%)	27 (81.82%)	21 (100.00%)	18 (85.71%)
Higher salary	25 (75.76%)	22 (66.67%)	21 (100.00%)	13 (61.90%)
Better life quality	23 (69.70%)	8 (24.24%)	21 (100.00%)	15 (71.43%)
Knowing mainland market	22 (66.67%)	1 (3.03%)	21 (100.00%)	/
Starting a business	18 (54.55%)	3 (9.09%)	16 (76.19%)	2 (9.52%)
Skill improvement	17 (51.52%)	2 (6.06%)	10 (47.62%)	2 (9.52%)
Knowing latest developments	17 (51.52%)	1 (3.03%)	8 (38.10%)	1 (4.76%)
Expanding connections	15 (45.45%)	/	10 (47.62%)	/
Better living environment	15 (45.45%)	/	10 (47.62%)	/
Getting promotion	13 (39.39%)	/	8 (38.10%)	/
Being more competitive	13 (39.39%)	/	6 (28.57%)	/
Improving employment situation	10 (30.30%)	/	18 (85.71%)	/
<i>Collective values</i>				
Promoting GBA integration	22 (66.67%)	/	21 (100.00%)	/
More cooperation opportunities in GBA	21 (63.64%)	/	16 (76.19%)	/
Facilitating GBA internationalization	20 (60.61%)	/	21 (100.00%)	/
Promoting HK development	19 (57.58%)	/	18 (85.71%)	/
Obtaining investment in HK	5 (15.15%)	/	10 (47.62%)	/
Integrating GBA resources	5 (15.15%)	/	10 (47.62%)	/

Table 3.1 indicates the distribution of all the factors mentioned as well as key factors regarding STEM undergraduates' attitudes. In terms of personal values, 90.91% and 75.76% of the interviewees mentioned better development prospects and higher salary respectively, of which 81.82% and 66.67% respectively stated as key factors influencing STEM undergraduates' intention of working in the GBA. Meanwhile, improving life quality and knowing mainland market were stated as important factors by 69.70% and 66.67% of the interviewees, and 8 and 1 considered them key factors, respectively. In addition, 54.55%, 51.52% and 51.52% of the interviewees mentioned starting a business, skill improvement and knowing the latest development in the interviews, while 3, 2 and 1 people considered them as key factors, respectively. On the other hand, in terms of collective values, 66.67% and 63.64% of the interviewees believed Hong Kong youths working in the GBA would promote GBA integration and create more cooperation opportunities in GBA, respectively. Nonetheless, no interviewee chose any items of collective values as a key factor influencing STEM undergraduates' intention to work in the GBA. The overall patterns were similar for non-STEM undergraduates.

Table 3.2

*Frequency of influencing factors about perceived behavioural control for working in the GBA*

	<i>STEM undergraduates' intention</i>		<i>Non-STEM undergraduates' intention</i>	
	<i>Factors</i>	<i>Key factors</i>	<i>Factors</i>	<i>Key factors</i>
<i>Internal conditions</i>				
Communicating well	28 (84.85%)	6 (18.18%)	21 (100.00%)	3 (14.29%)
Being professional	23 (69.70%)	/	21 (100.00%)	/
Adapting to new environment	20 (60.61%)	6 (18.18%)	21 (100.00%)	4 (19.05%)
Learning new things	16 (48.48%)	/	21 (100.00%)	/
Dealing with problems	14 (42.42%)	/	18 (85.71%)	/
R&D capability	5 (15.15%)	/	10 (47.62%)	/
<i>External conditions</i>				
Unfamiliarity with living environment	26 (78.79%)	3 (9.09%)	20 (95.24%)	/
Unfamiliarity with working environment	25 (75.76%)	5 (15.15%)	21 (100.00%)	3 (14.29%)
Worrying about leaving family	20 (60.61%)	5 (15.15%)	21 (100.00%)	4 (19.05%)
More intense competition	18 (54.55%)	7 (21.21%)	21 (100.00%)	6 (28.57%)
Worrying about Putonghua	18 (54.55%)	4 (12.12%)	15 (71.43%)	3 (14.29%)
Different terminology	17 (51.52%)	/	21 (100.00%)	/
Different industry standards	17 (51.52%)	/	18 (85.71%)	/
Unclearness of career path	15 (45.45%)	/	16 (76.19%)	/
Long working hours	13 (39.39%)	6 (18.18%)	21 (100.00%)	2 (9.52%)

Difficulty of making friends	10 (30.30%)	/	12 (57.14%)	/
Obtaining professional certificates	7 (21.21%)	/	8 (38.10%)	/

The interview results regarding perceived behavioural control are shown in Table 3.2. In terms of internal conditions, communicating well (84.85%) and adapting to new environment (60.61%) were widely regarded as important factors, being stated respectively by 6 interviewees as key factors. Being professional was also considered an important factor by most interviewees (69.70%). As for external conditions, the majority of interviewees had worries about unfamiliarity with living environment (78.79%), unfamiliarity with working environment (75.76%) and leaving family (60.61%), which were stated by 3, 5 and 5 interviewees as key factors, respectively. More intense competition (54.55%) and using Putonghua (54.55%) were considered as important factors as well, with 7 and 4 interviewees stating them as key factors respectively. Interestingly, even though having long working hours was not widely mentioned as an important factor by all, 6 interviewees chose it as a key factor. No apparent differences were found between the findings regarding STEM and Non-STEM undergraduates' intentions.

Table 3.3

*Frequency of influencing factors about subjective norms for working in the GBA*

	<i>STEM undergraduates' intention</i>		<i>Non-STEM undergraduates' intention</i>	
	<i>Factors</i>	<i>Key factors</i>	<i>Factors</i>	<i>Key factors</i>
<i>Significant others</i>				
Parents' support	27 (81.82%)	1 (3.03%)	21 (100.00%)	/
Best friend's willingness	20 (60.61%)	1 (3.03%)	21 (100.00%)	/
Classmates' willingness	20 (60.61%)	/	21 (100.00%)	/
Relatives' support	10 (30.30%)	/	16 (76.19%)	/
Teacher's support	6 (18.18%)	/	21 (100.00%)	/
Boyfriend's / girlfriend's support	5 (15.15%)	1 (3.03%)	4 (19.05%)	2 (9.52%)
<i>Social pressure</i>				
Encouragement of Central Government	30 (90.91%)	/	21 (100.00%)	/
Encouragement of HK Government	29 (87.88%)	/	21 (100.00%)	/
Encouragement of career development department	20 (60.61%)	/	16 (76.19%)	/
Positive attitude of mass media	18 (54.55%)	/	15 (71.43%)	/
Encouragement of university	13 (39.39%)	/	16 (76.19%)	/

Support of student clubs / organizations	5 (15.15%)	/	5 (23.81%)	/
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Table 3.3 illustrates the interview results regarding perceived behavioural control. In terms of significant others, 81.82% of the interviewees referred to parents' support and 1 considered it as a key factor. The second most popular factors were best friend's willingness (60.61%) and 1 interviewee chose it as a key factor. 60.61% interviewees mentioned classmates' willingness in the interviews. There was 1 person who chose boyfriend / girlfriend's support as a key factor. Additionally, in terms of social pressure, 90.91% and 87.88% of them mentioned encouragement of Central Government and encouragement of HK Government, respectively. Nevertheless, no one mentioned any items related to social pressure as key factors. STEM undergraduates may pay a slightly more attention to best friends and parents than non-STEM undergraduates.

### 3.8.2 Results of regression analyses of significant factors influencing the intention of working in the GBA

#### 3.8.2.1 Impacts of the six factors on STEM undergraduates' intention to work in the GBA

Multiple linear regression analyses were performed to reveal the significant predictors for undergraduates' intention to work in the GBA. Initially, the six dimensions covered in the TPB were incorporated into the regression analysis, including personal values, collective values, internal conditions, external conditions, significant others and social pressure. The results of regression analyses and descriptive statistics of locals, non-locals and all STEM undergraduates are presented in Table 3.4. It was found that

- Personal values were the most important predictors of all STEM undergraduates' intention to work in the GBA. Additionally, the mean values were the second lowest for both groups of students. For all STEM undergraduates, personal values were predictive and the mean values were relatively low.
- Significant others were another significant predictor for both local and non-local STEM undergraduates' intention to work in the GBA. Nonetheless, the mean values of locals were the lowest of the six factors, while medium for non-locals.

- Internal conditions were also a significant predictor of all STEM undergraduates' intention to work in the GBA. They were more predictive of locals' intention than non-locals'. The mean values of the two groups appeared the highest of the six factors.
- External conditions were a significant negative predictor of the intention to work in the GBA for both groups of undergraduates. However, the means of non-locals appeared the lowest of the six factors, while the second highest for locals.
- Collective values and social pressure were not significant predictors of both groups of students' intentions to work in the GBA although their mean values were not low.

Table 3.4

*Results of linear regression on STEM undergraduates' intention to work in the GBA*

<i>Factors</i>	<i>Local</i>		<i>Non-local</i>		<i>All</i>	
	<i>Beta</i>	<i>M (SD)</i>	<i>Beta</i>	<i>M (SD)</i>	<i>Beta</i>	<i>M (SD)</i>
Personal values	.45**	3.76 (1.15)	.30**	4.86 (.80)	.53**	4.07 (1.19)
Collective values	.09	3.92 (1.17)	.11	5.01 (.85)	.12*	4.24 (1.20)
Internal conditions	.10**	4.12 (1.00)	.06	5.14 (.66)	.14**	4.42 (1.04)
External conditions	-.07*	4.06 (.85)	-.12*	3.42 (.83)	-.12**	3.85 (.90)
Significant others	.25**	3.27 (1.21)	.23**	4.90 (.86)	.29**	3.74 (1.36)
Social pressure	-.04	4.04 (1.00)	-.06	4.94 (.75)	-.07	4.29 (1.04)

\*  $p < .05$     \*\*  $p < .01$

### 3.8.2.2 Impacts of personal values on STEM undergraduates' intention to work in the GBA

Multiple linear regression analyses were performed to investigate the impacts of the 12 elements of personal values on local, non-local and all STEM undergraduates' intention to work in the GBA. The results are presented in Table 3.5. It was found that

- Better life quality was the most important predictor of all STEM undergraduates' intention to work in the GBA. Additionally, it was a bit more significant for local STEM undergraduates than non-local ones. Its mean values appeared the lowest and the third lowest, respectively for locals and non-locals.
- Improving employment situation was the second significant predictor for both groups of students. Its means were the fourth lowest, the second lowest and the third lowest of the twelve elements for locals, non-locals and all, respectively.

- Starting a business appeared to be more significant for locals than for non-locals. Its mean values were medium for both groups of students.
- Better development prospects were more predictive of STEM undergraduates' intention to work in the GBA for locals than non-locals. Its mean values were the second highest for both groups of students.
- Other elements regarding personal values were not found as significant predictors of local than non-local STEM undergraduates' intention to work in the GBA.

