Civic Engagement and the Identity of Minoritized Students: The Influence of the Moderated Mediation of Online Participation and Socio-Demography

by

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A Thesis Submitted to

The Education University of Hong Kong

in Partial Fulfillment of the Requirement for

the Degree of Doctor of Philosophy

September 2020

Statement of Originality

I, CHAN, Ki Keith, hereby declare that I am the sole author of the thesis and the material presented in this thesis is my original work except those indicated in the acknowledgement. I further declare that I have followed the University's policies and regulations on Academic Honesty, Copyright and Plagiarism in writing the thesis and no material in this thesis has been submitted for a degree in this or other universities.

Abstract

The issues of identity for a small population of minoritized students are complex because their citizenship, by law, resides in a home country even though their residence is in Hong Kong. Research, however, has indicated that many of them consider themselves Hongkongers who show strong identity toward the local community rather than toward China or their home countries. Since Hong Kong has become an Internet city that connects them closely in cyberspace, this research explores how their identity develops and whether participation online for civic activities facilitates their civic engagement. This research is the first to focus specifically on the role and impact of online participation on minoritized students. In particular, it aims at identifying who might be netizens among minoritized students since many of them have used mobile phones with online social media apps while they are in the secondary school. A cross-sectional survey with a sample of 419 minoritized secondary students was collected in 2018. Hypothesized models were developed based on theoretical models of media effects. The models assumed that there were positive moderated mediation effects between the relationships of their online participation, civic engagement and identity in school and in community. Structural equation modeling was used to explore the hypothetical relationships that were assumed to be non-recursive. In order to test the hypotheses, *residual centering* procedures were adopted for orthogonalizing observed variables, eliminating multicollinearity from latent variables and controlling for covariates before statistical data analysis. *Plausible values* were also computed using *Bayesian* approaches for the data to quantify the degree of uncertainty arising from the interactions between latent variables and socio-demographics since residual centering essentially has no effect on dichotomous or categorical variables. Direct and indirect effects were estimated by maximum likelihood including the effects of both mediating and moderating variables. The results explained the hypothetical models how online participation as a form of network

decentralization led to their independence from group-based civic paradigms in which they may or may not have been welcomed. The findings also implied that these minoritized student netizens were influenced by their civic activism of online participation or socio-demographic characteristics. This research has demonstrated a link between online participation, civic engagement and identity. In particular, the important role of identity has been highlighted for minoritized students and this has implications for both policy and practice. Given the importance of social issues related to civic engagement in Hong Kong, future research should test the associations found here with local Chinese students.

Keywords: Civic Engagement, Identity, Minoritized Students, Moderated Mediation, Online Participation

Acknowledgments

Working with Professor KENNEDY Kerry John, Professor LIM Chir Ping, and Professor LAW Hau Fai Edmond for completing this thesis is a wonderful experience to me. Without their guidance, encouragement and trust, it is not possible for me to go through this long journey of doctoral study and finish the thesis that has been my dream after graduating from the university.

I owe a lot of gratitude to Professor Kennedy for introducing me to this exciting and interesting field of civic education research and teaching me the correct way of doing research. His enthusiasm, integral and differential view on research, mission of achieving high quality work have impressed me deeply. During our long years of interaction for the study, I have learnt extensively from him how to address research questions by systematic thinking, statistical data analysis and serendipity. I feel proud to be able to learn with a prestigious professor like him during my study. My words of sincere thanks should also be given to my supervisor Professor Law for his kind inspiration, useful advices, dedicated help, and continuous support throughout the journey from its beginning until the end. His constant guidance, encouragement and cooperation have always kept me going ahead. I should also express my heartfelt gratitude to my supervisor Professor Lim for his enthusiasm, patience, immense knowledge and ongoing support of my research journey. His guidance and advices on how to conceptualize new research questions and how to approach each research question from a new perspective inspires me at all the time of research and writing of this thesis.

I should gratefully acknowledge the teachers and minoritized students of the secondary schools that have participated in the survey for the data collection. I am indebted to the ethnic minority NGOs for allowing me to carry out the research. I am very much grateful to all my friends in the EdUHK for their friendships and support. I also feel a deep sense of gratitude for my parents for their infallible love and support to me to continue this journey.

Table of Contents

List of Abbreviations

IEA	International Association for the Evaluation of Educational Achievement
EMs	Ethnic Minorities
ICCS	International Civic and Citizenship Education Study
FDHs	Foreign Domestic Helpers
EDB	Education Bureau
C&SD	Census and Statistics Department
OP	Online Participation
CI	Perception of Hong Kong and Hongkonger
CE	Civic Engagement in School and in Community
PVs	Plausible Values
CFA	Confirmatory Factor Analysis
EFA	Exploratory Factor Analysis
KMO	Kaiser-Meyer-Olkin
MLR	Robust Maximum Likelihood
OP1	Civic Awareness and Self-Perception of Online Participation
OP2	Civic Activism of Online Participation
ML	Maximum Likelihood
SEM	Structural Equation Model
W	Moderator

List of Figures

List of Tables

Chapter 1

Introduction

1.1 Introduction

Online (Internet-based) social media platforms, such as WhatsApp, WeChat, or Facebook, have continued to emerge as the dominant forms of communication environment in the daily lives of youth. Thus, an increasing number of studies has been conducted to explore its influence on the change of the social and civic values of young people. However, systematic and thorough studies exploring the relationship between this impact and the contributing factors to the formation of the social and political values, and civic perception of ethnic minority students are few. This is particularly the case for minoritized students in Hong Kong where engagement in online social media is substantial across all age groups.

This study seeks to understand the possible effects of minoritized students' experience of online participation on their civic engagement and identity in the school and community. Identity refers to the students' self-perceived identity in relation to the sense and identification toward local community and people (Schwartz *et al*., 2006; Hart, 2011; Vignoles *et al*., 2011). Online participation refers to the students' online engagement in social media, and their interaction between one another concerning civic issues through the social media network (Jensen, 2007; Gil de Zúñiga *et al*., 2012; Liu, 2013; Warren, 2014). Civic engagement refers

to the students' approach of improving the quality of the civic life for the school and community (Youniss, 2002; APA, 2012; Greenhow & Li, 2013; Lenzi *et al*., 2015).

The literature suggests that this online engagement by youth has a profound impact on the development of their awareness and self-perception of their civic responsibilities in particular. However, the extent that their engagement in online social media has possible effects on the formation of their self-perceived identity and responsibilities in civic activities is unknown (Gil de Zúñiga *et al*., 2012; Warren, 2014).

Although there is some recent evidence concerning youth's online participation in the Hong Kong context, the focus is on the local Chinese youth, with little attention paid to the students from minoritized groups, such as those from Indian, Nepalese, Pakistani and Sri Lankan heritage. These students, for the most part, study in the local mainstream schools with the Chinese curriculum. Other minoritized students with the national backgrounds such as British, American, Australian, Canadian, and Japanese are more likely to study in the privileged international schools in Hong Kong and are excluded in this study.

However, the issues of identity for minoritized youth are complex because their citizenship, by law, resides in a home country even though their residence is in Hong Kong (Bhowmik, Kennedy & Hue, 2017). Kennedy (2016) and Ng, Kennedy, and Hui (2019) indicated that many young Hong Kong minoritized students consider themselves "Hongkongers," who

show strong identity toward the local community, rather than being either a citizen of China or their original countries. However, the research that explores how their identity develops and how online participation facilitates this phenomenon is limited. The study particularly explores the mediation effects of online social media, civic engagement and identity of Hong Kong minority students. It is the first to focus specifically on the role and impact of minoritized students' online participation on their civic engagement and identity.

Although minoritized students in mainstream local schools generally show strong identity with the local community, great differences in their family incomes were found among different ethnic groups, such as Pakistanis and Indians. Students from Indian families are likely to have more online engagement than the students from Pakistani and Nepalese families, who are often found living below the poverty line (Cheung & Chou, 2017). This finding raises the issues of a potential digital divide between different groups of minoritized students and whether this issue affects their online participation for communication. Therefore, further investigation on this issue is important.

1.2 Purpose of the Study

In this age of technological innovation, understanding the transformation of democracy and citizenship is essential for strong democracies and the development of good future citizens. Citizenship has been clearly defined by Marshall (1950) as the right and ability to participate

in a society, where individuals navigate democracy and its values. However, Democracy has not always been easy to define, especially when minoritized identities become embedded in the fabric of societies. Democracy then becomes a collection of movements, practices, and institutions (Simon *et al*., 2017). For minoritized students, whose family background and culture differ from those of local citizens, negotiating with local institutions, such as schools, is complex, thereby leading them to experience difficulties with participation, identity, and institutional oppression embedded in the local dominant culture. Therefore, the approach of minoritized students in navigating Hong Kong's institutional contexts is an important issue for them personally and for Hong Kong society as a whole.

At present, online social media have become a popular platform for minoritized students to navigate their identity in the Hong Kong society. The exposure to the use of digital devices begins at a very young age in Hong Kong, which has become well known for being inhabited by netizens (Chan, 2013). Hong Kong's Internet culture, reflected in the use of online platform among young people, has given rise to the "netizen" (Agur & Frisch, 2019; Ma, 2014). A netizen is a person who typically intends to conceal its actual identity and uses social media to express feelings, thoughts, and criticisms on the Internet. Netizens are currently found on Facebook, WhatsApp, WeChat, Line, Twitter, Instagram, HKGolden and LIHKG. Anyone can be "tough" behind a computer or smartphone screen because of the distance between individuals. However, little is known about how online participation, as a form of

civic engagement, affects youth identity.

On the contrary, since social media platforms have pathed a new way of forming tribes for different groups of people with their own senses and identification of togetherness, netizens are more likely to communicate with those who share similar views. It has also seen the evolution of a new class of warriors in the community known as the 'keyboard warrior' who evolved from disoriented netizens (Bam, 2018). The Oxford Dictionary defines keyboard warrior as "a person who puts aggressive and offensive comments about people on the Internet, especially one who hides their own identity" (Keyboard Warrior, 2019). Studies have found that keyboard warriors' heavier use of online social media may cause a wide range of psychological health problems such as social isolation, anxiety and depression (Lin e*t al.*, 2016; Peper & Harvey, 2018; Primack *et al.*, 2017).

Keyboard warriors, who are always addicted to cause someone's life to be miserable through cyber bullying, may have "Internet Addiction" disorder known as "problematic Internet use or pathological use of Internet" (Kuss and Lopez-Fernandez, 2016). To determine who are the "netizens' or "keyboard warriors" in this study, measures such as years of use (Shah *et al*., 2001) or even intensity of use (Ellison *et al.*, 2007), and focusing on minoritized students' specific uses of social media platform to participate online for communication with others are important. The nature of social media use may influence the relationships between their civic

engagement and identity.

1.3 Significance and/or Impact

The study addresses citizenship issues related to minoritized students in the new online environment and how these issues are related to the developments in contemporary democracies in Hong Kong. It focuses on Hong Kong's minoritized students. In particular, it examines the relationships between the online participation, civic engagement and identity of minoritized students in Hong Kong secondary schools. Minoritized students include those ethnic minorities born in Hong Kong or immigrated from other South Asia and Southeast Asia countries.

The results of this research will have contributions for policy, practice, and theory in connection with minoritized students, their citizenship and identity, particularly as these relate to the influence of online participation. This participation is reflected in Hong Kong's netizen culture. The unexplored issues include whether or not this culture applies to minoritized students, how they engage online, for what reasons and with what effect. These are the issues to be addressed in this study.

1.4 Thesis Structure

The thesis consists of six chapters. "Introduction" is the first chapter that highlights the focus of the research, namely, the aims and significance of the study. In the second chapter,

"Literature Review" provides a comprehensive review of the current literature related to the topic to identify the conceptual framework and research gap that leads to the proposed hypothesis in the study. In the third chapter, "Methodology and Methods" describes the quantitative methods used to address the research questions. It focuses not only on the reasons of selecting this method but also on the sampling techniques, instrumentation, data collection, and analysis. In the fourth chapter, "Results" presents the data and results without interpretation and comments. In the fifth chapter, "Discussion" relates to the analysis of the results and their interpretation. In the sixth chapter, "Conclusion" summarizes the analysis and discussion, indicating the contribution and limitation of the study and providing the implications for research in the future.

Chapter 2

Literature Review

2.1 Introduction

This chapter identifies and explains the theoretical and empirical studies that can help to highlight some of the fundamental dynamics that are involved in the relationship between online (internet-based) participation, offline (non-internet based) civic engagement and identity. It develops an overview of recent literature to clarify what exactly is the effect of online participation on civic engagement and identity through online social media. In particular, it also explores the relationship of online participation, civic engagement and identity among minoritized students in Hong Kong schools.

2.2 Topography of Civic Technologies

The civic technologies impacting how students engage in civic life have rapidly evolved in the recent years. Some scholars have identified specific social affordances of civic technologies that lead individual to greater engagement in civic life (Klopfer & Squire, 2008; Wellman, *et al*., 2003). Civic technologies can also provide opportunities to prioritize online participation where the engagement of civic activities is neither tedious nor laborious. In fact, civic technologies open up a space of possibility that is itself meaningful for individual in this digital era.

The education scholar, Nwokah (2010) indicates that playing online game frequently includes exchange, negotiation, sharing, intellectual and creative collaboration through emotion and action. Online participation also provides a contained “little world” in which the range of human nature is demonstrated. The confluence of civic technologies with hardware advances that are connected, interactive, individual, portable, and context sensitive has afforded the possibility of a playful modality of civic engagement (Klopfer & Squire, 2008).

With the advent of civic technologies, individuals have the ability to come together online to participate which is referred as “learning, taking action and cooperation” in unprecedented ways (Ito, 2012). Actually, participation online itself may have the most direct bearing on mediated civic engagement. This phenomenon has been studied and discussed by literature focusing on the specific affordances of online games (Kahne, Middaugh, & Evans, 2008; Ruiz, Stokes, & Watson, 2011).

In addition, online connectivity has increased opportunities for participation through information flow for precisely strategizing what and when information or communications are presented to others. Wireless portability including network accessibility and hardware is the key in affording this type of situated participation (Hampton & Gupta, 2008). Even though individuals may experience the “digital divide” due to the social exclusion which frequently

manifests in the socio-economic gap, the equitable access provided by worldwide connection has lowered the barrier of online participation (Baym & Boyd, 2012; Best & Kreuger, 2005; Jung, Kim, & de Zuniga, 2011).

Along with these technological changes, there would be shift in the aspects and motivation for civic engagement. Although rational choice models have long been the realm of political socialization, behavioralist theories are seldom linked to studies of relationship of online participation and civic engagement. By exploring behavioralist theories within the field of political socialization for understanding what the relationship means, the following section illustrates how particular theory of behaviorism can explain the underlying aspects and motivations for civic engagement.

2.3 Shifting of Identity in Hong Kong

Some studies indicated that it is not only because of rapid revolution of the civic technologies, but also there would be other reasons for having significant relationship between online participation and civic engagement (Fuller and Hester, 1998; Inglehart, 1997; Scheufele, 1999). Afterwards, Putnam (2000) tried to argue whether the online participation encourages or discourages engagement in civic activities since civic engagement has performed a key role in the operation of a democratic society.

The rationale of minoritized students' changing level of civic engagement in the society may

be closely linked to the history, Chinese culture and localism in Hong Kong. Since Chinese people have migrated and become the major residents in Hong Kong in the last century, Chinese is an ethnic majority group. As Confucianism is the Chinese culture that characterizes "Chineseness" to be hardworking, passive and quiet which actually ignore the diversity of multicultural societies, South Asian residents have been stereotyped as small ethnic groups for a long time in Hong Kong. Most of local Hong Kong Chinese speaks Cantonese, non-Cantonese speaking becomes a barrier for the Hong Kong ethnic minorities (EMs) to engage in the local community. Actually, a lot of Hong Kong EMs such as Indian and South Asians have resided in Hong Kong for several generations. They have considered Hong Kong to be their hometown. For this reason, they may have been deprived of equal rights to belong and integrate into local society due to the difficulty of Cantonese dialect that lead to the lack of recognition by Chinese Hongkongers (Kapai, 2015).

In fact, the evolution of local Hongkonger's identity has begun to arise during the 1960s and 1970s. At that time, the Cultural Revolution has been started that resulted in China's self-isolation. However, Hong Kong's economy was taking off and the cultural industry was prosperous. From that time, there were new immigration, citizenship and social policies to be implemented by colonial government in Hong Kong. By 1980s, the Hongkonger's identity was being recognized as common sense in the local society (Ku, 2004; Mathews, Ma & Lui, 2008; Tsang, 2003).

Until 1984, the Hongkonger's identity became unavoidably important when Sino-British Joint Declaration tied the future prosperity of Hong Kong to Mainland China. Thereafter, the public opinion surveys were being used to measure Hong Kong people's view in order to trace their issues of identities. Between 1985 and 1995, around 49%-64% of the respondents identified themselves to be "Hongkongers", only 24%-36% was claiming "Chinese" identity, and 10%-21% claiming "both" (Lau, 1997).

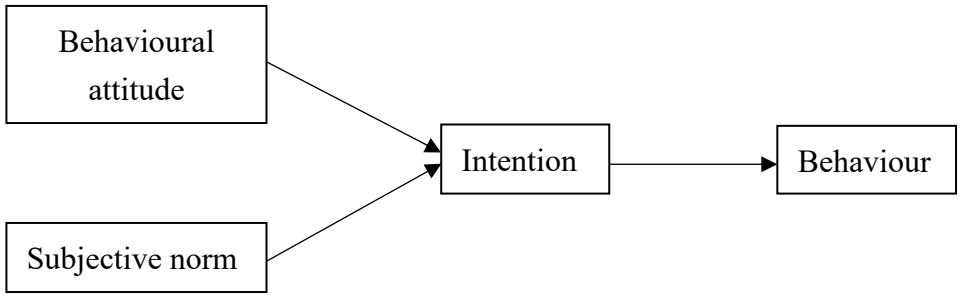
Subsequently, the results of public opinion polls suggested a particular type of "mixed identity" that tried to define the self-identification of Hong Kong people by including the categories of "Chinese from Hong Kong" and "Hongkonger in China". The survey data of the Public Opinion Programme of The University of Hong Kong on 1997-2013 has also reflected this observation (POP HKU, 2016). Thus, the emergence of "local mixed identity" has given rise to "localism" in Hong Kong.

This internal and local coherent notion of "Chineseness" and "Hongkongese" has continued to frame Hong Kong EM to be temporary residents and not committed to engage in civic activities. Afterward, minoritized students identifying themselves as Hong Kong EMs have to face a type of ethnocentrism and prejudice that challenge their sense of belonging to Hong Kong. It was seemed that they have faced misrecognition and animosity that have been intensified from time to time (Flowerdrew, Li, & Tran, 2002).

2.4 Theories of Behaviorism

Previous research on the detailed theoretical model of behaviorism explains the elements in relation to intentions of behavior and examines their relationship from intentions to participation. There are some models of behaviorism available in the literature that predict an individual's intention to adopt civic technologies. Theory of Reasoned Action is known as an early model that was explored by Fishbein and Ajzen (1975) to explain individuals' maneuver by pinpointing the causal relationship between behavior, intentions, attitudes, and beliefs (**Figure 2.1**).

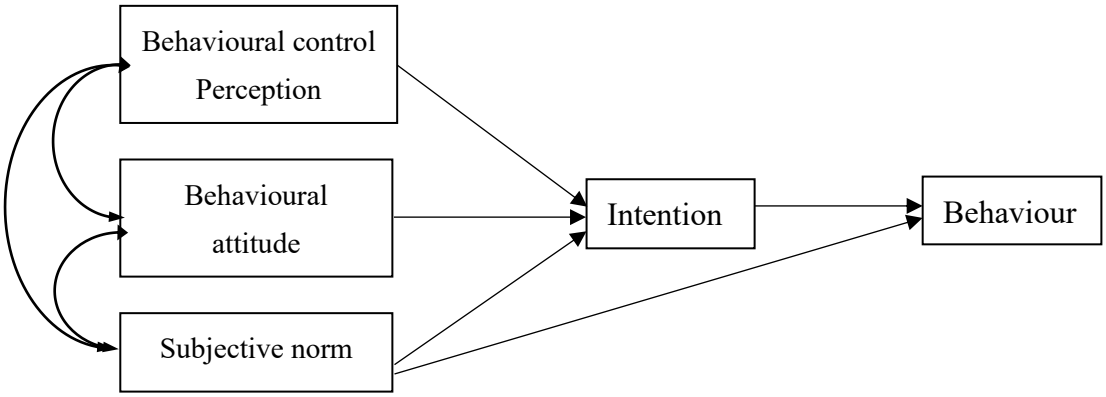
Figure 2.1
Reasoned Action Theory



The hypothesis of reasoned action is that there is mediational effect of the individual's intention on the causal relation between the behavior and behavioral attitude, and/or between the behavior and subjective norm (Fishbein & Ajzen 1975). The reasoned action theory was then extended by Ajzen (1985) to be the planned behavior theory which indicated the awareness of behavior control will help to reshape the circumstances where individuals are not able to control (**Figure 2.2**).

Figure 2.2

Planned Behavior Theory

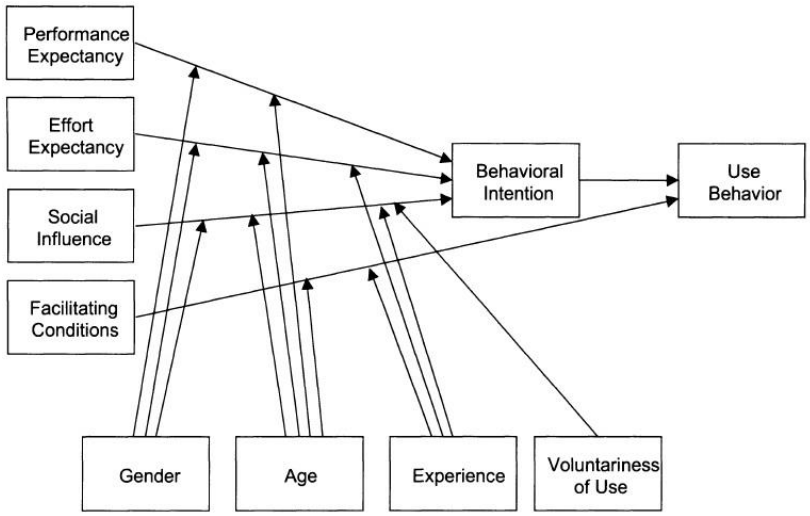


The basic assumption of the modified theory is that the relationship of behavior with (i) perceived control of behavior, (ii) behavior's attitude, and (iii) subjective norm are positively *mediated* by "intention" and have reciprocal effects (Ajzen, 1985). However, these two models are too general to be applicable to the context of civic technologies. Many situations of civic technologies cannot be represented well in these two models such as individuals' awareness about adopting technologies to participate online in order to achieve certain goals.

