



# A Socioecological Perspective on the Future Quality of Life of Hong Kong's Young People: the Role of Competencies, Livelihood Improvement and Support, Upward Mobility and Environment, and Five-Year Outlook

Anthony Fung<sup>1</sup> · Jason Lam<sup>2</sup> · Stephen Chiu<sup>3</sup>

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## Abstract

The rapid loss of young people from Hong Kong's (HK's) labor force between 2020 and 2022 was not reflected in the steady unemployment rate, suggesting the departure of young people. It was likely due to the pessimism about their future quality of life (QoL) in HK, following discontent about, for example, the Anti-Extradition Bill and stringent COVID-19 restrictions. To help prevent further loss of the precious population, we aimed to identify the HK-specific socioecological aspects that could predict young people's future QoL based on a socioecological perspective. We found that, compared to 2018 ( $n = 794$ ), young people in 2021 ( $n = 636$ ) were significantly more pessimistic, and this was predicted by factors in the socioecological framework at lower levels, such as financial competence and self-efficacy to improve one's QoL, and at higher levels, such as positive evaluations of QoL, opportunities for young people's upward mobility, the natural environment in the Great Bay Area compared to HK, and the five-year economic outlook and QoL in HK. Implications for HK young people's perceptions and what they value were discussed.

**Keywords** Hong Kong · Young people · Quality of life · Optimism · Socioecology

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Anthony Fung and Jason Lam contributed equally to this work.

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✉ Anthony Fung  
anthonyfung@cuhk.edu.hk

<sup>1</sup> Centre for Youth Studies, Hong Kong Institute of Asia-Pacific Studies, Chinese University of Hong Kong, Room 507, 5/F, Esther Lee Building, Chung Chi College, Shatin, New Territories, Hong Kong

<sup>2</sup> Department of Applied Social Sciences, Hong Kong Polytechnic University, 11 Yuk Choi Road, Hung Hom, Kowloon, Hong Kong

<sup>3</sup> Department of Social Sciences, Education University of Hong Kong, 10 Lo Ping Road, Ting Kok, New Territories, Hong Kong

In the last few years, events in Hong Kong (HK) could undermine the confidence of young people (i.e., 15–30-year-olds) in the country. A 2019 protest began when dissatisfaction with the Anti-Extradition Bill spilled over. The protest was predominantly driven by young people who were frustrated by the government's and police's handling of the protest and the protestants' demands (Centre for Communication and Public Opinion Survey 2020; Hong Kong Public Opinion Research Institute 2020). The momentum slowed in early 2020 due to the detrimental effects of the COVID-19 pandemic. Strict and prolonged pandemic regulations enforced by the government in 2021 drastically shrank HK's economy, resulting in negative GDP growth and increased unemployment, but high residential property prices remained unchanged (Hong Kong Monetary Authority 2020). Under these harsh conditions, the newly enforced HK national security law could undermine confidence in the political and legal systems, which are some of many indicators of quality of life (QoL; i.e., the sense of subjective well-being<sup>1</sup>; e.g., Chan et al. 2005; Estes 1998; Muldoon et al. 1998; Nikolova 2016).

These events could be some of the reasons that contributed to the 12.33% (i.e., about ten thousand) net population loss of HK's young people from 2019 to 2022 (Census and Statistics Department 2022a). This implication is supported by the fact that young people's participation in the labor force dropped significantly, whereas the unemployment rate remained steady (Census and Statistics Department 2022b; Hong Kong Business Times 2022). In fact, a recent survey of 1054 HK youths revealed that 46.9% were pessimistic about HK's future, while 35.7% were uncertain (Hong Kong Federation of Youth Groups 2022). Another survey in 2021 also observed that 25.3% of youth had negative expectations about their future life as compared with 17.2% in 2017 (Shi 2022). Some of these observations were not new. To name a few, HK youths in 1993 considered inflation and housing problems to be the primary worries for their future (Hong Kong Federation of Youth Groups 1993). In 1997, nearly 60% of surveyed youths did not think that the financial market would be better (Hong Kong Federation of Youth Groups 1997). Eight years later, they reported that livelihood, economics, and the government's effective management and ability to grasp public opinion were crucial when judging the optimism of their future life in HK (Hong Kong Federation of Youth Groups 2005).

Pessimism for the future life among youth is not uncommon around the globe. One example is that half of the youth in America across ethnicity were not optimistic about their future (Statista Research Department 2023). Studies from other societies suggested that both internal and external factors could affect one's perception of optimism and be associated with, for example, poor emotional control and lower help-seeking attitudes (Ciarrochi and Deane 2001; Citraningtyas 2021). It is necessary to examine whether young people's perceived future QoL, as operationalized as optimism/pessimism, in HK has fallen and to identify the potential factors that may predict their future QoL so that plans can be made to preserve HK's precious future.

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<sup>1</sup> QoL can be defined as the subjective well-being in general or in specific dimensions (e.g., mental or social) and as objective functioning, typically health-related research (e.g., Bowling 1991). But this study only focuses on the general level of subjective well-being specifically in the future.

## Socioecological Framework

The socioecological model is an ideal framework for systematically identifying the factors that are potentially associated with HK young people's perceptions of their future lives in HK. Bronfenbrenner (1977, 1986) and Bronfenbrenner and Morris (2007) first described how nested layers of factors influence human development in terms of the distance between those factors and an individual. An individual's personal qualities, such as demographics, physiological/psychological conditions, personality traits, and abilities, are at the center of the model. The innermost layer of the model is the microsystem, which includes environmental factors that immediately and directly influence the individual, such as family, peers, and QoL. The next layer (the mesosystem) accounts for the effect of the interactions between the components of the microsystem. Moving further outward, the exosystem includes organizations, institutions, or locations that indirectly influence the individual, such as the school, neighborhood, workplace, or government. The subsequent macrosystem concerns higher-order systems and ideologies, such as political systems, economic conditions, cultural values, and policies. Finally, the outermost layer (the chronosystem) takes time into account and describes how events occurring across his/her life span influence an individual.

Different variations of the model have been developed to study specific topics. One of the most adaptable versions, which has four layers (individual, relationship, community, and society), was developed by the Centers for Disease Control and Prevention (Centers for Disease Control and Prevention (CDC) 2022) for health-related studies concerning, for example, child maltreatment, youth violence, and suicide (Wilkins et al. 2014). Tully et al. (2013) employed a three-layer model (i.e., individual, social environment, and built environment) to study the effect of urban rejuvenation on community health. Jang (2022) used a four-layer model (i.e., individual, interpersonal, community, and policy) to examine preventive behaviors during COVID-19. Black Women's Blueprint (2018) expanded the CDC model by integrating the cultural aspects of violence against females and specifying four additional layers (structural, historical, environmental, and spiritual) to holistically study violence prevention. For non-health-related studies, UNICEF (2013) used a five-layer model (i.e., individual, interpersonal, community, organizational, policy/enabling environment) to highlight the importance of birth registration. Sallis et al. (2006) also used a five-layer model, but with slightly different layers (i.e., intrapersonal, perceived environment, behavior, behavior settings, and policy environment), to study active aging. Finally, Little (2008) constructed a more complex form of the model to understand the effects of different layers on QoL.

The discrepancies among the sequences of nested layers and the positioning of factors among the adaptations indicate the considerable flexibility of the model. Therefore, in the present study, we chose not to rely heavily on a specific version of the model because it could have been unsuitable for understanding young people's perceptions of future QoL in the HK context. Furthermore, although the

design of Bronfenbrenner's framework is better addressed by multilevel modeling design, it is not suitable for such an all-inclusive framework. Instead, we first identified indicators of QoL that were considered crucial and specific to HK's social climate from all indicators that the framework can offer and then submitted them to the hierarchical regression model, where the indicators entered a series of blocks according to their corresponding layers, as informed by the framework.