Table 3.5

*Results of linear regression of personal values' elements on STEM undergraduates' intention to work in the GBA*

<i>Elements</i>	<i>Local</i>		<i>Non-local</i>		<i>All</i>	
	<i>Beta</i>	<i>M (SD)</i>	<i>Beta</i>	<i>M (SD)</i>	<i>Beta</i>	<i>M (SD)</i>
Better development prospects	.09*	4.24 (1.33)	-.03	5.05 (.96)	.05	4.38 (1.33)
Higher salary	-.03	3.39 (1.42)	-.01	4.75 (1.15)	.00	3.76 (1.48)
Skill improvement	.08	3.73 (1.39)	.10	4.86 (1.03)	.09*	4.03 (1.39)
Being more competitive	.09	3.65 (1.40)	-.16	4.84 (1.08)	.11*	4.01 (1.42)
Getting promotion	.06	3.65 (1.35)	-.04	4.79 (1.06)	.03	4.00 (1.38)
Better life quality	.30**	3.35 (1.48)	.11	4.73 (1.10)	.27**	3.77 (1.51)
Better living environment	.01	3.51 (1.49)	-.05	4.67 (1.19)	-.01	3.86 (1.51)
Improving employment situation	.18**	3.55 (1.43)	.22**	4.71 (1.08)	.20**	3.89 (1.44)
Expanding connections	-.03	3.97 (1.35)	.20*	4.92 (.95)	.01	4.23 (1.34)
Knowing latest developments	.10	3.95 (1.33)	-.07	4.96 (1.02)	.05	4.22 (1.35)
Knowing mainland market	-.04	4.36 (1.33)	.05	5.19 (.80)	.00	4.60 (1.26)
Starting a business	.09*	3.76 (1.40)	.05	4.88 (1.06)	.09*	4.08 (1.41)

\*  $p < .05$     \*\*  $p < .01$

### 3.8.2.3 Impacts of collective values on STEM undergraduates' intention to work in the GBA

Multiple linear regression analyses were performed to explore the impacts of the 6 elements of collective values on local, non-local and all STEM undergraduates' intention to work in the GBA. The results about personal values are presented in Table 3.6. It was found that



- Facilitating GBA internationalization was the most significant predictor of both local and non-local STEM undergraduates' intentions to work in the GBA. The means of them were of medium value.
- Promoting HK development was another significant predictor of local STEM undergraduates' intention to work in the GBA. The mean values were the second lowest and the lowest for locals and non-locals respectively.
- More cooperation opportunities in GBA were found as a significant predictor of non-local STEM undergraduates' intention to work in the GBA. The mean value was the highest among the six elements for locals, while just medium for non-locals.
- Obtaining investment in Hong Kong, promoting GBA integration, and integrating GBA resources were not found as significant predictors of local than non-local STEM undergraduates' intention to work in the GBA.

Table 3.6

*Results of linear regression of collective values' elements on local STEM undergraduates' intention to work in the GBA*

<i>Elements</i>	<i>Local</i>		<i>Non-local</i>		<i>All</i>	
	<i>Beta</i>	<i>M (SD)</i>	<i>Beta</i>	<i>M (SD)</i>	<i>Beta</i>	<i>M (SD)</i>
Promoting HK development	.29**	3.80 (1.38)	.01	4.91 (1.02)	.22**	4.12 (1.36)
Obtaining investment in HK	.07	3.79 (1.36)	.01	4.94 (1.04)	.10*	4.12 (1.38)
More cooperation opportunities in GBA	-.01	4.06 (1.30)	.19*	5.04 (.97)	.02	4.34 (1.30)
Promoting GBA integration	.09	4.03 (1.33)	.06	5.10 (.93)	.10*	4.34 (1.32)
Facilitating GBA internationalization	.28**	3.88 (1.40)	.37**	5.00 (1.02)	.29**	4.23 (1.38)
Integrating GBA resources	.08	3.96 (1.34)	-.05	5.07 (.89)	.08	4.29 (1.32)

\*  $p < .05$     \*\*  $p < .01$

### 3.8.2.4 Impacts of internal conditions on STEM-major students' intention to work in the GBA

Multiple linear regression analyses were carried out to reveal the impacts of the 6 elements of internal conditions on local, non-local and all STEM undergraduates' intention to work in the GBA. The results of internal conditions are presented in Table 3.7. It was found that

- Being able to adapt to new environment was the most significant predictor for both groups of undergraduates. The means were the lowest and medium for local and non-local STEM undergraduates respectively.
- Communicating well was a significant factor influencing local STEM undergraduates' intention to work in the GBA. On the contrary, no significant impact was identified for non-local STEM undergraduates. Its mean values were medium and the highest of the six elements for locals and non-locals respectively.
- Being able to have sufficient professional knowledge and skills, R&D capacity, learning new things and dealing with problems were not found as significant predictors of local than non-local STEM undergraduates' intention to work in the GBA.

Table 3.7

*Results of linear regression of internal conditions' elements on local STEM undergraduates' intention to work in the GBA*

<i>Elements</i>	<i>Local</i>		<i>Non-local</i>		<i>All</i>	
	<i>Beta</i>	<i>M (SD)</i>	<i>Beta</i>	<i>M (SD)</i>	<i>Beta</i>	<i>M (SD)</i>
Being professional	.05	4.30 (1.14)	.11	5.12 (.83)	.08*	4.51 (1.13)
Dealing with problems	.07	4.13 (1.19)	.01	5.04 (.82)	.06	4.39 (1.17)
Communicating well	.26**	4.09 (1.38)	.05	5.30 (.84)	.24**	4.47 (1.33)
R&D capability	.02	3.99 (1.28)	.05	5.01 (.92)	.04	4.27 (1.29)
Learning new things	-.06	4.28 (1.18)	-.04	5.19 (.81)	-.06	4.55 (1.17)
Adapting to new environment	.38**	3.94 (1.40)	.40**	5.18 (.87)	.42**	4.32 (1.39)

\*  $p < .05$     \*\*  $p < .01$

### 3.8.2.5 Impacts of external conditions on STEM undergraduates' intention to work in the GBA

Multiple linear regression analyses were conducted to examine the impacts of the 11 elements of external conditions on local, non-local and all STEM undergraduates' intention to work in the GBA. The results of external conditions are presented in Table 3.8. It was found that

- Different industry standards were the most significant predictor of two groups of undergraduates' intentions to work in the GBA, and the coefficients were all negative. The mean values appeared to be the second highest and the third highest for locals and non-locals respectively.

- Worrying about leaving family was also a significant negative predictor for two groups of undergraduates' intentions. The means were medium and the third lowest of the eleven elements for locals and non-locals respectively.
- Different terminology was a significant negative factor influencing local and non-local STEM undergraduates' intentions to work in the GBA. The mean value was the highest for locals, while the fourth highest for non-locals.
- Long working hours was another negative factor influencing local and non-local STEM undergraduates' intentions to work in the GBA. The means of the two groups were of approximate value in this item.
- More intense competition was found as a positive predictor for all three groups of STEM undergraduates' intentions to work in the GBA. This may reflect young people's tendency to conquer challenges. The means of these items ranked the third highest and the highest within the dimension of external conditions for locals and non-locals respectively.
- Other elements regarding external conditions were not found as significant predictors of local and non-local STEM undergraduates' intentions to work in the GBA.

Table 3.8

*Results of linear regression of external conditions' elements on STEM undergraduates' intention to work in the GBA*

<i>Elements</i>	<i>Local</i>		<i>Non-local</i>		<i>All</i>	
	<i>Beta</i>	<i>M (SD)</i>	<i>Beta</i>	<i>M (SD)</i>	<i>Beta</i>	<i>M (SD)</i>
Unfamiliarity with working environment	.00	4.06 (1.35)	-.12	3.46 (1.40)	-.01	3.88 (1.37)
Unfamiliarity with living environment	.01	3.97 (1.36)	.12	3.07 (1.38)	.01	3.70 (1.42)
Worrying about leaving family	-.10*	4.16 (1.44)	-.15*	2.96 (1.36)	-.17**	3.80 (1.51)
Difficulty of making friends	-.03	3.88 (1.37)	.06	3.13 (1.53)	.01	3.64 (1.46)
Worrying about Putonghua	-.01	3.31 (1.62)	.00	2.09 (1.36)	-.06	2.91 (1.61)
Long working hours	-.12*	4.09 (1.28)	-.12	4.06 (1.42)	-.11**	4.02 (1.31)
More intense competition	.26**	4.26 (1.28)	.19**	4.59 (1.22)	.29**	4.31 (1.27)
Unclearness of career path	-.03	4.17 (1.29)	-.04	3.62 (1.28)	-.02	4.00 (1.32)
Different industry standards	-.22**	4.48 (1.17)	-.16*	3.99 (1.18)	-.20**	4.31 (1.21)
Different terminology	-.14**	4.57 (1.21)	-.06	3.76 (1.29)	-.17**	4.31 (1.29)

Obtaining professional certificates	.03	3.74 (1.33)	-.05	2.90 (1.27)	.00	3.47 (1.34)
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\*  $p < .05$     \*\*  $p < .01$

### 3.8.2.6 Impacts of significant others on STEM undergraduates' intention to work in the GBA

Multiple linear regression analyses were performed to investigate the impacts of the 6 elements of significant others on local, non-local and all STEM undergraduates' intentions to work in the GBA. The results of external conditions are presented in Table 3.9. It was found that

- Parents' support was the most important predictor for the two groups of students' intentions. Its means were the highest among the six elements for both local and non-local STEM undergraduates.
- Best friend's willingness was a positive significant predictor of local STEM undergraduates' intention to work in the GBA. Its mean value was the lowest for local STEM undergraduates, while the second lowest for the non-locals.
- Boyfriend's/girlfriend's support was another positive significant predictor of local STEM undergraduates' intention to work in the GBA. Its mean value of locals was significantly lower than that of non-locals.
- Classmates' willingness was a positive significant predictor of non-local STEM undergraduates' intention to work in the GBA. Its mean value of non-local students was significantly higher than that of locals.
- Teacher's support and Relatives' support were not found as significant predictors of local and non-local STEM undergraduates' intentions to work in the GBA.