Venkatesh et al. (2003) has created a comprehensive model for estimating the use of civic technology that is known as the Acceptance and Use of Technology Theory. It is a model in which the relationship between the outcome variable (*i.e.* use behavior of technology) and predictors are positively *mediated* by the behavioral intention, and in turn *moderated* by demographic variables (**Figure 2.3**).

Figure 2.3

Acceptance and Use of Technology Theory



2.5 Theoretical Models of Media Effects

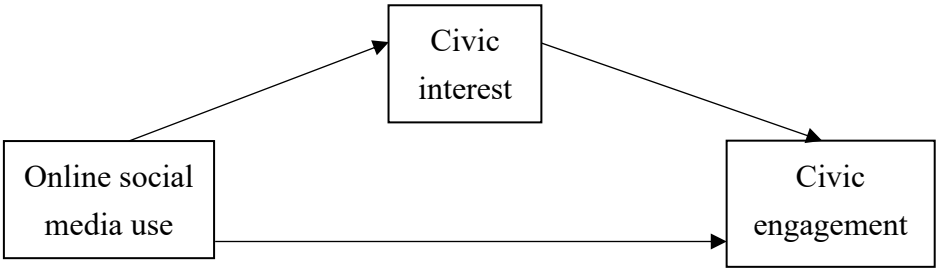
On the other hand, there are two types of theoretical models addressing the relationships between use of online (internet-based) social media, civic interest and engagement. One type is to consider the causal effect of the online social media use that act as stimulator influencing both civic engagement and interest (**Figure 2.4**).

The online social media use can shape individual's interest in civic affairs, attention to civic issues, and motivation of civic obligation to get involved in the civic process. For instance, participation in online chat and reading online news help to recognize which civic activist will be able to solve social problems and stimulate civic interest in public affairs. This model has been reported in some literature (McLeod *et al.*, 1996; Chan, 1997; Guo & Moy, 1998;

Schoenbach & Lauf, 2002; Lupia & Philpot, 2005; Mossberger, Tolbert, & McNeal, 2008). The use of online social media has played key roles in shaping an individual's civic interest and engagement that is argued by Norris (2001) to be a mobilization process. In sum, the online social media use stimulates civic interest and engagement.

Figure 2.4

Online Social Media Use Stimulate Civic Interest and Engagement

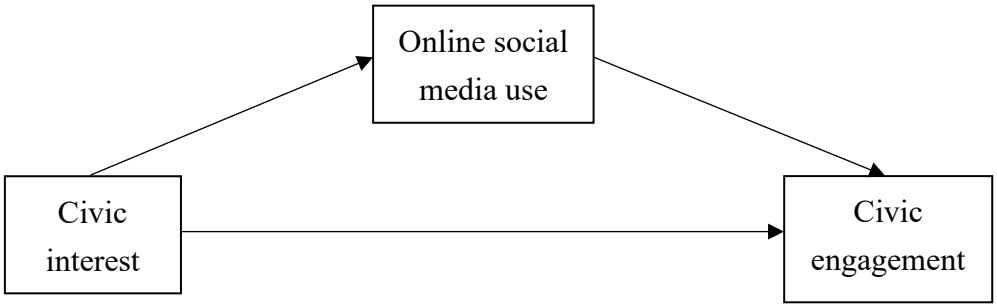


Another type of theoretical model of viewing the relationships is that the use of online social media acts as mediator between civic interest and engagement. The individual has freedom to select the source of online civic information to fit his/her interest and decide whether he/she engage in the civic activities (**Figure 2.5**).

This model has also been discussed in some literature (Kwak, 2005; Shah & Scheufele, 2006; Eveland *et al*., 2007; David, 2009). Norris (2001) refers to this condition as reinforcement process and argued that the online social media use is an information tool mediating the individuals who have been interested and engaged in civic activities.

Figure 2.5

Online Social Media Use Mediates Civic Interest and Engagement



Although both models have been existing in the literature, it is worthwhile to be re-evaluated in light of the popularity of online participation. The relationship between minoritized students' online participation, civic engagement and identity may be reciprocal in nature, and there would be moderation effects on the relationship by the socio-demographic background variables.

2.6 Relationship of online participation and civic engagement

The popularity of internet penetration in the past decade appears to have strengthened civic participation, particularly among students in Hong Kong (Ng, Kennedy & Hui, 2019; Chen, 2017). It has been argued that as "Hongkongers" become more educated, general interest in politics is bound to increase and spur individuals to intensify their civic activities (Chan, 2013).

Furthermore, studies show the positive role of social media in building social capital, particularly among the youth (Ahn, 2011; Ellison *et al.,* 2011). It may be that civic engagement is being reinvented with the help of these technological innovations (Syvertsen *et al.,* 2011). Whether this is also the case in Hong Kong will need to be considered as part of this research.

Monshipouri (2016) indicated that online participation facilitated communication between protestors during the 'Occupy Central Movement' and the 'Umbrella Revolution" in Hong Kong. Facebook, HKGolden, WhatsApp, Line, and Twitter became popular forum platform for protest participants to share information and encourage civic engagement. In addition, the Anti-extradition Protests that gave rise to a leaderless movement using decentralized networks of online social media have also drawn attention internationally. The protesters were seemed to rely on decentralized network of social media in the Internet to mobilize the protest without leaders. The world had been inspired by this kind of leaderless movement using online social media to mobilize millions of people to go to the street (Hui, 2019).

Ting (2019) pointed out that the Anti-China Extradition Bill Protest Movement spreading around different Hong Kong's districts has facilitated ethnic minority families to form civic unity. It is because their younger generation has strived to integrate into the local culture and become Hongkongers through struggling together with local people to fight for the future of

Hong Kong. Moreover, many ethnic minorities in Hong Kong hoped to unite with locals to engage in political issues through the protest in order to indicate their civic views and political standing that are the same as Hongkongers (Yeo & Chan, 2019).

In contexts other than Hong Kong, minoritized students who use online social media, perceive that they are empowered with high self-efficacy when their recognition needs are gratified (Leung, 2009). Shah *et al.,* (2001a) also concluded that informational motives for online social media use pave the way for increased knowledge and awareness of public affairs. Thus, it seems reasonable to assume that in the context of online social media, such informational uses could encourage the discussion of social issues, thereby allowing minoritized students to attain greater knowledge.

Little published research has explored the impact of online participation on civic engagement among students (Lin *et al*., 2010; Skoric & Ng, 2009). While some scholars have hailed the online social media as a social capital-building technology (Lee & Lee, 2010) with a capacity to extend the public sphere, it seems important to examine if online social media have the potential to stimulate minoritized students' civic engagement in a city such as Hong Kong (Dong *et al*., 2017).

Moreover, self-efficacy may also inspire the usage of online social media which gives rise to higher levels of civic engagement. It is because the minoritized students using internet may

cause them to believe that they will be able to communicate and connect with others who hold different interest and beliefs (Bandura 1997). On the contrary, Furutani *et al*., (2007) argued that students have lower levels of self-efficacy if they connect with others who have similar interest through the Internet. This rebuts the social identity theory's prediction which estimate the increasing level of self-efficacy of students who embrace similar beliefs and interests in face-to-face interactions.

Ahn (2011) suggested that online participation actually lowers the barriers of participating in and coordinating collective action because of its capacity for horizontal communication. The Internet has the capability to reconfigure the online network of social interactions and lower the costs of communication for students who can either contribute to or extract benefits from online social media platform.

For instance, online social media users can take advantage of technological provisions of the medium such as preservation of the records of previous interactions, which promote civic identity among group members (Gil de Zuniga *et al.*, 2011). In fact, online social platforms may also be as effective or have an even greater influence than face-to-face mobilization. It is therefore plausible that new forms of civic identity created online could revitalize different forms of civic engagement (Skoric & Ng, 2009).

The usage of internet could be considered as a way of assimilation, virtual, and hybrid. When

the primary use of the online social platform by minoritized students is considered as a way of assimilating into the Hong Kong society, it is primarily used for connecting from Hong Kong to their home country. In this way, the use of keyboard for this assimilation purpose is not likely to contribute to their civic engagement. In addition, it is considered as a "virtual" keyboard use for the case where the online social platform is used for constructing an imaginary community. Furthermore, it may also be called "hybrid" keyboard use in the case that the Internet is used to connect to their home country and then expand those connections back to Hong Kong simultaneously (Howard *et al.*, 2001).

On the other hand, the usage of Facebook may reassure the minoritized students' principal need of self-expression and belongingness (Sheldon *et al*., 2011). This necessity of belongingness has association with the teachers who have need of social recognition, and with the students who possess need of affiliation (Sosik & Dinger, 2007). It is because students' level of self-efficacy and esteem may be increased through complimentary and supportive communication when students pursue affiliation and are attracted to teachers or others who construct sociable and friendly virtual world in the online social media. As a reward, teachers would be commented and posted by the minoritized students as being "friended' or "liked" if they seek for validation.

In contrast, recreational uses such as playing games are often asocial or anonymous, and may

erode the individual-level engagement of civic activity (Shah *et al.,* 2001a). Still, with regards to entertainment use, prior research on the relationship between uses of the online social media and civic participation does not present a consistent picture. While one group of researchers found negative relationships between entertainment use and civic participation (Sci-Hill, 2007; Zhang & Chia, 2006), other scholars found positive relationships (Lenhart *et al*., 2008; Lin *et al*., 2010).

One of the possible explanations for this discrepancy is that the key characteristics of entertainment and/or recreation-oriented keyboard applications have significantly changed over time. Indeed, while the early recreational uses of online social media typically involved either solitary gaming (*i.e.,* playing alone against a computer) and/or anonymous conversation (*i.e.* chat rooms) (Shah *et al.,* 2001b), the nature of online entertainment today is markedly more social. Similarly, online gaming is also more social, taking the form of either multiplayer online games, or more casual, social network games.

Recent studies indicate that playing of online games or network games has a positive relationship with both bridging and bonding forms of social capital, and that these platforms are frequently used for initiating, maintaining and enhancing social relationships (Chen, 2017; Skoric & Kwan, 2011). Although it can be expected that recreational uses of online social media may have social capital benefits, it is unclear whether such uses could also promote

civic engagement in school/community.

In addition to recreation/entertainment, another widely studied dimension for online social media use is that of building or maintaining interpersonal relationships that has manifested itself in various ways (*i.e.,* socialization, interpersonal interaction, social networking, *etc.*) (Chen, 2017). Nonetheless, the essence of them is the inherent human need to stay connected with others (Boyd & Ellison, 2007).

It has been established that online social media allow users to connect with others who are part of their extended social network and to strengthen or maintain existing relationships with their offline connections (Ellison *et al*,, 2007). It is essential to notice that online social media are nowadays frequently used to maintain close relationships with friends and family members, as well as to keep in touch with casual acquaintances (Chen, 2017).

Therefore, the impact of online social media has provided new opportunities for civic participation in Hong Kong. It has been acknowledged internationally that social media's transformation from an electronic network designed to connect pages, documents and files, to one increasingly linking people, ethnic groups and communities, has undoubtedly spurred a new wave of interest in this topic of quest for civic rights in the digital age (Kahne *et al.,* 2013).

Furthermore, with its widespread diffusion and maturation as a medium, the online social media platform has become a vital component of the technological infrastructure that enables civic life in ethnic communities. However, there is little knowledge concerning whether on the Internet it is promoting or eroding "offline" *versus* "online" civic engagement and participation, specifically amongst Hong Kong's minoritized students, and this will be a focus of the study.

2.7 Relationship of online participation and identity

As online social media have evolved, there has been much interest in the relationship between identity formation and online participation (Gitelman, 2006). The study of this relationship is highly contested and is often conceptualized as determined by online social media with the view that online participation produces change in individuals (Bolter, 1997). Lievrouw and Livingstone (2006) suggested online social media platform can best be understood as "infrastructures" which make online participation possible.

What are specific contexts that transform the identity of Hong Kong minoritized students through online participation? In recent years, civic activism via use of online social media has drawn awareness in Hong Kong. The world watched as student activists used online social platform to organize protests during the Hong Kong's Umbrella Movement and Occupy Central Movement (Bowyer & Kahne, 2016; Chan, 2013). During the Anti-China Extradition

Bill Movement, there were ethnic minority protesters demanding identity in the street as well as online social media that emphasizes their belonging to Hong Kong. The question of identity was hidden behind the protests in which the protesters claimed for pro-democracy using local Hongkonger's culture and languages to set apart themselves from mainland China (Chor, 2019).

Thus, Hong Kong is a suitable site for research examining the relationship between online participation, civic engagement and identity among minoritized students. In order to look into the role of online participation in the creation and nurture of identity of minoritized students in Hong Kong, it is important to focus on minoritized students' specific uses of keyboard for online participation that mediates the relationships between civic engagement and identity.

The developmental process of minoritized students' identity and online participation during this online era might be classified into individual and school levels that develop independently and mutually from time to time (Valsiner, 1989). Valsiner (1989) has considered that development of identity to be volatile and complex procedures by taking into account of different levels of interaction between students and schools where they study. Valsiner (2000) also indicated that it is imperative to investigate the complicated situations so as to understand how the relationship between identity and online participation to be developed into its existing format and how it would be developed in the near future.

The minoritized student's online participation is assumed to have impact on his/her development of identity. In addition, minoritized students' educational worlds have turned out to be complicated after attending schools (Arat *et al.*, 2016). Valsiner (2000) argued that education has played dual functions. Education has not only taught students to acquire necessary knowledge and skills, but also provided students with guidance for them to have right attitudes towards the others and to behave well in the society.

For minoritized students, it could also be argued that online participation would have the effects of directing them in their ways of thinking, feeling and acting digitally towards each other. By the way, online participation would be thought to be able to influence minoritized students' development of identity in alignment with their cultural backgrounds and expectation of civic engagement. Therefore, its effect on identity would have implication on the outcome and goals of citizenship education in schools.

The IEA Octagon model indicates that civic engagement unfolds within societal discourses that imply construction of civic identity (Torney-Purta *et al.,* 2001). However, there is an ecological system of human civic development that is multilevel in nature and has been proposed by Urie Bronfenbrenner to describe how students relate with their multicultural contexts (Bronfenbrenner, 1979).

Ratner (1991) indicated that Bronfenbrenner's model provides the misleading explanation that multilevel social layers and influences in connection with students are not related to individual student and are out of the control of each student. Therefore, he suggested a revision of Bronfenbrenner's model that the multilevel social layers are described as illustrating and interpreting how the macrosystem penetrates through the mesosystems and microsystems of an individual student. He also recommended how all of these systems influence the development of civic identity of an individual student.

Similarly, Ferdman (2000) proposed that the model of formation of identity could be investigated through the structure and configuration of particular multicultural contexts. In reality, minoritized students could form distinctive identities (Bank, 2008). Ferdman (2000) elucidated the further point that the identity query of "who am I?" should also be extended to "why am I who I am?". Ferdman argued that it is important to make sense for the model in the right track by clarifying how minoritized students form their own identity. Otherwise speaking, the ways how do the minoritized students positioned in the school could affect their formation of identity.

Online social media and digital technology have altered the ways people gain access to information that could be transmitted across borders and locations, and connecting to each other online (Kovach and Tosenstiel, 2010). However, the debate over the power of online

participation in the digital world has raised a key issue: Would the online social media be transformed into new formats of communication for the transmission of message, knowledge, opinion, resistance and protest in an innovated society?

From the point of view of accessing online social media in this internet-connected world, acquiring participatory skills in the online environment has been important to rectify problems from collaboration to collective action, from barriers of communication to face-to-face meeting in order to increase the likelihood of offline participation. These technological developments, combined with the flourishing of the Internet, have strengthened the voiceless correspondents so as to render governments grudgingly more tolerant of diverse views and competing narratives (Rheingold, 2012).

Castells (2000) has theorized that, powered by digital resources, online participation has been redefining organizational structures of education where traditional boundaries between students, classes or schools can be overcome with relative ease. He argues that online participation is promoting novel types of social identities (Castells, 1996).

According to the view, the increasing prominence of ‘networked individualism’ is reshaping the ways in which students identify and relate to others (Chambers, 2006). For example, using websites, social networks, blogging and instant message services, and email highlight the ways in which students are able to know the civic issues and deepen connections to local

community. Prior studies have uncovered online social platform's beneficial effects on identity (Ellison *et al.*, 2011; Lannegrand-Willems *et al*., 2018).

Similarly, in a mixed-methods study on youth civic engagement, Harris *et al.*, (2010) found that digital media was significant for exploration and expression of social and political views. They highlight the ways in which, outside of formal strategies for mobilizing youth participation in institutions and networks, online social media is recognized as a platform for young people to socialize with each other and express their thoughts (Harris *et al.*, 2010). There is a wide range of questions emanating from a consideration of the relationship between online participation and identity. The interdisciplinary and rapidly evolving nature of online participation means there is an almost inexhaustible range of ways to examine how civic identity is being transformed (Bennett, 2012).

Early studies of online participation enthusiastically claimed to identify new forms of identity that were independent or disassociated with offline lives. These early approaches tended to conceptualize cyberspace as disembodied. That is, the virtual world was separate, and the emphasis was often on how students used the Internet to connect with others not known offline and play out aspects of identity they would not perform in real life (Turkle, 1995).

However, more recent research on how online practices fit with offline relationships and activities indicates that online participation largely supports existing relationships. In the

meantime, it yields probability for new connections and self-expression. In this way, online participation obscures the difference between virtual and real life, particularly as online participation has become increasingly personalized, interactive and mobile, and thus increasingly embedded in everyday life (Chambers, 2006).

Identity constructed "online" refers to self-expression of individual to others through the online social media platforms. The content relates to their civic engagement, interests, opinion, and participation that include setting up events, updating status and profile (Bargh, McKenna, & Fitzsimons, 2002). Johnson, Zhang, Bichard, and Seltzer's (2011) indicated their studies of online identity that civic participation could be enhanced by using internet purposefully for civic mean.

Moreover, Vitak and her associates (2011) argued that there was an association between online identity and offline civic participation. Thus, online identity could promote individuals' offline civic participation. Rheingold (2012) also argued that online identity could affect and initiate those who are less engaged to participate more in civic activities. Furthermore, Rheingold (2012) explained that internet users with strong online identity had high scores on self-efficacy of duty because online identity can constitute identity in "real life".

Notwithstanding there are concerns that online participation leads to the fragmentation of identity and the weakening of civic ties. Turkle (1995) argued in her book that identities had

become incomplete, ever-changing and fragmented when examining it in the digital age. In contrast, Weber and Mitchell (2008) had argued in their discussion of youth online practices in which the fluidic and fragmented nature of identity in the context of online participation may be understood as different parts of hybrid that is a unified whole if it is always coherent. For instance, creative production required in online practices highlights the ways in which identities are assembled.

Weber and Mitchell (2008) also argued that youth online practices demonstrate the ways in which online participation entails individual and collective negotiation, subversion and adaptation of the technology, and the setting and the relationships at play. They argued the construction that characterizes civic processes in online participation highlights the contingent and changing nature of identity as work-in-progress. They also argued for the notion of identities-in-action to highlight the ways in which online participation is part of the civic and cultural activities drawn upon as people construct identity through action in a form of personal bricolage (Weber and Mitchell, 2008). Not only can the components of identity in online social media be augmented, renovated or discarded, but also it will always retain some features such as shadows or traces of past assemblages.

Boyd (2011) argued that Internet has an important role in the structuring of social life such as the ways in which people act, communicate, represent ourselves and make sense of others.

Information in these new “publics” is both knowingly shared by individuals. The information shared through online participation activities can also be used by others to make assumptions about the kind of person he/she might be. This can shape the kind of information delivered to people online via search engines, online social network services, government, and community sites.

2.8 Effect of socio-demography on civic engagement

Accessing online social media for information and news has significant impact on civic participation. However, how and why does it occur? To address this issue, the relationship between online participation, civic engagement and identity should be analyzed within a suitable conceptual framework. The previous sections have indicated that there are some factors affecting civic engagement. According to the recent study, those factors could be classified into the categories such as use of online platform, social orientation and demographics. Demographic factors that influence civic engagement are age, income, gender, and identity (Zukin *et al.,* 2006).

First, people learn civic knowledge and acquire norms of civic duty through education to enhance civic engagement (Campbell, 2006; Klofstad, 2007). Second, study has also revealed that there is different tendency of engagement in social movement between males and females. Boys have higher intention than girls to engage in civic activities. Another demographic

factor influencing civic engagement is identity because extroverts can typically be expected to engage more than introverts (Enns *et al.,* 2008).

Thirdly, the level of civic engagement of students can also be influenced by their social orientations such as civic identity, organizational membership, trustfulness, and satisfaction of life. Students who indicated that they were inclined to take part in political activity usually appreciate with their lives and are predisposed to trust others, and thus more intended to have civic engagement (Yuen & Lee, 2016). The study shows contentment and trust can promote civic participation. In addition, students attached to certain types of social ideology such as conservatism or liberalism are also more likely to participate in civic affairs (Yuen, 2014).

Finally, student's online network that is referred as platform to be used by a group of people informally discussing about civic affairs at the same time with the others who have same age has tremendous effect on civic engagement. Therefore, informal discussion with the same aged people in the online social platform facilitates students to learn about opportunities for civic action, think about problems facing the people around them, and exchange civic information with others (Gil de Zuniga, 2009).

On the other hand, there are two ways including offline (interpersonal) discussion and online

(keyboard-mediated) discussion to influence civic engagement. Interpersonal discussions (offline participation) have been known to have impact on civic participation, and the study continues to support this argument (Gil de Zuniga *et al.,* 2010). The effect of online (keyboard-mediated) participation on civic engagement has been shown by the situation in which the student using online social media for political news are more likely to join political events. However, the students using online social media for purpose of entertainment would not intend to engage in civic events (Shah *et al.,* 2001b).

Another important way of influence on civic engagement is the network size and the strength of ties that constitute the online social media. As Rojas (2008) has suggested the bigger the network size, the higher the number of weak ties will be in it. By their very nature, weak ties expose students to information and resources that are insufficient to mobilize and motivate them for civic engagement. This includes information that can motivate and mobilize them for civic engagement. Thus, there are close interrelationship between tie strength and size of network which influences civic engagement (Kahne *et al.*, 2014). Larger network size tends to increase the chances of the students being exposed to more information about civic activities and people's connection who provide expertise related to civic engagement (Kahne *et al.*, 2012).