## Quality of Life Indicators in Hong Kong

Literature suggests that there are many dimensions of QoL that could serve as indicators, such as competence and self-efficacy (e.g., Griffiths et al. 2010), material living standards and upward mobility (e.g., Hagerty et al. 2001), sense of belonging to one's local community (e.g., Gullone and Cummins 1999), affordable housing (e.g., Osberg and Sharpe 2002), environmental quality (e.g., Bayer et al. 1998), education, economic and political activities (e.g., Estes 1998), equality (e.g., Johnston 1988), and rule of law (e.g., Nikolova 2016). In fact, most of these dimensions were the primary indicators of QoL in HK (Chan et al. 2005). Literature about the *future* QoL was limited, but those around the *present* QoL could also be useful to inform the study because opinions about QoL were rather stable across time without major life changes (Atkinson 1982). We reviewed the indicators above and categorized four groups that were significant to HK, including competencies, livelihood improvement and support, upward mobility and environment, and five-year outlook.

### Competencies

The sense of competencies of HK's youths was largely based on how much those competencies could benefit their career exploration and development (Ngai et al. 2021). We identified four types of competencies that were celebrated in HK, including those in technology, innovation, finance, and communication. Information technology is a significant area of competence in HK, and the well-planned development of technological capabilities is crucial for young people's future intrapersonal and interpersonal lives, including their QoL (Rodrigues et al. 2021). The better prepared they were for using technologies, the more satisfied they were with their lives (Nevado-Peña et al. 2019). Indeed, the use of technology was found to mediate the relationship between digital inclusion and QoL (Alhassan and Adam 2021). Regions with high technological capacity and significant investment in technological research and development, such as HK, were better able to promote young people's QoL by enabling them to acquire technological competence, avoid interpersonal marginalization, and benefit from access to technology.

HK has emphasized innovation in recent years (Hong Kong Special Administrative Region (HKSAR) Government 2022a) with the intention of increasing QoL by finding novel solutions to existing social problems and enhancing well-being and life satisfaction (Edwards-Schachter et al. 2012; Moulart et al. 2005). How a region's innovation system was organized (e.g., through research institutions or

technological enterprises) directly linked to residents' QoL (Natarajan and Angur 2014). By developing competence in innovation and problem-solving, young people increased their opportunities to improve the sustainability of their lives, and hence their QoL, however indirectly (Brazdauskas 2015; Mutiani and Faisal 2019). Creativity could also directly influence the maintenance and improvement of well-being (Molina-Luque et al. 2022).

Along with New York City and London, HK is one of the world's greatest international financial centers (Hong Kong Special Administrative Region (HKSAR) Government 2022b), which could benefit young people's life planning. The understanding of essential economic and financial notions that enabled people to adequately manage financial resources to attain financial well-being was referred to as financial literacy (Hung et al. 2009). Financial literacy was associated with QoL, including life satisfaction and physical and psychological well-being (Nejad and Javid 2018; Xiao and Porto 2017). Studies have suggested that this association was channeled through financial technology (fintech) adoption (Kakinuma 2022) and was stronger in highly developed regions, such as HK (Xiao and Bialowolski 2022). As a component of financial literacy, the appropriate attitudes to support financial behaviors, rather than mere financial knowledge, are related to QoL (Amonhaemanon and Isaramalai 2020).

Lastly, there was a clear connection between social competence and QoL (Jamison and Schuttler 2015). A 17-year longitudinal study revealed that the social competence of young people aged 15–16 years and their capacity to initiate and sustain close interpersonal relationships for two years could predict life satisfaction when they were aged 27–30 years (Allen et al. 2020). Another study of young people suggested that this connection was channeled through an increase in self-esteem (Caqueo-Urizar et al. 2022). Indeed, social competence and self-esteem may be closely related to family cohesion and social resilience, which were associated with life satisfaction (Yakici and Zeliha 2018). The enhanced self-esteem resulting from improved social competence may also be attributed to a stronger inclination to form and pursue life goals, consequently facilitating higher life satisfaction (Calmeiro et al. 2018).

## **Livelihood Improvement and Support**

The quality, environment, and financial burdens of housing greatly could affect QoL among HK residents (Ng et al. 2018; Streimikiene 2015), because HK was deemed the costliest city in the world in which to live (Arcibal 2020). Shek (2020) has argued that real estate prices in HK have undermined almost all aspects of residents' physical (e.g., proper protection), psychological (e.g., optimism), familial (e.g., harmony between family members), social (e.g., economic equality), and political (e.g., successful housing policies) well-being. Moreover, Gou et al. (2018) claimed that the HK housing environment is the most crucial factor affecting general QoL, especially for low-income residents such as young people (Gou et al. 2018). In fact, across 16 dimensions of life, 59% of HK respondents prioritized "having a comfortable home" as vital for QoL (Sing 2009).

Livelihood strategies are collections of abilities, activities, and resources mobilized to achieve livelihood goals that promote QoL by securing family continuity (Chambers and Conway 1992; Frankenberger et al. 2002; Sunarti et al. 2005). A sustainable livelihood could maximize financial protection against risks and promote QoL (Pennington-Zoellner 2009), and livelihood strategies could enhance a family's tangible and subjective QoL (Fofana 2009). Aguilana (2019) suggested that young people were motivated to engage in educational programs when they perceived them as sources of livelihood because qualifications may help them develop successful careers. Even when tertiary education was not an option, young people aimed to use their acquired skills and knowledge to earn a living for themselves and their families (Tan 2021).

### Upward Mobility and Environment

Economic status is closely connected to an individual's interpersonal well-being because it grants the individual a sense of approval and worth in his/her own and others' eyes (Anderson et al. 2012). Through upward mobility, improvement in socio-economic status motivates downward social comparison with a reference group, producing positive self-evaluations because people want to feel that they outperform others (Festinger 1954). Maintaining or advancing one's economic status has been claimed to be a primary motivator for educational accomplishment and professional mobility (Breen and Goldthorpe 1997; Treiman 1970). Unfortunately, the upward mobility of educated HK youths weakened (Augustin-Jean and Cheung 2020). In fact, a recent study reported that the younger the HK people were, the fewer of them could obtain upward mobility, especially that the slow economic growth in HK was expected in the coming ten years, suggesting a strong pessimism on their future (Liu et al. 2023).

Since 2017, the Chinese government has aimed to develop the Great Bay Area (GBA) of HK as a major zone for fostering interregional collaboration between HK and nearby Chinese cities. In exchange for the benefits of HK's "status as international financial, transportation, trade center, and aviation hub," HK residents were encouraged to study, work, and live in GBA to enhance the concentration of people, commodities, capital, and information (Constitutional and Mainland Affairs Bureau 2022). HK's Labour Department (2022) has established a GBA youth employment scheme to expedite upward mobility among HK's young people.

### Five-Year Outlook

Lastly, the outlook for the *future* (i.e., the expectations or views for the future; Hellström et al. 1999, 2000) could be another important indicator of the QoL (Colombo et al. 2017). Emigration to a destination country is a risky action, full of uncertainty, that requires long-term planning. Such planning implies that the original place of residence, at least in some respects, is not as good as the destination country. Based on the previously mentioned events, it is possible that some of HK's young people departed because they perceived deteriorating economics,

politics, judicial expectations, freedom, QoL, and financial market conditions compared to earlier times. However, those who stayed may have perceived the development of these aspects *in the future* more positively, encouraging them to remain in HK because they felt more hopeful. Although the outlook and the future QoL are conceptually similar, the study examined the outlook in aspects very specific to HK but the future QoL at a generic level because the expectation in a specific area may or may not be important to one's future QoL.