Table 3.9

*Results of linear regression of significant others' elements on local STEM undergraduates' intention to work in the GBA*

<i>Elements</i>	<i>Local</i>		<i>Non-local</i>		<i>All</i>	
	<i>Beta</i>	<i>M (SD)</i>	<i>Beta</i>	<i>M (SD)</i>	<i>Beta</i>	<i>M (SD)</i>
Parents' support	.20**	3.65 (1.47)	.31**	5.03 (1.00)	.23**	4.05 (1.51)
Boyfriend's / girlfriend's support	.22**	3.06 (1.47)	.04	4.88 (1.16)	.19**	3.58 (1.63)
Relatives' support	.05	3.40 (1.44)	-.01	4.81 (1.03)	.04	3.81 (1.48)
Best friend's willingness	.21**	2.97 (1.46)	.08	4.83 (1.11)	.20**	3.52 (1.61)
Classmates' willingness	.06	3.02 (1.48)	.16*	4.85 (1.09)	.10*	3.54 (1.62)

Teacher's support	.08	3.50 (1.40)	.05	5.00 (.95)	.08*	3.94 (1.46)
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\*  $p < .05$     \*\*  $p < .01$

### 3.8.2.7 Impacts of social pressure on STEM undergraduates' intention to work in the GBA

Multiple linear regression analyses were finally conducted to unpack the impacts of the 6 elements of social pressure on local, non-local and all STEM undergraduates' intentions to work in the GBA. The results of social pressure are presented in Table 3.10. It was found that

- Support of student clubs / organizations was the most significant predictor for both groups' intentions of working in the GBA. Nevertheless, Its means values appeared the lowest for both local and non-local STEM undergraduates.
- Encouragement of Central Government was also a significant predictor for two groups of STEM undergraduates' intentions. Its mean values ranked the second highest of the six elements for local STEM undergraduates and the highest for non-local STEM undergraduates.
- Encouragement of career development department was another significant predictor of STEM undergraduates' intention to work in the GBA even though its impact on local students was a bit higher than the non-local. Its mean values were medium for both groups.
- Positive attitude of mass media was a significant predictor of STEM undergraduates' intention. It appeared to be a bit more significant for local students but the regression coefficients were similar for both groups. The means of the two groups were the second lowest among the six elements.
- The impact of encouragement of HK Government on all STEM undergraduates' intention was more complicated than normally hypothesised. Although its means were the highest for both groups, there was a significant negative regression coefficient for local students. This might be caused by the rather high mean value of this item. Direct promotions of the relevant schemes might be interpreted by some students as forcing them to leave home. Such a feeling may be reduced through connecting the employment and entrepreneurship schemes as discussed in Section 4.7.
- Encouragement of university was not found as a significant predictor of local and non-local STEM undergraduates' intentions to work in the GBA.

Table 3.10

*Results of linear regression of social pressure's elements on local STEM undergraduates' intention to work in the GBA*

<i>Elements</i>	<i>Local</i>		<i>Non-local</i>		<i>All</i>	
	<i>Beta</i>	<i>M (SD)</i>	<i>Beta</i>	<i>M (SD)</i>	<i>Beta</i>	<i>M (SD)</i>
Encouragement of career development department	.10*	3.92 (1.33)	.11	4.94 (.92)	.12**	4.20 (1.32)
Positive attitude of mass media	.10*	3.77 (1.34)	.09	4.74 (1.07)	.10*	4.02 (1.36)
Encouragement of university	.06	4.07 (1.32)	.02	4.99 (.83)	.06	4.33 (1.26)
Support of student clubs / organizations	.39**	3.22 (1.43)	.17*	4.63 (1.09)	.40**	3.61 (1.51)
Encouragement of HK Government	-.12**	4.70 (1.29)	-.06	5.10 (.87)	-.13**	4.83 (1.20)
Encouragement of Central Government	.16**	4.55 (1.37)	.22**	5.24 (.85)	.18**	4.75 (1.29)

\*  $p < .05$     \*\*  $p < .01$

### 3.8.3 Integrating the findings of interviews and survey

The comparison between the findings generated in interviews and regression analyses indicated that the interview results on key factors were more consistent with regression analyses than those on all important factors. This is because the question on key factors was asked in a more open manner, which more straightforwardly reflected the thoughts of interviewees. Both interviews and regression analyses showed that personal values and significant others were the most influential factors in STEM undergraduates' decisions on working in the GBA. Their perception of internal and external conditions was also important.

- As for personal values, better development prospects and better life quality were stated by a number of interviewees as key factors respectively. They both appeared to be significant predictors of local STEM undergraduates' intention to work in the GBA.
- Regarding significant others, best friends' willingness was mentioned by more than half of the interviewees as important factors influencing local STEM undergraduates' intention and its regression coefficient was also very significant. The regression coefficient of boyfriend's/girlfriend's support was also significant for local STEM undergraduates even though it was just stated by a small number of interviewees. This may be due to not all interviewed undergraduates having a boyfriend/girlfriend. In addition, parents' support was considered a key factor by most of the local interviewees and regression analysis also

indicated its significant impact on locals' STEM undergraduates' intention of working in the GBA.

- With regards to internal conditions, communicating well and adapting to new environment, were stated by the interviewees as key abilities influencing local STEM undergraduates' intention decision on working in the GBA. Meanwhile, they were very significant predictors of local STEM undergraduates' intention.
- Concerning external conditions, worrying about leaving family and long working hours were stated by the interviewees as key factors reducing local STEM undergraduates' intention. They were also found in regression analyses as negative significant predictors of their intention. In addition, different industry standards and different terminology were stated by more than half of the interviewees as important factors and they were both found as significant constraints on local STEM undergraduates' intention in regression analyses.

## Chapter 4 Policy implications and recommendations

This section will discuss policy implications and recommendations from eight directions. For each direction, the relevant findings revealed in this study will be first summarized. After then, the policy background relevant to the recommendations will be illustrated. At the end, the specific recommendations will be described.

### 4.1 Review the effectiveness of mainland internship arrangements under existing schemes

*Among various demographic variables, mainland internship experience was found as one of the crucial factors influencing STEM undergraduates' intention to work in the GBA. Significant differences were revealed between undergraduates with and without mainland internship experience not only in their intention to work in the GBA, but also in their perceptions of personal values, collective values, internal conditions, external conditions, significant others and social pressure. These findings indicated that internship arrangements should be a policy emphasis.*

- The Hong Kong Government has launched varied schemes to increase youth's internship experience in the Mainland. Such schemes include the “GBA Hong Kong Youth Internship Scheme”, the “Thematic Youth Internship Programmes to the Mainland”, the “Scheme on Corporate Summer Internship on the Mainland and Overseas” and the “Mainland Experience Scheme for Post-Secondary Students”. However, there is still a lack of work to review and summarise the experience of these schemes, especially for the programs involving the GBA mainland cities.
- To maximise the positive impacts of mainland internship experience on STEM undergraduates' intention to work in the GBA, efforts should be made in the future to investigate the arrangements of these themes made by different universities in different hosting companies, compare the impacts of different types of arrangements, and identify the key elements influencing the effectiveness of mainland internship.
- STEM undergraduates may think that local internship opportunities are more attractive than those in the GBA mainland cities because local job vacancies are sufficient. The Government could first send interested Hong Kong STEM undergraduates to Hong Kong branches of cross-border companies for an internship or to work, and then deploy them to



GBA mainland branches after familiarizing them with the work culture and requirements. According to the acceptance level of the young people, adjust the duration and work content so that it will be more beneficial for them.

- Worrying about leaving family and long working hours in the GBA were two critical predictors for locals and the mean values were medium-high. On the other hand, they tended to agree that the development prospects would be better in the GBA mainland cities. The Government may learn from popular internship programmes by some NGOs and organise STEM-related virtual internship programmes in the GBA. Without having to live there or travel among cities, these experiences may still enable Hong Kong youth to understand the labour market, work culture, and career prospects and establish interpersonal networks in the GBA.

#### 4.2 Strengthen the functions of the Guangdong-Hong Kong-Macao University Alliance

*It was found that non-local STEM undergraduates had significantly higher intentions to work in the GBA than their local counterparts. Moreover, non-local STEM undergraduates had higher scores in their perceptions of personal values, collective values, internal conditions, significant others and social pressure. On the contrary, they were less constrained by external conditions. At the same time, regression analyses and interviews also indicated that peers were a very significant factor influencing STEM undergraduates' intention to work in the GBA. All these findings imply that strengthening the communication between local STEM undergraduates and non-local STEM undergraduates (in/outside Hong Kong) may be an effective strategy.*

- The collaboration among the universities in the GBA mainly focused on research. Although Guangdong-Hong Kong-Macao University Alliance (GUA) was formed in 2015, its main activities are for deepening academic exchanges and cooperation between scholars in the universities in the GBA. Existing professional STEM-related sub-alliances include the Space Science and Technology Alliance, the Supercomputing Alliance, the Marine Science and Technology Innovation Alliance and the University Alliance for New Drug Innovation. Their activities are rather similar to those carried out by the GUA.
- Until now, GUA may be the biggest platform available to enhance cross-border exchange and communication among STEM undergraduates so as to enhance local STEM

undergraduates' intention to work in the GBA. The GUA may establish a department to connect student affairs offices and student organizations in the universities in the GBA.

- With the cooperation of student affairs offices and student organizations, The GUA can further organise cultural immersion programs that allow students to experience the unique culture and traditions of different regions in the GBA. This can include homestay programs, cultural festivals, and city tours. This not only offers opportunities for Hong Kong youth to experience real life in the GBA, but also diminishes their worries about adapting to the living environment there as well as the difference in quality of life between Hong Kong and the GBA mainland cities.
- Apart from exchange activities, the GUA may organise volunteer activities for undergraduate students from different GBA cities that enable students to give back to the local community and develop a sense of social responsibility. This can include activities such as environmental clean-ups, charity events and community service projects. By participating in these activities, STEM undergraduates may find they are needed and regard working in the GBA as a vocation.

#### 4.3 Provide more targeted training and career guidance

*Regression analyses and interviews with students both showed that encouragement of the career development department was a significant predictor of local STEM students' intention to work in the GBA. Regression analyses also indicated that different industrial standards and different terminology considerably constrained their intention. Meanwhile, their worries about communicating with colleagues in mainland China, and their unfamiliarity with the working and living environment in the GBA were widely reported in the interviews.*

- The Student Career Developments in the universities are offering various work courses and workshops to prepare STEM undergraduates to work in the GBA. Recently, Shenzhen and Guangzhou started the “GBA Workplace Mentorship Programme”, which allows Hong Kong and Macao talents with mainland workplace and life experience to share their views and provide one-on-one guidance and assistance. The findings of this study may make suggestions on how more targeted and tailor-made support can be provided in the future.
- To eliminate STEM students' worries about the differences in profession and workplace, Career Development Departments could arrange courses that include specific skills and

knowledge that are required in the mainland workplace, such as Mainland certification of professional qualification, professional vocabulary used in Mainland workplace, Mainland workplace cultural demonstration and rehearsal, Mainland law as well as workplace Putonghua. If students choose to participate in relevant courses offered by the market, the Government should provide special subsidies or funding. Continuing Education Funds could also be applied for GBA workplace training.

