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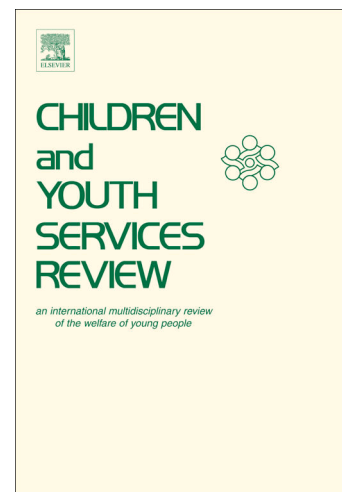
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Criteria for adulthood, resilience, and self-esteem among emerging adults in Hong Kong: A path analysis approach

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Abstract

Emerging adulthood refers to a developmental life stage between adolescence and adulthood. The period of emerging adulthood varies in pattern in different cultures and countries. For emerging adults, individual subjective perceptions about entering into adulthood undergo tremendous changes. Furthermore, the impact of criteria for adulthood on psychological well-being in emerging adults is under-researched. Using a survey of 1,908 Hong Kong emerging adults aged 18 to 29 years, an integrated path model for self-esteem with resilience was established (TLI = .986; NFI = .991; CFI = .996 ; RMSEA = .021; SRMR = .018). The results show that resilience mediated the effects of family capacity ($\text{Beta}_{\text{FC-resilience}} - \text{SE} = .03, p < .05$, BC bootstrap 95% CI = .00 to .08) and relational maturity ($\text{Beta}_{\text{RM-resilience}} - \text{SE} = .12, p < .001$, BC bootstrap 95% CI = .08 to .15) on self-esteem. Role transformation was found to have a negative direct effect on self-esteem ($\text{Beta}_{\text{RT-resilience}} = -.10, p < .001$, BC bootstrap 95% CI = -.15 to -.05). However, norm compliance, biological transition, and legal transition were not associated with self-esteem or resilience among the sampled emerging adults. In addition, resilience mediated the relationship between gender, educational attainment, and parental educational level and self-esteem. Policymakers and social workers in Hong Kong should pay

attention to perceptions of emerging adulthood in young people, and tailor-made interventions and educational programs should be launched for parents and school teachers. For instance, training in knowledge of late adolescence and the characteristics of emerging adults should be implemented. Programs to enhance such positive traits as resilience and self-esteem among emerging adults in Hong Kong should be provided.

Keywords: Emerging adults, subjective perception of adulthood, self-esteem, resilience, path analysis

Highlights

- Little is known about the criteria for adulthood on psychological well-being among emerging adults.
- Resilience mediated the effects of family capacity and relational maturity on self-esteem.
- Role transformation was found to have a negative direct effect on self-esteem.
- Characteristics of emerging adulthood should be added to related intervention and education programs.

1. Introduction

Emerging adulthood refers to a distinctive developmental stage between adolescence and adulthood, and is a critical period of transition and change for individuals and their families (Arnett, 2000, 2004). For young people, it is a crucial period (i.e., 18–29 years old) that involves identity exploration and transition. This period of emerging adulthood varies in pattern among different cultures and countries (Sulimani-Aidan, 2020). According to the theory of emerging adulthood, emerging adulthood is a stage that is distinguished from other stages by nature of its identity exploration, feeling-in-between, and instability (Arnett, 2000, 2001, 2004). Meanwhile, this transition period involves challenges and changes for young

adults. Arnett et al (2014) stated that instability may account for mental health issues in young adults. Therefore, a deeper understanding of emerging adults' perceptions of adulthood is vital to address these phenomena.

1.1 Understanding emerging adulthood

Criteria for adulthood is a multi-dimensional concept and a critical identity development indicator for assessing a young person's objective and subjective sense of achieved categories of criteria when entering adulthood. It includes two major constructs: subjective criteria (i.e., family capacity, relational maturity, and norm compliance) and objective criteria (i.e., role transformation biological transitions, and legal transitions) (Žukauskienė et al., 2020). A growing number of studies have observed that multiple dimensions of the criteria for adulthood—namely, family capacities, relational maturity, role transformation, norm compliance, biological transitions, and legal transitions—should be explored in various ethnic groups and cultures (Arnett, 2003; Badger, Nelson and Barry, 2006; Cheah, Trinder and Gokavi, 2010; Galanaki and Sideridis, 2018). Family capacity refers to individuals' ability to care for others and to build a family. Relationship maturity postulates a young person's ability to achieve independence and interdependence (i.e., the capacity to build a long-term intimate relationship). As emerging adulthood is a transitional period in one's youth, role transformation usually features how one adapts to one's new roles. Norm compliance refers to how a young adult conforms to specific social norms. Biological transition and legal transition refer to individual changes in physiological and legal aspects (i.e., age, being married). The criteria for being adult vary according to the different norms, values, and ideologies of different societies.