2.9 "Digital divide" due to unequal distribution of information literacy

According to the 2016 Population By-census, about 584,383 (8%) of the Hong Kong population are ethnic minorities (EMs) who migrated from the countries of Nepal, Pakistan, India, Thailand, the Philippines, Indonesia, Japan, and Other Asian countries. The 2006 By-census indicated that 342,198 (5%) of the Hong Kong population were EMs. Therefore, it implies that total proportion of EMs population had increased by more than two-third (70.8%) during the past ten years (**Figure 2.6**). By excluding foreign domestic helps, EMs relative proportion among Hong Kong population had climbed from 2.4% in 2001 to 3.6% in 2016 (**Figure 2.7**).

Figure 2.6

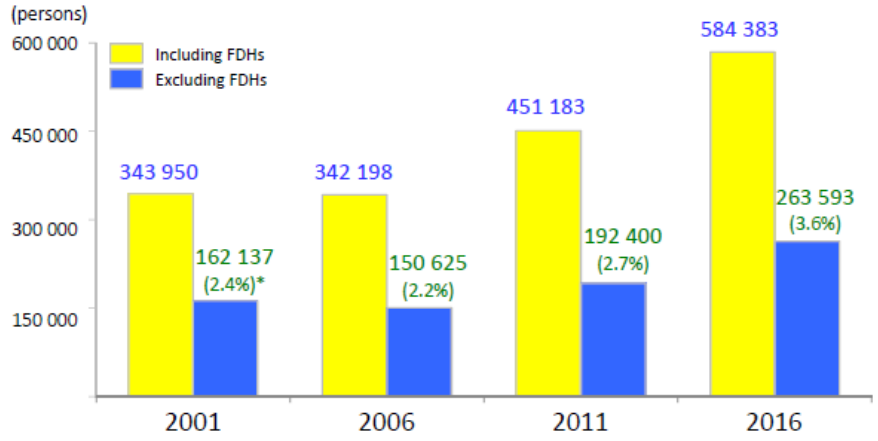
EMs Population in Hong Kong, 2001, 2006 and 2011

Ethnicity	2006		2011		2016	
	Number	Number	Number	% of total	Number	% of total
Chinese	6522148	95.00%	6620393	93.60%	6752202	92.0%
Indonesian	87840	1.30%	133377	1.90%	153299	2.10%
Filipino	112453	1.60%	133018	1.90%	184081	2.50%
White	36384	0.50%	55236	0.80%	58209	0.80%
Indian	20444	0.30%	28616	0.40%	36462	0.50%
Pakistanis	11111	0.20%	18042	0.30%	18094	0.20%
Nepalese	15950	0.20%	16518	0.20%	25472	0.30%
Japanese	13189	0.20%	12580	0.20%	9976	0.10%
Other Asians	12663	0.20%	12247	0.20%	19589	0.30%
Thai	11900	0.20%	11213	0.20%	10215	0.10%
Others	20264	0.30%	30336	0.40%	68986	0.90%
Total	6864346	100.0%	7071576	100.0%	7336585	100.0%

Source: Population By-Census (2006), Census (2011) and By-Census (2016), Census & Statistics Department, HKSAR

Figure 2.7

Population of EMs, 2001-2016



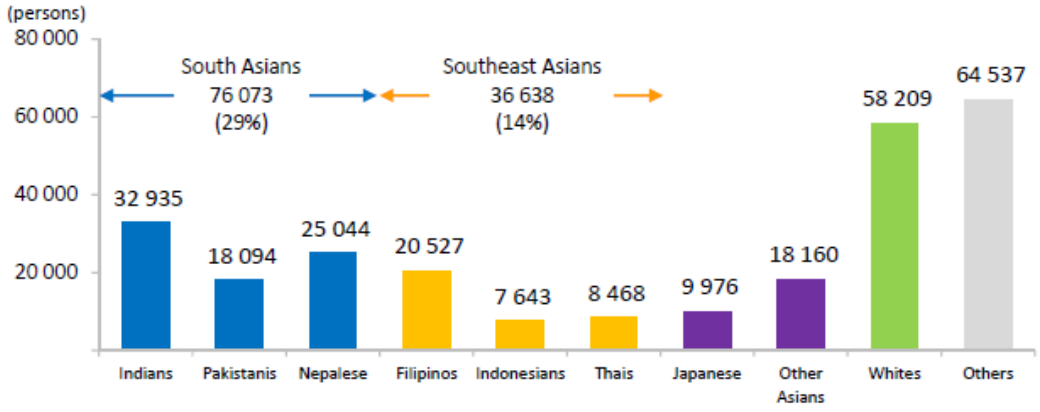
Note: (*) Figures in brackets indicate the % of EMs to the whole Hong Kong population.

Source: Census & Statistics Department, HKSAR

However, the leading EMs groups in Hong Kong should actually include Nepalese, Pakistanis, and Indians that occupy 29% among major EMs groups in 2016 (**Figure 2.8**) since most of Filipinos and Indonesians are domestic helpers who will return to their home countries after their employment contracts have expired.

Figure 2.8

Population Structure of EMs Groups, 2016



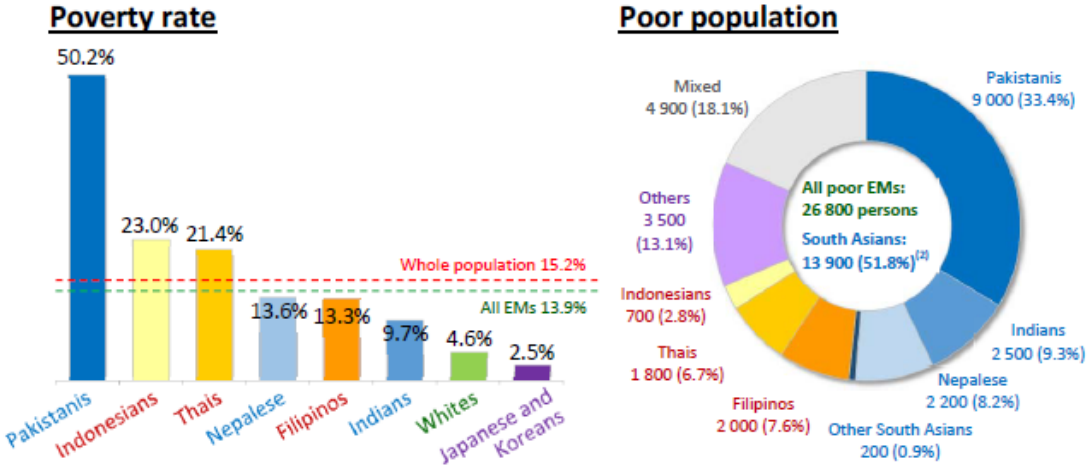
Source: Census & Statistics Department, HKSAR

EMs students' well-being varies according to their ethnicity as there are differences between them in cultural proximity, perception of discrimination, socioeconomic status. Because, in general, those of Indian ethnicity have already built up favorable social status throughout their long history of economic development and social adaption, Indian in Hong Kong have experienced higher well-being than Pakistanis, Indonesians, Thais and Nepalese. In 2011, among EMs group with the highest poverty rate was Pakistanis who share approximate half (50.2%) to the population of all poor EMs (**Figure 2.9**).

Indeed, Arat *et al.* (2016) revealed that Indians are reported to have the highest levels of economic status and satisfaction with life than Nepalese and Pakistanis. Therefore, Indian students seem to have better life satisfaction and social adaptation than Nepalese and Pakistanis students (Arat *et al.*, 2016; Cheung & Chou, 2018).

Figure 2.9

Poor Population and Poverty Rate of EMs Groups, 2011



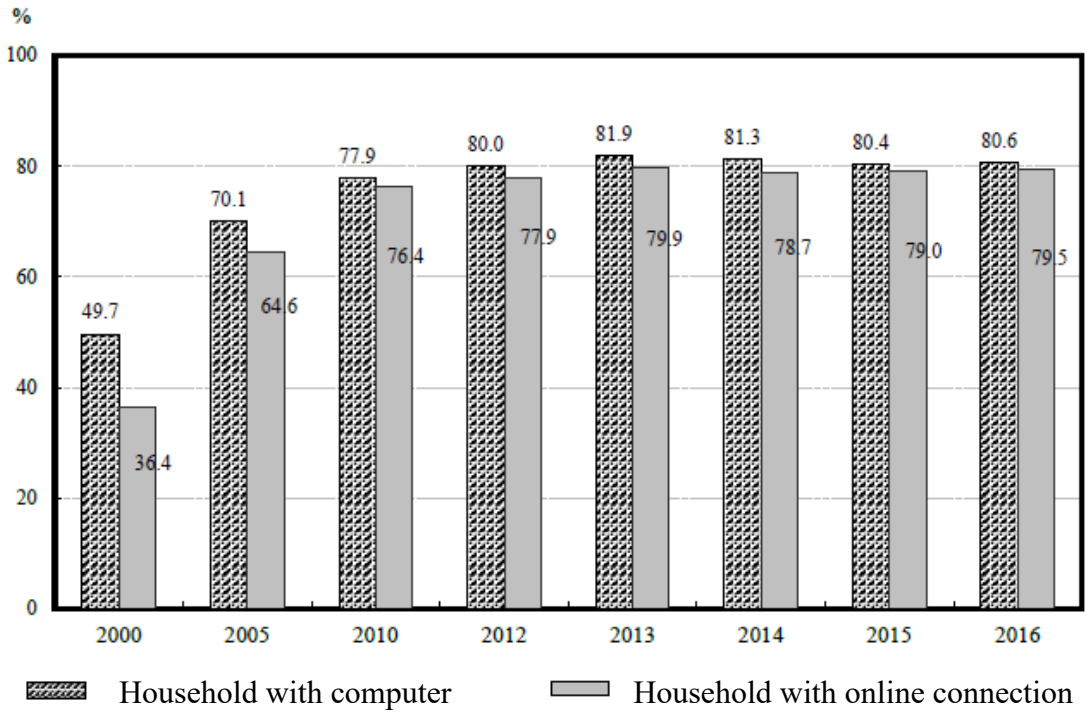
Notes: (*) Figures in brackets indicate the % share to the population of all poor EMs.

Source: Census & Statistics Department, HKSAR

Not only has the ethnic minority population increased, but also the proportions of households with computer and online connection have increased simultaneously for the past decade in Hong Kong (**Figure 2.10**) that is not reported by ethnic group. Some ethnic minority students, however, may not have families who possess deep knowledge of computing and online social networks, hence schools are important potential sites for bridging the digital divide of ethnic minority students.

Figure 2.10

Proportion of Hong Kong Households with Computer and Online Connection at Home, 2000-2016



Source: Thematic Household Survey Report No. 62 (2017), Census & Statistics Department, HKSAR

Ito and colleagues (2010) confirmed wide disparities in how students participate in online social media landscapes. This broad-based ethnography affirms that today's students are

constantly connected but do not necessarily have clear understandings of the potential power of the online social platforms. It found that students primarily leverage online social platforms to explore information, expand their understandings, and extend their social worlds. The online world provides them places to determine independently what they want to know, whom they want to be friend, and how they want to be known. Some students enter virtual worlds and outfit avatars as a means of trying on alternate selves. Some chat with online friends in other countries. Through this "messing around", they begin to develop new technical and literacy skills. Some students go beyond "messing around" and learn to create new uses and spaces within existing technologies as well as their own tools.

It is necessary to tackle for the issue of the digital divide between different ethnic groups' students (Kahne *et al*., 2016) because a lot of the ethnic minority students come from the poor families that are less educated and lack of information technology knowledge (Cheung & Chou, 2017). Therefore, the unequal opportunities of education and poverty are main issues that need to be solved (Norris, 2001). The technical computing support such as the training of using software would be important (Van Dijk, 2005). The training of online information literacy (Mossberger *et al.*, 2003) and the skills of searching online materials and judging the validity of information (Warschauer, 2003) and writing skills (Warschauer, 2010) are critical. In addition, the online social media also require basic reading and comprehension skills of languages (Volodymyr *et al*., 2015). With competent skills in using information technologies,

it provides a good way for EMs to assimilate into the society (Volodymyr *et al*., 2015).

2.10 Behavioral risk of "cyberbullying" during online participation

The Sustainable Development Goals of the United Nation aim to provide a world that is healthy, and free from exploitation and violence for the child to grow up (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2016; United Nations Development Program [UNDP], 2016). With the increasing affordability and accessibility of the Internet, more and more students are going online for longer durations (Balakrishnan, 2017; UNESCO, 2016). Although schools and communities are always the venues where students are normally raised, the Internet has turned these venues into a utopian world of virtualism and fantasy ruled by netizens and where the distance between them is ignored (Balakrishnan, 2017; Hinduja & Patchin, 2014).

Nonetheless, some groups of student netizens evolve to become "keyboard warriors" who abuse the freedom of the cyberworld by bullying and harming others in online social media platforms (Cassidy *et al*., 2009; Ghazali *et al*., 2017). Some online social media platforms have been transformed into battle arenas by keyboard warriors whose predatory internet behavior and online brutality put netizens at risks of potential bullies during online or in real life. (Balakrishnan, 2017; Soni and Singh, 2018).

Howard (2018) found that online civic activism among people has created more engaged

netizens to participate and express themselves through online platforms. However, there has been an increasing amount of junk and fake news scattered online by keyboard warriors who were associated with the risks of disseminating fake news to the extent of public shaming of individuals and groups which could lead to slander and defamation among others. In real life, online information overload in the Internet makes it very difficult for netizens to distinguish the truth from the fake information (Choi, 2015).

Furthermore, Tsatsou (2014) had drawn attention to the Internet use that has altered the way people communicate. Today's Internet technology is easily used by netizens in anonymous ways that make it possible for malicious attempts by keyboard warriors to engage in cyberbullying. As there are netizens who do not like each other, it has become easier for them to have risk of arguments in the online social media platform. Recently, Campbell and Bauman (2018) actively debated whether cyberbullying is a different form of violent behavior, and suggested that it has similar outcomes as traditional bullying, and also has same consequences such as low self-esteem and negative relationships with peers and family.

Kim *et al*., (2018) had also found that cyberbullying causes similar undesirable consequences for teenagers who may suffer from low self-control. In addition, Festl *et al*. (2017) indicated that the proportion of victims of cyberbullying is much more than those of real-life bullying. Hinduja & Patchin (2014) indicated that cyberbullying is more harmful than real-life bullying

since victims of cyberbully may not know who is the bully or why are they being targeted. Moreover, Cyberbullying behavior is more difficult to monitor than real-life bullying (Hinduja & Patchin, 2014) because of the online platform's virtual nature (Hango, 2016). The cyberbully may easily conceal his or her identity behind a computer screen or mobile phone using anonymous e-mail addresses, pseudonymous names, fake profile pictures or avatars (Campbell & Bauman, 2018; Hinduja & Patchin, 2014).

Therefore, a lot of netizens at school, in community, city, and even country may be directly or indirectly bullied and become potential victims (Rodelli *et al*., 2018). It is often that the cyberbully may not know and understand the severe harm caused by them because they do not see the consequence of their actions and victim's immediate reaction in real-life (Bauman & Baldasare, 2015). As a result, it is highly possible that the bully's actions and the victim's experiences would not be noted. Actually, many teachers and parents may not be able to respond immediately and sufficiently even if bullies are identified in some situation (Rodelli *et al.*, 2018). It is because they do not know how to keep track of what their students and children are doing in the Internet (Hinduja and Patchin, 2014).

2.11 Summary

In accordance with literature review, the background evidences are diagnosed for (i) the relationship of online participation and civic engagement, (ii) the relationship of online

participation and identity, (iii) effect of socio-demography on civic engagement, and (iv) the necessity for tackling 'digital divide' and "cyberbullying" issues of minoritized students.

Although there is currently no predetermined definition of what online social media should be applied for evaluating the relationship of online participation, civic engagement and identity of minoritized students, the study will propose to restrict the "online social media" platform for minoritized students who access the Internet and other online resources via a range of technologies such as personal and laptop computers, tablets, mobile and smart phones, digital television and media players, etc.

Online participation is referred as "involvement of Internet users in the online communities to facilitate communication processes". The online social media make possible many kinds of online participation including consumption, production, sharing and mixing of text-based/photographic/video/audio content in "online social media" platform, and role-playing via virtual worlds/online social communities, gaming, video, and online phone/video communications, etc.

As noted throughout the literature review, the technological innovation of Internet platform has the potential to make a significant contribution to civic activism. Addressing the limits of what could and should be expected from technology can also help to better understand why and how self-perception, civic awareness and civic activism of online participation may,

under specific circumstances of Hong Kong, be seen as an important source of civic engagement and collective consciousness of identity. It is abundantly clear that online participation has changed and is changing Hong Kong as it has altered the world's social and civic landscape. Such contexts demonstrate that the Internet has opened up new opportunities for much more direct and robust communication despite the fact it has not replaced face-to-face interaction.

Therefore, modern online social media has profoundly altered the social contexts of Hong Kong, allowing newer movements to penetrate deeply into the social fabric and mobilize new actors to become involved in social movements. On the other hand, there is limited evidence to indicate that the growing use of Internet in Hong Kong has influenced minoritized students. As an effctive tools for reaching large numbers of people including ethnic minorities, online social media has amplified the impact of connectedness and fostered social movement of staggering magnitude throughout the territories in Hong Kong.

2.11 Research Gap

After reviewing the literature, it is important to investigate whether minoritized students form part of the 'netizen' culture for civic participation in Hong Kong. Although there is a literature relating to local Chinese students, there is limited study that has been done to investigate the influences of online participation for civic activities on the relationships between civic

engagement and identity of minoritized students in Hong Kong. Therefore, there is research gap about these relationships for Hong Kong minoritized students.

2.12 Research Questions / Hypotheses

Following the reviewed literature, I propose the following research hypotheses and questions to explore Hong Kong minoritized students' online participation (OP), civic engagement (CE) and identity (CI). Specifically, online participation is further elaborated into the (i) *civic awareness and self-perception* of online participation, and (ii) *civic activism* of online participation. The research questions are:

R1. How do minoritized students' civic awareness/self-perception of online participation relate to civic engagement and identity?

R2. How do minoritized students' civic activism of online participation relate to civic awareness/self-perception of online participation, civic engagement and identity?

R3. How do minoritized students' civic activism of online participation relate to the *"mediated"* relationship between civic awareness/self-perception of online participation, civic engagement and identity?

R4. How do minoritized students' socio-demographic background relate to the *"mediated"* relationship between civic awareness/self-perception of online participation, civic engagement and identity?

Chapter Three

Methodology and Methods

This chapter explains the research design and methodology in this research project. Section 3.1 discusses the theoretical, empirical and conceptual framework of the research questions:

R1. How do minoritized students' civic awareness/self-perception of online participation relate to civic engagement and identity?

R2. How do minoritized students' civic activism of online participation relate to civic awareness/self-perception of online participation, civic engagement and identity?

R3. How do minoritized students' civic activism of online participation relate to the *"mediated"* relationship between civic awareness/self-perception of online participation, civic engagement and identity?

R4. How do minoritized students' socio-demographic background relate to the *"mediated"* relationship between civic awareness/self-perception of online participation, civic engagement and identity?

Section 3.2 specifies the reasons of selecting quantitative methodology.
Section 3.3 focuses on explaining the research design.
Section 3.4 reports the data collection, sampling method and sample size.
Section 3.5 outlines the ways data validation was carried with a focus on issues of validity and reliability.
Section 3.6 specifies the rationales of using residual centering and plausible values to build parsimonious structural equation model.
Section 3.7 illustrates the data analysis procedures for testing the hypothesis and building models of the mediation, moderation and moderated mediation for the study.
Section 3.8 indicate the ethical review and approval processes undertaken for this research.

3.1 Theoretical, empirical and conceptual framework

As shown in the literature review, the focus of the research project is to inquire into the influences of online participation on the relationships between civic engagement and identity of Hong Kong minoritized students. The proposed models that lead to the research questions for this study are indicated in **Figure 3.1**. In this figure, it is assumed that there may be recursive relationship between the identified variables. These scales in the proposed model will be tested for their reliability and validity to ensure their soundness for the proposed hypotheses in this study.

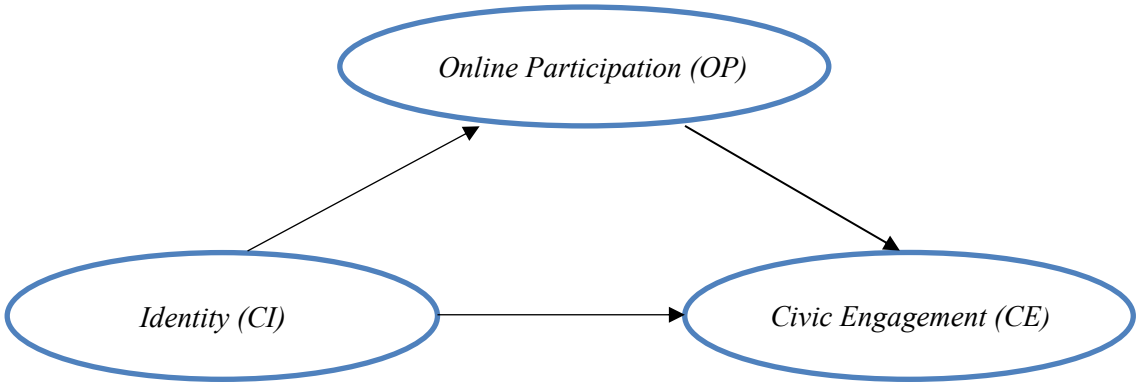
The proposed recursive models represent the conceptual models for the study. It provides the direction for the study based on the existing literature and is the basis framework for developing the structural model. During the initial stage of the study, the conceptual models contribute to the formation of the research questions as the key drivers of the study seeking to understand how different environments influence the civic engagement, online participation and identity of Hong Kong's minoritized students.

The conceptual model may also help to locate minoritized students' online participation, civic engagement, and identity in sociocultural and educational contexts. In particular, it allows for an examination of students' digital civic experiences outside the school in which they may participate.