- The universities could introduce mentorship programmes and invite alumni who have work and living experience in the GBA to be mentors of the undergraduates. This may reduce the chance of making mistakes and accelerate personal growth. Some enterprises in the GBA have experience in hiring and training Hong Kong graduates, and the mentorship programme is constructive. The university could invite HRs of the mainland companies to share some effective workplace soft skills, such as the strengths and weaknesses of Hong Kong young people, unspoken rules in the GBA workplace and useful in-service training. This may shorten the time of adaptation of the GBA internships and work.
- One-on-one career guidance services could be offered by the Student Career Developments in the universities and some organizations from the market, and the Government should provide funding to support it. The above activities can lead students out of classrooms to broaden their horizons and help to equip them with information about different industries and career pathways. Students can then gain confidence as well as be well-prepared for further development and pursue careers in the GBA.

#### 4.4 Enhance STEM elements in secondary students' study tours

*Survey findings revealed a significant difference in the intention to work in the GBA between STEM undergraduates with and without mainland exchange experience. Such difference was also found in the perceptions of personal values, collective values, internal conditions, significant others and social pressure.*

- Recently, with the full resumption of normal travel between Hong Kong and the Mainland, the EDB has launched Mainland study tours for the senior secondary subject Citizenship and Social Development, whose itineraries include GBA cities.
- As more than one-third of the Mainland study tours for senior secondary school students by the EDB are just one-day tours, students may only gain a limited understanding from a

fleeting visit. Further work should be done to review the relevant itineraries and extend the contents to STEM-related fields as well as the duration of the tours so that students can gain a first-hand understanding of our country and its latest development through experiential learning.

- For life planning, the EDB has been collaborating with local business corporations and providing a wide range of career exploration activities to senior secondary students. During school long holidays, the “GBA Career Exploration Programme” can be launched, which allows Hong Kong teens to visit Mainland enterprises and factories, especially industries that they are interested in, and arrange for them to do job shadowing in related industries.
- Secondary schools can arrange extensive corporate visits and corporate culture tours to quality enterprises in the GBA during the summer holiday so that Hong Kong young people can broaden their horizons, explore their interests in diverse industries, and know more about the latest development in the GBA.

#### 4.5 Reinforce the cooperation in school STEM curriculum development and STEM events in the GBA

*As mentioned in 4.3, peers were a very significant factor influencing local STEM undergraduates’ intention to work in the GBA. At the same time, the mainland exchange experience had a positive impact on their intention. In addition to strengthening the communication among STEM undergraduates in the GBA, the exchange between local and non-local school students interested in STEM learning can plant the seed for their long-term friendship when they enter the universities in the future. Such early experiences can also contribute to reducing their anxiety when local STEM undergraduates think about working in the GBA in the future.*

- STEM Education is a policy emphasis in both Hong Kong and the whole GBA. Although Hong Kong STEM Education Alliance in cooperation with mainland organisations has organised several forums to promote the exchange among STEM teachers and scholars from different cities in the GBA, rather limited opportunities have been created to enhance the exchange among school STEM learners in the GBA through STEM events. There is less cooperation among different GBA cities to develop school STEM curricula or activities.

- Since STEM education has higher requirements for hardware and software and cross-disciplinary integration makes the design of STEM curricula or activities more difficult, the Education Bureaus in different GBA cities should synergise the educational and industrial resources to determine the key goals of STEM education in the GBA, develop the basic framework to implement school STEM education in the GBA, and produce the corresponding hardware and software for teaching STEM in schools. Such measures will lay a solid foundation to strengthen the exchange among school STEM learners and teachers in the GBA.
- In Hong Kong, there are a number of STEM events, such as the Primary Science Project Exhibition, the Hong Kong Youth Science & Technology Innovation Competition, and the GreenMech Context. Efforts can be made to develop them into GBA STEM events through collaboration with the government and organisations in other GBA cities. Through participating in these events, school STEM learners (potential STEM undergraduates) can increase their knowledge and enhance their connections in informal contexts.

#### 4.6 Enrich the official online resources about working in the GBA

*As indicated in regression analyses and interview data, local STEM undergraduates' perception of external conditions was a significant predictor of their intention to work in the GBA. They had great concerns about different industry standards, different terminology, leaving family, and long work hours, which were negatively connected to their intention to work in the GBA in the regression analysis. Their worry about unfamiliar work and living environments was mentioned by the interviews as two key factors affecting their intention.*

- Until now, there were three major official online resources for local STEM undergraduates to get information on working in the GBA, including GOGBA one-stop platform established by Hong Kong Trade Development Council (HKTDC), YES webpages constructed by Labour Department, and the BAYAREA webpages constructed by Constitutional and Mainland Affairs Bureau. All these resources have provided useful information for local STEM undergraduates on living and working in the GBA.
- Local STEM undergraduates will encounter some challenges when they work outside Hong Kong. Until now, it is still difficult for local STEM undergraduates to know from the existing official online resources how serious the challenges will be and more important what are the experiences to conquer them. If some concrete examples can be shared in the

websites about how Hong Kong I&T professionals now working in the GBA experience and conquer the challenges, local STEM undergraduates will get a more complete picture on working in the GBA, which will in turn relieve their worries.

- When Googling the keywords “work in GBA”, the first result is the BAYAREA webpage constructed by the Constitutional and Mainland Affairs Bureau. It is difficult to find the YES webpages constructed by Labour Department and the GOGBA one-stop platform established by HKTDC. It will be helpful if there are more explicit connections among these online resources to direct more efficiently direct local STEM undergraduates to the information they are interested in.
- AI Chatbots can be created to answer some frequently asked questions from the official accounts of social media and networking platforms. Comprehensive service centres in the GBA cities should be set up to follow up on some specific cases. Moreover, offline activities can be organised to enhance interactions with the youth and promote the use of these resources.

#### 4.7 Establish connections between employment and entrepreneurship schemes related to the GBA

*The survey findings indicated that starting a business and improving employment situations were critical predictors of local STEM undergraduates’ intention to work in the GBA. As revealed in the interviews, familiarizing with the mainland markets, promoting the integration of Hong Kong and other GBA cities, and creating more cooperation opportunities for I&T talents in the GBA were three factors that were mentioned by more than half of the interviewees.*

- Due to the favourable feedback from the participating enterprises and young people, it was announced in the Chief Executive’s 2022 Policy Address that the Government would regularise the GBA Youth Employment Scheme (YES) and continue to provide the young people of Hong Kong with entrepreneurial support and incubation services in the GBA through the Youth Development Fund. Further efforts should be made to establish connections amid YES and other policies related to working in the GBA.
- In addition to YES, a number of entrepreneurship schemes have been announced, including Funding Scheme for Youth Entrepreneurship in the GBA, Funding Scheme for Experiential Programmes at Innovation and Entrepreneurial Bases in the GBA, Guangdong-Hong Kong

Technology Cooperation Funding Scheme and Technology Start-up Support Scheme for Universities. In fact, the experience of working in the GBA can enhance the success rate of the awardees of these schemes. It is meaningful to include the experience of working in the GBA as one of the factors for evaluating the application for these schemes. Such a measure can motivate more local STEM undergraduates to join the YES.

- If such connections are established in the future, they should be explicitly highlighted when disseminating both YES and the relevant entrepreneurship schemes so that local STEM undergraduates can perceive the YES as a part of long-term strategies of the government to enhance their whole career and life development, rather than a short-term employment plan.

#### 4.8 Leverage the roles of student organizations and social media

*The interviews with local STEM undergraduates indicated that some of them still have limited knowledge about YES, work opportunities, and information about working and living in the GBA. At the same time, regression analyses revealed the significant impacts of mass media and student clubs/organizations on local STEM students' willingness to work in the GBA.*

- Until now, student organizations have very limited engagement in the promotion of YES and other schemes related to working in the GBA. It is time to invite student organizations to make suggestions on the content and methods of enhancing local STEM undergraduates' intention to work in the GBA. With their contribution, the promotion of YES or other similar schemes will better match the interest and habits of university students.
- The student affairs offices in different universities can work with student organizations to organise various activities related to work and life in the GBA. For example, cultural, sports, art and other exchange activities can deepen students' understanding of daily life in the GBA. Academic and entrepreneurship competitions can improve their academic performances and innovation through interactions with talents from the GBA. Participants could also be invited to join sharing sessions after returning to Hong Kong, helping to promote such activities.
- Although the official online resources for local STEM undergraduates provide connections with popular social media, such as Facebook, Instagram and YouTube, the number of their followers or subscribers is still limited. Efforts should be made to promote these resources

in mass media with the help of career development departments and student organizations in different universities.



## Chapter 5 Details of the Public Dissemination Held

The preliminary findings of this research were first presented in a public seminar held at the Education University of Hong Kong on 17<sup>th</sup> February 2023, with the presentation title “Hong Kong local STEM undergraduates’ intention of working in the GBA: Comparison with non-local STEM students”.

The quantitative findings of this research were presented at the 5<sup>th</sup> International Conference on Computer Science and Technologies in Education held on 23<sup>rd</sup> February 2023 in Xi’an, PRC, with the presentation title “Investigating Hong Kong STEM major’ cross-boundary work intention in the GBA: Application of the Planned Behavior Theory”.

Through integrating both the quantitative and qualitative findings, a presentation was made at International Conference on Learning and Teaching 2023 held on 17<sup>th</sup> May 2023 in Hong Kong, entitled “Working in the Guangdong-Hong Kong-Macao Greater Bay Area: Hong Kong Science, Technology, Engineering and Mathematics (STEM) Undergraduates’ Intention and Concerns”.

Focusing on the policy implications, a presentation was made at the departmental conference held by the Department of Curriculum & Instruction of the Education University of Hong Kong on 16<sup>th</sup> June 2023, entitled “Investigating Hong Kong STEM majors’ cross-boundary work intention in the Greater Bay Area: Implications for future policies”.

An article entitled “去還是不去？這是個問題-STEM 專業大學生取大灣區工作的意向 (To go or not to go? that is the question-Hong Kong STEM majors’ intention of working in the GBA)” (Appendix D) has been accepted for publishing in Mingpao (Happy Pama).

To thank for the support from the participating universities of this research, a two-paged poster showing the key findings of this study and a leaflet showing the eight policy recommendations were designed and provided to each of the participating universities (Appendix E for the sample posters and Appendix F for the leaflet).

## Chapter 6 Conclusion

I & T is a key direction in the development of the entire GBA and Hong Kong. To realise the vision of building a globally competitive I&T hub in the GBA and accelerating the I&T development in Hong Kong, it is necessary to strengthen the bilateral flow of the four key I&T resources (i.e., talent, capital, information and technologies) within the GBA, in which talent is the most important (GHKSAR, 2017).

In addition to various strategies to cultivate and accumulate talent in Hong Kong (e.g., Technology Talent Admission Scheme and Global STEM Professorship Scheme), the government also implemented some schemes to encourage Hong Kong talent to enter other cities of the GBA, including the Funding Scheme of Youth Internship in the Mainland since 2014-2015 and Youth Entrepreneurship Scheme in 2019. A more recent scheme, entitled Greater Bay Area Youth Employment Scheme (YES), is announced in the 2020 Policy Address to support companies that have operations in Hong Kong and across the border to recruit fresh local graduates to work in other cities of the GBA. A total of 430 million HK\$ will be allocated. Different from other schemes as introduced above, the YES spares the considerable quotation for I&T talent and sets up a specific higher salary standard for them. The emphasis of I&T talent in this scheme echoes the policy emphasis placed on the I&T development in Hong Kong and the entire GBA. In 2022 Policy Address, the government further announced the regularisation of the scheme to encourage more enterprises to offer jobs and support young people to work in the GBA Mainland cities.