## Present Study

In this study, we first tested whether the future QoL, as operationalized as optimism/pessimism, among young people in 2021 deteriorated compared to three years earlier. We then fitted the previously mentioned HK-specific QoL indicators into the socioecological framework to examine whether and how these indicators could predict perceptions of future QoL. Specifically, according to the framework, we considered the perceived competencies that are closest to the individual. Livelihood and housing are linked with the microsystem and mesosystem, location-specific policies and upward mobility are related to the exosystem and macrosystem, and the future states and conditions of different dimensions of HK (those furthest from the individual) are associated with the chronosystem.

## Methods

### Participants

In 2018, we collected valid data from 794 participants with a mean age of 22.84 years ( $SD = 4.43$  years). More than half were male (51.13%), and many had at least a bachelor's degree (54.66%). Most were born in HK (75.94%), worked full-time (51.76%), were unmarried (83.58%), and had at least HKD 30,000 monthly household income (75.38%). In 2021, we collected valid data from 636 participants. The sample had a mean age of 23.29 years ( $SD = 4.41$  years). At least half the participants were male (51.42%), and roughly half had a bachelor's degree or above (54.56%). Similarly, the majority were born in HK (75.94%), worked full-time (46.54%), were unmarried (81.99%), and had at least HKD 30,000 monthly household income (74.34%). The two samples did not differ in age,  $t(1428) = 1.91$ ,  $p = .06$ ; gender,  $\chi^2(1) = 0.01$ ,  $p = .92$ ; education level,  $U = 241373$ ,  $p = .14$ ; birthplace,  $\chi^2(2) = 2.82$ ,  $p = .25$ ; marital status,  $\chi^2(2) = 5.38$ ,  $p = .07$ ; and monthly household income,  $U = 191631$ ,  $p = .74$ . But they differed in employment status,  $\chi^2(5) = 19.53$ ,  $p = .002$ . According to the thematic report by the Census and Statistics Department (2021), these characteristics were generally representative of the youth in HK from 2016 to 2021.

## Procedure

We employed a mobile phone survey for both samples. The interviewers collected data using a computer-assisted telephone interviewing system and a structured interview schedule. Phone numbers were randomly assigned to each interviewer. Since HK uses eight-digit numbers, the numbers were assigned according to a random first-four-digit number from 1000 numbers issued by the Communication Authority and a last-four-digit number randomly generated between 0000 and 9,999.

The target participants were young people in HK aged 15–30 years who spoke fluent Cantonese or Mandarin. In 2018 and 2021, the interviewers made 101,414 and 41,000 calls, respectively. After excluding ineligible (non-working number or non-targeted participant) and unknown (no answer or answerphone message) cases, we retained 803 eligible cases for both years, entirely by chance. After removing incomplete data, the sample sizes were 794 and 636, respectively.

## Measurements

Following the socioecological framework adapted to the HK context, the items we selected focused on four facets considered crucial in HK, as explained in the following sections. We minimized the number of items to accommodate the spectrum of the chosen indicators to reduce participants' fatigue.

## Competencies

Perceived competencies were defined as people's subjective beliefs about how well they perform in specific (to HK) areas. Each of the four items measured the extent to which participants considered they possessed sufficient competence across four areas: (1) using technology or computers and other technological devices, (2) innovation and problem-solving, (3) financial management and life planning, and (4) communication and collaboration. Participants rated the items on a 5-point Likert scale from "extremely insufficient" to "extremely sufficient."

## Livelihood Improvement and Support

Attitudes towards livelihood improvement and support were specifically defined as people's perception of crucial ways (specific to HK) to obtain and sustain better livelihood. No established scales were available for this specific dimension, so we designed three items ourselves. Two items measured participants' agreement with the following statements: "In HK, buying a house is the first condition for improving one's livelihood" and "You can improve your quality of life by your own efforts," rated from "strongly disagree" to "strongly agree." Another item measured how readily they received support from family members, relatives, or



friends when encountering difficulties in life, rated from “very difficult” to “very easy.” All three items were rated on a 5-point Likert scale.

### **Upward Mobility and Environment**

Attitudes towards upward mobility and environment were operationally defined as people’s perception of how much certain crucial aspects of HK provide sufficient and better (vs. GBA) upward mobility and living environment. Generic or specific scales were not appropriate in this study because of the specificity of the construct and scope, we thus developed individual items (e.g., Manza and Brooks 2021). Three items measured the extent to which participants agreed that in HK, (1) everyone has equal opportunities, (2) education is the most important way for young people to move upward in socioeconomic status, and (3) learning about financial management and investment is crucial to young people’s upward mobility. Three items measured their agreement that, in GBA in the future, (1) QoL will be better than that in HK, (2) there will be more opportunities for young people’s upward mobility than in HK, and (3) the natural environment will be better than that in HK. The final item measured agreement with the statement, “Compared to working in HK, I would be as willing to work in GBA; there are no differences between the two.” All seven items were rated on a 5-point Likert scale, from “strongly disagree” to “strongly agree.”

### **Five-Year Outlook**

Outlook could be defined as the expectation of the *future* (e.g., Colombo et al. 2017). Although the Beck Hopelessness Scale (Beck et al. 1974) and items designed for future orientation (Hirsch et al. 2006; Steinberg et al. 2009) could be used to measure a similar construct, the items focus on one’s self but not a specific societal aspect. We thus developed five items to respectively measure the five-year expectation in HK’s overall economics, politics, judicial expectations, freedom, QoL, and financial market conditions for citizens. Participants rated the five-year outlook using a 5-point Likert scale, ranging from “must be worse” to “must be better.”

### **Optimism/Pessimism for Future Life**

To our knowledge, there are no established measurements for future QoL. Given QoL can be defined as individual’s subjective well-being, future QoL is defined as individual’s subjective well-being of the future (Muldoon et al. 1998). It was measured by how optimistic or pessimistic participants were about their future lives in HK. This serves as a good proxy for future QoL because stronger optimism indicates a better sense of well-being. Participants rated their optimism on an 11-point Likert scale, ranging from “very pessimistic” to “very optimistic.”

## Data Analysis

We tested the difference in optimism/pessimism about future life between 2018 and 2021 using an independent sample *t*-test, followed by a correlation analysis for the associations among the variables.

We used hierarchical multiple regression models to examine how the four socio-ecological levels predicted optimism/pessimism. There were five models, as follows: Model 1 controlled for demographics, including gender, age, education level, and birthplace; Model 2 included four additional competence predictors; Model 3 included three additional livelihood improvement and support predictors; Model 4 included an additional seven environment and upward mobility predictors; and Model 5 included five additional five-year outlook predictors.

## Results

As expected, HK's young people were more pessimistic about their future life in 2021 than in 2018 ( $t(1428) = -10.57, p < .001$ ), and the difference had a large effect ( $M_{2021} = 4.96 (SD = 1.94), M_{2018} = 6.00 (SD = 1.77), d = -.56 [-.67, -.45]$ ).

The correlations (see Table 1) revealed that optimism was positively associated with all four aspects of competence and self-efficacy for achieving a better life (i.e., "You can improve your quality of life by your own efforts"), all aspects of environment and upward mobility except the upward mobility granted by financial and investment knowledge, and all aspects of the five-year outlook.