Emerging adults may endorse different beliefs and norms concerning their transition to adulthood with regard to variations in social, economic, and cultural contexts (Cheah et al.,

2010; Nelson, Badger and Wu, 2004; Zhong and Arnett, 2014). Research indicates that emerging adults who achieve greater emotional and psychological well-being tend to navigate their transition to adulthood more adaptively and successfully (Skowron et al., 2009). Among different indicators of individual psychological well-being, empirical studies suggest that resilience and self-esteem are important assets for emerging adults to overcome their developmental challenges with fewer emotional and behavioral problems (Galambos, Barker & Krahn, 2006; Lin et al., 2008; Sanders, Munford, Thimasarn-Anwar, Liebenberg, & Ungar, 2015). People between their late teens and twenties are at the pivot of personal growth. It is argued that a greater understanding of emerging adulthood, for instance, perceptions of becoming an adult among young people, is necessary for policymakers and youth workers to determine the related developmental challenges and to promote various capacities among emerging adults. However, there is little research investigating the relationship between criteria for adulthood and psychological well-being among young people.

1.2 Self-esteem and resilience in emerging adults

Self-esteem is an important construct in development psychology and refers to both one's positive and negative evaluations of oneself (Moneta, 2014). Maslow's hierarchy of needs places self-actualization at the highest level (Maslow, 1968); to attain self-actualization, more pressing preceding needs like self-esteem must first be realized (Benetti and Kambouropoulos, 2006), especially for young people. Positive self-esteem can be seen as a critical factor protecting against health and social behavior issues (To et al., 2014). Persons with higher levels of self-esteem present fewer behavioral problems (Backer-Fulghum et al., 2012) and feel more positive about their characteristics and competencies (Shaffer & Kipp, 2010); low self-esteem can lead to a range of mental health issues, such as depression, anxiety, and violence (Kalina et al., 2011).

Nowadays, people's lives change dramatically from their late teens to their late twenties. It has been suggested that self-esteem helps to promote the developmental capacities of emerging adults to facilitate the achievement of important life outcomes (Orth et al., 2012), such as career success (Kammeyer-Mueller et al., 2008), job satisfaction (Zhang et al., 2014), relationship satisfaction (Erol & Orth, 2014), and health (Trzesniewski et al., 2006). Emerging adults vary in their degree of self-esteem, subject to their maturation and demographic characteristics (e.g., educational level) during their transition to adulthood (Nelson and Chen, 2007). Arnett (2007) argued that emerging adulthood entails developmental challenges and that there is a great heterogeneity of experience: some young people may suffer serious problems, while others may not. It is expected that a person with greater self-esteem will be more inclined to recognize personal needs and desires and to take an active stance against stress.

Resilience is defined as having the capacity for positive adaptation, despite the context of experiencing adverse life events (Lepore and Revenson, 2006; Snyder and Lopez, 2009; Yu and Zhang, 2007). Resilience encompasses the capacity of an individual to adapt positively and flexibly in the face of stress and adversity (Luthar et al., 2000) by exploring ways of developing different social, psychological, financial, physical, and cultural resources to realize personal strengths, thereby identifying alternatives to cope with that stress and adversity (Ungar, 2008). Given the transitional nature of emerging adulthood, individuals may face complex challenges, with the prospect of gaining their independence and navigating meaningfully to adulthood. Studies have shown that resilience also plays a protective role in remedying emotional and behavioral problems among psychologically maltreated adolescents (Arslan, 2016).

Previous studies have indicated that resilience serves as a protective factor in increasing self-esteem in undergraduate students (Liu et al., 2014) and exerts a significant effect on self-

esteem among children and young adults (Benetti and Kambouropoulos, 2006; Gilligan, 2000). This highlights the role of resilience in self-esteem and requires further exploration. Existing studies on emerging adults were conducted mainly in Western societies, so less is known about varied pathways between criteria for adulthood impact, resilience, and self-esteem in emerging adults in the Chinese context.

1.3 Emerging adults in Hong Kong

Previous studies have found that Asian values, such as family obligation and collectivism, have effects on those entering into adulthood (Arnett, 2003; Seiter and Nelson, 2011; Zhong and Arnett, 2014). Asian-American emerging adults regarded family capacities (i.e., being able to support and to protect others) and role transitions (i.e., being married or finishing education) as criteria for entering into adulthood, in contrast to their White American counterparts (Arnett, 2003; Zhong and Arnett, 2014). Likewise, a study of Indian emerging adults also notes that taking care of one's family is a relevant indicator of being an adult (Seiter and Nelson, 2011). It is suggested that emerging adults residing in non-Western cultures may experience different patterns, such as an earlier transition to adulthood compared with emerging adults living in Western countries (Nelson et al., 2004). In particular, the available Asian studies on the characteristics of emerging adulthood are from developing countries (Atak and Cok, 2008; Seiter and Nelson, 2011; Zhong and Arnett, 2014). More studies from Asian regions with high economic development, such as Hong Kong, should fill these gaps.

Historically, Hong Kong has been an international city with a culture that blends Eastern and Western values (Ng et al., 2013, 2016). Hong Kong is a typical Chinese region in that its people respect and value harmonious family relationships and collectivism. On the other hand, as a typically developed society, delays in marriage and childbearing and the extension of education among young adults are not uncommon. As Hong Kong has been moving rapidly

toward becoming an information- and technology-based society, it is quite natural for young adults to postpone their assumption of adult roles and responsibilities (e.g., making long-term commitments or starting a family) because fulfilling these societal requirements demands a high level of education.

In Hong Kong, approximately 700,000 individuals fall into the 18–25 age category (Census and Statistics Department, 2011). As increasing numbers of occupations have come to require higher education, greater numbers of young individuals spend more time pursuing their studies before establishing a family. For instance, the proportion of young people with post-secondary education rose from 19.5% in 2001 to 39.3% in 2011 (Census and Statistics Department, 2011). Therefore, for those emerging adults in Hong Kong, cultural influences and societal changes have made the transition to adulthood more complex.