The intention of Hong Kong STEM graduates was a crucial condition for the success of the YES and other similar schemes. To give the government and the public a useful reference for encouraging and facilitating Hong Kong STEM talent to join the bilateral flow between Hong Kong and Mainland cities of the GBA, this project conducted in-depth interviews and an online survey designed based on the Theory of Planned Behavior to investigate STEM undergraduates' intention to work in I&T companies in the GBA, as well as the factors that influence their decision. Data were collected from both local and non-local students, and STEM and non-STEM majors. STEM academics, University career consultants, and Hong Kong I&T professionals working in the GBA were also involved in the interviews.

The findings indicated that there was still considerable room to further enhance local STEM undergraduates' intention to work in the GBA. Significant differences were revealed between

the local and non-local students. Mainland internship and exchange experiences were found as the most significant demographic factors causing the difference in STEM undergraduates' intention and six major influencing factors highlighted in the TPB (i.e., personal values, collective values, internal conditions, external conditions, significant others and social pressure). Interviews and regression analyses of the survey data consistently indicated that students' perception of personal value, significant others, and internal conditions were the significant factors facilitating STEM undergraduates to work in the GBA. At the same time, their concern about external conditions significantly constrained their intention.

On the basis of these findings, recommendations were provided for policymakers in higher education, school education and other government departments on how to more effectively enhance local STEM undergraduates' cross-border work intention. In fact, strengthening the bilateral flow of STEM talent within the GBA required joint forces of various stakeholders with innovative strategies. It is hoped that relevant policymakers, academics, Civil society, and student organizations can take synergistic actions with consideration of these recommendations.

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## Appendix A: Survey questions for STEM undergraduates

### STEM專業大學生大灣區 (香港以外城市) 工作意向調查

各位同學：

這份問卷的目的是了解香港STEM專業大學生對進入(香港以外城市)粵港澳大灣區工作的意向，並為制定大灣區人才流動策略提供可行性建議。本問卷收集資料僅作學術研究之用，資料絕對保密，請放心作答。請就你自己的狀況在適當選項前塗●。

#### [第一部分] 基本資料

性別： <input type="radio"/> 男 <input type="radio"/> 女	年齡：_____	出生地： <input type="radio"/> 香港 <input type="radio"/> 中國內地 <input type="radio"/> 海外	居住地區： <input type="radio"/> 新界 <input type="radio"/> 九龍 <input type="radio"/> 港島
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就讀大學：	<input type="radio"/> 港大	<input type="radio"/> 中大	<input type="radio"/> 科大	<input type="radio"/> 理大	<input type="radio"/> 浸大	<input type="radio"/> 城大	<input type="radio"/> 嶺大	<input type="radio"/> 教大
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STEM專業：	<input type="radio"/> 生物	<input type="radio"/> 物理/化學	<input type="radio"/> 數學	<input type="radio"/> IT/電腦	<input type="radio"/> 工程、技術	<input type="radio"/> 其它
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至今到國內旅行次數： <input type="radio"/> 沒有 <input type="radio"/> 1-3次 <input type="radio"/> 4-8次 <input type="radio"/> 9次或以上
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至今到國內交流經驗 (可多選)： <input type="radio"/> 遊學團 <input type="radio"/> 實習 <input type="radio"/> 比賽 <input type="radio"/> 學術交流 <input type="radio"/> 交流生 <input type="radio"/> 沒有經驗
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

國內親戚的數量： <input type="radio"/> 沒有 <input type="radio"/> 1-3個 <input type="radio"/> 4-8個 <input type="radio"/> 9個或以上
---------------------------------------------------------------------------------------------------------------------

香港本地實習地點： <input type="radio"/> 香港政府部門及相關公營機構 <input type="radio"/> 香港本地公司 <input type="radio"/> 跨國公司 (可多選) <input type="radio"/> 中港跨境公司 <input type="radio"/> 其它組織機構 <input type="radio"/> 沒有本地實習經驗
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

內地實習地點： <input type="radio"/> 跨國公司內地分部 <input type="radio"/> 中港跨境公司 <input type="radio"/> 內地的公司和機構 (可多選) <input type="radio"/> 其它組織機構 <input type="radio"/> 沒有內地實習經驗
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#### [第二部分] 工作意向

我大學畢業之後願意	十分願意	願意	有點願意	有點不願意	不願意	十分不願意
在香港工作	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
去國內非大灣區城市工作	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
去中港兩地跨境公司在在大灣區(香港以外)的部門工作	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
去僅在大灣區(香港以外)運作的公司工作	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

如果去大灣區(香港以外城市)科創公司工作，我願意去做以下職位	十分願意	願意	有點願意	有點不願意	不願意	十分不願意
1. 研發	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. 數據分析	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. 工程設計	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. 品質監控	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. 網絡安全	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. 信息技術	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. 銷售	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. 市場營銷	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. 生產	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. 金融	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. 行政	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. 教育	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

在去大灣區(香港以外城市)工作，我願意去以下地區	十分願意	願意	有點願意	有點不願意	不願意	十分不願意
1. 深圳	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. 廣州	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. 澳門	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. 大灣區其他國內城市	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**[第三部分] 對大灣區(香港以外城市)工作的看法**

	十分同意	同意	有點同意	有點不同意	不同意	十分不同意
1. 我所學的专业在大灣區有好的發展前景。	○	○	○	○	○	○
2. 在大灣區工作，我能夠獲得更高薪酬。	○	○	○	○	○	○
3. 在大灣區工作能夠提升我的專業能力。	○	○	○	○	○	○
4. 在大灣區的工作經驗讓我求職時更有競爭力。	○	○	○	○	○	○
5. 在大灣區工作有助於我未來晉升職位。	○	○	○	○	○	○
6. 在大灣區工作可以提高我的生活質素。	○	○	○	○	○	○
7. 在大灣區工作可以改善我的居住環境。	○	○	○	○	○	○
8. 香港青年去大灣區工作能夠改善我們專業的就業情況。	○	○	○	○	○	○
9. 在大灣區工作有助於拓展我與科創人才的聯繫。	○	○	○	○	○	○
10. 在大灣區工作有助於我了解科創行業的新發展。	○	○	○	○	○	○
11. 在大灣區工作有助於我熟悉國內市場。	○	○	○	○	○	○
12. 在大灣區工作有助於我未來創業。	○	○	○	○	○	○
13. 香港青年去大灣區工作會促進香港科創行業的未來發展。	○	○	○	○	○	○
14. 香港青年去大灣區工作有利於香港將來獲得更多投資機會。	○	○	○	○	○	○
15. 香港青年去大灣區工作為大灣區科創人才創造更多合作機會。	○	○	○	○	○	○
16. 香港青年去大灣區工作可以促進香港和大灣區其它城市的融合。	○	○	○	○	○	○
17. 香港青年去大灣區工作能夠為促進大灣區企業的國際化。	○	○	○	○	○	○
18. 香港青年去大灣區工作有助於整合大灣區科創資源。	○	○	○	○	○	○

**[第四部分] 去大灣區(香港以外)工作的信心**

	十分同意	同意	有點同意	有點不同意	不同意	十分不同意
1. 我相信我有足夠專業知識與技能在大灣區工作。	○	○	○	○	○	○
2. 我能夠應對在大灣區工作時將會遇到的問題。	○	○	○	○	○	○
3. 我能夠與國內同事順暢地溝通。	○	○	○	○	○	○
4. 我有足夠的研發能力以勝任大灣區的工作。	○	○	○	○	○	○
5. 我能有效學習新事物去適應大灣區的新工作環境。	○	○	○	○	○	○
6. 我有信心適應大灣區的新生活環境。	○	○	○	○	○	○
7. 我不了解大灣區的工作環境。	○	○	○	○	○	○
8. 我不了解大灣區的生活環境。	○	○	○	○	○	○
9. 離開香港家庭讓我感到擔憂。	○	○	○	○	○	○
10. 在大灣區我難以結識新的朋友。	○	○	○	○	○	○
11. 我擔心我的普通話能力。	○	○	○	○	○	○
12. 我覺得大灣區的工作時數會很長。	○	○	○	○	○	○
13. 我覺得大灣區工作的競爭壓力大。	○	○	○	○	○	○
14. 我不清楚去大灣區之後的職業發展方向。	○	○	○	○	○	○
15. 我覺得大灣區的行業標準和香港差異大。	○	○	○	○	○	○
16. 我覺得大灣區使用的專業詞彙和香港差異大。	○	○	○	○	○	○
17. 我難以獲得國內專業認證。	○	○	○	○	○	○

**[第五部分] 周圍人對大灣區(香港以外)工作的看法**

	十分同意	同意	有點同意	有點不同意	不同意	十分不同意
1. 我的父母支持我去大灣區工作。	○	○	○	○	○	○
2. 我的男/女朋友支持我到大灣區工作。	○	○	○	○	○	○
3. 我的親戚希望我去大灣區工作。	○	○	○	○	○	○
4. 我的好朋友願意到大灣區工作。	○	○	○	○	○	○
5. 我的同學願意去大灣區工作。	○	○	○	○	○	○
6. 我的老師支持我到大灣區工作。	○	○	○	○	○	○
7. 大學的職業發展部門鼓勵我們去大灣區工作。	○	○	○	○	○	○
8. 大眾媒體對香港青年大灣區工作持積極態度。	○	○	○	○	○	○
9. 我的大學鼓勵學生到大灣區工作。	○	○	○	○	○	○
10. 我參加的學生社團支持成員到大灣區就業。	○	○	○	○	○	○
11. 香港政府鼓勵香港青年到大灣區工作。	○	○	○	○	○	○
12. 中央政府重視香港青年去大灣區工作。	○	○	○	○	○	○



[第六部分] 背景情況

父母出生地：	父： <input type="radio"/> 香港 <input type="radio"/> 中國內地 <input type="radio"/> 海外
	母： <input type="radio"/> 香港 <input type="radio"/> 中國內地 <input type="radio"/> 海外

父母職業類別 (如已退休或失業，請填寫以往職業)：

父	母	職業
<input type="radio"/>	<input type="radio"/>	非技術型工作 (例如：小販、看更、家務助理、清潔工、工廠勞工、雜工等)
<input type="radio"/>	<input type="radio"/>	技術型工作 (例如：裝修工、工匠、職業司機、電機技工、警察等)
<input type="radio"/>	<input type="radio"/>	文職、秘書、服務員等白領階層 (例如：侍應、客戶服務員、售貨員、郵務員等)
<input type="radio"/>	<input type="radio"/>	專業人士 (例如：醫生、工程師、會計師、教師、律師等)
<input type="radio"/>	<input type="radio"/>	商人、公司董事或管理層
<input type="radio"/>	<input type="radio"/>	打理家務或其它