Hierarchical multiple regression models revealed significant predictors of optimism about future life among pessimistic young people in 2021 (see Table 2). No demographics predicted optimism in Model 1 ( $F(5, 630) = .46, p = .81$ ). Model 2, which included competence, was a better model ( $F(4, 626) = 12.66, p < .001, \Delta R^2 = .07$ ); significant predictors included competence in using technology or technological devices and financial management. Model 3, which included livelihood, was a better model ( $F(3, 623) = 48.05, p < .001, \Delta R^2 = .17$ ); competence in financial management was still a predictor, but a weak one, whereas self-efficacy for achieving a better life became a strong predictor. Model 4 was a slightly better model after environment and upward mobility were accounted for ( $F(7, 616) = 4.68, p < .001, \Delta R^2 = .04$ ). Joining the previous two predictors as weak predictors were the relative positive evaluation of QoL, opportunities for upward mobility, and the natural environment in GBA over HK. Finally, Model 5 became the best model after the five-year outlook was included in the model ( $F(5, 611) = 25.27, p < .001, \Delta R^2 = .12$ ), explaining 41% of the variance in the optimism about future life. Self-efficacy for achieving a better life remained the strongest predictor, but the positive outlook for economic status and QoL in HK five years from now were also moderate predictors.

**Table 1** Pearson's correlations for study variables among HK's young people in 2021

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1. Optimism																				
2. Technology	.18***																			
3. Innovation	.20***	.44***																		
4. Finance	.21***	.20***	.40***																	
5. Communication	.19***	.27***	.37***	.41***																
6. Buy house	-.01	-.01	-.03	.04	.00															
7. Support	.03	.02	.00	.01	.02	-.12**														
8. Efforts	.48***	.23***	.28***	.25***	.25***	-.03	.02													
9. HK equal opportunities	.12**	.06	-.02	-.01	-.07	.19***	.11**	.09*												
10. HK education UM	.09*	.11**	.03	-.03	-.06	.10**	.03	.13**	.44***											
11. HK finance UM	.03	.06	.09*	.06	.03	.21***	.08*	.02	.16***	.24***										
12. GBA living quality	.19***	.08	.04	.01	-.04	.16***	-.02	.08*	.45***	.23***	.17***									

Table 1 (continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
13. GBA young people's opportunity UM	.17***	.10*	.03	.03	-.04	.20***	-.04	.01	.38***	.26***	.21***	.67***							
14. GBA nature	.17***	-.01	-.05	-.03	-.05	.07	-.08*	.08	.39***	.23***	.08*	.49***	.49***						
15. HK GBA work	.14***	.05	.04	.04	.01	.19***	.00	.09*	.37***	.24***	.12**	.68***	.60***	.45***					
16. Economics	.46***	.15***	.07	.06	.02	.03	.00	.31***	.15***	.07	.01	.15***	.16***	.12**	.07				
17. Politics and judiciary	.41***	.02	.01	.10**	.00	.09*	-.03	.26***	.21***	.05	.05	.30***	.22***	.20***	.19***	.59***			
18. Living quality	.43***	.04	.00	.03	-.06	.07	.03	.26***	.19***	.07	.01	.17***	.14***	.18***	.09*	.62***	.64***		
19. Financial market	.39***	.10**	.01	.09*	.08*	.05	-.02	.27***	.13***	.08*	.02	.10*	.10**	.08	.05	.71***	.54***	.57***	
20. Freedom	.35***	-.05	-.06	.03	-.05	.06	.00	.25***	.24***	.07	.03	.27***	.19***	.22***	.20***	.49***	.78***	.60***	.52***

Note:  $N = 636$ . HK Hong Kong, GBA Great Bay Area, UM upward mobility

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Table 2** Hierarchical multiple regression models predicting optimism about future QoL among HK's young people in 2021

	Model 1		Model 2		Model 3		Model 4		Model 5						
	$\beta$	95% CIs	$p$	$\beta$	95% CIs	$p$	$\beta$	95% CIs	$p$	$\beta$	95% CIs				
<b>Demographics</b>															
Female (vs. male)	-.10	[-.26, .06]	.22	-.07	[-.22, .08]	.37	-.08	[-.21, .06]	.28	-.10	[-.23, .04]	.16	-.10	[-.23, .02]	.11
Age	.00	[-.09, .08]	.94	-.03	[-.11, .05]	.50	-.02	[-.09, .06]	.63	-.03	[-.10, .05]	.48	.01	[-.06, .08]	.81
Education	-.02	[-.11, .06]	.60	-.03	[-.11, .05]	.51	-.03	[-.10, .05]	.45	-.02	[-.09, .05]	.58	-.01	[-.07, .06]	.81
Born on mainland (vs. HK)	.05	[-.14, .24]	.62	.03	[-.15, .21]	.73	-.05	[-.22, .11]	.52	-.12	[-.29, .05]	.16	-.13	[-.29, .02]	.09
Born in other places (vs. HK)	.22	[-.59, 1.03]	.59	.22	[-.56, 1.01]	.58	.35	[-.36, 1.06]	.33	.20	[-.50, .91]	.57	.38	[-.26, 1.02]	.25
<b>Competencies</b>															
Technology		.10	[.01, .18]	.03	.04	[-.03, .12]	.26	.03	[-.05, .11]	.44	.01	[-.06, .08]	.78		
Innovation		.07	[-.02, .17]	.11	.02	[-.07, .10]	.70	.02	[-.06, .11]	.57	.04	[-.03, .12]	.26		
Finance		.13	[.04, .22]	.00	.08	[.00, .16]	.05	.08	[.00, .16]	.05	.07	[-.01, .14]	.07		
Communication		.08	[-.01, .17]	.07	.02	[-.06, .10]	.57	.04	[-.04, .12]	.35	.07	[-.01, .14]	.07		
<b>Livelihood improvement and support</b>															
Buy house				.00	[-.07, .07]	1.00	-.02	[-.10, .05]	.51	-.04	[-.11, .02]	.20			
Support				.01	[-.05, .08]	.68	.03	[-.04, .09]	.47	.02	[-.04, .09]	.49			
Efforts				.45	[.37, .52]	<.001	.44	[.36, .51]	<.001	.31	[.24, .38]	<.001			
<b>Environment and upward mobility</b>															
HK equal opportunity				.01	[-.07, .09]	.82	-.03	[-.11, .05]	.43						
HK education UM				-.01	[-.09, .07]	.76	.01	[-.06, .08]	.75						
HK finance UM				-.02	[-.10, .05]	.50	-.01	[-.08, .05]	.73						
GBA living quality				.11	[.00, .21]	.05	.06	[-.04, .15]	.27						
GBA young people's opportunity UM				.10	[.00, .20]	.05	.05	[-.04, .15]	.24						
GBA nature				.09	[.00, .17]	.04	.06	[-.02, .14]	.12						
HK GBA work				-.07	[-.16, .03]	.18	-.01	[-.10, .07]	.74						

Table 2 (continued)

	Model 1		Model 2		Model 3		Model 4		Model 5			
	$\beta$	[95% CIs]	$p$	$\beta$	[95% CIs]	$p$	$\beta$	[95% CIs]	$p$	$\beta$	[95% CIs]	$p$
Five-year outlook												
Economics										.18	[.08, .27]	<.001
Politics and judiciary										.09	[-.03, .20]	.13
Living quality										.16	[.06, .25]	<.001
Financial market										.03	[-.06, .12]	.55
Freedom										.01	[-.10, .11]	.92
$R^2$	.00			.08		.25	.29		.41			
Adjusted $R^2$	.00			.06		.24	.27		.39			
$F$	.46			5.90		17.44	13.19		17.77			
$p$	.81			<.001		<.001	<.001		<.001			
$\Delta R^2$ (vs. the previous model)	–			.07		.17	.04		.12			
$F$	–			12.66		48.05	4.68		25.27			
$p$	–			<.001		<.001	<.001		<.001			

Note:  $N = 636$ . HK Hong Kong, GBA Great Bay Area, UM upward mobility

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

## Discussion

This study employed a socioecological perspective to understand the predictors of young people's optimism about QoL in HK amid the pessimism caused by political unrest and COVID-19 between 2018 and 2021. Our findings showed that HK's young people were much more pessimistic about their future in 2021 than in 2018. The correlation results suggested that the socioecological levels and the predictors within them, as investigated by the current study, were valid and appropriate for the HK context and HK's young people. The regression findings implied that certain predictors should be focused on to improve future QoL across different socioecological levels. More importantly, however, the insignificant predictors revealed the worrying views of HK's young people.