1.4 The present study

To date, empowering youth remains a major concern for researchers and policymakers in Hong Kong (Lai and Chan, 2002). The findings of the present study may help to identify the challenges that young people go through and facilitate the development of youth policy and services in this cosmopolitan city.

The present study was guided by the emerging adulthood theory and a positive psychology perspective. Emerging adulthood theory argues that multiple dimensions of subjective perception—namely family capacity, relational maturity, role transformation, norm compliance, biological transitions, and legal transitions—should be explored in various ethnic groups and cultures (Arnett, 2003). On the other hand, a positive psychology perspective postulates that resilience and self-esteem are key indicators of psychological well-being and that the effect of resilience on self-esteem should be evaluated in young persons. To identify the multiple pathways of criteria for adulthood that influence self-esteem through resilience, we constructed a mediation path analysis model using a survey of 1,908 Chinese

young adults in Hong Kong. This is shown in Figure 1.

The purpose of the present study is twofold: (1) to develop and test an integrated path model (Figure 1) of criteria for adulthood (including family capacities, relational maturity, role transformation, biological transitions, legal transitions, and norm compliance), resilience, and self-esteem; and, (2) to determine whether the relationships between criteria for adulthood and self-esteem are mediated by resilience.

Figure 1 about here

2. Method

2.1 Participants

The data for this study was based on a convenience sample collected by researchers as part of a larger study of the challenges of emerging adulthood in contemporary Hong Kong in 2015. With the institutional approval of the Human Ethics Panel of Hong Kong Baptist University, the study recruited participants from a variety of sources, including directly from secondary schools, universities, community colleges, and through an online survey system. To protect participants' confidentiality, the data collection was conducted anonymously. Consent was obtained from the participants via invitation letters stating the scope and purpose of the study. For inclusion in the study, participants had to: (1) be aged between 18 and 29 years; (2) be permanent residents of Hong Kong (i.e., have been resident for at least seven years, per the Hong Kong government's official definition); and, (3) have sufficient Chinese language ability (Mandarin or Cantonese) to provide informed consent and complete the questionnaire. Each participant completed the self-administered questionnaire within approximately 45 minutes. In total, 1,980 participants completed the questionnaire during the study period. After data cleaning and verification, there were 1,908 valid responses, comprising 776 males (40.67 %) and 1,132 females (59.33%), with mean age 21.19 ($SD =$

2.45).

2.2 Measures

Hong Kong Chinese version of Emerging Adulthood Scale (CEAS-HK). The CEAS-HK consisting of 45 items, and was developed based on the English version of the Emerging Adulthood Scale (EAS) (Arnett, 2001, 2003)—which encompassed seven conceptual factors, including relational maturity (individualism/ interdependence), roles transitions, norm compliance, biological transitions, chronological transitions, and family capacities—and the simplified Chinese character version of the EAS (CEAS) used in mainland China (Nelson et al., 2004). Since chronological transitions highly overlaps with chronological age, it was not employed in the current analysis. The CEAS-HK has demonstrated good reliability, with a high Cronbach's alpha (.93) (Cronbach, 1951).

Rosenberg Self-esteem Scale. The Rosenberg Self-esteem Scale (RSES) is designed to measure people's level of self-worth (Martin-Albo et al., 2007; Rosenbert, 2015; Song et al., 2011). The Chinese version of the 10-item RSES has been widely used to test the self-esteem of young adults in Hong Kong (Lee, & Lee, 2000; Ng, et al., 2016; Martín, Thompson, & Chan, 2006). In this study, the Cronbach alpha of the Chinese version RSES was .84.

Resilience Scale. The original Resilience Scale (RS) consisted of 25 items developed to measure one's capacity to withstand life stressors and to thrive and make meaning from challenges (Abiola & Udofia, 2011; Wagnild & Young, 1993). The RS has been translated and validated in different languages and is widely used for studying resilience among different populations in a community (Ahem, Kiehl, Lou Sole, Byers, 2006; Chung, et al., 2020; Windle, Bennett, Noyes, 2011). A 14-item short-form version (RS-14) was developed and has been translated and validated in different Chinese versions for mainland Chinese, Taiwanese, and Hong Kong participants (Chung, et al., 2020). In this study, the Hong Kong Chinese version of RS-14 was used and obtained a satisfactory internal consistency of .86.

Sociodemographic characteristics. In addition to the information of CEAS-HK and RS-14, the participants' sociodemographic data, such as age, gender (0 = female, 1 = male), personal education attainment, and parents' university educational attainment, were obtained.

Educational attainment was categorized as primary education and below, secondary education, associated degree study, undergraduate, and postgraduate or above. As parents' education attainment is an important indicator of family socioeconomic status, especially for emerging adults (Galambos, et al, 2006), the number of parents in a household who had attained a university degree was also included.