家庭月收入： <input type="radio"/> 低於1.5萬 <input type="radio"/> 1.5-3萬 <input type="radio"/> 3-5萬 <input type="radio"/> 5萬以上
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## Appendix B: Survey questions for non-STEM undergraduates

### 2022大學畢業生大灣區工作意向調查（非STEM專業）

各位同學：

此問卷目的是了解香港非 STEM 專業大學生對進入粵港澳大灣區(香港以外城市) 的工作意向，並為制定大灣區人才流動策略提供可行建議。本問卷收集資料僅作學術研究之用，凡有關閣下的資料將會保密，一切資料的編碼只有研究人員得悉，請放心作答。閣下的參與純屬自願性質。閣下享有充分的權利在任何時候決定退出這項研究，更不會因此引致任何不良後果。

#### [第一部分] 基本資料

性別： <input type="radio"/> 男 <input type="radio"/> 女	年齡：_____	出生地： <input type="radio"/> 香港 <input type="radio"/> 中國內地 <input type="radio"/> 海外	居住地區： <input type="radio"/> 新界 <input type="radio"/> 九龍 <input type="radio"/> 港島
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就讀大學： <input type="radio"/> 港大	<input type="radio"/> 中大	<input type="radio"/> 科大	<input type="radio"/> 理大	<input type="radio"/> 浸大	<input type="radio"/> 城大	<input type="radio"/> 嶺大	<input type="radio"/> 教大
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非STEM專業： <input type="radio"/> 社科 <input type="radio"/> 文學 <input type="radio"/> 工商管理 <input type="radio"/> 醫藥 <input type="radio"/> 教育 <input type="radio"/> 法律 <input type="radio"/> 設計/視藝 <input type="radio"/> 媒體/電影 <input type="radio"/> 其它
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至今到內地旅行次數： <input type="radio"/> 沒有 <input type="radio"/> 1-3次 <input type="radio"/> 4-8次 <input type="radio"/> 9次或以上
至今到內地交流經驗（可多選）： <input type="radio"/> 遊學團 <input type="radio"/> 實習 <input type="radio"/> 比賽 <input type="radio"/> 學術交流 <input type="radio"/> 交流生 <input type="radio"/> 沒有經驗
內地親戚的數量： <input type="radio"/> 沒有 <input type="radio"/> 1-3個 <input type="radio"/> 4-8個 <input type="radio"/> 9個或以上
香港本地實習地點： <input type="radio"/> 香港政府部門及相關公營機構 <input type="radio"/> 香港本地公司 <input type="radio"/> 跨國公司 （可多選） <input type="radio"/> 中港跨境公司 <input type="radio"/> 其它組織機構 <input type="radio"/> 沒有本地實習經驗
內地實習地點： <input type="radio"/> 跨國公司內地分部 <input type="radio"/> 中港跨境公司 <input type="radio"/> 內地的公司和機構 （可多選） <input type="radio"/> 其它組織機構 <input type="radio"/> 沒有內地實習經驗

#### [第二部分] 工作意向

我大學畢業之後願意	十分願意	願意	有點願意	有點不願意	不願意	十分不願意
1. 在香港工作	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. 去國外工作	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. 去大灣區工作（中港兩地跨境公司）	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. 去大灣區工作（僅在大灣區運作的公司）	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. 去內地非大灣區城市工作	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

如果去大灣區(香港以外城市)的公司工作，我願意去做以下職位	十分願意	願意	有點願意	有點不願意	不願意	十分不願意
1. 法律	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. 財務	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. 人力資源	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. 物流	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. 後勤	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. 市場營銷	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. 品質監控	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. 採購	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. 生產	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. 銷售	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. 金融	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. 行政	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. 教育/培訓	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

在去大灣區(香港以外城市)工作，我願意去以下地區	十分願意	願意	有點願意	有點不願意	不願意	十分不願意
1. 深圳	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. 廣州	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. 澳門	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. 大灣區其他城市	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### [第三部分] 對大灣區(香港以外城市)工作的看法

請根據你自己的看法選擇適當選項	十分同意	同意	有點同意	有點不同意	不同意	十分不同意
1. 我所學的專業在大灣區有好的發展前景。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. 在大灣區工作，我能夠獲得更高薪酬。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. 在大灣區工作能夠提升我的專業能力。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. 在大灣區的工作經驗讓我求職時更有競爭力。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. 在大灣區工作有助於我未來晉升職位。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. 在大灣區工作可以提高我的生活質素。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. 在大灣區工作可以改善我的居住環境。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. 香港青年去大灣區工作能夠改善我們專業的就業情況。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. 在大灣區工作有助於拓展我與業界人才的聯繫。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. 在大灣區工作有助於我了解自身行業的新發展。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. 在大灣區工作有助於我熟悉內地市場。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. 在大灣區工作有助於我未來創業。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. 香港青年去大灣區工作會促進香港相關行業的未來發展。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. 香港青年去大灣區工作有利於香港將來獲得更多投資機會。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. 香港青年去大灣區工作為大灣區業內人才創造更多合作機會。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. 香港青年去大灣區工作可以促進香港與大灣區其它城市的融合。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. 香港青年去大灣區工作能夠促進大灣區企業的國際化。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. 香港青年去大灣區工作有助於整合大灣區業內資源。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### [第四部分] 去大灣區(香港以外城市)工作的信心

請根據你自己的看法選擇適當選項	十分同意	同意	有點同意	有點不同意	不同意	十分不同意
1. 我相信我有足夠專業知識與技能在大灣區工作。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. 我能夠應對在大灣區工作時將會遇到的問題。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. 我能夠與內地同事順暢地溝通。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. 我有足夠的研發能力以勝任大灣區的工作。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. 我能有效學習新事物去適應大灣區的新工作環境。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. 我有信心適應大灣區的新生活環境。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. 我不了解大灣區的工作環境。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. 我不了解大灣區的生活環境。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. 離開香港家庭讓我感到擔憂。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. 在大灣區難以結識新的朋友。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. 我擔心我的普通話能力。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. 大灣區的工作時數會很長。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. 大灣區工作的競爭壓力大。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. 我不清楚去大灣區之後的職業發展方向。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. 大灣區的行業標準與香港差異大。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. 大灣區使用的專業詞彙與香港差異大。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. 我難以獲得內地專業認證。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### [第五部分] 周圍人對大灣區(香港以外城市)工作的看法

請根據你自己的情況選擇適當選項	十分同意	同意	有點同意	有點不同意	不同意	十分不同意
1. 我的父母支持我去大灣區工作。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. 我的男/女朋友支持我到大灣區工作。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. 我的親戚希望我去大灣區工作。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. 我的好朋友願意到大灣區工作。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. 我的同學願意去大灣區工作。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. 我的老師支持我到大灣區工作。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. 大學的職業發展部門鼓勵我們去大灣區工作。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. 大眾媒體對香港青年到大灣區工作持積極態度。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. 我的大學鼓勵學生到大灣區工作。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. 我參加的學生社團支持成員到大灣區就業。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. 香港政府鼓勵香港青年到大灣區工作。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. 中央政府重視香港青年去大灣區工作。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**[第六部分] 背景情況**

<b>父母出生地：</b>	父： <input type="radio"/> 香港 <input type="radio"/> 中國內地 <input type="radio"/> 海外
	母： <input type="radio"/> 香港 <input type="radio"/> 中國內地 <input type="radio"/> 海外

**父母職業類別** (如已退休或失業，請填寫以往職業)：

父	母	職業
<input type="radio"/>	<input type="radio"/>	非技術型工作 (例如：小販、看更、家務助理、清潔工、工廠勞工、雜工等)
<input type="radio"/>	<input type="radio"/>	技術型工作 (例如：裝修工、工匠、職業司機、電機技工、警察等)
<input type="radio"/>	<input type="radio"/>	文職、秘書、服務員等白領階層 (例如：侍應、客戶服務員、售貨員、郵務員等)
<input type="radio"/>	<input type="radio"/>	專業人士 (例如：醫生、工程師、會計師、教師、律師等)
<input type="radio"/>	<input type="radio"/>	商人、公司董事或管理層
<input type="radio"/>	<input type="radio"/>	打理家務或其它

<b>家庭月收入：</b> <input type="radio"/> 低於1.5萬 <input type="radio"/> 1.5-3萬 <input type="radio"/> 3-5萬 <input type="radio"/> 5萬以上
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## Appendix C: Examples of STEM-major-related Interview

### Transcriptions

#### 1 Personal values

##### 1.1 我所學的專業在大灣區有好的發展前景

The majority of STEM-related interviewees mentioned the importance of better development prospects in the GBA and some even chose this as the key factor of the intention to work in the GBA. Work opportunities and choices were widely considered more in the GBA mainland cities than in Hong Kong.

一位數學相關專業的本地學生表示，我這個行業在香港的發展會有一點停滯的情況出現，最近關於專業人才的流失以及外資撤離香港等的負面消息比較多。大灣區始終是新的地方，那裡的金融體系沒發展到香港這麼完整，對香港學生發展應該更加有利。(STEM 03)

一位物理相關專業的本地學生表示，考慮去不去大灣區工作的第一個因素，就是可能大灣區的發展機會會更多一點，科技發展會更先進，工作機會會多一點，見識也會多一點。始終大灣區的環境會大一點，可以去的地方也會更多，而不是局限在香港這一個地區。(STEM 07)

一位在大灣區工作的專業人士表示，如果重新選擇畢業後進修或回大陸工作，我可能還是會選擇回大陸工作，第一個原因是確實這邊的機會會更多一些，香港的機會相對少一點。第二個原因是香港的行業領域相對還是窄一些。尤其在深圳，科技、科學、生物、醫藥等類型研究，政府的支持力度很大。(Professional 01)

##### 1.2 在大灣區工作，我能夠獲得更高薪酬

The salary was the key factor that most STEM-related interviewees mentioned. However, their perspectives on the salary level in the GBA mainland cities varied.

一位建築相關專業的本地學生表示，最主要是因為相較香港，大灣區人工可能就會比較低，應該是會低很多。政策上，薪金支援的時間太短，導致去大灣區工作的動機不足。所以如果我要去大灣區找工作，我意願不太大。(STEM 12)

一位數學相關專業的本地學生表示，薪酬是首要考慮因素。我實習時認識了一位同事參加過大灣區青年就業計畫，職位是 **project manager**。那個老闆手頭上有幾間公司，其中一間在大灣區。因為政府資助金都挺多的，我想他們老闆沒有金錢的顧慮，怎麼都先聘請他來看看行不行。(STEM 13)

一位在大灣區工作的專業人士表示，剛畢業的時候大灣區公司給的 offer 不錯，起薪比較滿意。公司做的系統是我所熟悉的，我也有這方面的人脈，那麼我的長處就能用上，所以選擇了這間公司。如果在香港工作，做得久了，人工會高一點，稅也少一點。(Professional 04)

### 1.3 在大灣區工作可以提高我的生活質素

STEM undergraduates with experience living in GBA mainland cities thought the living conditions there were better than those in Hong Kong. They tended to think it would be easier to own a home in the GBA.