At the individual level, feeling proficient in handling technologies and managing finances uniquely explained optimism. In fact, financial management ability remained a marginally significant predictor across models, echoing HK's primary role as a major global financial center. However, despite the HK government's constant promotion and development of innovation and technology (e.g., Hong Kong Special Administrative Region (HKSAR) Government 2022a), competence in innovation and problem-solving did not explain optimism. In other words, those efforts and outcomes could not be passed down to young people, so they did not consider such abilities crucial for developing QoL, which could hinder their motivation to engage in novel technological research.

At the relationship and community levels, self-efficacy for achieving a better life was the strongest predictor across all models, implying that the more strongly young people believe in and depend on themselves to shape a better life, the more confident they are about achieving that life. This is consistent with the "Lion Rock Spirit"—a prevalent can-do mentality among HK citizens that encapsulates the idea that "perseverance and hard work bring a bright future" (Gruber 2020; Wu 2020). Nevertheless, confidence was not related to whether they could receive social support during difficult times or whether they considered owning real estate to be a priority for achieving QoL. This was perhaps because of the desperation about finding affordable housing in HK (Arcibal 2020), meaning that young people no longer link their future QoL to property ownership, as they did in previous studies (Ng et al. 2018; Sing 2009).

At the societal level, the marginal predictors were the positive perception of GBA in terms of QoL, opportunities for upward mobility for young people, and the natural environment over HK. The willingness to work in GBA was initially associated with optimism, but it was lost in the regression models. It suggests that the advantages of GBA over HK offer some encouragement and achievable goals for HK's young people to develop QoL, motivating them to work in GBA. Although it demonstrates the effectiveness of ongoing programs in HK that aim to encourage HK citizens to live and develop their careers in GBA (e.g., Labour Department 2022), these programs may no longer be effective for HK's young people (aged 20–29 years) who represent the most significant decrease in the labor force (Hong Kong Business Times 2022). However, the unemployment

rate in the same age group did not proportionally increase (Census and Statistics Department 2022b). This echoes the fact that HK's young people have been leaving HK since 2020 (Census and Statistics Department 2022a). Since more young people left HK in 2022 than in 2021, the government clearly failed in its intention to retain them. Regardless of the reasons for their departure, focusing on what they admire about GBA and making local efforts in HK to improve QoL, opportunities for upward mobility, and the natural environment could boost their confidence in the possibility of achieving QoL in HK rather than elsewhere.

One alarming observation in this study was that HK's young people notably underestimated the importance of education in their lives. The belief that education could improve socioeconomic status only weakly correlated with optimism and self-efficacy for achieving a better life. It lost its unique prediction in the regression models, but self-efficacy did not. It could be that the variance in such beliefs was explained by self-efficacy when predicting optimism. However, the results of additional exploratory analysis suggest that the beliefs remained insignificant in Model 4 ( $p = .41$ ) and Model 5 ( $p = .21$ ) after self-efficacy was removed. Although financial competence remained marginally significant, the collective implication is that young people perceive money, rather than education or knowledge, as important for achieving QoL in the future.

Interestingly, the belief that acquiring financial and investment knowledge is important for status advancement was not associated with optimism in the correlation or regression analysis. This indicates that upward mobility and having a better life could be two different concepts among young people. If they were associated, self-efficacy for achieving a better life would have correlated with upward mobility from owning real estate, education, financial knowledge, and opportunities for young people in GBA. However, our findings suggest otherwise, except for education, which partially supports the potential interpretation of two distinct ideas. One possible reason for HK's young people to detach upward mobility from a better life is that the cost of owning real estate and starting a business in HK (as traditional approaches to upward mobility) is far beyond their financial means. Even if they could afford them on a decent salary, little would be left over for a decent life. Therefore, they may simply be giving up the idea of upward mobility and focusing on QoL.

Regarding perceptions about future states and conditions in HK, all four aspects correlated with optimism, whereas only the five-year outlook for economics and QoL made unique, significant predictions. This indicates that the more hopeful HK's young people were about future QoL and economics, the more optimistic they were about QoL, which is self-explanatory. More importantly, their optimism was not associated with HK politics, judicial expectations, the financial market, or freedom. It is possible that, after the social movement in 2019, HK's young people changed their perspectives on politics and freedom and reprioritized the importance of different values. It appears that they became mindful of things that were beyond their control and focused on things that were immediately important to their QoL, such as the economics that directly influenced their jobs and the living conditions they experienced daily.



## Limitations and Further Studies

Our study is limited in several ways. First, the findings of the current study offer no direct causal evidence, and the correlational nature of the study limits the relevant interpretations. However, the theoretical conceptualization of the links between optimism and the predictors offered some causal implications. We urge future research to employ a quasi-, if not absolutely, experimental design to confirm the causal influence.

The levels of competence were self-reported and may not have been objective. The results would have differed if the discrepancies between the participants' perceptions and their actual abilities were large. A possible solution would be to replicate the study in both school and corporate settings. Teachers and supervisors could provide a relatively objective evaluation of young people's competence.

Completing the study over the phone may have introduced some sampling bias since the sample may not have included participants who were reluctant to engage with a stranger. It also precluded the use of validated and established measures that might have imposed additional fatigue, study length, and attrition rate, although the items in this study had high face validity. Future studies could employ online questionnaires, which would be faster, involve less pressure, and accommodate validated scales with more items.

We did not include all socioecological systems and the relevant predictors since we focused only on those that have been crucial to HK in recent years. A further study could systematically conceptualize and measure socioecological levels and predictors at a general level to provide a more holistic view of how they affect HK young people's perceptions of future QoL. The findings could offer scientifically informed guidance for future policies.

Despite self-efficacy for achieving a better life being the strongest predictor, the study did not investigate what contributes to self-efficacy or how. Young people's belief that their efforts can result in a better life could be attributed to various factors, such as competence in communication, collaboration, and finance and investments. Further research could systematically study a spectrum of different competencies and knowledge and identify which best predict self-efficacy, allowing the mediation role of self-efficacy between competencies and optimism to be examined. The findings could inform policymakers' allocations of resources to improve young people's desired competencies and knowledge, and their heightened self-efficacy could then lead to greater confidence in achieving QoL.

Although the study was conducted in 2021, we believe the findings are still applicable in 2022 or at any time when HK's young people suffer from relative pessimism. HK's young people have been steadily leaving HK for various reasons (e.g., politics or tight COVID-19 restrictions), partially suggesting that they remain pessimistic in 2022 about their future lives in HK. Even if, for example, the COVID-19 regulations are relaxed, it may take some years to reverse the pessimism induced by the harsh regulations; hence, the findings of this study are likely to remain valid. However, when optimism increases beyond the 2021 level, future research will be required to account for the moderating role of the rise in optimism and the factors contributing to the rise.

**Author contribution** Anthony Fung: resources, writing—review and editing, supervision, funding acquisition. Jason Lam: conceptualization, methodology, software, formal analysis, investigation, data curation, writing—original draft preparation. Stephen Chiu: funding acquisition, investigation, writing—review.

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## Declarations

**Ethics Approval and Consent to Participate** Our studies have received the formal approval of the Research Ethics Committee of the Chinese University of Hong Kong. This study was based on a telephone survey in Hong Kong with random and representative samples. All the respondents of the survey were anonymous and were informed of the purpose of the study and the use of data. The contacts of the respondents were deleted after the study.