2.3 Data analysis

Data analyses were carried out using IBM's SPSS 21.0 and Amos 21.0 (Arbuckle James, 2012). Descriptive analyses, presented as mean scores, standard deviations, and ranges, were conducted on participants' sociodemographic characteristics. Bivariate correlational analyses were also performed to estimate whether all variables would follow their predicted directions. Only those predictive variables that were shown to be significantly ($p < .05$) correlated with either resilience or self-esteem in the bivariate analyses were included in the subsequent path model. Path analysis was employed to test the mediating effect of resilience on the relationships between different characteristics of emerging adulthood and self-esteem. In this sample, missing values ($\leq 5\%$) were filled using mean/mode value substitution. Normality and multicollinearity were examined before further calculation. The results supported the assumptions of a normal distribution for residuals and no multicollinearity among the independent factors. Furthermore, an integrated model was employed to test both the direct and indirect effects of emerging adulthood traits, mediated by resilience, on self-esteem. We note that the bootstrap approach allows researchers to validate mediation effects, which can yield more accurate estimates by using a resampling method; therefore, bootstrapping with 2,000 bootstrap samples drawn from the original sample was performed. The 95% bias-

corrected confidence intervals (CIs) were calculated. Confidence intervals that do not contain zero show significant indirect effects (Mackinnon, Lockwood and Williams, 2004). This resampling method can also serve as an aid for analysing non-normal data (Byrne, 2013; Hu and Wang, 2010). Nevertheless, owing to the sensitivity of the chi-square coefficient to sample size, the p-value as the model fit index is not preferred for large samples such as the one in this study ($N = 1,908$). Researchers have addressed the chi-square limitation by developing goodness-of-fit indices that take a more pragmatic approach to the evaluation process.

To assess the model fit of the path model, several criteria of model fit indices were listed. We considered the purposed model to have a good fit when the values of Tucker Lewis index (TLI), normed fit index (NFI), and compared fit index (CFI) were above .90 (Bentler, 1992), and a superior fit when they were close to .95 (Hu & Bentler, 1999). A common misfit measure, the root mean square error (RMSEA), was also reported in the standard error of measurement analysis. The RMSEA considers a mediocre fit to be below .08, and a good fit to be below .06 (Hu & Bentler, 1999).

3. Results

3.1 Descriptive statistics

Table 1 illustrates the informants' sociodemographic characteristics. Participants were all aged between 18 and 29, with a mean of 21 ($SD = 2.45$). Nearly sixty percent (59.33%) of them were female. Approximately two-fifths of the participants possessed a bachelor's degree (38.78%) and 14.31% a master's degree or above. Roughly three-quarters (74.31%) of the emerging adults' parents did not go to university. The mean scores of other characteristics were as follows: family capacity 24.99 (range 8–32), relational maturity 40.37 (range 12–66), role transformation 18.82 (range 5–43), biological transitions 8.04 (range 3–37), legal

transitions 6.97 (range 3–12), and norm compliance 28.21 (range 9–57). With higher scores in subsections of criteria for adulthood, indicating more achieved criteria for adulthood. Overall, the mean scores for resilience and self-esteem were 51.91 (range 14–96) and 27.68 (range 13–40) respectively, indicating that some participants were mildly at risk of insufficient resilience but had a moderate level of self-esteem.

3.2 Correlations between potential predictive variables

Correlation analyses among the potential predictive variables (i.e., age, gender, educational levels, parent education, family capacity, relational maturity, role transformation, biological transitions, legal transitions, and norm compliance), resilience, and self-esteem were conducted, and the results are provided in Table 2. Specifically, all the selected variables were significantly associated with resilience. Additionally, age, levels of education, parent education, family capacity, relational maturity, norm compliance, and resilience were significantly associated with self-esteem. Based on the criteria we set earlier, only those variables that were determined to be significant ($p < .05$) with either resilience or self-esteem in the bivariate analyses were included in the subsequent path analysis. Therefore, all the predictive variables were included for further testing in the proposed path model.

3.3 Path analysis and model fit

Table 3 presents the results of testing the proposed path model. In this model, we assumed that self-esteem was the dependent variable; resilience was the mediator; family capacities, relational maturity, role transformation, biological transitions, legal transitions, and norm compliance were the independent variables; and age, gender, participants' educational levels, and the number of parents with a university education were set as the control variables. The nonsignificant relationships between independent variables and the control variables were then removed to obtain a simpler model; the resulting fit indices of the proposed mediated path model were satisfactory ($\chi^2 (21) = 38.68$; TLI = .986; CFI = .996 (1.00); NFI = .991

(1.00); RMSEA = .021; and SRMR = .018). In total, the path model explained 32% of the variance in self-esteem and 9% of the variance in resilience.

Family capacity ($\text{Beta}_{\text{FC-resilience}} = .06, p < .05$, BC bootstrap 95% CI = .00 to .13) and relational maturity ($\text{Beta}_{\text{RM-resilience}} = .21, p < .001$, BC bootstrap 95% CI = .15 to .27) were determined to have significantly positive direct effects on resilience, and resilience ($\text{Beta}_{\text{resilience-self-esteem}} = .54, p < .001$, BC bootstrap 95% CI = .50 to .58) had a statistically significant direct path to self-esteem. In contrast, role transformation ($\text{Beta}_{\text{RT-resilience}} = -.10, p < .001$, BC bootstrap 95% CI = -.15 to -.05) had a negative direct effect on self-esteem. Three control variables such as male gender ($\text{Beta}_{\text{male-resilience}} = .07, p < .001$, BC bootstrap 95% CI = .03 to .12), education attainment ($\text{Beta}_{\text{education-resilience}} = .08, p < .01$, BC bootstrap 95% CI = .04 to .13), and number of parents with a university education ($\text{Beta}_{\text{PU-resilience}} = .08, p < .01$, BC bootstrap 95% CI = .03 to .12) had positive relationships with resilience.