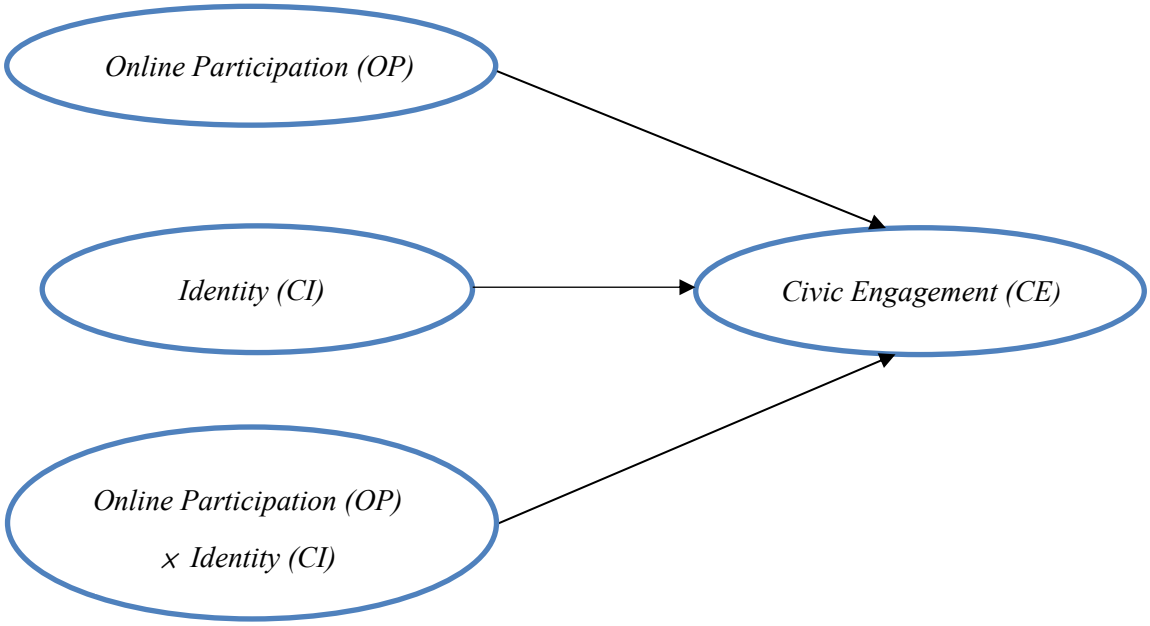
Figure 3.1

Assumption of Recursive Relationship between Minoritized Students' Online Participation, Civic Engagement and Identity

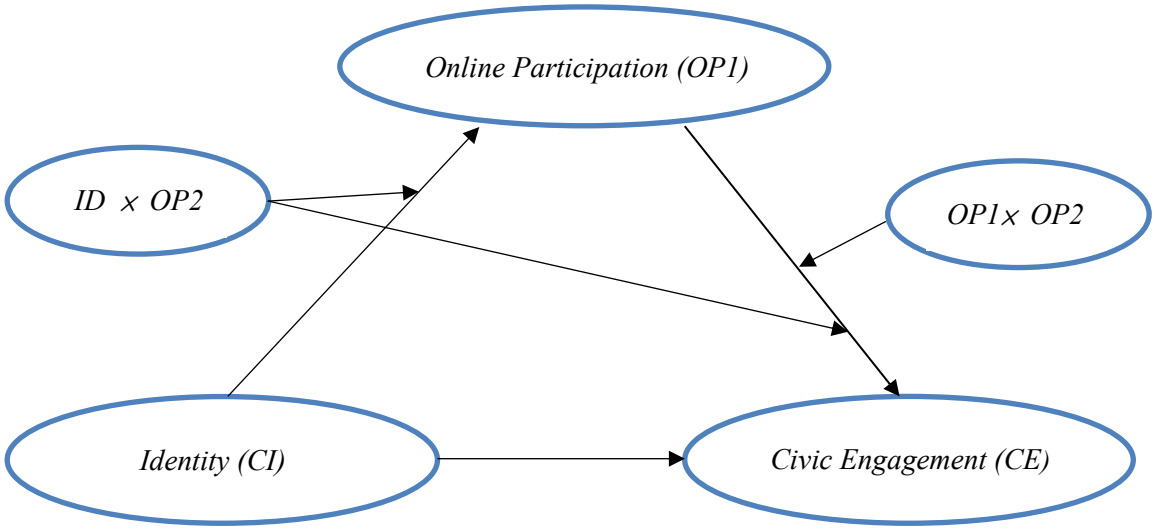
(i) The First Conceptual Model



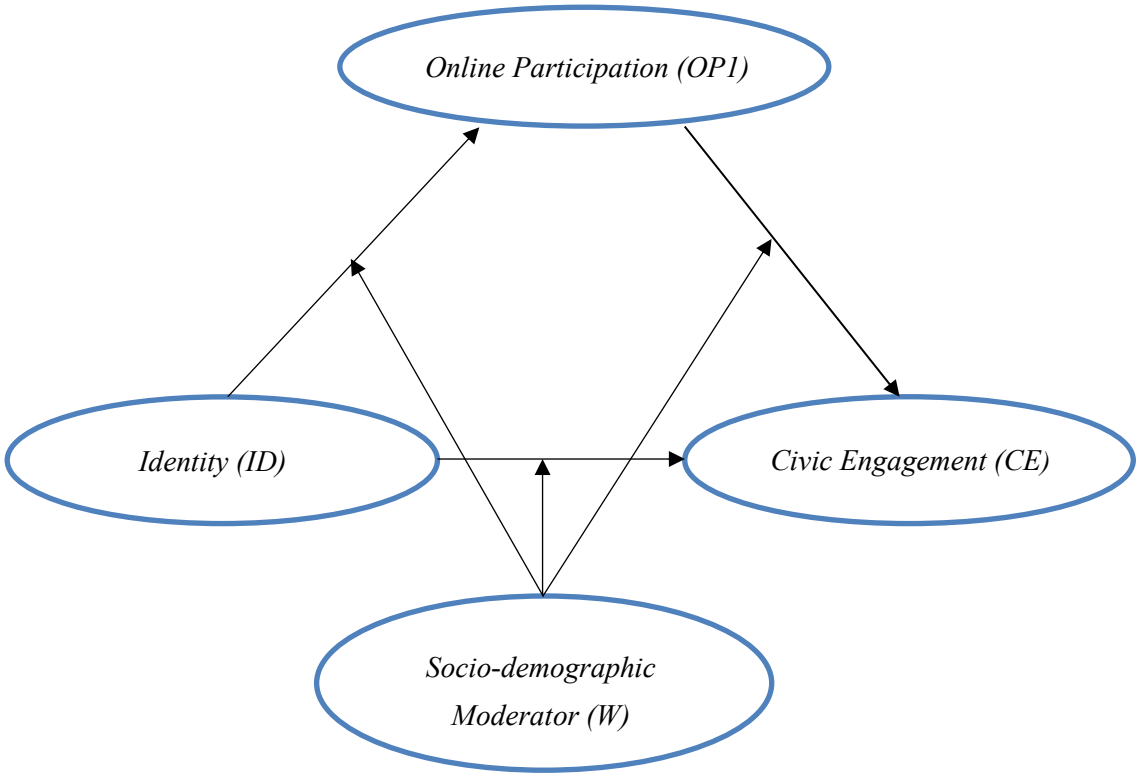
(ii) The Second Conceptual Model



(iii) The Third Conceptual Model



(iv) The Fourth Conceptual Model



The first and second conceptual models seek to portray the complex mediation and moderation relationships between online participation, civic engagement and identity. However, they do not consider the moderation effects of the socio-demographic variables. The third and fourth conceptual model includes the moderating variables of self-perception and civic awareness of online participation (OP2) and socio-demographics (W) such as school religious background, gender, age, education level, specific minority group, ethnic identity, and years of internet use to be the moderators that illustrate the moderation effects. Therefore, the third and fourth conceptual model take into account the effects of moderated mediation that may influence minoritized students' civic development.

The proposed models, therefore, offers a conceptualization that can assist in understanding the complexity of minoritized student's civic engagement and identity in the contemporary democratic environment of Hong Kong. In considering the online participation of minoritized students in Hong Kong, it is important to explore in more detail what is meant by online social media especially for understanding online participation, civic engagement and identity.

In relation to online social media, this study will explore ecologies of online participation that are collective rather than individual in nature (Agur & Frisch, 2019; Mascheroni, 2013; Lee & Chan, 2018). It is expected that different students with different ethnic backgrounds will have very different configurations of online ecologies and these will influence their forms of

civic engagement and identity. Ideally, relationships of online participation, civic engagement and identity among study participants would be captured in the proposed models. As a result, this study will highlight the complexities and emergent effects of online participation influencing appropriate civic engagement and identity of minoritized students embedded within online social media.

3.2 Methodology

A quantitative methodology will be used to study the relationship between a set of specific variables: (i) online participation, (ii) civic engagement and (iii) identity with a particular focus on Hong Kong's minoritized students. The purpose is "to generate knowledge and create understanding about the social world" (Burrell & Gross, 2018 p.1).

While minoritized students are influenced by broad social and political contexts in Hong Kong, for this particular study the emphasis is on a limited range of variables and their impact on this specific group of students within a prescribed area of study. Quantitative methodology allows the relationship between these variables to be tested. It requires a scientific approach to data collection and analysis within a system of explicit rules and procedures which will allow inferences to be drawn from the results (Frankfort-Nachmias *et al.*, 2015).

On account of sample size, studies of minoritized students in Hong Kong have rarely used quantitative methodology. This study, therefore, can potentially make a contribution to a

specific and important area of understanding for these students. A quantitative methodology assumes that there will be a complex relationship between variables. Statistical methods can model these relationships, and results can identify both the size of the associations as well as the theoretical implications that can be drawn from such results. The results of this study can add to the accumulated body of knowledge concerning minoritized students in Hong Kong with the benefits of a quantitative methodology that can provide the basis for not only for theory building but also the possibility of prediction and generalization (Burrell & Gross, 2018).

3.3 Research Design

3.3.1 Classification of minoritized students

Hong Kong's minoritized students are classified as a group of students who belong to different ethnic groups which form 8% of Hong Kong's population. Ethnic minorities are referred as persons of non-Chinese ethnicity in Hong Kong *Population Census and By-census* (CSD, 2016, p.3). They usually come from the ethnic groups with wide range of cultural backgrounds including Indian, Pakistan, and Nepalese.

3.3.2 Target population

The target population was minoritized students studying in Form 1 to Form 6 in the secondary schools in Hong Kong.

3.3.3 Survey instrument

A set of measurement items and scales for the variables of online participation, civic engagement and identity of minoritized students was developed in both Chinese and English. The questionnaire can be found in **Appendix 1**. The following hypotheses were developed for the study:

H1: Minoritized students' self-perception/civic awareness of online participation is *assumed to mediate* the relationship between civic engagement and identity.

H2: Minoritized students' civic activism of online participation is *assumed to moderate* the relation between (i) civic engagement and identity, and (ii) self-perception/civic awareness of online participation and civic engagement.

H3: Minoritized students' civic activism of online participation is *assumed to moderate* the *"mediated"* relationship between self-perception/civic awareness of online participation, civic identity and engagement.

H4: Minoritized students' socio-demographic background is *assumed to moderate* the *"mediated"* relationship between self-perception/civic awareness of online participation, civic identity and engagement.

The hypotheses are used to describe generally the positive mediation, moderation, and moderated mediation relationship between the variables of online participation, civic

engagement and identity. The latent factors will be extracted by factor analysis in this chapter and its directional mechanisms of mediation and moderation relationships will be explained and tested in the next chapter of data analysis.

3.3.4 Measures

The measurement scales were identified from the literature review to assess the variables of online participation, civic engagement and identity. The questions were adapted for the Hong Kong's context. Five-point Likert scales (1 to 5) were used as response categories: "strongly agree," "agree," "neutral," "disagree," and "strongly disagree". The measurement scales were examined to assess any association between them (**Appendix 1**). A pilot test (n = 36) was conducted to test the wordings of individual question and reliability of the scales (Chan, Law, & Kennedy, 2017). The tested questionnaire was distributed for data collection in the main survey of participating secondary schools (**Appendix 2**).

There were 43 items for scale development and three possible scales including online participation (OP), civic engagement (CE) and identity (CI), and these might be grouped into different dimensions. The first scale was adapted from Choi (2015) and Kara (2018). There were eight items including questions asking participants whether (a) they were more informed [v11], (b) they were aware of civic issues [v15], (c) they were refreshed for their beliefs of special civic issue through the Internet [v23], (d) online participation is functional way for

engaging in civic matters [v3], (e) online participation promotes offline civic engagement [v13], (f) they felt more civically engaged while going online [v19], (g) online participation was effective way to make a difference [v8], and (h) could enhance democracy [v40].

The second scale was adapted from Choi (2015), and Choi et al., (2017) and operationalized by items such as (a) using the Internet to join in protest or social movement [v24], (b) express their opinions about civic issues online [v29], and (c) discuss civic issues in social networking apps/sites [v37]. This scale was categorized as "OP2 Civic activism of online participation".

The third scale was assessed by adopting the Internet self-efficacy scale (Kim & Glassman, 2013; Choi, 2015). It was referred as respondents' perception of their abilities to perform online participation successfully. There were seven items in two sub-scales and respondents were asked whether they (a) used the Internet to look for information [v1], (b) used the Internet to search/download useful apps [v6], (c) were effective using social network apps/sites like Snapchat QQ, Wechat, Whatsapp, Twitter, or Facebook to connect and communicate with others [v5], (d) spot videos/audio/pictures/messages to express opinions/ideas/ thoughts/ feelings online [v35], (e) like online communication with other people [v14], (f) prefer collaboration with other people online rather than offline [v26], (g) agree the freedom of using Internet and social networks should be supported in schools [v34]. The first and third scales were merged to be a scale of "OP1: Civic Awareness and

Self-perception of Online Participation".

In order to address the relationship between identity and online participation, the scales were adapted from the 2009 and 2016 International Civic and Citizenship Education Study (ICCS) (Schulz, Ainley, Fraillon, Kerr, & Losito, 2010; Schulz, Ainley, Fraillon, Losito & Agrusti, 2016) and adapted for the current study. Items adapted from Schulz *et al.,* (2010) and Schulz *et al.,* (2016) were used to capture respondents' perception of Hong Kong and its people.

There were seven items in the first scale and its operationalization was assessed by items asking respondents whether they (a) love Hong Kong [v4], (b) have respect for Hong Kong [v10], and (c) feel proud to live in Hong Kong [v18], (d) think Hong Kong people appreciate environmental protection [v25], (e) think Hong Kong is a better city to live in than most other cities [v30], (f) are second citizen in Hong Kong and first citizen of their local region [v38], and (g) are possessing connection to their local region rather than Hong Kong [v42].

There were seven other items in the second scale adapted from Schulz *et al.,* (2010) and Schulz *et al.,* (2016). Its operationalization was measured by items asking respondents whether they think Hong Kong people are (a) not selfish [v7], (b) the finest in the world [v27], (c) not very patriotic [v32], and (d) more cohesive than people of other countries [v39]. Moreover, they were also asked whether they have (e) a favorable impression on Hong Kong people [v12]. The first and second scales were combined to be a scale of "CI: Identification

and Perception toward Hong Kong and its people" that was used to measure the respondents' identity.

The scales of civic engagement were also adapted from Schulz *et al.,* (2010) and Schulz *et al.,* (2016). Operationalization of the first scale was measured by items asking participants whether they involved in (a) youth alliance associated with a political group [v9], (b) environmental organization [v17], (c) voluntary association to support the society [v21], (d) artistic affiliation in accordance with ethnicity [v31], (e) religious organization or group [v36], and (f) concern group advocating for a matter [v41].

Operationalization of the second scale was assessed by items asking participants whether they took part in (a) drama or music events during other learning session [v2], (b) school's debate activities [v16], (d) making decision how to direct a school [v28], (e) students' dialogue in the gathering [v33], (c) nominating for school parliament or class representative [v22], and (f) becoming representative candidate of class or school congress [v43]. The first and second scale were combined to be a scale of "CE: Civic engagement in the community and school".

3.3.5 Item Analysis

The reliability of scales was calculated for item reduction (**Table 3.1**). The internal consistency of the scales was verified by the reliability coefficients that were all above the cut-off criterion (Cronbach's $\alpha > .70$) indicating the internal consistency of the scales (Hair et al., 2010; Nunnally & Bernstein, 1994).

In addition, the squared multiple correlations of each tested item indicated that 34 out of 43 items were larger than 0.300, 6 out of 43 items ranged from 0.200 to .299 and 2 of 43 ranged from 0.100 to 0.199. The smallest squared multiple correlation was 0.079 from the test item 20 that was less than the cutoff point 0.100. Therefore, item 2, 20 and 35 would be considered as outliners (Tabachnick & Fidell, 1996). On the other hand, the scale's reliability test results showed that the Cronbach's α increased if item 38 and 42 were deleted. This suggested that item 2, 20, 35, 38 and 42 should be taken into consideration for the subsequent factor analysis.

Table 3.1

Results of Item Analysis

Dimension	Item	Mean	SD	Cronbach's α if Item Deleted	Squared Multiple Correlation
OP1	1	4.299	0.837	.853	.257
(α = .854)	3	3.207	0.952	.844	.336
	5	3.976	0.941	.846	.302
	6	4.196	0.788	.849	.357
	8	3.318	0.851	.843	.394
	11	3.383	0.884	.843	.422
	13	3.149	0.830	.844	.380
	14	3.908	1.053	.840	.398
	15	3.457	0.918	.840	.449
	19	3.280	0.982	.837	.496
	20	2.804	1.119	**.865**	**.079**
	23	3.288	0.936	.838	.496
	26	3.266	1.052	.846	.360
	34	3.851	0.975	.848	.251
	35	3.329	1.116	**.853**	**.159**

	40	3.383	0.878	.845	.312
OP2	24	2.990	1.119	.750	.374
(α = .795)	29	2.921	1.100	.700	.436
	37	2.971	1.031	.713	.424
CI1	4	3.836	0.978	.833	.516
(α = .846)	7	3.153	0.977	.834	.337
	10	3.847	0.898	.826	.547
	12	3.367	0.823	.831	.444
	18	3.726	1.009	.828	.540
	25	3.343	1.062	.833	.332
	27	2.863	1.078	.828	.453
	30	3.463	1.028	.834	.382
	32	3.107	0.863	.841	.234
	38	3.230	1.108	**.847**	**.257**
	39	3.055	0.953	.829	.416
	42	3.282	1.048	**.852**	**.243**
CE	2	3.064	1.281	**.865**	**.177**
(α = .861)	9	2.614	1.127	.846	.392
	16	2.877	1.232	.855	.269
	17	2.949	1.112	.848	.375
	21	3.359	1.105	.848	.353
	22	3.349	1.098	.849	.387
	28	2.904	1.061	.847	.399
	31	3.158	0.978	.849	.386
	33	3.005	1.070	.845	.402
	36	3.228	1.150	.849	.347
	41	2.928	0.971	.847	.434
	43	3.153	1.160	.850	.350

Note: Reliability statistics, scale statistics and item-total statistics of dimensions are shown in ***Appendix 5****.*

3.3.6 Extraction of Factors

The discriminant and convergent validity (*i.e.* construct validity) of the dimensions were verified by factor analysis to assume that there are latent variables OP_1, OP_2, ...CE_m and

observed variables $X_1, X_2, \ldots X_p$ to generate the maximum correlations for observed variables X_i based on a linear equation of the latent variables together with residual error.

$$X_i = \lambda_{i1} OP_1 + \lambda_{i2} OP_2 + \cdots + \lambda_{im} CE_m + e_i \quad \text{(eq 3.1)}$$

where:

(i) $i = 1, 2, \ldots, p$

(ii) $\lambda_{i1}, \lambda_{i2}, \ldots, \lambda_{im}$ *are factor loadings in which* λ_{i1} *is the factor loading of* i^{th} *variable on the* 1^{st} *factor*

(iii) e_i *is residual error*

The factor loadings $\lambda_{i1}, \lambda_{i2}, \ldots, \lambda_{im}$ infer how much the observed variable has contributed to the latent variable. When the factor loading increases, the contribution of the observed variable to the latent variable also increases. Because the latent factors $OP_1, OP_2, \ldots, CE_m$ are assumed to be inter-correlated between itself when being extracted, there are zero partial correlations between any pairs of the observed variables $X_1, X_2, \ldots X_p$ that are conditionally independent given the value of $OP_1, OP_2, \ldots, CE_m$ (Joreskog & Sorbom, 1979).

By computing correlation matrix for the latent factors, the factor loadings $\lambda_{i1}, \lambda_{i2}, \ldots, \lambda_{im}$ are estimated to show what type of observed variables $X_1, X_2, \ldots, X_p$ to be loaded onto the corresponding latent factors $OP_1, OP_2, \ldots, CE_m$. Therefore, the seven-factor structure can be described by the equation in matrix notation (McDonald, 1985).

$$R = PCP' + U^2 \quad \text{(eq 3.2)}$$

where:

(i) ***R*** *is correlation matrix of observed variables* $(X_1, X_2, \ldots X_p)$

(ii) ***P*** *is pattern matrix (****P'*** *was the transpose)*

(iii) $\boldsymbol{C}$ *is factor matrix*
(iv) $\boldsymbol{U^2}$ *is unique variances*

Then, eq 2 can be further elaborated into the equation:

$$R_{m\times m} - U^2{}_{m\times m} = F_{m\times p}\, F'_{p\times m} \qquad \text{(eq 3.3)}$$

where:

(i) $\boldsymbol{R_{m\times m}}$ *is m by m correlation matrix of observed variables* $(X_1, X_2, \ldots X_p)$
(ii) $\boldsymbol{U^2_{m\times m}}$ *is m by m diagonal matrix of unique variances of each observed variable*
(iii) $\boldsymbol{F_{m\times p}}$ *is the factor loadings (*$\boldsymbol{F'_{p\times m}}$ *was the transpose)*

The eq 3 describes which observed variable $(X_1, X_2, \ldots X_p)$ is a linear combination of which latent factors $(OP_1, OP_2, \ldots CE_m)$. The principal axis factor analysis is conducted in sequential order for estimating factor solution by applying SPSS 25.0 and Mplus 8.3 for overall 43 items scale to check whether the observed variables loading together are adequately correlated to fulfill the criteria of validity and reliability. *Maximum likelihood estimation* is selected during the analysis to sustain consistency with the subsequent confirmatory factor analysis while determining the correlation between latent variables and unique variance among observed variables.

Moreover, *Promax* is chosen since it is the common technique of oblique rotation to extract factors by raising the power of loadings which results in high correlations between the latent factors and accomplishes simple factor structure. Scree plots and eigenvalues were also examined to assess the discriminant and convergent validity of the extracted components.

The results of factor analysis for the 43 items indicate that there may be *less than 7 factors* dividing among the latent variables of online participation (OP), civic engagement (CE) and identity (CI) correspondingly (**Figure 3.2**). Since the first *seven factors* have all extracted factors showing eigenvalues above 1 as shown in scree plot, it only accounts for more than half (53.116%) of the total variance (i.e. total eigenvalue / no. of variable = 22.838 / 43 = 0.531) that is arranged in descending order of **Table 3.2**. Therefore, discriminant and convergent validity (*i.e.,* construct validity) were tested using exploratory factor analysis for the underlying seven-factor latent constructs (Hair et al., 2010).