一位數學相關專業的本地學生表示，在大灣區工作，對人生規劃如結婚、置業等會有幫助，置業比在香港容易。(STEM 01)

一位數學相關專業的本地學生表示，在大灣區的居住環境較佳，生活指數較低。長遠可以考慮常駐或跳至國內其他城市。(STEM 03)

一位物理相關專業的本地學生表示，本地學生要回去大灣區工作，本身是和家人一起住的，就會變成自己一個人住，衣食住行所有東西都要自己負責和支付開支。那可能這是他們需要花時間想的一件事。我的家庭在大灣區有物業。在大灣區的生活條件是一定好過香港的，我覺得無論是環境或條件，對比之下都一定都會好過香港。(STEM 07)

## 2 Collective values

### 2.1 香港青年去大灣區工作可以促進香港與大灣區其它城市的融合

Most STEM-related interviewees believed that the integration of Hong Kong with other cities in the GBA would be promoted, which would be a long-term process in various aspects.

一位數學相關專業的本地學生表示，我覺得香港青年去大灣區工作有利於香港與內地接軌。大灣區就像是一個中間點一樣，中國利用大灣區這個地方，將香港與內地的距離拉近一點。在人才、經濟、文化、生活等層面，將所有東西連接在一起。(STEM 03)

一位電腦相關專業的本地學生表示，長遠來說，香港青年去大灣區工作會促進香港與大灣區其他城市間的雙向交流。(STEM 02)

一位建築相關專業的本地學生表示，如果多了香港人回去大灣區工作，內地的人也會來香港工作，兩邊的人才交換一下，可能香港人會認識多一點內地來的人，內地人也會多認識香港人，整個大灣區一家親。但是這個過程要很久，短期內做不到。(STEM 12)

## 2.2 香港青年去大灣區工作為大灣區科創人才創造更多合作機會

As mentioned by most interviewees, more cooperation opportunities for I&T talents in the GBA would be created. It was also believed that different cities in the GBA have their own strengths, which may benefit the two sides.

一位物理相關專業的本地學生表示，香港青年去大灣區工作可以加強香港與內地的連接。香港的教學模式和內地的教學模式有些不一樣，我估計兩個地方的人才可以互相交流，互補不足。(STEM 07)

一位物理相關專業的非本地學生表示，香港學生有教育優勢，專業知識扎實，為國內公司帶來香港的關係網。長遠來說，可以增加香港與內地的溝通，互通優勢。(STEM 09)

一位大學生就業指導負責人表示，大灣區不同城市有各自的 STEM 優勢，像廣州、深圳這些城市走得比較前。學校除了教授相關知識外，如果同學可以到大灣區工作，便可以看到更多的可能性，開闊眼界。人才與資訊互通後，大家可以再決定是留在國內還是回港，對雙方都有好處。(Career Consultant 01)

一位大學 STEM 教師表示，例如，你可能認識編程的人，但是在硬件或者在設備方面，其實香港是很缺乏的，你走進去內地就可以找到。又例如，你想到一個點子，但不知道怎麼把它商品化，你需要能做 Prototype 的人，那你走去大灣區就有了，所以這也是互惠互利的。(Academic 01)

## 3 Internal conditions

### 3.1 我能夠與國內同事順暢地溝通

The ability of workplace communication was mentioned by most interviewees. Nevertheless, their confidence in communicating well depended on their Putonghua levels and dispositions.

一位數學相關專業的本地學生表示，我首先覺得語言會是一個問題。在港學習時語言以英文為主，如果工作轉用中文會有一定困難。雖然大家都是使用中文，但是其實香港和內地的中文是有些差異的。再加上我的普通話不是特別好，我在普通日常生活可以應付到，但是如果在工作上使用可能會比較弱點。(STEM 03)

一位數學相關專業的本地學生表示，我本身比較喜歡從事變化、對人的工作，而且普通話流利，不太擔心溝通問題。(STEM 10)

一位建築相關專業的本地學生表示，我本身普通話較弱，所以溝通上會有些問

題。另外，可能香港的法例去到內地就變了。還有這行也很考驗和師傅作溝通的，所以如果你母語是當地語言會好溝通一點。(STEM 12)

### 3.2 我相信我有足夠專業知識與技能在大灣區工作

The majority of the interviewees mentioned that they had sufficient professional knowledge and skills to work in the GBA and tended to have positive thinking about continuous learning.

一位物理相關專業的本地學生表示，其實去到哪裡都要持續學習，畢竟在工作中注重實踐多於理論。(STEM 07)

一位建築相關專業的本地學生表示，雖然兩地的建築有不同標準，但香港行內的標準更高更規範，預計一個月左右便可以適應差異。(STEM 12)

一位大學生就業指導負責人表示，香港人有拼搏精神，對工作的妥善跟進以及專業性都是獨有的優勢。如果帶著自身的優勢去大灣區工作，學會靈活變通，機會會更多。(Career Consultant 01)

### 3.3 我有信心適應大灣區的新生活環境

Adapting to the new living environment in the GBA was a worry that was widely mentioned by the interviewees, and their perspectives varied.

一位物理相關專業的本地學生表示，我身邊的很多本地生朋友都未必習慣在內地的生活模式與居住環境等，雖然我覺得沒有什麼很大的區別。(STEM 07)

一位建築相關專業的本地學生表示，只是去過大灣區玩，那裡的食物也挺好吃，但是生活上要時間去習慣。(STEM 12)

一位在大灣區工作的專業人士表示，工作上我接觸那幾個都是香港同事，他們提及香港人到大灣區工作，找地方住會麻煩點。另外，辦理銀行卡好像都挺麻煩的。這是聽他們說過的生活上遇到的困難。(Professional 04)

## 4 External conditions

### 4.1 我不了解大灣區的生活環境

More than half of the STEM undergraduates mentioned that they were unfamiliar with the living environment in the GBA because they lacked long-term living experience there. Some even had worries about renting or buying a flat there.



一位數學相關專業的本地學生表示，對大灣區的了解，我只去過深圳一次，吃喝玩樂為主。內地流行電子支付，物價與香港有差異。(STEM 01)

一位電腦相關專業的本地學生表示，年幼時有較多回鄉經驗，到廣州、深圳等城市旅行。但我從小在香港長大，沒有在內地長期生活的經驗，加上普通話不流暢，對內地生活環境不了解。(STEM 02)

一位物理相關專業的本地學生表示，很多人覺得有大灣區跟香港有很大差異，我想可能是消費模式不同，譬如生活上的開支。現在內地的物價都會高一點，但是就人工未必有香港這麼高，唯一低一點的可能是租金。廣州物價也不低了，平時喝星巴克，價錢和香港也差不多。(STEM 07)

一位建築相關專業的本地學生表示，聽說對比起香港，內地的置業壓力很大，現在內地的樓價都飆升了。內地在 10 年內的樓價升得很快，但是人工又反而增幅沒那麼大，所以內地人都覺得很難買樓。(STEM 12)

#### 4.2 我不了解大灣區的工作環境

Most STEM-related interviewees mentioned that local undergraduates were not familiar with the work environment in the GBA in terms of knowledge, language, culture and communication.

一位數學相關專業的本地學生表示，我對內地公司情況不了解，譬如收入、稅收等。另外，覺得內地公司對港人期望較高。(STEM 01)

一位物理相關專業的本地學生表示，我只是知道在內地工作經常都要出差。我不怕出差。我比較喜歡去很多不同的地方見識下。(STEM 07)

一位在大灣區工作的專業人士表示，香港與內地在職場文化還是有些差異的。香港工作量會大過內地，同事之間的溝通文化其實都有不同。不過因為我長時間接觸，會習慣內地的文化多點。在內地，對領導或者下屬的態度不一樣，溝通的方式會比較謹慎一點。而在香港可能就更加直白一點。(Professional 04)

#### 4.3 離開香港家庭讓我感到擔憂

Worrying about leaving their family in Hong Kong was expressed by more than half of the interviewees. However, others who had stronger connections in the GBA did not have such worry.

一位電腦相關專業的本地學生表示，我是獨生子女，希望多在香港陪伴家人。(STEM 02)

一位物理相關專業的本地學生表示，我比較多親友多在大灣區，在廣州為主。疫情前，我每年都回去探親數次。我的父母已退休，如果我去大灣區工作，父

母可一同前往居住。(STEM 07)

一位大學生就業指導負責人表示，我們發現有些同學沒有試過離開家這麼遠的，他們會有擔心。但是我們都要鼓勵年輕人要有勇氣，嘗試新的東西。(Career Consultant 02)

#### 4.4 我覺得大灣區工作的競爭壓力大

Over half of the undergraduates claimed that the competition for jobs in the GBA was more intense in terms of competitive markets, working hours, gender discrimination, etc.

一位電腦相關專業的本地學生表示，內地公司文化與香港不同，通常工時較長，市場競爭大。我不能長期承受長工時的工作。(STEM 02)

一位數學相關專業的本地學生表示，身邊沒有人前往大灣區發展。有師兄姐曾經前往上海、北京等地工作，已經回流香港。兼職認識了國內同行專才，分析過香港與國內專業人才及行業發展情況。中資公司的工作文化會與香港有區別，例如國內的處事方式要圓滑點、工作節奏快、工時較長，我會考慮適不適應這些壓力。(STEM 03)

一位在大灣區工作的專業人士表示，我覺得工作上最大的壓力可能是競爭壓力。大陸的競爭壓力還是不小的，而且它的競爭模式還有區別，大陸在性別歧視方面非常普遍而且越演越烈，這個在香港可能是比較難以理解和適應的。我遇到的企業不論是外資或中資都有非常嚴重的性別歧視問題。如果女性跟男性競爭同樣一個崗位，女性的可能性就會低 95%。如果競爭對手都是男性的話，老闆可能就不會考慮雙方的年齡、能力、學歷上的差別了。(Professional 02)

## 5 Significant others

### 5.1 我的父母支持我去大灣區工作

Nearly all STEM undergraduates mentioned that their parents supported them to work in the GBA, mainly because of better development prospects and more opportunities.

一位數學相關專業的本地學生表示，我的父母對我去大灣區工作持開放態度。(STEM 13)

一位電腦相關專業的本地學生表示，我的父母支持我在內地發展，認為仕途較佳。(STEM 02)

一位物理相關專業的本地學生表示，去不去大灣區工作，我想主要都是家裡的因素。如果去，想和家人一起去。(STEM 07)

## 5.2 我的同學/好朋友願意去大灣區工作

Peer influences were mentioned by most interviewees. STEM undergraduates lacked the confidence to work in the GBA and preferred to have peer company.