The indirect effects of emerging adulthood traits on self-esteem, mediated through resilience, were also significant. The results revealed that resilience fully mediated the effect of family capacity ($\text{Beta}_{\text{FC-resilience-SE}} = .03, p < .05$, BC bootstrap 95% CI = .00 to .08) and relational maturity ($\text{Beta}_{\text{RM-resilience-SE}} = .12, p < .001$, BC bootstrap 95% CI = .08 to .15) on self-esteem. That is, the effect of the independent variable (i.e., family capacity and relational maturity) on self-esteem can be fully explained by a change in the mediator (i.e., resilience). Likewise, resilience mediated the relationship of male gender ($\text{Beta}_{\text{male-resilience-SE}} = .04, p < .001$, BC bootstrap 95% CI = .01 to .07), level of education ($\text{Beta}_{\text{education-resilience-SE}} = .04, p < .01$, BC bootstrap 95% CI = .02 to .07), and parents' university education ($\text{Beta}_{\text{PU-SE}} = .04, p < .05$, BC bootstrap 95% CI = .00 to .08; $\text{Beta}_{\text{PU-resilience-SE}} = .04, p < .01$, BC bootstrap 95% CI = .02 to .07) with self-esteem.

Table 1 about here

Table 2 about here

Table 3 about here

Figure 2 about here

4. Discussion

This study established an integrated path model for self-esteem with resilience as a mediator, using data collected from a sample of 1,908 Hong Kong emerging adults aged 18 to 29 years old. The results in Table 3 and Figure 2 show that resilience mediated the effects of family capacity and relational maturity on self-esteem. Meanwhile, role transformation had a negative direct effect on self-esteem. Norm compliance, biological transformations, and legal transformations had no significant relationship with either resilience or self-esteem in the final model. In terms of sociodemographic characteristics, male gender, educational attainment, and number of parents with a university education were found to be positively associated with self-esteem through resilience. The results facilitate a greater understanding of the relationship between criteria for adulthood, resilience, and self-esteem among emerging adults in Hong Kong. The present study's results will aid in the design and implementation of intervention and education programs for emerging adults, their families, educators, and youth workers.

Previous studies have shown that resilience had a significant effect on self-esteem among children and adolescents (Benetti and Kambouropoulos, 2006; Gilligan, 2000). The findings of the present study confirm the aforementioned link among the sample of Chinese emerging adults. More importantly, prior studies have postulated that Chinese emerging adults emphasize the importance of family obligations and social relations (Badger et al., 2006; Zhong and Arnett, 2014). The present study provides empirical support for family capacity

and relational maturity among young Hong Kong Chinese adults and indicates various pathways regarding multiple dimensions of criteria for adulthood influences on self-esteem through resilience. As Table 3 and Figure 2 illustrate, increasing family capacity and relationship maturity are positively associated with personal self-esteem via resilience. The present study highlights the role of resilience in perceptions of emerging adulthood and self-esteem. It is therefore suggested that young Hong Kong people's entrance to adulthood and the achievement of greater self-esteem might be facilitated by investment in positive traits such as resilience. Cote (1996) asserted that the formation of identity is multidimensional, coining the term "identity capital" to describe how a person understands and negotiates life challenges in an individualistic and complex post-modern society. In particular, certain psychological factors can serve as intangible resources to identify formation in achieving holistic personal development (Cote, 1996). Therefore, for a young person frequently facing personal, occupational, and social barriers during emerging adulthood, it is important to invest in positive psychological characteristics; this may help them overcome those challenges.

The present study found role transformation to be negatively associated with self-esteem, which is consistent with the notion that emerging adulthood is characterized by personal experimentation and exploration of new identities (Arnett, 2004). The process of self-exploration may involve a decline in self-esteem; emerging adults often struggle between multiple identities at the time of becoming fully-fledged adults. Arnett (2000) pointed out also that emerging adulthood should not be regarded as a universal stage or a normative period of development across all cultures.

In addition, the present study discovered that perceptions of emerging adulthood, represented by norm compliance, biological transition, and legal transition, were not associated with self-esteem or resilience among the sample of emerging adults. This observation is consistent with the characteristics of Hong Kong, which is a post-industrial city

with an increasingly information- and technology-based economy. Nowadays, becoming an adult can greatly differ from what it entailed in previous generations; young people may adopt innovative strategies under the current demanding economic conditions. In addition, Hong Kong is a cosmopolitan city, characterized as a hybrid of East and West (Lin & Jackson, 2020). Traditional Chinese values (i.e., being responsible and taking care of one's family) and Western thoughts (i.e., the rule of law, free speech) co-exist in young persons in Hong Kong. Therefore, it is not surprising that norm compliance had a non-significant effect on resilience or self-esteem among the sample. Our findings also revealed biological transition and legal transition were not associated with psychological well-being. It is possible that, as a prior study noted, criteria for adulthood, family capacities, and role transitions were more important than biological and legal transition criteria (Sirsch et al., 2009).