Figure 3.2

Overall Dimension's Plot of Scree

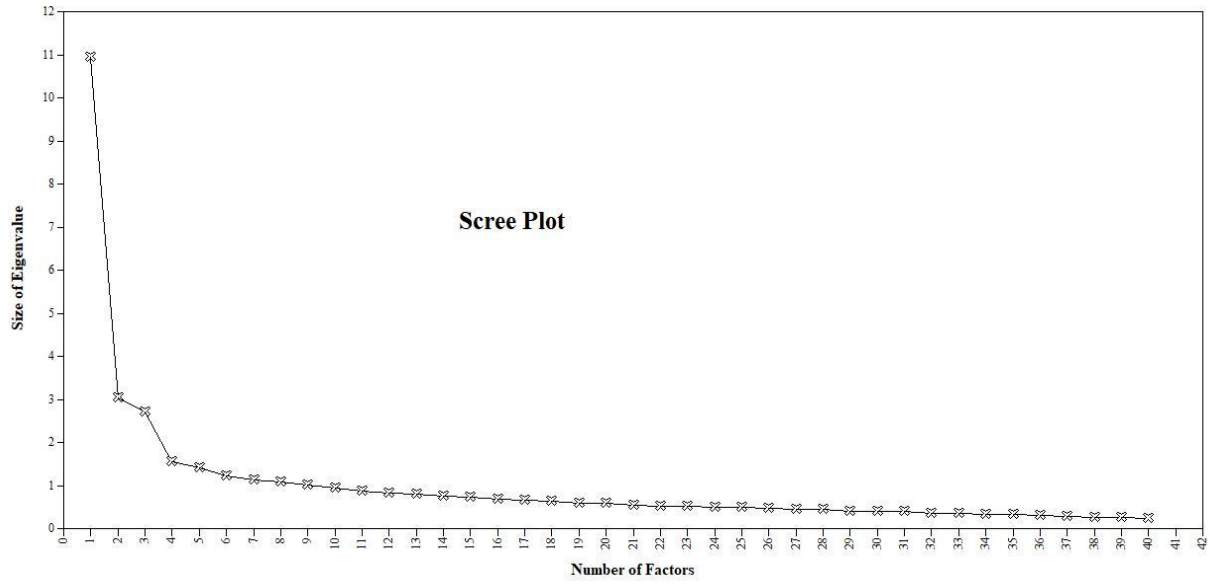


Table 3.2

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[(1)]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	11.146	25.922	25.922	7.340	17.071	17.071	8.228
2	3.350	7.791	33.713	5.418	12.600	29.671	6.339
3	2.841	6.608	40.321	1.842	4.283	33.954	6.078
4	1.581	3.678	43.999	1.899	4.417	38.371	5.965
5	1.364	3.172	47.171	1.093	2.542	40.913	3.538
6	1.306	3.037	50.208	.937	2.179	43.092	4.309
7	1.250	2.907	53.116	.746	1.735	44.827	2.018
8	1.153	2.681	55.796	.703	1.635	46.463	4.667
9	1.112	2.587	58.383	.730	1.698	48.160	5.809
10	1.086	2.526	60.910	.654	1.521	49.681	1.526
….	……	……..	…….				
….	……	……..	…….				
41	.237	.551	99.040				
42	.220	.511	99.551				
43	.193	.449	100.000				

Note: Extraction Method: Maximum Likelihood. (1) When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

3.3.7 Test of Dimensionality

Confirmatory factor analysis (CFA) was used to test for the fit of the structure of latent variables *OP, CI and CE* to data. Moreover, CFA also helped to diagnose the level of correlation between different latent factors by taking into account of measurement error. In CFA, the *maximum likelihood* (ML) estimation was applied in SPSS Amos 16.0 for predicting

the residual variation to meet the assumption of normality because ML corrects for non-normality of errors and heteroscedasticity (Nevitt & Hancock, 2001; Yuan & Bentler, 2000).

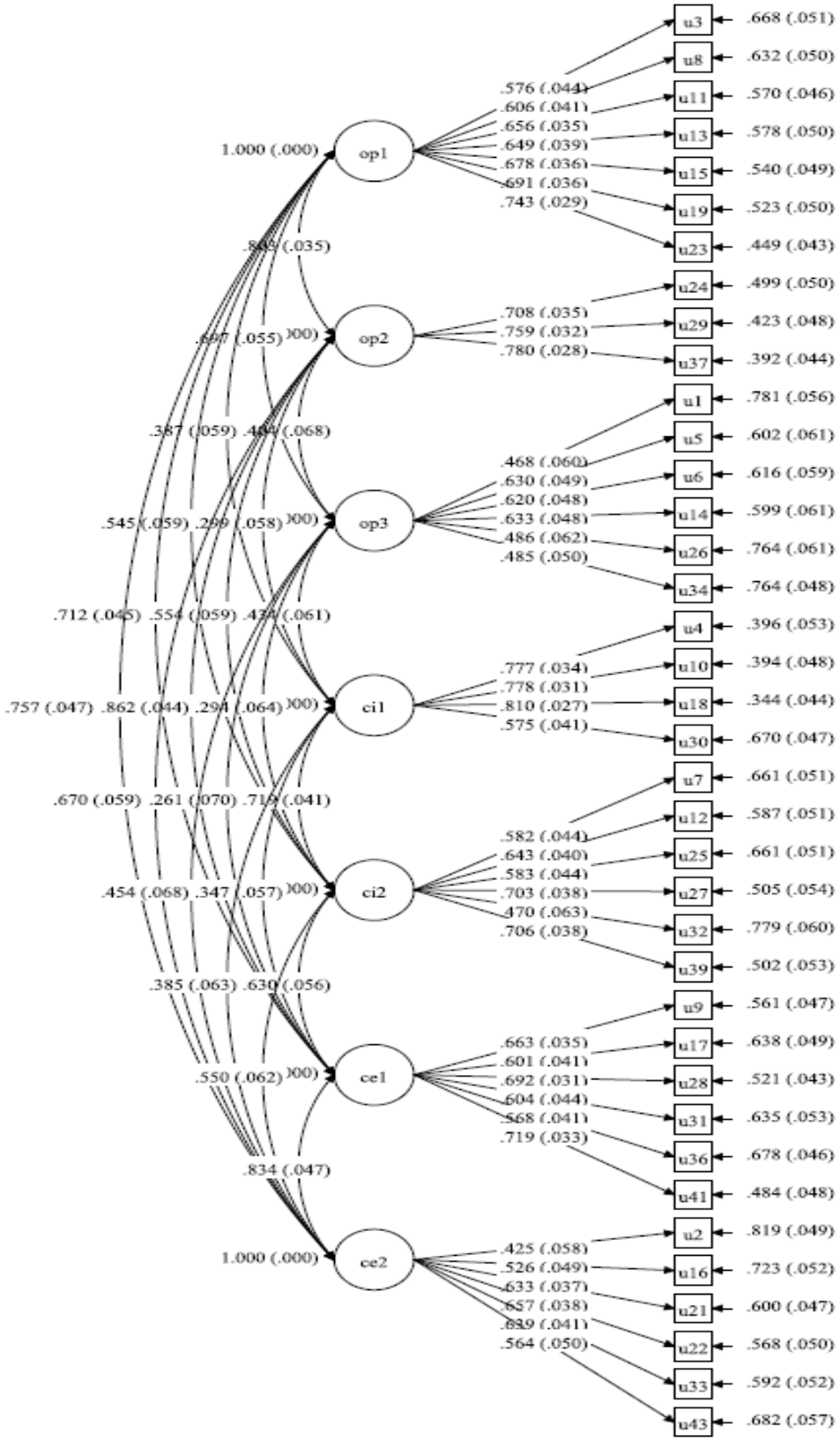
The measurement model was analyzed by CFA to investigate construct validity by testing the fit for whether the observed variables *u1, u2, ...u42, u43* behave as hypothesized in relation to the latent variables $OP_1,..,CI_1,..,CE_1$ and the degree of measurement error in each observed variable (**Figure 3.3**). At the same time, CFA permits a diagnosis of the level of correlation between different latent factors by taking measurement error into account, and attempt to reduce the number of observed variables into latent factors.

Figure 3.3 illustrates the fitted fundamental measurement model in which rectangles represent directly measured (*i.e.* observed) variables *u3, u8, ...u33, u43* and circles indicate latent (*i.e.* unobserved) variables $OP_1,..,CI_1,..,CE_1$ that are defined by observed variables. Theoretically, the fitted measurement model can be expressed as a system of equations with statistical notation indicated as follows:

$u3 = \lambda_1 OP_1 + \delta_1$
$u8 = \lambda_2 OP_1 + \delta_2$
...
$u4 = \lambda_{18} CI_1 + \varphi_1$
$u10 = \lambda_{19} CI_1 + \varphi_2$
...
$u33 = \lambda_{39} CE_1 + \varepsilon_2$
$u43 = \lambda_{40} CE_1 + \varepsilon_3$

Figure 3.3

The Fitted Measurement Model [χ^2 =1357.046, df = 681, p > 0.05; RMSEA = .049, CFI = 0.858, TLI = 0.846, SRMR = 0.064]



where:
(i) *u3, u8, ..., u4, u10, ..., u33, u43 are observed variables*
(ii) *OP_1, ..., CI_1, ..., CE_1 are latent variables*
(iii) *λ_1, λ_2,..., λ_{18}, λ_{19},...., λ_{39}, λ_{40} are factor loadings*
(iv) *δ_1, δ_2, ..., φ_1, φ_2, ..., ε_2, ε_3 are error terms*

As shown in above equations, the relationships between the observed variables *u3, u8, ...u33, u43* and latent variables OP_1,..,CI_1,..,CE_1, and the correlation between the latent variables can be estimated by CFA. In **Figure 3.3**, the arrows point to the observed variables *u3, u8, ...u33, ...u43* which are considered as dependent variables. Moreover, in order to identify the measurement model with latent and observed variables on the same statistical scale, the factor loadings for λ_1, λ_2,..., λ_{39}, λ_{40} and the error terms δ_1, δ_2 , ..., ε_2, ε_3 for the latent variable are set to 1. The fundamental model can be written in matrix form:

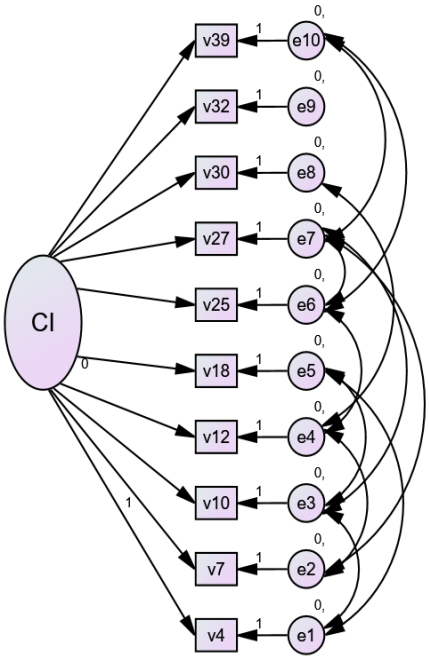
$\boldsymbol{x} = \boldsymbol{\Lambda_x}\, OP_1 + \boldsymbol{\delta}$
...
$\boldsymbol{y} = \boldsymbol{\Lambda_y}\, CI_1 + \boldsymbol{\varphi}$
...
$\boldsymbol{z} = \boldsymbol{\Lambda_z}\, CE_1 +$
...
where:
(i) *$\boldsymbol{x}$, ..., $\boldsymbol{z}$ is the matrix of observed variable*
(ii) *$\boldsymbol{\Lambda_x}$ ..., $\boldsymbol{\Lambda_z}$ is the matrix of factor loading of latent variable*
(iii) *$\boldsymbol{\delta}$, ..., $\boldsymbol{\varepsilon}$ is the matrix of error terms*

The CFA results showed that the seven-factor model assuming seven correlated latent variables, representing OP_1,..,CI_1,..,CE_1, had acceptable overall model fit statistic

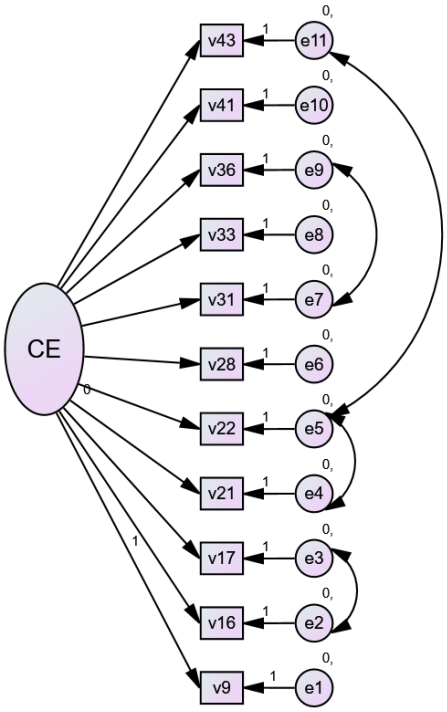
(χ^2 =1357.046, df = 681, p > 0.05) and parsimonious indices (RMSEA = .049, CFI = 0.858, TLI = 0.846, SRMR = 0.064). Standardized factor loadings in the seven-factor model ranged from .467 to .810 (all factor loadings are shown in **Figure 3.3**, and Mplus code is in **Appendix 8**). These results indicated that the measurement model needs to be modified through integrating the latent factors in order to improve its construct validity with satisfactory goodness-of-fit and parsimonious indices. Therefore, the seven-factor model was revised by merging the two latent factors of CI_1 and CI_2 to be one factor CI, two latent factors of CE_1 and CE_2 to be CE, and two latent factors of OP_1 and OP_2 to be OP. It was eventually turned out to be three-factor model assuming that each latent factor demonstrates a justifiable hypothetical structure (**Figure 3.4**).

Figure 3.4

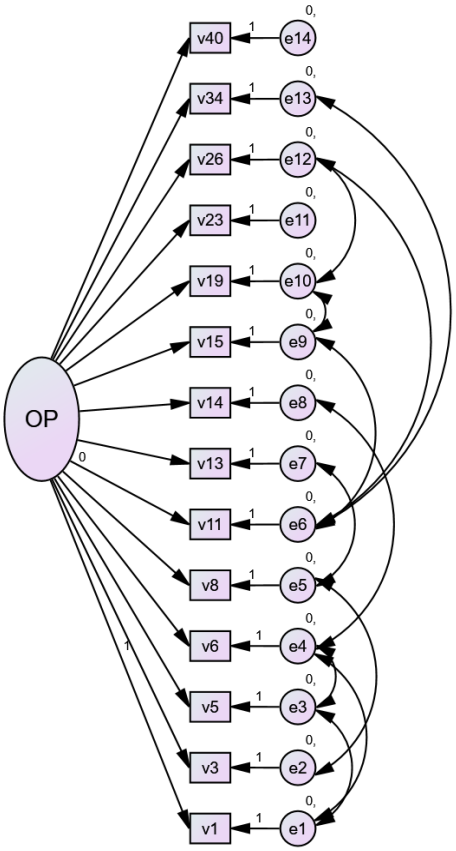
One-factor Confirmatory Factor Analysis



CFI = .983
TLI = .967
RMSEA = .049
AIC = 131.137
BIC = 133.279



CFI = .969
TLI = .958
RMSEA = .050
AIC = 157.585
BIC = 159.699



CFI = .962
TLI = .948
RMSEA = .048
AIC = 237.730
BIC = 241.543

The results of one-factor CFA addressed queries on the structure of latent factors and their underlying relationships. For the civic identity (CI) scale, the dimension consisted of "*Perception of Hong Kong, environment and ties"* including items "*v4, v10, v18, v30*", and "*Perception* of *Hong Kong people"* including items "*v7, v12, v25, v27, v32, v39*". For the civic engagement (CE) scale, the first dimension consisted of "*Civic engagement in the community*" including items "*v9, v17, v28, v31, v36, v41*", and "*Civic engagement at school*" including items "*v2, v16, v21, v22, v33, v43*".

For the items in the online participation (OP) scale, the dimension consisted of "*Civic awareness through online participation*" including items "*v3, v8, v11, v13, v15, v19, v23, v40"*, and "*Perceived self-efficacy of online participation*" including items "v1, v5, v6, v14, v26, v34". The items "v24, v29, v37" that were categorized as "*Civic activism of online participation*" was considered to be moderating variables.

3.4 Validation of data

The data was validated sequentially using tests of adequacy and reliability for the validation of the latent factors structure. Kaiser-Meyer-Olkin (KMO)[1] measure was used to assess

[1] Kaiser-Meyer-Olkin measure for variable x_j is given by $KMO_j = \frac{\sum_{i \neq j} r_{ij}^2}{\sum_{i \neq j} r_{ij}^2 + \sum_{i \neq j} u_{ij}^2}$ where the correlation matrix is r_{ij} and the partial covariance matrix is u_{ij} over all combinations and $i \neq j$.

adequacy of items scale of all variables in each dimension (**Appendix 5**). KMO is an estimate implicating the proportion of variance caused by latent factors. If the value of KMO is closed to 1.0, it implies factor analysis should be used to identify the factor structure. The results showed that all KMO measure of each dimension and overall variables were larger than 0.8 indicating the sample is sufficiently adequate for factor analysis (Kaiser, 1974; Kaiser & Rice, 1974).

Also, Bartlett's Test of Sphericity[2] was used, a statistic with Chi-square distribution to test the null hypothesis that the correlation between variables is an identity matrix. Thus, the rejection of the hypothesis indicates there is correlation between variables. The significant level of $\alpha < 0.05$ rejects the hypothesis and implies to use factor analysis for the identification of factor structure. Since the test result of all dimensions was significant at $\alpha < 0.05$, indicating the variables are appropriate for factor analysis (Kaiser, 1970).

Details are provided in **Table 3.3**. The summary of types of measures, dimensions and Cronbach's α are shown in **Table 3.4** to indicate the reliability of the item scales of all variables in each dimension. The detailed estimates of Cronbach's α such as item statistics and scale mean are indicated in **Appendix 6**.

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[2] Bartlett's Test statistic is $\chi^2 = \frac{(N-k)In(S_p^2) - \sum_{i=1}^{k}(n_i - i)In(S_i^2)}{1+\frac{1}{3(k-1)}\left(\sum_{i=1}^{k}(\frac{1}{n_i-1}) - \frac{1}{N-k}\right)}$ which has approximately χ^2_{k-1} distribution, where N is the mean of n_i and S_p^2 is the pooled estimate for the variance.

Table 3.3

Test for Sampling Adequacy

Dimensions	KMO[a]	Bartlett's Test[b]	Chi-square value
Online Participation (OP)	.900	.000	2263.742
Civic Identity (CI)	.864	.000	1515.828
Civic Engagement (CE)	.910	.000	1365.272
Overall	.898	.000	5375.990

Note: (a) The ideal value of KMO is above 0.8; (b) The test is significant at $\alpha < 0.05$

Table 3.4

Types of Measures and Domains

Measures	Dimensions	Cronbach's α
1. Online Participation (OP)	OP1: Civic awareness and self-perception of online participation (*v1, v3, v5, v6, v8, v11, v13, v14, v15, v19, v23, v26, v34, v40*)	0.866
	OP2: Civic activism of online participation (*v24, v29, v37*)	0.795
2. Civic Identity (CI)	CI: Perception of Hong Kong environment and peoples (*v4, v7, v10, v12, v18, v25, v27, v30, v32, v39*)	0.860
3. Civic Engagement (CE)	CE: Civic engagement in the community and school (*v9, v16, v27, v21, v22, v28, v31, v33, v36, v41, v43*)	0.867

3.5 Collection of data

3.5.1 Sampling

The purposeful sampling design was considered for the minoritized students as target population in accordance with the low proportion of ethnic minorities (EMs) in all districts of Hong Kong. Since the relative proportion of EMs among Hong Kong population has been 3.6% (*i.e.* 263,593 out of 7,336,585) in 2016 Population By-census by *excluding foreign domestic helpers (FDHs),* the proportion of EMs in different districts can be estimated by the base population of 7,336,585 to be distributed approximately at 1.10% in Hong Kong Island, 1.08% in Kowloon, and 1.41% in New Territories and Outlying Islands (C&SD, 2016, p136). The proportion of EMs population by district is presented in **Table 3.5(i)**.

Table 3.5(i)

Proportion[1] of Ethnic Minority Population by District (Excluding Foreign Domestic Helpers)

District	New Territories & Outlying Islands	Kowloon	Hong Kong Island
Population Proportion (%)	1.41	1.08	1.10

Note: Relative proportion of EMs excluding foreign domestic helpers among Hong Kong population is 3.6% since the population of EMs excluding foreign domestic helpers is 263,593 out of 7,336,585 total Hong Kong population. The proportion of EMs population by district excluding FDHs is estimated with the base population of 7,336,585. Source: C&SD, 2016, p136

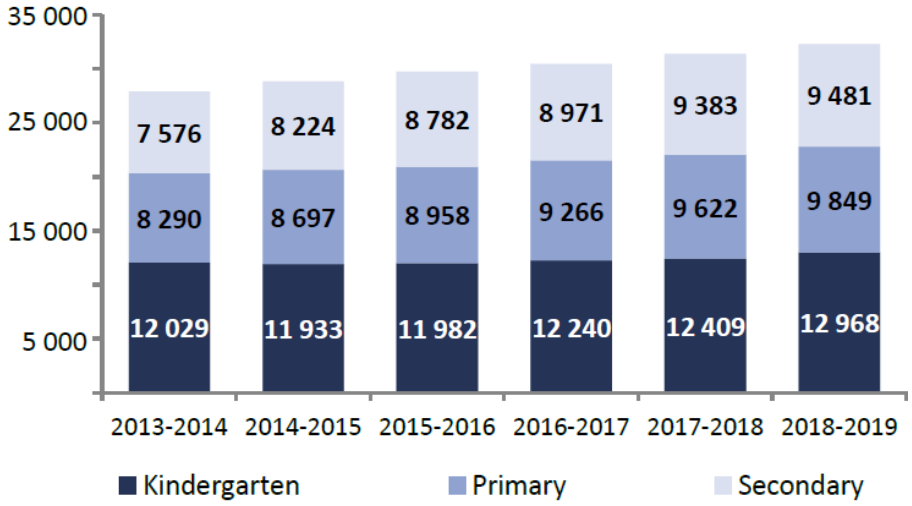
Since the proportion of EMs population is low, the proportion of minoritized students is also low. According to the Statistics Section of School Education of the Education Bureau (EDB,

2019), the number of minoritized students S1-S6 (i.e. Form 1-6) in the secondary school is 9481 (**Figure 3.5**), and the total number of student enrolment in the secondary schools (**Table 3.5(ii)**) is 167380+155727 = 323107. Thus, the proportion of minoritized students of S1-S6 (*i.e.,* Form 1-6) in the secondary schools is $\frac{9481}{167380+155727} \times 100\% = 2.93\%$, that is very low proportion.