**Conflict of Interest** The authors declare no competing interests.

## References

- Aguilana LE (2019) Level of attitudes of students towards TLE of state universities Samar: implications for curriculum development. *Int J Economics Manag Stud* 6(1):74–87. <https://doi.org/10.14445/23939125/IJEMS-V6I1P108>
- Alhassan MD, Adam IO (2021) The effects of digital inclusion and ICT access on the QoL: a global perspective. *Technol Soc* 64:101511. <https://doi.org/10.1016/j.techsoc.2020.101511>
- Allen JP, Narr RK, Kansky J, Szewedo DE (2020) Adolescent peer relationship qualities as predictors of long-term romantic life satisfaction. *Child Dev* 91(1):327–340. <https://doi.org/10.1111/cdev.13193>
- Amonhaemanon D, Isaramalai S (2020) Boosting financial literacy: the roles to enhance QoL. *ABAC Journal* 40(1):85–108. <http://www.assumptionjournal.au.edu/index.php/abacjournal/article/view/4556/2688>
- Anderson C, Kraus MW, Galinsky AD, Keltner D (2012) The local-ladder effect: social status and subjective well-being. *Psychol Sci* 23(7):764–771. <https://doi.org/10.1177/0956797611434537>
- Arcibal C (2020) Hong Kong tops global list of most expensive housing market again as protests make little dent. *South China Morning Post*. from <https://www.scmp.com/print/business/article/3046868/hong-kong-tops-global-list-most-expensive-housing-market-again-protests>. Accessed 19 Jul 2023
- Atkinson T (1982) The stability and validity of quality of life measures. *Soc Indic Res* 10:113–132. <https://doi.org/10.1007/BF00302506>
- Augustin-Jean L, Cheung AH (2020) The dilemmas facing Hong Kong's generation in the era of globalization. *Asia Pac J Jpn Focu* 18(2):1–29
- Bayer AE, Willis SM, Snelson ML (1998) Quality of life in Virginia: 1998. Virginia Tech Center for Survey Research
- Beck AT, Weissman A, Lester D, Trexler L (1974) The measurement of pessimism: the hopelessness scale. *J Consult Clin Psychol* 42(6):861–865. <https://doi.org/10.1037/h0037562>
- Black Women's Blueprint (2018) Black women's blueprint recommended socio-ecological model of prevention. [http://wiki.preventconnect.org/wp-content/uploads/2018/08/ff0223e\\_9d9d273646ec48ed9f8f576dd63d38ae.pdf](http://wiki.preventconnect.org/wp-content/uploads/2018/08/ff0223e_9d9d273646ec48ed9f8f576dd63d38ae.pdf). Accessed 19 Sept 2023
- Bowling A (1991) Current state of the art in quality of life measurement. In: Carr AJ, Higginson IJ, Robinson PG (eds) *Quality of Life*. BMJ Books, pp 1–55
- Brazdauskas M (2015) Promoting student innovation-driven thinking and creative problem solving for sustainability and corporate social responsibility. *J Creat Bus Innov* 1:75–87. [https://web.archive.org/web/20180409202345id\\_/http://www.journalcbi.com/uploads/3/1/8/7/31878681/promoting\\_student\\_innovation-driven\\_thinking\\_and\\_creative\\_problem\\_solving\\_for\\_sustainability\\_and\\_corporate\\_social\\_responsibility.pdf](https://web.archive.org/web/20180409202345id_/http://www.journalcbi.com/uploads/3/1/8/7/31878681/promoting_student_innovation-driven_thinking_and_creative_problem_solving_for_sustainability_and_corporate_social_responsibility.pdf). Accessed 19 September 2023
- Breen R, Goldthorpe JH (1997) Explaining educational differentials: towards a formal rational action theory. *Ration Soc* 9(3):275–305. <https://doi.org/10.1177/104346397009003002>

- Bronfenbrenner U (1977) Toward an experimental ecology of human development. *Am Psychol* 32(7):513–531. <https://doi.org/10.1037/0003-066X.32.7.513>
- Bronfenbrenner U (1986) Ecology of the family as a context for human development: research perspectives. *Dev Psychol* 22(6):723–742
- Bronfenbrenner U, Morris PA (2007) The bioecological model of human development. In: Damon W, Lerner RM (eds) *Handbook of child psychology: theoretical models of human development*. Wiley. <https://doi.org/10.1002/9780470147658.chpsy0114>
- Calmeiro L, Camacho I, de Matos MG (2018) Life satisfaction in adolescents: the role of individual and social health assets. *Span J Psychol* 21:E23. <https://doi.org/10.1017/sjp.2018.24>
- Caqueo-Urizar A, Atencio D, Urzúa A, Flores J (2022) Integration, social competence and life satisfaction: the mediating effect of resilience and self-esteem in adolescents. *Child Indic Res* 15(2):617–629. <https://doi.org/10.1007/s12187-02109907-z>
- Census and Statistics Department (2021) 2021 Population census thematic report: youths. [https://www.censtatd.gov.hk/en/data/stat\\_report/product/B1120115/att/B11201152021XXXXB10100.pdf](https://www.censtatd.gov.hk/en/data/stat_report/product/B1120115/att/B11201152021XXXXB10100.pdf). Accessed 19 Sept 2023
- Census and Statistics Department (2022a) Table 1B: population by sex and age. [https://www.censtatd.gov.hk/en/web\\_table.html?id=1B](https://www.censtatd.gov.hk/en/web_table.html?id=1B). Accessed 19 Sept 2023
- Census and Statistics Department (2022b) Table E022: unemployed persons with a previous job by previous occupation, age and sex (Table 3.3 in the Quarterly Report on General Household Survey). <https://www.censtatd.gov.hk/en/EIndexbySubject.html?scode=200&pcode=D5250026>. Accessed 19 Sept 2023
- Centers for Disease Control and Prevention (CDC) (2022) The social-ecological model: a framework for prevention. <https://www.cdc.gov/violenceprevention/about/social-ecologicalmodel.html>. Accessed 19 Sept 2023
- Centre for Communication and Public Opinion Survey. (2020). Research report on public opinion during the Anti-Extradition Bill (Fugitive Offenders Bill) movement in Hong Kong. <http://www.com.cuhk.edu.hk/ccpos/en/pdf/202005PublicOpinionSurveyReport-ENG.pdf>. Accessed 19 Sept 2023
- Chambers R, Conway G (1992) Sustainable rural livelihoods: practical concepts for the 21st century. Institute of Development Studies
- Chan YK, Kwan CCA, Shek TLD (2005) Quality of life in Hong Kong: the CUHK Hong Kong Quality of Life Index. *Soc Indic Res* 71(1):259–289. <https://doi.org/10.1007/s11205-004-8020-4>
- Ciarrochi JV, Deane FP (2001) Emotional competence and willingness to seek help from professional and nonprofessional sources. *Br J Guid Couns* 29(2):233–246. <https://doi.org/10.1080/03069880020047157>
- Citraningtyas CE (2021) Addressing optimism among the young Indonesian generation in sustaining the pandemic. *Jurnal Ilmu Sosial Dan Humaniora* 10(2):279–289. <https://doi.org/10.23887/jish-undiksha.v10i2.33469>
- Colombo N, Lorusso D, Scollo P (2017) Impact of recurrence of ovarian cancer on QoL and outlook for the future. *Int J Gynecol Cancer* 27(6):1134–1140. <https://doi.org/10.1097/IGC.0000000000001023>
- Constitutional and Mainland Affairs Bureau (2022) Guangdong–Hong Kong–Macao Greater Bay area - overview. <https://www.bayarea.gov.hk/en/about/overview.html>
- Edwards-Schachter ME, Matti CE, Alcántara E (2012) Fostering QoL through social innovation: a living lab methodology study case. *Rev Policy Res* 29(6):672–692. <https://doi.org/10.1111/j.1541-1338.2012.00588.x>
- Estes RJ (1998) Social development trends in transitional economies, 1970–1995. In: Kempe RH Sr (ed) *Challenges of transformation and transition from centrally planned to market economies*. United Nations Centre for Regional Development, pp 13–30
- Festinger L (1954) A theory of social comparison processes. *Hum Relat* 7(2):117–140. <https://doi.org/10.1177/001872675400700202>
- Fofana IN (2009) A socio-economic sustainability assessment of livelihoods from scrap metal collection in Freetown. Master's dissertation, Lund University. [https://www.lumes.lu.se/sites/lumes.lu.se/files/fofana\\_idris\\_1.pdf](https://www.lumes.lu.se/sites/lumes.lu.se/files/fofana_idris_1.pdf)
- Frankenberger, T. R., Luther, K., Becht, J., & McCaston, M. K. (2002). Household livelihood security assessments: a toolkit for practitioners. TANGO International Inc. [https://pdf.usaid.gov/pdf\\_docs/pnadd652.pdf](https://pdf.usaid.gov/pdf_docs/pnadd652.pdf)
- Gou Z, Xie X, Lu Y, Khoshbakht M (2018) QoL survey in Hong Kong: Understanding the importance of housing environment and needs of residents from different housing sectors. *Int J Environ Res Public Health* 15(2):219. <https://doi.org/10.3390/ijerph15020219>