The theory of emerging adulthood emphasizes the importance of post-secondary education and training on self-actualization among emerging adults (Arnett, 2007). Likewise, the present study finds that both personal educational attainment and numbers of parents with a university education are associated with resilience. Furthermore, resilience mediated the effects of male gender and personal and parents' university education on self-esteem through resilience. Our findings are consistent with those of a previous study, which showed male and female differences in family capacity and relational maturity. Barker and Krahn's (2006) research noted that parents' educational level was positively associated with an improvement in emerging adults' self-esteem. This suggests that not only personal educational attainment but also such family conditions as whether the emerging adults' parents attended a university play a role in self-esteem and resilience.

4.1 Implications

There are several important implications for program and service development targeting Chinese emerging adults:

- (1) Young people, their families, and educators should realize that most young adults experience identity exploration and role transformation from their late teens to their late twenties. Parents and society in general should give them the time and the appropriate freedom to explore their capacities. Meanwhile, parents and educators should be aware that compliance with norms is not necessary.
- (2) Policymakers and practitioners should design tailored-made intervention and educational programs to enhance emerging adults' self-esteem, with a special focus on characteristics such as increasing resilience, family obligations, and relational maturity in a Chinese context. As China is a collectivist society, it is not surprising that traditional Chinese culture emphasizes family capacity and responsibility. The findings in the present study confirm the existence of indirect pathways from family capacity to self-esteem via resilience among Hong Kong's emerging adults. It is possible that traditional collective values in Chinese culture (i.e., providing support for other family members and taking care of their offspring) are assets that may contribute to the personal development of emerging adults. In school, it is particularly helpful to provide training for high school teachers in matters such as knowledge of late adolescence and the characteristics of emerging adults. School teachers should be made aware of the fact that emerging adulthood is a natural transitional period between adolescence and adulthood. Enhancing resilience may contribute to students' maturation and self-esteem. Certain vocational training covering emerging adulthood should be provided to high school students to better aid their future career planning. In addition, professionals such as youth workers should identify those who are currently experiencing role transformation, given that this has a significant negative impact on self-esteem.

(3) Given the significant indirect effects of gender, educational attainment, and parents' university education on self-esteem, it is worth noting that males and emerging adults in families with lower socioeconomic status should be paid sufficient attention by policymakers and professionals to enable young people to make smooth, successful, and fulfilling transitions into adult life.

4.2 Limitations

Several limitations should be noted and a certain caution advised when interpreting the present study's findings. Firstly, this study is a cross-sectional study that adopts convenience sampling methods. Although the sample size is large, it is a relatively homogeneous survey of convenience – for example, it consists of a sizable proportion of university students, a group that tends to have higher socioeconomic status and educational attainment, and therefore may not be an accurate representation of emerging adults in Hong Kong. It is highly recommended that future researchers of emerging adulthood should recruit a longitudinal sample or samples from more diverse socioeconomic backgrounds. Secondly, due to the cross-sectional nature of the study, it not possible to infer causalities from the findings. Future studies may be necessary to investigate the causational aspect of the relationships between subjective perceptions of adulthood, resilience, and self-esteem. Thirdly, the current research relies heavily on self-reports of resilience and self-esteem, a methodology that is subject to recall bias and desirability. Fourthly, other psychosocial factors, such as personality traits, immigration status and political participation that may affect self-esteem and resilience were not adjusted for in the present study. Finally, caution is advised when generalizing the results to the whole population of emerging adults in Hong Kong and when implementing policies on the basis thereof, because emerging adults with non-Chinese cultural and ethnic backgrounds may hold different attitudes regarding the transition to adulthood. Although the findings of the present study have implications for emerging adults in major cities in the People's Republic

of China, Singapore, or Taiwan, those who live in rural areas or in smaller cities that are much less prosperous than Hong Kong may present different patterns of criteria for adulthood.

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Figure 1. The proposed integrated path model