Therefore, a purposeful sampling method was used to collect data from the secondary schools in which every minoritized student has an equal opportunity of being selected in order to ensure that there were sufficient number of minoritized students to be sampled for meaningful statistical analysis.

Figure 3.5

Number of Minoritized Students in Local Kindergartens, Primary and Secondary Schools



Notes: The figures of minoritized students in secondary schools include public sector schools and direct subsidy scheme schools, but not special schools.

Source: The Legislative Council Commission, HKSAR

Table 3.5(ii)

Number of Students Enrolment and Average Class Size in Local Secondary Schools

	School Year				
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**
Student Enrolment[(1)(2)]					
S1-S3	180153	170113	164955	164366	167380
S4-S6	190842	180286	170934	164090	155727
S7	2136	2210	2263	2348	2391
Total	373131	352 609	338 152	330804	325498
Average Class Size[(3)]					
S1-S6	29.8	28.7	28.1	27.6	27.3

Note: (1) Figures include statistics of local schools, the English Schools Foundation (ESF) schools and other private international schools. (2) The New Senior Secondary academic structure has been implemented fully in the 2011/12 school year. Upon implementation of the New Senior Secondary Academic Structure, there are no subsidised Secondary 7 places under local curriculum starting from the 2012/13 school year. (3) Figures exclude statistics of the English Schools Foundation (ESF) schools and other private international schools.

Sources: School Education Statistics Section, Education Bureau, HKSAR

Among eighteen districts in Hong Kong, nine districts were randomly selected including two districts in Hong Kong Island (1. Central and Western, 2. Eastern), three districts in Kowloon (3. Yau Tsim Mong, 4. Sham Shui Po, 5. Kwun Tong), and four districts in New Territories (6. Kwai Tsing, 7. Tuen Mun, 8. Yuen Long, 9. Outlying Islands). Either one or two secondary schools located in one of these nine districts were selected with reference to their characteristics of relatively higher proportion of minoritized students.

According to the 2018-2019 School Education Statistics of Education Bureau, there are approximately 28 students in a secondary school's class on average (**Table 3.5(ii)**). By assuming there is at least 1 class in each Form (*i.e.* Grade) within a secondary school, it

should be possible to recruit respondents who are minoritized students in the sampling schools although the proportion is very low.

A total of 13 schools were invited at the beginning to participate in the survey among the nine selected districts. The consent letters of the principals (**Appendix 3**) were sent to the invited schools for triggering the survey. Eventually, 5 schools agreed to take part in the survey. The distribution of the participating schools in different districts was shown in **Table 3.5(iii)**.

Table 3.5(iii)

Distribution of the Participating Schools in the Districts

Districts	**Outlying Island**	**New Territories**	**Kowloon**	**Hong Kong Island**
Number of Secondary School	1	1	1	2

As a result, the survey was conducted in 2018 for minoritized students as a target sample in the five participating schools. Since there were 3 to 4 classes in each Form of the participating schools and there were very limited number of minoritized students in each class that was estimated to be 28 × 2.93% = 0.82, the minoritized students of Form 1 to 6 (*i.e.* 7th-12th graders) were randomly selected from the sampled schools to complete the survey. The background of the sampled schools such as school type, student gender and religion were indicated in **Table 3.6**. Before the questionnaires were distributed, the letters of consent

(**Appendix 3**) were provided to the students and parents in order to allow them to agree or disagree to participate in research.

Table 3.6

Characteristics of the Secondary School Participating in the Survey

School Code	I	II	III	IV	V
School Type	DSS	DSS	DSS	Aided	DSS
Student Gender	Co-ed	Co-ed	Co-ed	Co-ed	Co-ed
Religion	N/A	Buddhism	N/A	Islam	N/A

Note: DSS: Direct Subsidized Scheme charges school fees; Aided: Government Aided Scheme relies on government funding; Co-ed: Co-educational admits both boy and girl students; N/A: Non-applicable

3.5.2 Sample size

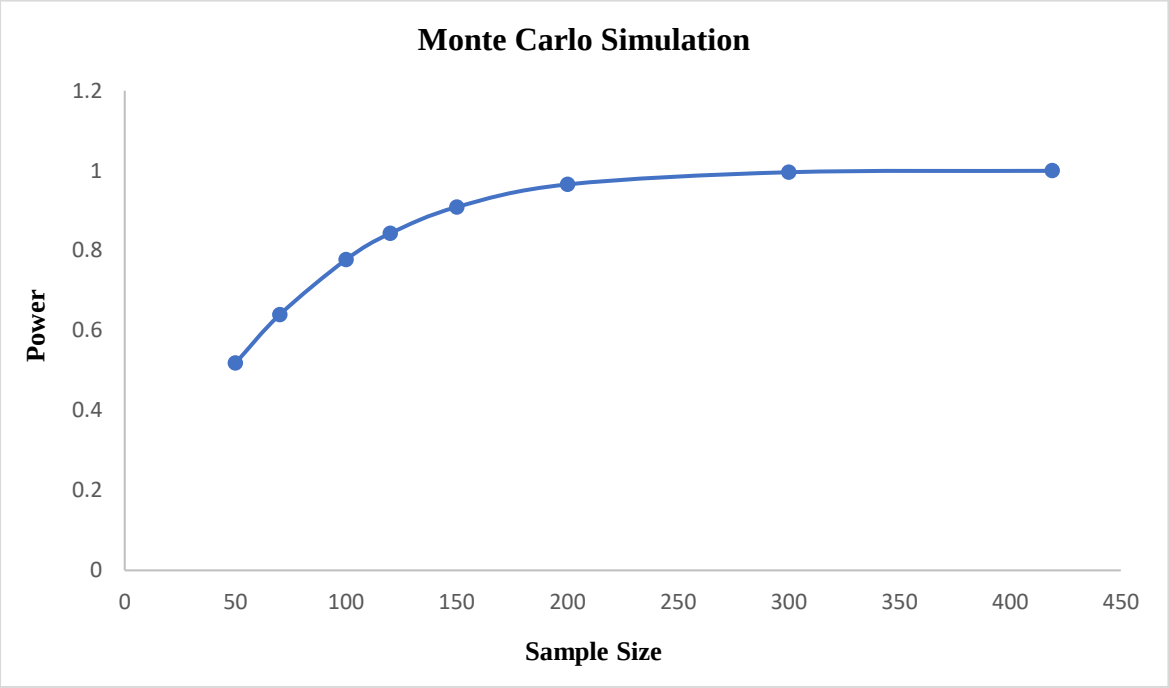
Sample size determination for SEM is complex because there is no agreement on what is the sufficient sample size which can be used in all conditions of SEM (Muthén and Muthén, 2002). The sample size required for building SEM depends on lots of factors relating to the tested model and data characteristics (Velicer and Fava, 1998), model complexity (Kline 1998), model estimators (Fan et al. 1999), multivariate normality (Anderson 1996), study design (Muthén and Muthén 2002), and missing data (Brown 1994).

Since Monta Carlo simulation (Muthén and Muthén 2002) has been increasingly used to conduct power analysis and estimate sample size for structural equation models, statistical power is estimated given a sample size and significance level (*i.e.,* $\alpha = 0.05$), and the sample

size needed to reach a certain power (i.*e.,* 0.80) is estimated as shown in **Figure 3.6**. According to the simulation results, the sample size of greater than 300 will provide sufficient statistical power for constructing SEM.

Figure 3.6

Power Analysis using Monta Carlo simulation to estimate sample size needed for structural equation models



A sample of 419 minoritized secondary students were collected in the survey. The distribution of the samples in the secondary schools was shown in **Table 3.7**. Although the sample size was small, it suggested adequate statistical power (Kyriazos, 2018, Fritz & Mackinnon, 2007). In addition, this sample size collected from five schools might provide a clustered structure with measurement nested in class levels as long as there was a mean of 3 or more students per class. This made it possible to make use of multilevel modelling.

Multilevel models need sufficient sample sizes because statistical power deepens with the total sample size for each level. It is usually desirable to have as many units as possible at the upper level of the multilevel hierarchy (Maas & Hox, 2005). Therefore, the statistical analysis and model building is strengthened by using multi-level model (Wolf, Harrington, Clark & Miller, 2013).

Table 3.7

Samples Size from Each Sampling Site

Participating Schools	**School Code**					**Total**
	I	**II**	**III**	**IV**	**V**	
Sample Size	83	99	35	149	53	419

3.5.3 Sample characteristics

The characteristics of the sample by the socio-demographic variables such as level of education, age, gender, and ethnicity are indicated in **Table 3.8(i)**. Not only the respondents' socio-demographic information, but also the identity and years of using Internet were collected to evaluate different backgrounds and digital divide of ethnic minority students. The frequency distribution of the background variables of "identity" asking whether participants identified themselves as 'Hongkonger', 'ethnic minority', 'Hong Kong ethnic minority', and "years of using Internet" (*i.e.,* "How many years have you been using Internet") were also calculated. These background characteristics were included as control variables.

Table 3.8(i)

Sample Characteristics

Categories	Frequency	Valid Percent	Mean	S.D.
School Background			0.590	0.492
0. Non-religious	171	40.8		
1. Religious	248	59.2		
Gender			0.450	0.498
0. Boy	229	54.9		
1. Girl	188	45.1		
Age Group			0.390	0.487
0. 11-15	236	61.5		
1. 16-20	148	38.5		
Level of Education			0.490	0.500
0. Form 1 to 3	214	51.1		
1. Form 4 to 6	205	48.9		
Ethnicity by Groups			0.390	0.489
0. Indian/Nepalese/Pakistani	255	60.9		
1. Filipino/Indonesian/ Other Asian/White/Mixed	164	39.1		
Identity			1.04	0.785
0. Ethnic Minority	104	28.7		
1. Hong Kong Ethnic Minority	139	38.4		
2. Hongkonger	119	32.9		
Years Using Internet			0.95	0.796
0. Below 5 years	141	34.1		
1. 5-10 years	151	36.6		
2. Over 10 years	121	29.3		

The students reported different ethnic minority backgrounds consisting of Indian/Nepalese/Pakistani (60.9%) and Filipino/Indonesian/Other Asian/White/Mixed (39.1%). Less than one-third of the participants identified themselves as ethnic minority (28.7%), more than one-third self-rated them as Hong Kong ethnic minority (38.4%) and the remaining one-third classified themselves as Hongkongers (32.9%). The further breakdown

proportion of specific ethnic group is indicated in **Table 3.8(ii).**

Table 3.8(ii)

Breakdown of Ethnic Groups

Categories	Frequency	Valid Percent	Mean	S.D.
Ethnicity			0.390	0.489
1. Indian	35	8.4		
2. Nepalese	23	5.5		
3. Pakistani	197	47.0		
4. Filipino	84	20.0		
5. Indonesian	5	1.2		
6. Japanese	4	1.0		
7. Thai	1	.2		
8. Other Asian	13	3.1		
9. White	19	4.5		
10. Others	27	6.4		

They also reported their years of using Internet in the timeframe of below 5 years (34.1%), 5-10 years (36.6%) and over 10 years (29.3). Since the data analysis did not include the local students that abandons the potential for comparison between local and minoritized students, it was the limitation for this study.

3.5.4 Data processing and checking

The collected questionnaires were processed by providing the school codes and questionnaire numbers before data entry. The data of each questionnaire was entered twice so as to allow cross-checking by matching the data from double entry. When there was error identified in the database after cross-checking, the problem questionnaire was searched according to the questionnaire number and the wrong data entry was corrected by data cleaning and re-entry.

For processing the missing data, the code of "99" was given when there was omitted data which was left blank by the respondents as *non-response*. Then, the code of "98" was given when there was *non-logical response* for which the response was dependent on a filtered question. If a filtered question was answered non-logically that the follow-up questions could not be applied, both of the responses to filtered question and follow-up questions were classified as non-logical. At last, the code of "97" was given when there were *multiple responses* to a question. All of the codes of "99", "98", "97" were classified as missing data that were further grouped and recoded into one single code "99". The detailed steps of data cleaning are shown on **Appendix 4**.

3.6 Statistical issues of parsimonious structural equation model (SEM)

There are many items for each factor in the SEM model resulting in too many variables for the model (Deng *et al*., 2018). This is a problem often encountered in the SEM. This challenge can be solved by fitting the SEM model with latent variables' estimated values computed by *plausible values* and *residual centering* procedures in order to make the SEM more parsimonious.

Firstly, plausible values (PVs) were estimated based on *Bayesian* approach and the imputed PVs of latent variables were used for further statistical data analysis (Asparouhov & Muthén, 2010). The plausible values (PVs) of latent variables were a set of generated values of factor

scores using multiple imputations as the measures in the SEM model (Mislevy, 1991; Asparouhov & Muthén, 2010).

Before undertaking statistical data analyses, Bayesian plausible values (PVs) were computed for the data to quantify any uncertainty arising from the interactions between latent variables that depend on the observed variables of online participation, civic engagement and identity. Five sets of plausible values (K=5) were imputed for each response. Therefore, the parameter will be estimated five times when all of the five set of plausible values are used (Asparouhov and Muthen, 2010).

In *MPlus*, PVs are estimated using the *Bayesian* approach[3] and the *Mplus* codes for the imputation of plausible values is illustrated in **Appendix 7** in which the data is further saved as "PV1, PV2, PV3, PV4, and PV5" and merged to be "PV.list". Based on the database "PV.list", subsequent analysis of moderated mediation of the socio-demographic and latent variables interactions are analyzed. Although the PVs estimate and standard errors are more reliable than those obtained by the Maximum Likelihood (ML) estimator, there is argument that PVs of latent variables may increase uncertainty and error in exchange for simplicity (Muthen & Asparouhov, 2012).

[3] Rubin (1987) indicated that plausible value data sets are analyzed as multiple imputation data by MCMC in which the imputation mean of statistic M is $\bar{M}_{IMP} = \frac{\sum_i^K M_i}{K}$ and the variance of statistics M is expressed as $\hat{V}_{IMP} = \frac{1}{K}\sum_i^K \hat{V}(M_{pvi}) + (1+\frac{1}{K})\left[\frac{1}{K-1}\left(\sum_i^K M_{pvi} - \bar{M}_{pv}\right)^2\right]$

For comparison, the *residual centering* (*i.e.*, orthogonalizing) procedures were also applied to avoid any statistical dependency between indicators of first-order effect variables and those of the latent product variable (Little et al., 2006). The application of *residual centering* was useful for modeling interaction between latent variables through eliminating multi-collinearity and controlling for covariation (Crandall et al., 2012). Its two-stage procedures are explained in **Appendix 7**.

3.7 Data analysis

The *correlation coefficient* between the dimensions was firstly analyzed to understand the relationship between the variables. Thereafter, *mediation*, *moderation*, and *moderated mediation* models were estimated for the latent variables and their interactions at the *single and multi-level* of analysis of the SEM in order to understand the complex relationship between online participation, civic engagement and identity.

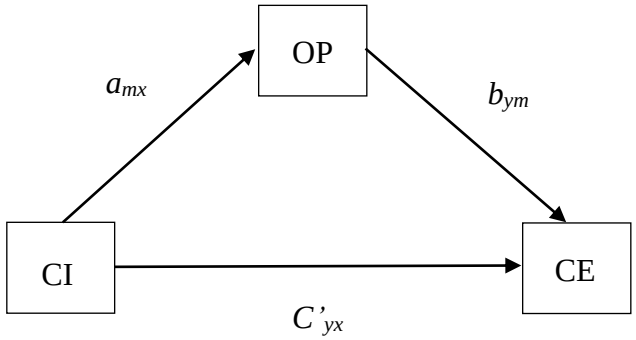
Mediation is the correlation between predictor and outcome variable could be explained by the effect of the mediator (Cohen *et al*., 2013). Moderation is the conditional interaction effect in which the outcome variable is affected by the predictor variable across different levels of the moderator (Cohen *et al*., 2013). The moderated mediation is the conditional indirect effect analysis and is applied to analyze the dependent variable that is affected by the predictor variable through the mediator differed by depending on the values of moderator (Hayes, 2013). The following subsection interprets the statistical derivation of these types of quantitative models by referring to the hypotheses for illustration.

3.7.1 Mediation

Mediation was referred to be the observed relation between predictor variable of "*Civic Identity (CI)*" and the outcome variable of "*Civic Engagement (CE)*" that could be explained by the effect of the mediator of "*Online Participation (OP)*" (Cohen et al., 2013). The mediation effect of *CI* on *CE* via *OP* is specified in **Figure 3.7**.

Figure 3.7

Pathway of mediation



For identifying the model's parameters, the following common notations were applied with regression coefficients to indicate the relationship. The subscripts a_{mx} is 1st path in a mediation relationship of *CI* and *OP*; b_{ym} is 2nd path in a mediation relationship of *OP* and *CE*; c'_{yx} is total effect of *CI* on *CE* by controlling for *OP*. The subscripts were also used to indicate the *CI*, *OP* and *CE* associated with regression coefficients. The mediation effect of *OP* on "*CI* and *CE"* was shown in equations as follows:

$$OP_i = V_m + a_{mx}CI_i + \varepsilon_{m,i} \quad \text{(eq 3.1)}$$

$$CE_i = V_y + b_{ym}OP_i + C'_{yx}CI_i + \varepsilon_{y,i} \quad \text{(eq 3.2)}$$

When eq 3.1 was substituted into eq 3.2, the indirect effect of *CI* was shown as below:

$$CE_i = V_y + b_{ym}\,(V_m + a_{mx}CI_i + \varepsilon_{m,i}) + C'_{yx}CI_i + \varepsilon_{y,i} \quad \text{(eq 3.3)}$$

Then, eq 3.3 was regrouped to follow the structure of regression equation:

$$CE_i = (V_y + b_{ym}\,V_m) + (a_{mx}\,b_{ym} + C'_{yx})CI_i + b_{ym}\,\varepsilon_{m,i} + \varepsilon_{y,i} \quad \text{(eq 3.4)}$$

where:

(i) $(V_y + b_{ym}\,V_m)$ - intercept

(ii) $(a_{mx}\,b_{ym} + C'_{yx})$ - total effect of CI_i

(iii) $a_{mx}\,b_{ym}$ - indirect effect of CI_i

(iv) c'_{yx} - direct effect of CI_i

(v) $b_{ym}\,\varepsilon_{m,i}$ - direct effect of OP_i

The statistical significance of $a_{mx}b_{ym}$ was examined to test for mediation effect (Baron & Kenny, 1986).

The multilevel approach to mediation was indicated as follows:

$$OP_{Bj} = V_{Bm} + a_{Bmx}\,CI_{Bj} + \varepsilon_{Bm,j}$$

$$CE_{Bj} = V_{By} + b_{Bym}\,OP_{Bj} + C'_{Byx}\,CI_{Bj} + \varepsilon_{By,j}$$

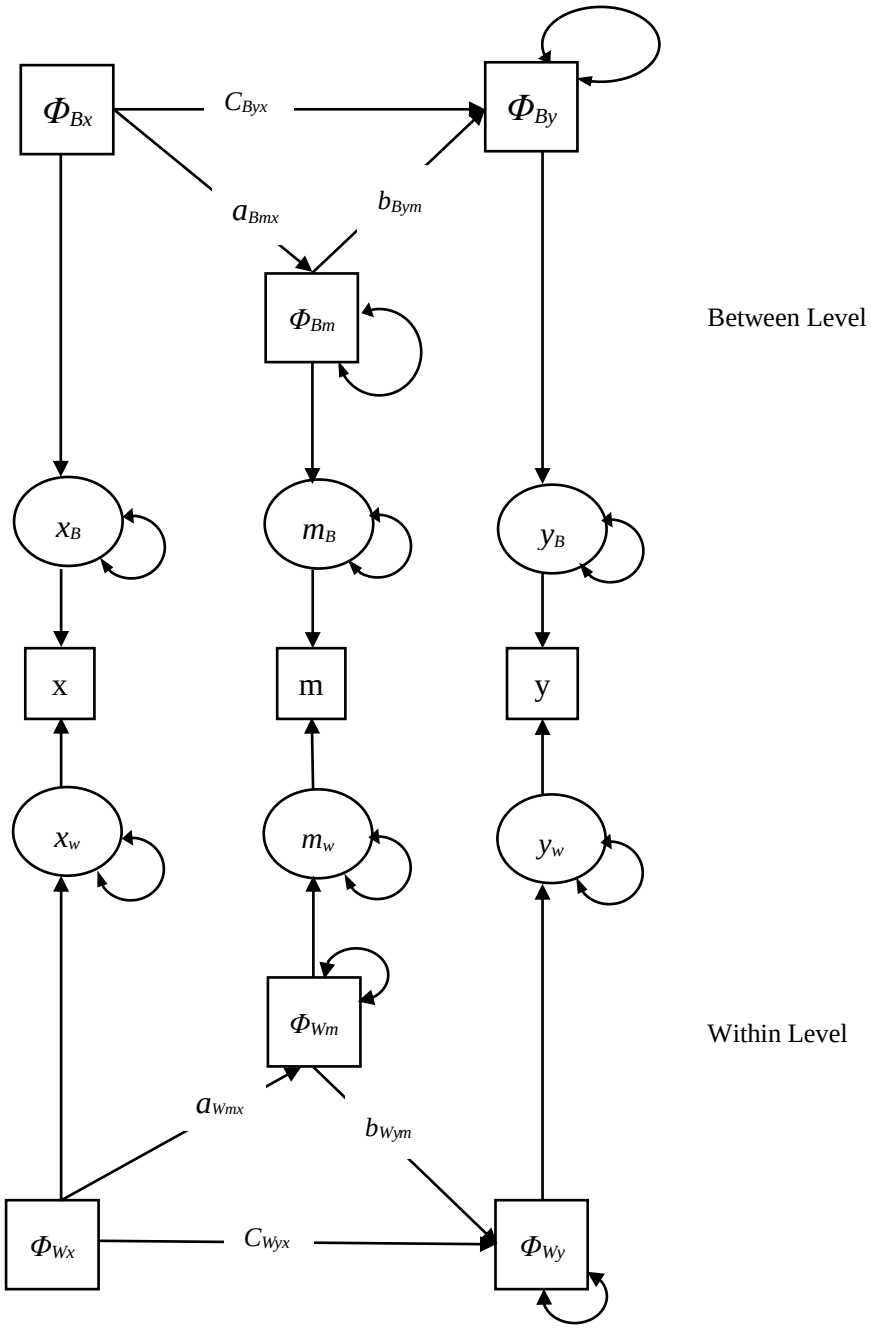
$$OP_{Wj} = a_{Wmx}\,CI_{Wij} + \varepsilon_{Wm,ij}$$

$$CE_{Wij} = b_{Wym}\,OP_{Wij} + C'_{Wyx}\,CI_{Wij} + \varepsilon_{Wy,ij}$$

where the B parts were referred as *group level* (i.e., classes) and the W parts were referred as *individual level* (i.e., students). The schematic diagram of multilevel mediation is shown in **Figure 3.8**. The logic of indirect effects was the same as the single-level mediation of which $a_{bmx}\,b_{Bym}$ was referred as the indirect effect between the class levels, and $a_{bmx}\,b_{Bym}$ was referred to as the indirect effect within the student levels.