- Griffiths LJ, Parsons TJ, Hill AJ (2010) Self-esteem and QoL in obese children and adolescents: a systematic review. *Int J Pediatr Obes* 5(4):282–304. <https://doi.org/10.3109/17477160903473697>
- Gruber DR (2020) The theatricality of Lion Rock: a new materialist theory for events of dissent. *Q J Speech* 106(4):453–469. <https://doi.org/10.1080/00335630.2020.1828607>
- Gullone E, Cummins RA (1999) The Comprehensive Quality of Life Scale: a psychometric evaluation with an adolescent sample. *Behav Chang* 16(2):127–139. <https://doi.org/10.1375/behc.16.2.127>
- Hagerty MR, Cummins RA, Ferriss AL, Land K, Michalos AC, Peterson M et al (2001) Quality of life indexes for national policy: review and agenda for research. *Soc Indic Res* 55:1–96. <https://doi.org/10.1023/A:1010811312332>
- Hellström C, Jansson B, Carlsson SG (1999) Subjective future as a mediating factor in the relation between pain, pain-related distress and depression. *Eur J Pain* 3(3):221–233. [https://doi.org/10.1016/S1090-3801\(99\)90049-6](https://doi.org/10.1016/S1090-3801(99)90049-6)
- Hellström C, Jansson B, Carlsson SG (2000) Perceived future in chronic pain: the relationship between outlook on future and empirically derived psychological patient profiles. *Eur J Pain* 4(3):283–290. <https://doi.org/10.1053/eujp.2000.0184>
- Hong Kong Business Times (2022) 香港人口2022連續3年現人口淨流出!20–24歲勞動力跌最多!3個行業受挫!7項數據揭示發展趨勢 [Hong Kong Population 2022!There is a net outflow of population for three consecutive years! The labor force aged 20–24 dropped the most! Three industries suffered setbacks! Seven sets of data reveal development trends]. *Hong Kong Business Times*. <https://shorturl.at/pvOY5>. Accessed 18 Jun 2023
- Hong Kong Federation of Youth Groups (1993) Young people's views on the Hong Kong economy and their choice of job (Ser. 6). Retrieved from <https://drive.google.com/file/d/1bPuKcQUJ654RiSZmoiXEV3s316liiTik/view>. Accessed 18 Jun 2023
- Hong Kong Federation of Youth Groups (1997) Youth's views on financial situation in the future (Ser. 50). Retrieved from [https://drive.google.com/file/d/1ho0FHp5y5IkCOUJKwjPb\\_UfdnFwomhKY/view](https://drive.google.com/file/d/1ho0FHp5y5IkCOUJKwjPb_UfdnFwomhKY/view). Accessed 18 Jun 2023
- Hong Kong Federation of Youth Groups (2005) 青年對2005/06年施政報告的評價 [Youth's views on the chief executive's 2005/06 policy address] (Ser. 144). [https://drive.google.com/file/d/1la-lwluHncht22hMaCQRssJgwiwLoy\\_/view](https://drive.google.com/file/d/1la-lwluHncht22hMaCQRssJgwiwLoy_/view). Accessed 18 Jun 2023
- Hong Kong Federation of Youth Groups (2022) What young people want for Hong Kong. <https://cps.hkfyg.org.hk/2022/09/28/what-young-people-want-for-hong-kong/>. Accessed 18 Jun 2023
- Hong Kong Monetary Authority (2020) Annual report 2020. [https://www.hkma.gov.hk/media/eng/publication-and-research/annual-report/2020/12\\_Economic\\_and\\_Financial\\_Environment.pdf](https://www.hkma.gov.hk/media/eng/publication-and-research/annual-report/2020/12_Economic_and_Financial_Environment.pdf). Accessed 18 Jun 2023
- Hong Kong Public Opinion Research Institute (2020) Anti-Extradition Bill movement public sentiment report. [https://www.pori.hk/wp-content/uploads/2021/01/ENGPCFxPORI\\_PSR\\_RevisedVersion.pdf](https://www.pori.hk/wp-content/uploads/2021/01/ENGPCFxPORI_PSR_RevisedVersion.pdf). Accessed 18 Jun 2023
- Hong Kong Special Administrative Region (HKSAR) Government (2022a) Hong Kong: facts - innovation, technology and industry. <https://www.gov.hk/en/about/abouthk/factsheets/docs/technology.pdf>. Accessed 18 Jun 2023
- Hong Kong Special Administrative Region (HKSAR) Government (2022b) Hong Kong: facts - financial services. [https://www.gov.hk/en/about/abouthk/factsheets/docs/financial\\_services.pdf](https://www.gov.hk/en/about/abouthk/factsheets/docs/financial_services.pdf). Accessed 18 Jun 2023
- Hirsch JK, Duberstein PR, Conner KR, Heisel MJ, Beckman A, Franus N, Conwell Y (2006) Future orientation and suicide ideation and attempts in depressed adults ages 50 and over. *Am J Geriatr Psychiatry* 14(9):752–757. <https://doi.org/10.1097/01.JGP.0000209219.06017.62>
- Hung A, Parker AM, Yoong J (2009) Defining and measuring financial literacy. *RAND Working Paper Series WR-708*. <https://doi.org/10.2139/ssrn.1498674>
- Jamison TR, Schuttler JO (2015) Examining social competence, self-perception, QoL, and internalizing and externalizing symptoms in adolescent females with and without autism spectrum disorder: a quantitative design including between-groups and correlational analyses. *Mol Autism* 6(1):1–16. <https://doi.org/10.1186/s13229-015-0044-x>
- Jang SH (2022) Social-ecological factors related to preventive behaviors during the COVID-19 pandemic in South Korea. *PloS One* 17(3):e0266264. <https://doi.org/10.1371/journal.pone.0266264>
- Johnston DF (1988) Toward a comprehensive 'quality-of-life' index. *Soc Indic Res* 20:473–496. <https://doi.org/10.1007/BF03359553>
- Kakinuma Y (2022) Financial literacy and QoL: a moderated mediation approach of fintech adoption and leisure. *Int J Soc Econ* 49(12):1713–1726. <https://doi.org/10.1108/IJSE-10-2021-0633>