一位數學相關專業的本地學生表示，我覺得最大的影響是朋友，如果有朋友去大灣區發展，會比較有意向一起去。但我身邊的人都沒有考慮過去大灣區工作，作為第一個去的話，壓力會比較大。(STEM 03)

一位建築相關專業的本地學生表示，身邊大部分人不考慮前往國內發展，或者沒有詳細考慮過。(STEM 05)

一位電腦相關專業的本地學生表示，剛畢業的師兄姐影響比較大，會比較多實在的建議。(STEM 14)

一位大學 STEM 教師表示，身邊的朋輩互相影響會比較大，朋輩之間分享：「我去了前海那裡發展，你看我現在住幾千尺的豪宅，生活又如意，可以自己駕車到處走，住也住得舒服，吃也吃得好，工作壓力也不大。」朋輩年齡相仿，做的東西相似，只有通過切切實實的比較，才能發現生活的不同。(Academic 01)

## 6 Social pressure

### 6.1 香港政府鼓勵香港青年到大灣區工作

Nearly all interviewees had the perspective that Hong Kong Government supported Hong Kong youth to work in the GBA. However, there were worries and some academics in the universities offered some suggestions.

一位物理相關專業的本地學生表示，我覺得香港政府應該是想培養些人才去大灣區，就好像前面所說，大灣區競爭大，挑戰大，如果他們在大灣區工作幾年後回來香港，這樣就可以提升香港年輕人的競爭力。(STEM 07)

一位大學 STEM 教師表示，政府可否有一個相對包容、清晰、長遠的政策，在大灣區一小時生活圈內建立穩固的經濟特區，讓金融資金流穩定，加強交通便利性。建立好這兩個基礎，讓他們知道政策不會輕易變，那他們就會去試了。(Academic 01)

一位大學 STEM 教師表示，政府應該多提供一些接觸大灣區的渠道，而不是只通過媒體宣傳，這樣沒有實際的意義。政府一定要起到一個實際組織的作用，對接大灣區相關組織，邀請學生多接觸多了解，他們慢慢覺得環境熟悉了，才能夠吸引人過去。政府對接的渠道比較可信，通過接觸，學生會發現其實廣東人素質還是不錯的，不是不可以談的，可能發現他們也懂英文、懂技術，雖然

沒有我們好，但是他們錢多，這樣大家了解才能進一步。(Academic 03)

## 6.2 大學/大學的職業發展部門鼓勵我們去大灣區工作

**Most interviewees thought that their university and career development offered support and had sufficient resources to help STEM undergraduates.**

一位物理相關專業的本地學生表示，我想大學的支援應該是足夠的。有時候學校會電郵學生介紹實習機會，擺設攤位宣傳和呼籲同學去大灣區工作。但是因為始終有些同學從小在香港長大，不太清楚大灣區的情況。如果有更多資訊和宣傳鼓勵會更好，鼓勵性會更強點。(STEM 07)

一位大學生就業指導負責人表示，我們部門會提供職業發展講座、各種活動和實習計劃等，這些渠道我們都有。(Career Consultant 02)

一位大學 STEM 教師表示，我們的校長做得很好，他帶同學去深圳龍崗一趟，看完了再坐下來談方案的時候，就會有不一樣的體會。(Academic 03)

## Appendix D: An article published in Ming Po

### 去還是不去？這是個問題

——STEM 專業大學生到大灣區工作的意向

(<https://life.mingpao.com/general/article?issue=20230621&nodeid=1687285964731>)

粵港澳大灣區有着龐大的發展機遇。在 2022 年的施政報告中，政府提出恆常推行「大灣區青年就業計劃」，鼓勵在香港及大灣區內地城市均有業務的企業聘請香港的大學畢業生，派駐他們到大灣區內地城市（下稱大灣區）工作，並提供津貼。然而，STEM 專業大學生，尤其是本地生，到大灣區工作的意向如何？

筆者早前就此展開研究，探討 STEM 專業大學生前往大灣區工作的意向及其影響因素，希望為此計劃的實施以及大灣區人才流動提供政策建議。

總括而言，STEM 專業大學生對前往大灣區工作有中等程度的意向。在大灣區不同城市當中，深圳及廣州最受歡迎。而在職位方面，研發、數據分析、工程設計是 STEM 專業大學生最想從事的首三位。研究同時指出，大灣區實習經驗及交流經驗是影響 STEM 專業大學生到大灣區工作意向的重要因素，有這些經驗的同學的意向明顯比沒有的同學高。

在個人層面，STEM 專業大學生普遍覺得大灣區有更好的發展前景，市場更廣闊，同時可以增進對創科行業最新發展的了解，拓展人脈，更有利於以後創業。然而，較多本地生認為，大灣區的生活質素不及香港，長遠來說，薪酬的吸引力也不及香港。

當思考是否前往大灣區工作時，STEM 專業本地大學生有着不同的顧慮。首先，他們當中的大部分人擔心能否適應大灣區的新生活環境，也對離開香港家庭感到擔憂。另外，他們覺得大灣區的工作競爭壓力大、工作時數長。最後，他們認為內地與香港有着不同的行業標準及專業用語，擔心能否與內地同事順暢地溝通。

在社會層面，STEM 專業本地大學生普遍覺得父母及老師對他們前往大灣區工作抱支持或開放態度，但這些人對他們的影響不大。身邊朋輩的意向不高才是令他們卻步的重要因素，使他們對做「第一個」的壓力倍增。

無疑，香港政府和中央政府都在推動香港 STEM 專業大學生前往大灣區工作上不遺餘力。隨着香港全面通關及復常，政府更在最近首次推出「青年發展藍圖」，針對青年發展提供一系列具體措施。香港青年人精通兩文三語，具法治意識，世界觀廣闊，服務專業，並兼備靈活性及創意，有拼搏精神。本地生有着背靠祖國、面向世界的優勢，如能抓緊機遇，放下過多的疑慮，積極參加大灣區的實習與交流計劃，多作嘗試，定能開闊眼界，對職業生涯規劃更有實質性的幫助。

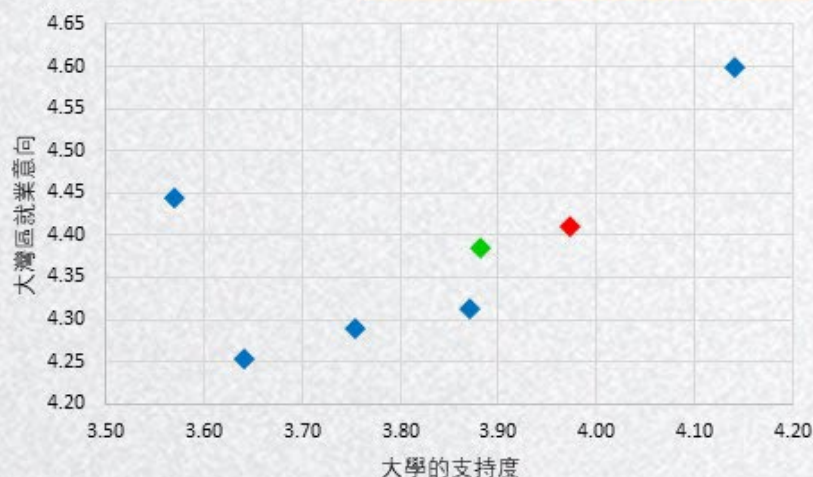


# Appendix E: Posters with Key Findings Sent to Universities





## 大學的支持度



整體STEM大學生到大灣區工作的意向平均值為3.88，貴校為3.97

整體STEM大學生覺得大學的支持度平均值為4.38，貴校為4.41

◆ 所有大學平均數  
◆ 貴校  
◆ 其他大學

## 影響就業意向的主要因素

個人價值、重要他人和內部條件顯著促進STEM大學生到大灣區就業的意向；外部條件顯著限制就業意向。



Beta (貝塔係數) 值越高的因素對就業意向影響越大  
\*\*  $p < .01$  \*  $p < .05$

研究團隊：萬志宏博士、李子建教授、趙振洲博士





# 創科 INTENTION GBA 工作意向



## YES 去還是不去?

### 公共政策研究

由香港特別行政區政府政務司司長辦公室轄下行政署的公共政策研究資助計劃資助  
(項目編號: 2021.A5.092.21C)

### 香港STEM專業大學生到大灣區工作的意向及影響因素

**研究背景** 粵港澳大灣區（大灣區）有着龐大的發展機遇。在2022年的施政報告中，政府提出恆常推行「大灣區青年就業計劃」（計劃），鼓勵在香港及大灣區內地城市均有業務的企業聘請香港的大學畢業生，派駐他們到大灣區內地城市工作，並提供津貼。

**研究目的** 探討STEM專業大學生前往大灣區工作的意向及其影響因素，為計劃的實施以及大灣區人才流動提供政策建議。

### 為提升本地STEM大學生到大灣區工作意向

## 建議

# 01



## 高等教育層面



建議（一）識別有效內地實習安排的主要特徵



### 檢視現有計劃下 內地實習安排的成效

研究發現：有內地實習經驗的STEM學生到大灣區就業的意向顯著較高

建議（二）加強大灣區STEM大學生之間的交流和互動

### 提升「廣東-香港-澳門 大學聯盟」的職能



研究發現：非本地生到大灣區就業的意向比本地生顯著較高；朋輩是影響意向的顯著因素

建議（三）減輕STEM大學生對挑戰的憂慮

### 提供更有針對性的培訓 和職業指導



研究發現：職業發展部門的鼓勵顯著預測STEM學生到大灣區的就業意向；STEM學生亟需參加大灣區職業技能培訓



## 02

## 中小學教育層面

建議（四）幫助學生了解大灣區創科行業的最新發展

### 增加中學生遊學團的STEM學習元素



研究發現：有內地交流經驗的STEM學生到大灣區就業的意向顯著較高

建議（五）在創科人才年幼時建立聯繫

### 加強學校STEM課程開發和STEM活動在大灣區的合作



研究發現：朋輩是影響STEM學生到大灣區就業意向的顯著因素

## 03

## 政府層面

建議（六）幫助STEM大學生更便捷地獲取生活和工作信息

### 豐富有關在大灣區工作的官方網上資源



研究發現：對大灣區職場不熟悉是STEM學生到大灣區就業的憂慮

建議（七）讓STEM大學生能夠將YES視為政府長期戰略的一部分，以促進他們的整個職業和生涯發展

### 建立與大灣區相關的就業和創業計劃間的聯繫



研究發現：有助未來創業和熟悉國內市場可顯著預測STEM學生到大灣區工作的意向

建議（八）更有效地設計宣傳YES和其他類似計劃的策略，以吸引本地STEM本科生的參與

### 發揮學生組織和社交媒體的作用



研究發現：社交媒體與學生團體/組織的影響顯著預測STEM大學生到大灣區工作的意向