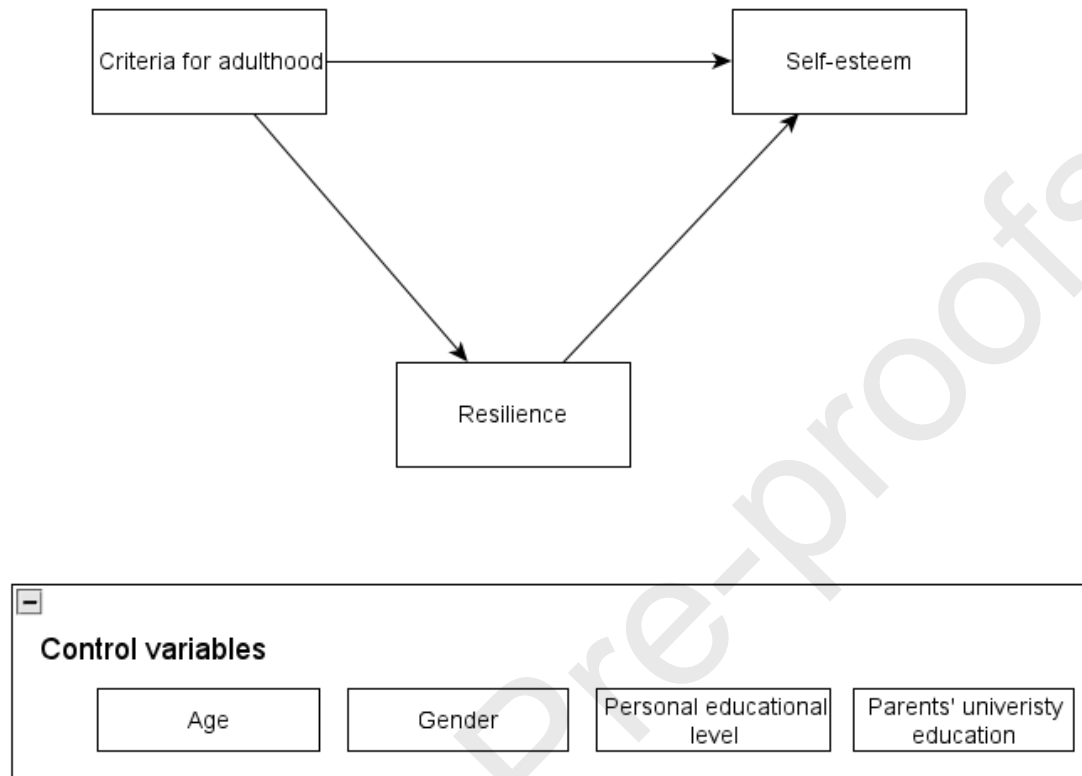
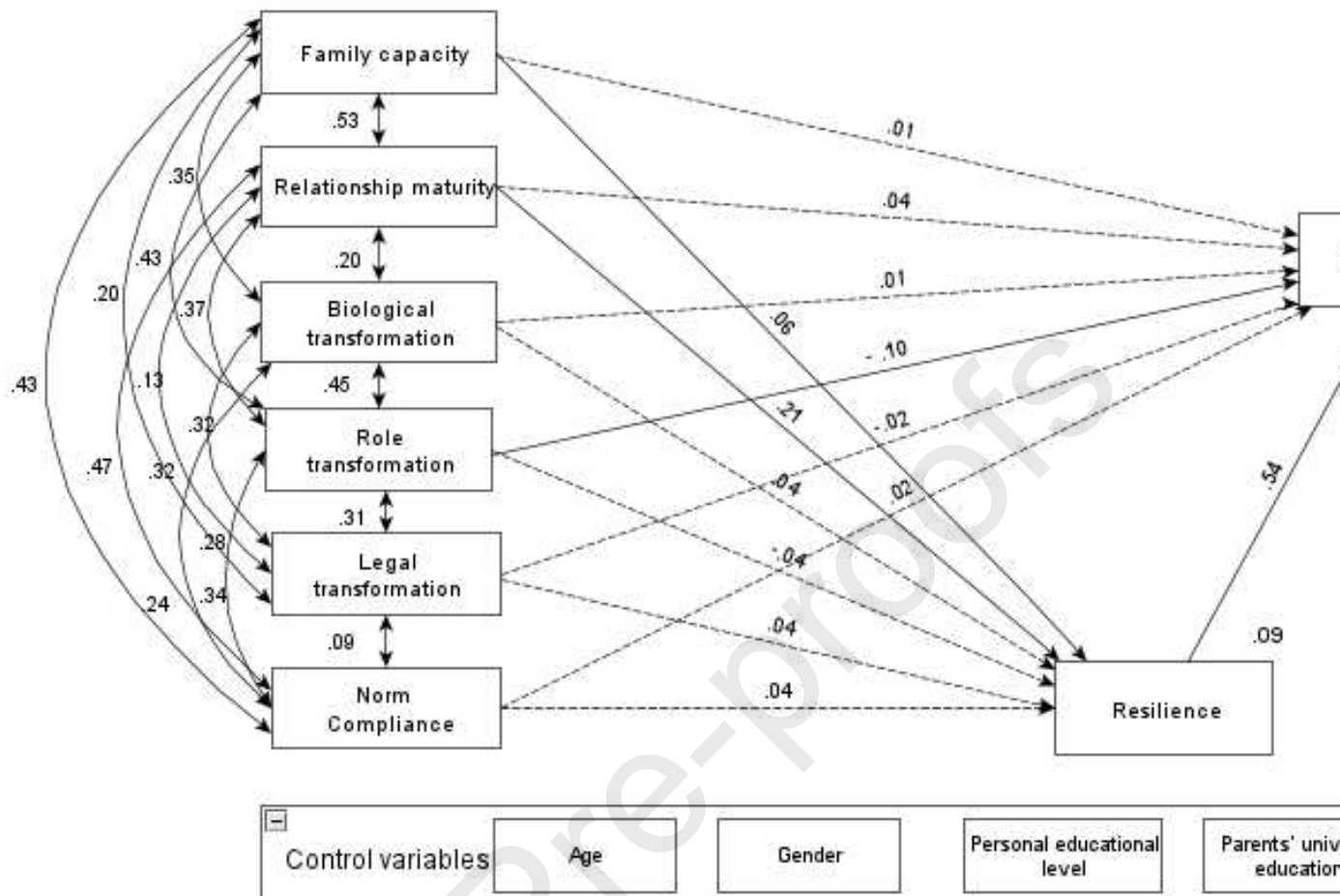


Figure 2. Path analysis of the effect of criteria for adulthood on self-esteem through resilience



Notes. The approach was 95% confidence interval derived from 2000 bootstrap resamples. Beta values represent standardized path coefficients. The values above arrows with single head stand for direct effects, whereas arrows with two arrows indicate correlations. Dashed lines indicate non-significant paths at 0.05 level. Control variables are age, gender education level and numbers of parents had university education. For simplicity reason, the association between control variables and other variables were not shown in the figure but were preserved in analysis.