Figure 3.8

Schematic diagram of multilevel mediation model



3.7.2 Moderation

Moderation measured the *conditional interaction effect*, of which the effect of the predictor variable "*Civic Identity (CI)*" on outcome variable "*Civic Engagement (CE)*" differed across the levels of the moderator of "*Ethnicity (W)"* (Cohen et al., 2013). The effect of moderation

was estimated by formulating product term of both predictor variables "*(CI)(W)"* (**Figure 3.9** and **3.10**).

Figure 3.9

Pathway of moderation

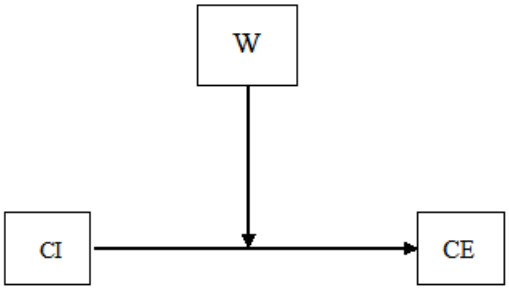
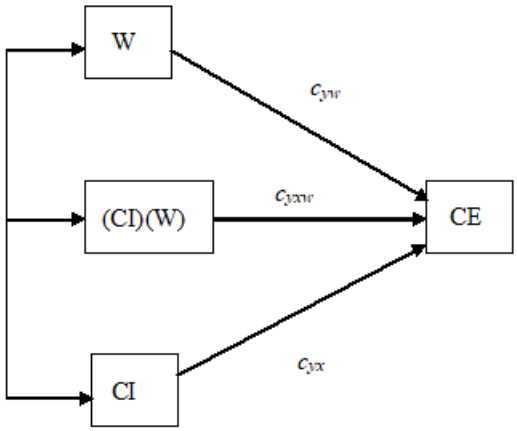


Figure 3.10

Pathway of moderation indicating covariances among predictors



The moderation effect of *"W"* on *"CI"* and *"CE"* was indicated in the following equations:

$$CE_i = V_y + C_{yx}CI_i + C_{yw}W_i + C_{yxw}CI_iW_i + \varepsilon_{y,i} \quad \text{(eq 3.5)}$$

where:

(i) i - individual student

(ii) V_y - intercept

(iii) C - regression coefficient

(iv) $\varepsilon_{y,i}$ - residual

The moderation effect was explained by re-ordering eq 3.5 to indicate *CI*'s effect on *CE* across different values of *W*:

$$CE_i = (V_y + C_{yw}W_i) + (C_{yx} + C_{yxw}W_i)\, CI_i + \varepsilon_{y,i} \qquad \text{(eq 3.6)}$$

where:

(i) $(V_y + C_{yw}W_i)$ - intercept that was the mean of CE_i when W_i had particular value

(ii) $(C_{yx} + C_{yxw}W_i)$ - slope of CI_i that was the expected value of CE_i when CI_i had specific value

The statistical significance of c_{yxw} was examined to test for moderation effect. If and only if $c_{yxw} \neq 0$, the coefficient on *CI* was detectably deviated from C_{yx} in eq 3.6.

The multilevel approach to moderation was shown as:

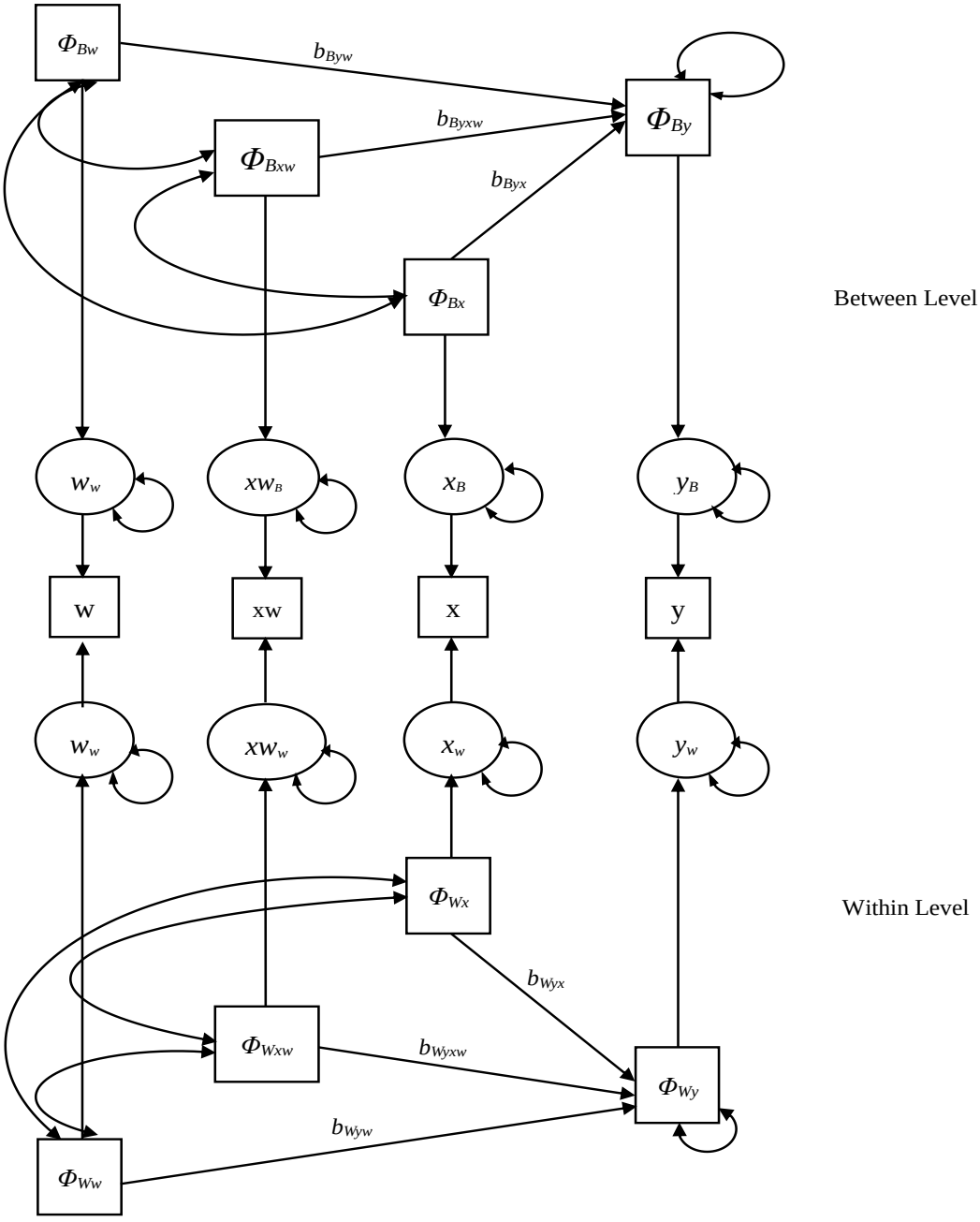
$$CE_{Bj} = V_{By} + C_{Byx}\, CI_{Bj} + C_{Byw}\, W_{Bj} + C_{Byxw}\, CI_{Bj}\, W_{Bj} + \varepsilon_{By,j}$$

$$CE_{Wij} = C_{Wyx}\, CI_{Wij} + C_{Wyw}\, W_{Wij} + C_{Wyxw}\, CI_{Wij}\, W_{Wij} + \varepsilon_{Wy,ij}$$

where the B parts represent *between class* effects and W parts represent *within class* effects. The y-intercept was in B part that was consistent with the single level mediation. The coefficients C_{Byx}, C_{Byw}, and C_{Byxw} were used to be inferences for class levels, and the coefficients C_{Wyx}, C_{Wyw} and C_{Wyxw} were used to be inferences for student levels that were nested within the class. Both C_{Byxw} and C_{Wyxw} were the interaction effects in the *between* and *within* levels respectively. The schematic diagram of multilevel mediation is shown in **Figure 3.11**.

Figure 3.11

Schematic diagram of multilevel moderation model



3.7.3 Moderated mediation

It measured *conditional indirect effect* that is the influence of the *Moderator (W)* such as *School Religious Background, Age, Gender, Educational Level, Ethnic Identity, Specific Ethnic Group* and *Years of Using Internet* on the mediated relationship between the independent variable "*Online Participation (OP)"* and outcome variable *"Civic Engagement (CE)"*. Thus, the effect of the mediator "*Civic Identity (CI)"* is moderated by the *Moderator (W)* and depends on the values of moderator (**Figure 3.12 and 3.13**) (Hayes, 2013).

Figure 3.12

Schematic diagram of moderated mediation at single level

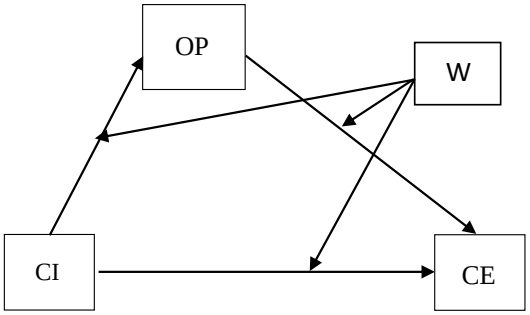
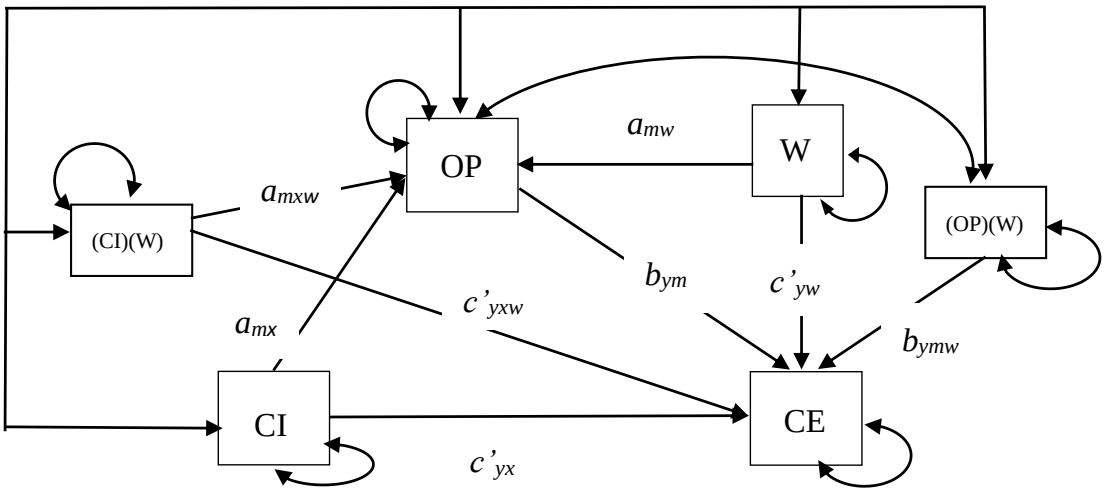


Figure 3.13

Schematic diagram of moderated mediation model at single level in which a is 1st indirect effect's path; b is 2nd indirect effect's path; c is direct effect's path



By eq 3.7, 3.8, and 3.9, the moderated mediation model was specified for the indirect effects of *CI* on *OP*, indirect effect of *OP* on *CE, and* direct effect of *CI* on *CE* moderated by W (Edwards & Lambert, 2007). By substitution, the effects of moderator W involving in the moderated mediation model were indicated as below:

$$OP_i = V_m + a_{mx} CI_i + a_{mw} W_i + a_{mxw} CI_i W_i + \varepsilon_{m,i} \quad \text{(eq 3.7)}$$

$$CE_i = V_y + b_{ym} OP_i + b_{ymw} OP_i W_i + C'_{yxw} OP_i W_i + C'_{yw} W_i + C'_{yx} CI_i + \varepsilon_{y,i} \quad \text{(eq 3.8)}$$

$$\begin{aligned} CE_i = {} & V_y + b_{ym} (V_m + a_{mx} CI_i + a_{mw} W_i + a_{mxw} CI_i W_i + \varepsilon_{m,i}) + \\ & b_{ymw} (V_m + a_{mx} CI_i + a_{mw} W_i + a_{mxw} CI_i W_i + \varepsilon_{m,i}) W_i + \\ & C'_{yx} CI_i + C'_{yw} W_i + C'_{yxw} CI_i W_i + \varepsilon_{y,i} \end{aligned} \quad \text{(eq 3.9)}$$

Eq 3.9 can be rearranged as follows:

$$\begin{aligned} CE_i = {} & V_y + b_{ym} V_m + a_{mx} b_{ym} CI_i + a_{mw} b_{ym} W_i + a_{mxw} b_{ym} CI_i W_i + b_{ym} \varepsilon_{m,i} + b_{ymw} V_m W_i + a_{mx} \\ & b_{ymw} CI_i W_i + a_{mw} b_{ymw} W_i W_i + a_{mxw} b_{ymw} CI_i W_i W_i + b_{ymw} \varepsilon_{m,i} W_i + C'_{yx} CI_i + C'_{yw} W_i + \\ & C'_{yxw} CI_i W_i + \varepsilon_{y,i} \end{aligned}$$

$$\begin{aligned} CE_i = {} & [V_y + b_{ym} V_m + \{ b_{ymw} V_m + a_{mw} b_{ym} + a_{mw} b_{ymw} W_i + C'_{yw} \} W_i] \\ & + [(a_{mx} + a_{mxw} W_i)(b_{ym} + b_{ymx} W_i) + (C'_{yx} + C'_{yxw} W_i)] CI_i \\ & + (b_{ym} + b_{ymw} W_i) \varepsilon_{m,i} + \varepsilon_{y,i} \end{aligned} \quad \text{(eq 3.10)}$$

where:

(i) $[V_y + b_{ym} V_m + \{b_{ymw} V_m + a_{mw} b_{ym} + a_{mw} b_{ymw} W_i + C'_{yw} \} W_i]$ - intercept of CE_i that consisted of direct and indirect effects of W_i

(ii) $[(a_{mx} + a_{mxw} W_i)(b_{ym} + b_{ymx} W_i) + (C'_{yx} + C'_{yxw} W_i)]$ - total effect of CI_i that consisted of indirect effect $(a_{mx} + a_{mxw} W_i)(b_{ym} + b_{ymx} W_i)$ and direct effect $(C'_{yx} + C'_{yxw} W_i)$

(iii) $(b_{ym} + b_{ymw} W_i)$ - direct effect of OP_i moderated by W_i

(iv) $\varepsilon_{y,i}$ - residual of CE_i

The *multilevel* approach to moderated mediation is indicated below:

Between level:

$$OP_{Bj} = V_{Bm} + a_{Bmx} CI_{Bj} + a_{Bmw} W_{Bj} + a_{Bmxw} W_{Bj} CI_{Bj} + \varepsilon_{Bm,j}$$

$$CE_{Bj} = V_{By} + b_{Bym} OP_{Bj} + b_{Bymw} W_{Bj} OP_{Bj} + C'_{Byx} CI_{Bj} + C'_{Byw} W_{Bj} + C'_{Byxw} W_{Bj} OP_{Bj} + \varepsilon_{By,j}$$

Within level:

$$OP_{wij} = a_{Wmx} CI_{Wij} + a_{Wmxw} W_{Wij} + a_{Wmxw} W_{Wij} CI_{Wij} + \varepsilon_{Wm,ij}$$

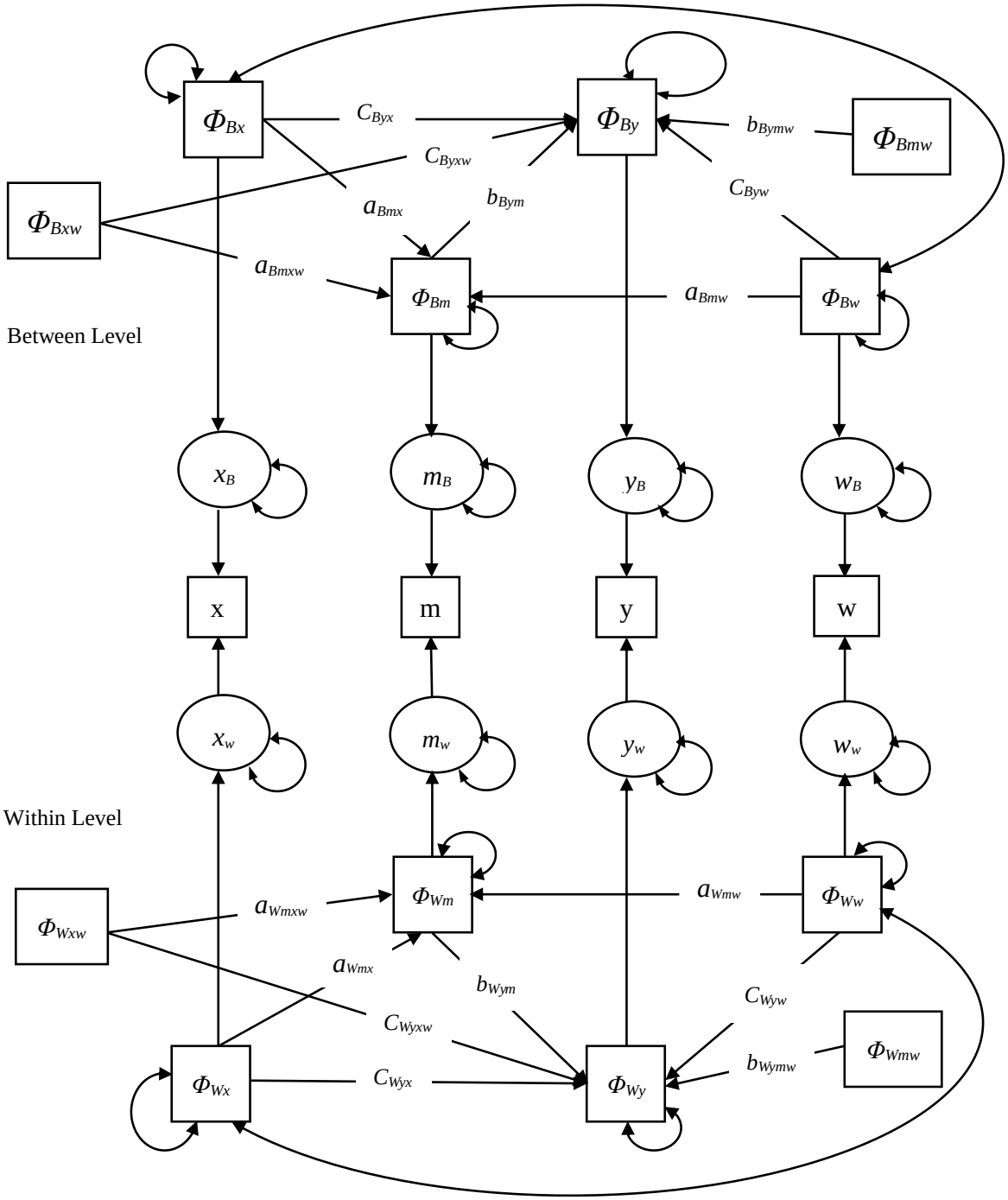
$$CE_{Bj} = b_{Wym} OP_{Wij} + b_{Wymw} W_{Wij} OP_{Wij} + C'_{Wyx} CI_{Wij} + C'_{Wyw} W_{Wij} + C'_{Wyxw} W_{Wij} OP_{Wij} + \varepsilon_{Wy,ij}$$

where B and W were classified as class level and student level respectively. Therefore, the logic of multilevel moderated mediation was the same as single level model. $C'_{Byx} + C'_{Byxw} W_{Bj}$ and $C'_{Wyx} + C'_{Wyxw} W_{Wij}$ were the *direct effects* on the group and individual levels respectively. $(a_{Bmx} + a_{Bmw} W_{Bj})$ $(b_{Bym} + b_{Bymw} W_{Bj})$ and $(a_{Wmx} + a_{Wmxw} W_{Wij})$ $(b_{Wym} + b_{Wymw} W_{Wij})$ were the *indirect effects* on the group and individual levels respectively.

The moderated mediation parameters were extended to the *multilevel* model that mirrors the single level with *group* and *individual* level. Since there were a limited number of minoritized students in each school, the student and class were considered as *within* and *between* level respectively where students were nested within classes. The schematic diagram of multilevel mediation is shown in **Figure 3.14**.