- Labour Department (2022) Greater Bay Area youth employment scheme. <https://www1.jobs.gov.hk/0/en/information/gbayes/>. Accessed 18 Jun 2023
- Little BR (2008) Personal projects and free traits: personality and motivation reconsidered. *Soc Personal Psychol Compass* 2(3):1235–1254. <https://doi.org/10.1111/j.1751-9004.2008.00106.x>
- Liu M, Ho LS, Huang KW (2023) Upward earnings mobility in Hong Kong: policy implications based on a census data narrative. *China Q* 253:214–230. <https://doi.org/10.1017/S0305741022001230>
- Manza J, Brooks C (2021) Mobility optimism in an age of rising inequality. *Sociol Q* 62(2):343–368. <https://doi.org/10.1080/00380253.2020.1756520>
- Molina-Luque F, Stončikaitė I, Torres-González T, Sanvicen-Torné P (2022) Profiguration, Active ageing, and creativity: keys for QoL and overcoming ageism. *Int J Environ Res Public Health* 19(3):1564. <https://doi.org/10.3390/ijerph19031564>
- Moulaert F, Martinelli F, Swyngedouw E, Gonzalez S (2005) Towards alternative model(s) of local innovation. *Urban Stud* 42(11):1969–1990. <https://doi.org/10.1080/00420980500279893>
- Muldoon MF, Barger SD, Flory JD, Manuck SB (1998) What are quality of life measurements measuring? *BMJ* 316:542–545. <https://doi.org/10.1136/bmj.316.7130.542>
- Mutiani M, Faisal M (2019) Urgency of the 21st century skills and social capital in social studies. *Innov Soc Stud J* 1(1):1–11
- Natarajan R, Angur MG (2014) Innovative ability and entrepreneurial activity: two factors to enhance “QoL”. *J Bus Ind Mark* 29(6):469–475. <https://doi.org/10.1108/JBIM-09-2013-0205>
- Nejad MG, Javid K (2018) Subjective and objective financial literacy, opinion leadership, and the use of retail banking services. *Int J Bank Mark* 36(4):784–804. <https://doi.org/10.1108/IJBM-07-2017-0153>
- Navado-Peña D, López-Ruiz VR, Alfaro-Navarro JL (2019) Improving QoL perception with ICT use and technological capacity in Europe. *Technol Forecast Soc Chang* 148:119734. <https://doi.org/10.1016/j.techfore.2019.119734>
- Ng SL, Zhang Y, Ng KH, Wong H, Lee JWY (2018) Living environment and QoL in Hong Kong. *Asian Geogr* 35(1):35–51. <https://doi.org/10.1080/10225706.2017.1406863>
- Ngai SSY, Wang L, Cheung CK, Mo J, Ng YH, Wang P (2021) Development and validation of the youth career development competency scale: a study based on Hong Kong youth. *Int J Environ Res Public Health* 18(23):12494. <https://doi.org/10.3390/ijerph182312494>
- Nikolova M (2016) Minding the happiness gap: political institutions and perceived quality of life in transition. *Eur J Polit Econ* 45:129–148. <https://doi.org/10.1016/j.ejpoleco.2016.07.008>
- Osberg L, Sharpe A (2002) An index of economic well-being for selected OECD countries. *Rev Income Wealth* 48(3):291–316. <https://doi.org/10.1111/1475-4991.00056>
- Pennington-Zoellner K (2009) Expanding ‘community’ in the community response to intimate partner violence. *J Fam Violence* 24(8):539–545. <https://doi.org/10.1007/s10896-009-9252-5>
- Rodrigues AL, Cerdeira L, Machado-Taylor MDL, Alves H (2021) Technological skills in higher education—different needs and different uses. *Educ Sci* 11(7):326. <https://doi.org/10.3390/educsci11070326>
- Sallis JF, Cervero RB, Ascher W, Henderson KA, Kraft MK, Kerr J (2006) An ecological approach to creating active living communities. *Annu Rev Public Health* 27:297–322. <https://doi.org/10.1146/annurev.publhealth.27.021405.102100>
- Shek DT (2020) Protests in Hong Kong (2019–2020): a perspective based on QoL and well-being. *Appl Res QoL* 15(3):619–635. <https://doi.org/10.1007/s11482-020-09825-2>
- Shi S (2022) Youths are becoming more pessimistic. The standard. <https://www.thestandard.com.hk/section-news/section/4/248329/Youths-are-becoming-more-pessimistic>
- Sing M (2009) The QoL in Hong Kong. *Soc Indic Res* 92(2):295–335. <https://doi.org/10.1007/s11205-008-9349-x>
- Statista Research Department (2023) Share of young Americans who are optimistic about their future by ethnicity 2020. <https://www.statista.com/statistics/1017766/share-young-americans-optimistic-about-future-ethnicity/>. Accessed 18 Jun 2023
- Steinberg L, Graham S, O’Brien L, Woolard J, Cauffman E, Banich M (2009) Age differences in future orientation and delay discounting. *Child Dev* 80(1):28–44. <https://doi.org/10.1111/j.1467-8624.2008.01244.x>
- Streimikiene D (2015) QoL and housing. *Int J Inf Educ Technol* 5(2):140–145. <https://doi.org/10.7763/IJIEET.2015.V5.491>
- Sunarti E, Atat SN, Noorhaisma R, Lembayung DP (2005) Pengaruh tekanan ekonomi keluarga, dukungan sosial, kualitas perkawinan, pengasuhan, dan kecerdasan emosi anak terhadap prestasi

- belajar anak [The effect of family economic pressure, social support, quality of marriage, parenting, and children's emotional intelligence on children's learning achievements]. *Media Gizi dan Keluarga [Nutrition and Family Media]* 29(1):34–40 <http://repository.ipb.ac.id/handle/123456789/52156>. Accessed 18 Jun 2023
- Tan MC (2021) Technology and livelihood education (TLE) instruction in the secondary schools in northern Samar division, eastern Philippines. *Asian J Adv Res Reports* 15(2):75–84. <https://doi.org/10.9734/ajarr/2021/v15i230369>
- Treiman DJ (1970) Industrialization and social stratification. *Sociol Inq* 40(2):207–234. <https://doi.org/10.1111/j.1475-682X.1970.tb01009.x>
- Tully MA, Hunter RF, McAnaney H, Cupples ME, Donnelly M, Ellis G et al (2013) Physical activity and the rejuvenation of Connswater (PARC study): protocol for a natural experiment investigating the impact of urban regeneration on public health. *BMC Public Health* 13(1):1–9. <https://doi.org/10.1186/1471-2458-13-774>
- UNICEF (2013) Passport to Protection: a guide to birth registration programming. <https://www.refworld.org/pdfid/52b2e2bd4.pdf>. Accessed 18 Jun 2023
- Wilkins N, Tsao B, Hertz M, Davis R, Klevens J (2014) Connecting the dots: an overview of the links among multiple forms of violence. In: Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. Prevention Institute, Oakland, CA
- Wu H (2020) Another rock, another Hong Kong story: lion rock from below and above. In *The hangover after the handover: things, places and cultural icons in Hong Kong*. Liverpool University Press
- Xiao JJ, Bialowolski P (2022) Consumer financial capability and QoL: a global perspective. *Appl Res QoL*. <https://doi.org/10.1007/s11482-022-10087-3>
- Xiao JJ, Porto N (2017) Financial education and financial satisfaction: financial literacy, behavior, and capability as mediators. *Int J Bank Mark* 35(5):805–817. <https://doi.org/10.1108/IJBM-01-2016-0009>
- Yakici E, Zeliha TRAS (2018) Life satisfaction and loneliness as predictive variables in psychological resilience levels of emerging adults. *Res Educ Psychol* 2(2):176–184 <https://dergipark.org.tr/en/pub/rep/issue/39782/488782>

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