Table 1

Socio-demographic Characteristics of the Participants

Characteristics	N (%)	Mean (SD)	Reliability	Range
Age	1908 (100)	21.19 (2.45)		18 - 29
Gender				
Male	776 (40.67)			
Female	1132 (59.33)			
Personal educational attainment				
Primary and below	2 (0.00)			
Secondary	571 (29.93)			
Associated degree	324 (16.98)			
Bachelor	843 (38.78)			
Master or above	168 (14.31)			
Numbers of parent having university education				
None	1429 (74.90)			
One	220 (11.53)			
Two	259 (13.57)			
Subjective perceptions of adulthood				
Family capacity	1908 (100)	24.99(3.65)	.86	8 - 32
Relationship maturity	1908 (100)	40.37 (4.16)	.75	12 - 66
Biological transformation	1908 (100)	8.04 (2.17)	.70	3 - 37
Role transformation	1908 (100)	18.82 (3.32)	.70	5 - 43
Legal transformation	1908 (100)	6.97 (1.99)	.64	3 - 12
Norm compliance	1908 (100)	28.21 (4.37)	.77	9 -57
Resilience	1908 (100)	51.91 (7.02)	.86	14 - 96
Self-esteem	1908 (100)	27.68 (4.19)	.84	13 - 40

Note: $N = 1908$. All the missing values were filled before data analysis.

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Table 2

Correlation Results between Study Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	1.00											
2. Gender	.08***	1.00										
3. Education	.48***	-.05*	1.00									
4. PU	-.01	-.01	.12***	1.00								
5. FC	.01	-.11***	.04	.02	1.00							
6. RM	.02	-.04	.04	.02	.54***	1.00						
7. BT	.02	.05*	.01	-.02	.34***	.20***	1.00					
8. RT	.03	.05*	.05*	.03	.43***	.37***	.45***	1.00				
9. LT	.01	.05*	.09***	.04	.20***	.13***	.32***	.31***	1.00			
10. NC	.01	-.15***	-.00	.05*	.43***	.47***	.23***	.34***	.08***	1.00		
11. Resilience	.08**	.05*	.11***	.09***	.18***	.25***	.08***	.10***	.08***	.13***	1.00	
12. SE	.08***	.03	.10***	.09***	.09***	.15***	.04	-.02	.01	.06**	.55***	1.00

Note: $N = 1908$ * $p < .05$, ** $p < .01$, *** $p < .001$. Numbers in parentheses indicate p values for the correlations between variables. “PU” denotes numbers of parents having university degree. “FC” denotes family capacity. “RM” denotes relational maturity (interpersonal/intrapersonal relationships). “BT” denotes biological transformation. “RT” denotes role transformation. “LT” denotes legal transformation. “NC” denotes norm compliance. “SE” denotes self-esteem.

Table 3

Direct and Indirect Effects of criteria for adulthood on self-esteem through resilience

Paths	Direct effect		Indirect effect		Total effect		R square
	Beta	BC bootstrap 95% CI	Beta	BC bootstrap 95% CI	Beta	BC bootstrap 95% CI	
Self-esteem							.32
Family capacity	.01	-.06 to .07	.03*	.00 to .08	.04	-.02 to .12	
Relationship maturity	.04	-.02 to .10	.12***	.08 to .15	.16***	.09 to .22	
Biological transformation	.04	-.01 to .09	.01	-.02 to .03	.05	-.01 to .10	
Role transformation	-.10***	-.15 to -.05	-.02	-.05 to .01	-.12***	-.18 to -.07	
Legal transformation	-.02	-.07 to .02	.02	-.01 to .05	-.00	-.06 to .05	
Norm compliance	-.01	-.06 to .05	.01	-.02 to .04	.00	-.06 to .07	
Age	.03	-.02 to .07	.02	-.01 to .04	.05	-.01 to .09	
Gender	.01	-.03 to .05	.04***	.01 to .07	.05*	.00 to .10	
Educational attainment	.02	-.02 to .06	.04**	.02 to .07	.07**	.02 to .11	
# of parent had university education	.04*	.00 to .08	.04**	.02 to .07	.08**	.04 to .13	

Resilience	.54***	.50 to .58	
Resilience			.09
Family capacity	.06*	.00 to .13	
Relationship maturity	.21***	.15 to .27	
Biological transformation	.01	-.04 to .06	
Role transformation	-.04	-.10 to .02	
Legal transformation	.04	-.02 to .09	
Norm compliance	.02	-.03 to .08	
Age	.03	-.02 to .08	
Gender	.07***	.03 to .12	
Educational attainment	.08**	.04 to .13	
# of parent had university education	.08*	.03 to .12	

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$, “BC” refers to “Bias-corrected”. “CI” refers to “Confidence Interval”. All numbers were included in the 95% confidence interval derived from 2,000 bootstrap samples. “Indirect effect” here refers to relationships between multiple dimensions of criteria for adulthood and self-esteem mediated by the resilience.

Author Statement

All the authors of this manuscript declare that there is no conflict of interests involved. Each author certifies that this journal paper has not been and will not be submitted to or published in any other publication before its appearance in the *Children and Youth Services Review*.

Declarations of interest: none

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