Figure 3.14

Schematic diagram of multilevel moderated mediation model



3.7.4 Model specification and estimation

The specification and formulation were aimed at explaining the moderated mediation models at *single level* that estimated the effects of being minoritized students in the schools. Because *moderator (W)* was a unique sociodemographic characteristic of a student whose identification of being minoritized student was regarded as the prevalent ethnic categorization in the schools. The moderated mediation model's specification for the effects of CI_i on CE_i through OP_i depending on the values of W_i can be explained in the following equations:

$$\boldsymbol{y_i} = \boldsymbol{v} + \wedge \boldsymbol{\eta_i} + \boldsymbol{\varepsilon_i} \quad \text{(eq 3.11)}$$

$$\boldsymbol{\eta_i} = \boldsymbol{\alpha} + \boldsymbol{B\eta_i} + \boldsymbol{\zeta_i} \quad \text{(eq 3.12)}$$

where:

$\boldsymbol{y_i}$ - vector of observed variables

$\boldsymbol{v}$ - vector of intercepts representing the data's mean structure

$\wedge$ - factor loading's matrix for indicating direction/magnitude of relationships between observed and latent variables

$\boldsymbol{\varepsilon_i}$ - residual's vector with covariance matrix Θ (i.e., estimated variances that was typically represented with unrestricted diagonal element)

$\boldsymbol{\eta_i}$ - latent variable's vector giving rise to the observed variable's covariance structure

$\boldsymbol{\alpha}$ - vector of intercepts which was restricted to zero and referred as a latent variable mean structure

$\boldsymbol{B}$ - matrix of regression coefficients for modeling the effects among latent variables

ζ_i - matrix of residuals with covariance matrix Ψ (i.e., variances that was typically represented with unrestricted diagonal elements)

In term of the latent interactions, the vector of latent variable $\boldsymbol{\eta_i}$ was used to shuffle the products of all latent and observed variables of OP_i, CE_i, and CI_i. W_i was understood as existing in $\boldsymbol{\eta_i}$ which was useful for reducing the complexity of the equations (Klein & Muthen, 2007). The result was that all of the effects of mediation, moderation, and moderated mediation in eq 3.11 and eq 3.12 were derived from components in $\boldsymbol{B}$. Therefore, eq 3.7, eq 3.8 and eq 3.9 were expressed as matrix pattern shown as below:

$$y_i = \begin{bmatrix} m_i \\ y_i \\ x_i \\ w_i \\ xw_i \\ mw_i \end{bmatrix} = v + \wedge \eta_i + \varepsilon_i = \begin{bmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \end{bmatrix} + \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} \eta_m \\ \eta_y \\ \eta_x \\ \eta_w \\ \eta_{xw} \\ \eta_{mw} \end{bmatrix} + \begin{bmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \end{bmatrix}$$

(eq. 3.13)

and

$$\eta_i = \begin{bmatrix} n_m \\ n_y \\ n_x \\ n_w \\ n_{xw} \\ n_{mw} \end{bmatrix} = \alpha + B\eta_i + \zeta_i$$

$$= \begin{bmatrix} v_m \\ v_y \\ \alpha_x \\ \alpha_w \\ \alpha_{xw} \\ \alpha_{mv} \end{bmatrix} + \begin{bmatrix} 0 & 0 & a_{mx} & a_{mw} & a_{mxw} & 0 \\ b_{ym} & 0 & c'_{yx} & c'_{yw} & c'_{yxw} & b_{ymw} \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix} \begin{bmatrix} \eta_m \\ \eta_y \\ \eta_x \\ \eta_w \\ \eta_{xw} \\ \eta_{mw} \end{bmatrix} + \begin{bmatrix} \varepsilon_{m,i} \\ \varepsilon_{y,i} \\ \zeta_{x,i} \\ \zeta_{w,i} \\ \zeta_{xw,i} \\ \zeta_{mw,i} \end{bmatrix}$$

(eq. 3.14)

To constrain the values of $\boldsymbol{v}$, $\wedge$, and $\boldsymbol{\varepsilon_i}$, eq 3.13 was used to formulate the terms in η_i to be the observed variables in y_i. In addition, the constraints to be arranged for η_i in eq. 3.14 were resulted in the variables belonging to predictors of the same outcome y_i. By reordering the variables in η_i, its matrix $\boldsymbol{\Omega}$ was expressed as below:

$$\Omega = \begin{bmatrix} \Omega_{m,m} & & & & & \\ 0 & \Omega_{x,y} & & & & \\ 0 & 0 & \Omega_{x,x} & & & \\ 0 & 0 & \Omega_{x,w} & \Omega_{w,w} & & \\ 0 & 0 & \Omega_{x,xw} & \Omega_{w,xw} & \Omega_{xw,xw} & \\ \Omega_{m,mw} & 0 & \Omega_{x,mw} & \Omega_{w,mw} & \Omega_{xw,mw} & \Omega_{mw,mw} \end{bmatrix}$$

(eq 3.15)

where:

(i) Off-diagonal elements - covariances/residual covariances

(ii) Diagonal elements - variances/residual variances

The moderated mediation that was modeled with the maximum likelihood estimation with chi-square test statistic would assume the observations with error terms that are independent and identically distributed. Therefore, *Bayesian* approaches providing the estimation for the error terms through construction of the *confidence intervals* for conditional direct and indirect effects were applied to fit the models (Muthen & Asparouhov, 2012; Muthen & Muthen, 2016). All of the data analysis was conducted using *Mplus 8.3* and *SPSS 25.0* software.

3.8 Ethical Review

The research was approved by the Human Research Ethics Committee of The Education University of Hong Kong. The survey was initiated by sending the letters of invitation and consent to the secondary schools which replied to indicate their willingness to participate in the research. The voluntary participation was emphasized in the letters. After the schools agreed in participation, the consent letter and information sheet were distributed to the parents and students respectively (**Appendix 3**).

The consent letters explained to parents and students that the information gathered in the research will be used for research purposes, and the collected data will be analyzed and reported in the thesis. The details of schools and students will be kept confidential and will not be disclosed to the public. Moreover, the information sheet introduced the research, listed the methodology including sampling, sample size and procedures, and described the potential benefit/risk and how the results will be disseminated for academic purposes in the future.

Chapter 4

Data Analysis and Results

The chapter analyzes the collected data in the survey for examining four research questions and hypotheses about the influences of online participation on the relationships between civic engagement and identity of minoritized students.

R1: How do minoritized students' civic awareness/self-perception of online participation relate to civic engagement and identity?

H1: Minoritized students' civic awareness/self-perception of online participation is *assumed to mediate* the relationship between civic engagement and identity.

R2: How do minoritized students' civic activism of online participation relate to civic awareness/self-perception of online participation, civic engagement and identity?

H2: Minoritized students' civic activism of online participation is *assumed to moderate* the relationship between (i) identity and civic engagement, and (ii) self-perception and civic awareness of online participation, and civic engagement.

R3: How do minoritized students' civic activism of online participation relate to the *"mediated"* relationship between civic awareness/self-perception of online participation, civic engagement and identity?

H3: Minoritized students' civic activism of online participation is *assumed to moderate* the *"mediated"* relationship between civic awareness/self-perception of online participation,

civic engagement and identity.

R4: How do minoritized students' socio-demographic background relate to the *"mediated"* relationship between civic awareness/self-perception of online participation, civic engagement and identity?

H4: Minoritized students' socio-demographic background is *assumed to moderate* the *"mediated"* relationship between civic awareness/self-perception of online participation, civic engagement and identity.

Specifically, this chapter will address the broad research issue regarding the reinforcement role of participation online for civic activities. Is it only a popular mediating channel for minoritized students who have already involved in civic activities with sense of belonging to Hong Kong or specific ethnic group? Or is it a reinforcer influencing civic participation? Results of the data analysis will be important in understanding the role of online participation in civic engagement and identity of a small group of minoritized students in this online social media era.

Section 4.1 estimate the descriptive statistics and correlation.

Section 4.2 test the first conceptual model and H1.

Section 4.3 test the second conceptual model and H2.

Section 4.4 test the third conceptual model and H3.

Section 4.5 test the fourth conceptual model and H4.

4.1 Descriptive Analysis

Descriptive statistics and bivariate correlations between all latent variables of online participation, civic engagement and identity are reported in **Table 4.1**. Mean and standard deviation (SD) reported for latent variables are estimated using "raw scale scores". The respondents reported slightly higher positive self-perception for online participation (*M = 3.915; SD = 0.612*) and perception of Hong Kong environment (*M = 3.710; SD = 0.797*).

Table 4.1

Descriptive Statistics and Correlations for Seven Latent Constructs

Latent Variables	Mean	SD	n	op1	op2	op3	ci1	ci2	ce1
Civic Awareness of OP (op1)	3.312	0.628	380	1					
Civic Activism of OP (op2)	2.961	0.913	407	.857***	1				
Self-perception of OP (op3)	3.915	0.612	401	.766***	.476***	1			
Perception of Hong Kong (ci1)	3.710	0.797	392	.431***	.355***	.467***	1		
Perception of Hong Kong People (ci2)	3.150	0.690	391	.595***	.618***	.335***	.794***	1	
Civic Engagement in Community (ce1)	2.971	0.767	399	.773***	.907***	.337***	.405***	.694***	1
Civic Engagement in School (ce2)	3.130	0.765	386	.802***	.759***	.501***	.396***	.599***	.881***

*Note: Mean, SD and correlation coefficient reported for latent variables are estimated using "Raw Scale Scores". Correlation between latent variables reported is Pearson correlation using PVs (n = 419); *p < 0.05, **p < 0.01 level, ***p < 0.001 level (2-tailed).*

The respondents also reported positively on civic awareness of online participation (*M = 3.312; SD = 0.628*), perception of Hong Kong people (*M = 3.150; SD = 0.690*), and civic engagement in school (M = 3.130; SD = 0.765). The civic activism of online participation (*M = 2.961; SD = 0.913*) and civic engagement in community (*M = 2.971; SD = 0.767*) were reported to be somewhere in between slightly disagree and slightly agree.

Correlation between latent variables reported is Pearson correlation using plausible values (PVs). Overall, all those dimensions were positively interrelated. Regarding online participation (OP) dimensions, civic awareness of OP was highly positive correlated to dimension of civic engagement in community ($r = 0.773, p < 0.001$), civic engagement in school ($r = 0.802, p < 0.001$), and perception of Hong Kong people ($r = 0.595, p < 0.001$).

In addition, civic activism of OP was also highly positive correlated to dimension of civic engagement in community ($r = 0.907, p < 0.001$), civic engagement in school ($r = 0.759, p < 0.001$), and perception of Hong Kong people ($r = 0.618, p < 0.001$). Regarding the relations between civic engagement and identity, correlations show that there was a slightly higher significant relation between perception of Hong Kong people and civic engagement in community ($r =0.694, p < 0.001$) and in school ($r = 0.599, p < 0.001$) This meant the correlations were higher for online participation and civic engagement.

After merging the seven constructs into three latent variables, the respondents reported slightly higher positive civic awareness and self-perception for online participation ($M = 3.554; SD = 0.518$). They also reported positively on perception of Hong Kong and people ($M = 3.376; SD = 0.649$). Their civic engagement in community and school ($M = 3.058; SD = 0.723$) were reported to be slightly disagree and slightly agree.

All of the dimensions were positively interrelated. Online participation dimension was positively correlated to dimension of civic engagement in community ($r = 0.536, p < 0.001$) and perception of Hong Kong people ($r = 0.439, p < 0.001$). There was also a significant relationship between perception of Hong Kong and people, and civic engagement in community and school ($r = 0.471, p < 0.001$) (See **Table 4.2**).

Table 4.2

Descriptive Statistics and Correlations for Three Latent Constructs

Latent Variables	Mean	SD	n	op	ci	ce
Civic Awareness and Self-Perception of OP (OP)	3.554	0.518	368	1		
Perception of Hong Kong and People (CI)	3.376	0.649	371	.439***	1	
Civic Engagement in Community and School (CE)	3.058	0.723	379	.536***	.471***	1

*Note: Mean, SD and correlation coefficient reported for latent variables are estimated using "Raw Scale Scores". Correlation between latent variables reported is Pearson correlation using PVs (n = 419); *p < 0.05, **p < 0.01 level, ***p < 0.001 level (2-tailed).*

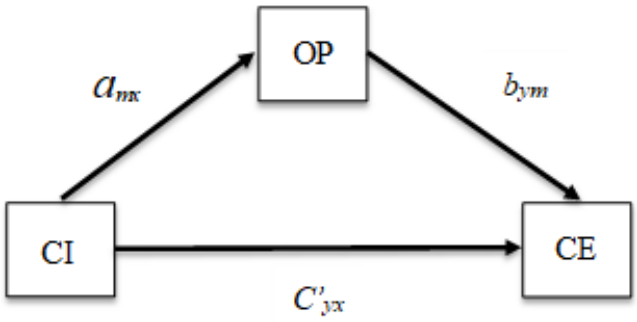
For testing hypothesis H1, H2 and H3, the *residual centering* procedures have been adopted to orthogonalize the data in order to eliminate multi-collinearity and control for covariation that is justified for modeling interaction between latent variables.

4.2 Hypothesis (H1): Test of the First Conceptual Model

In order to test the H1 hypothesis, the mediation SEM is the first structural model to be built for model selection. Using *Mplus* 8.3, there is a mediation model being fitted using a mediation pathway for each dimension *OP, CI, and CE* (**Figure 4.1**).

Figure 4.1

Mediation Model (OP is mediator between CI and CE)



Within the mediation model, a_{mx} is the 1st pathway existing among mediation relation between CI and OP, and b_{ym} is the 2nd pathway in a mediation relation of CE and OP. The product term of $a_{mx} \times b_{ym}$ is the indirect effect of CI on CE via OP, and c'_{yx} is direct effect of CI on CE without controlling for CE. The standardized regression coefficients of the fitted model are indicated in **Figure 4.2**.

The mediation model fit involves latent variables' interaction between predictor (CI) and mediator (OP). The robust maximum likelihood (MLR) is applied to correct for non-normality of errors and heteroscedasticity due to small sample size (Nevitt & Hancock, 2004; Yuan & Bentler, 2000). Actually, MLR parameter estimates are the same as *maximum likelihood* (ML) using bootstrap that influences only standard errors (SEs). The typical fit indices such as the χ^2 statistics, TLI, CFI and RMESA based on normal probability distribution theory are used for model evaluation such as for indirect effects and variances, particularly for this small sample size (n=419).

In addition, the Akaike Information Criterion (AIC)[4] and Bayesian Information Criterion (BIC)[5] are also evaluated for this mediation model with latent variable interaction (Akaike, 1974; Findley, 1991). As per the criteria of model evaluation, the smaller the AIC and BIC, the less information is lost by inclusion of the mediation term (Burnham & Anderson, 2002; Vandenberg & Grelle, 2009).

As shown in the **Figure 4.2**, this model is "Full mediation" in which the indirect effect $a_{mx}\, b_{ym}$ exists, but no direct effect c'_{yx} (Zhao *et al*., 2010). When the relationship is fully mediated, all of the significant variance of that relationship will be explained by the effect from mediator (OP1) to outcome variable (CE). Hence, the influence of predictor (CI) on outcome (CE) is adequately captured as an indirect influence through mediator (OP) (Loehlin, 1987).

Based on the results, H1 is supported by the "full mediation" model, and its results showed that minoritized students' "OP1: Self-perception and civic awareness of online participation" is significantly related to their "CE: Civic engagement in the school and community" (b_{ym} = *0.251, SE = 0.067, p < .001*), and in turn is positively influenced by their "CI: Perception and sense towards Hong Kong and people" (a_{mx} = *0.256, SE = 0.067, p < 0.001*).

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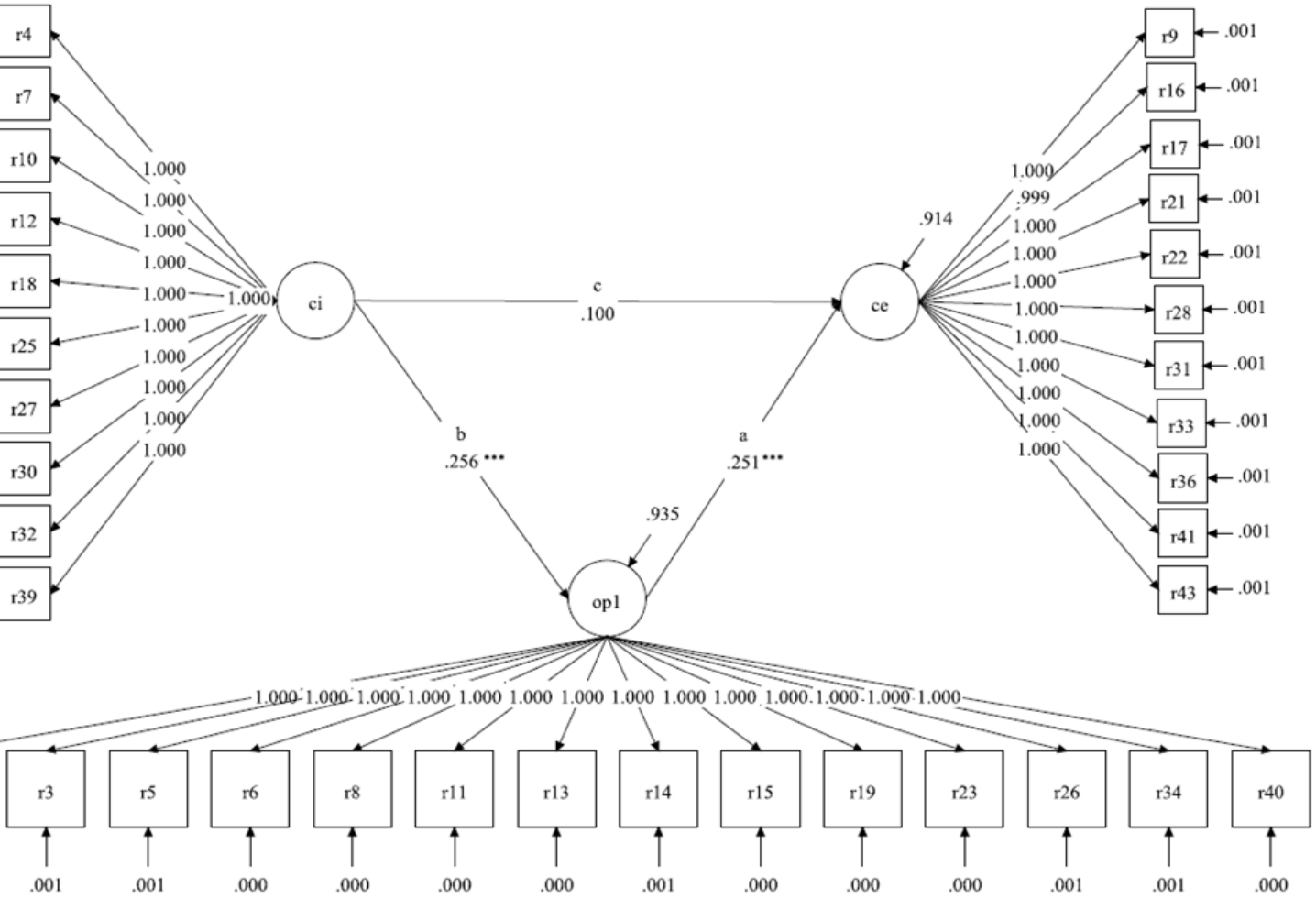
[4] *AIC = -2 ln f (y |θˆ) + 2k,* where "*2k*" is model complexity

[5] *BIC = -2 ln f (y |θˆ) + k ln(n)*, where "*k ln(n)*" is model complexity that is heavier penalty term to penalize the model than AIC.

2

n Model (OP1 is the mediator with highly significant indirect effects reinforcing the relationship between CI and CE)



CFI: 0

TLI: 0

RMSE

SRMR

AIC: 4

BIC: 4

R^2 = 0

*19; All the coefficients are standardized; *** p < .001, ** p < .01, * p < .05 (two-tailed)*

The significant indirect effect of CI on CE ($a_{mx}\, b_{ym} = 0.064,\ p < 0.001$) and non-significant direct effect ($C'_{yx} = 0.100,\ p > 0.05$) support H1 predicting that minoritized students' online participation (OP) is a mediator reinforcing a positive relationship between their civic engagement in school/community (CE) and their identity (CI).

Therefore, H1 is supported by the "Full mediation" model that the minoritized students' self-perception and civic awareness through online participation to look for information, search/download useful apps to connect and communicate with others, and to express opinions/ideas/ thoughts/ feelings online positively played a highly significant mediating role between their perception towards Hong Kong and its people, and their civic engagement in the community and in school. In summary, H1 confirms that the minoritized students' self-perception and civic awareness through online participation reinforces the relationship between their perception towards Hong Kong, identification of Hongkongers, and civic engagement in school and in community.

4.3 Hypothesis (H2): Test of the Second Conceptual Model

To understand the moderating effects of civic activism of online participation (OP2) on the relationship between self-perception/civic awareness of online participation, civic engagement in school/community and identity, moderation SEM models were built to test hypothesis H2. It hypothesizes that minoritized students' civic activism of online

participation (OP2) is *assumed to moderate* the relationship between self-perception/civic awareness of online participation, civic engagement and identity. There are *two* subsets of hypothesis:

H2(i): Minoritized students' civic activism of online participation is *assumed to moderate* the relation between civic engagement and identity.

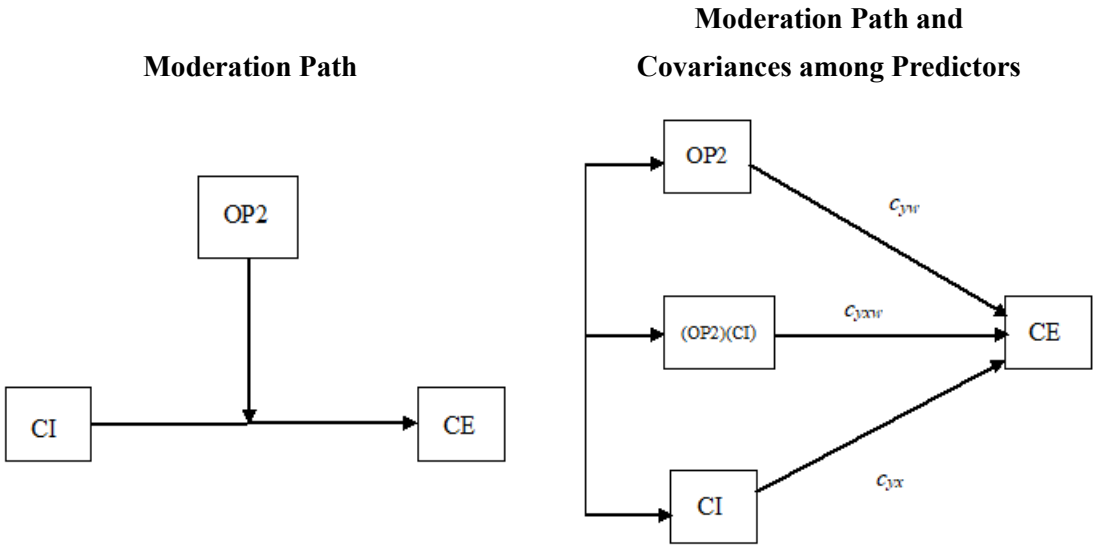
H2(ii): Minoritized students' civic activism of online participation is *assumed to moderate* the relation between civic awareness/self-perception of online participation and civic engagement.

Since moderator (OP2) changes the relationship between the outcome variable (CE) and predictor (CI), and between outcome variable (CE) and mediator (OP1), it influences the direction and strength of the relation between these variables. In the process of moderation, the predictor influences the outcome variable such that the effects of CI or OP1 on the CE are conditional and dependent on the values of moderator (OP2).

In this section, two types of moderation models have been formulated to test hypothesis H2(i), and H2(ii) by allowing civic activism of online participation (OP2) to moderate the relationships. Moderation models 1-2 are demonstrated in **Figure 4.3 and Figure 4.4** respectively.

Figure 4.3

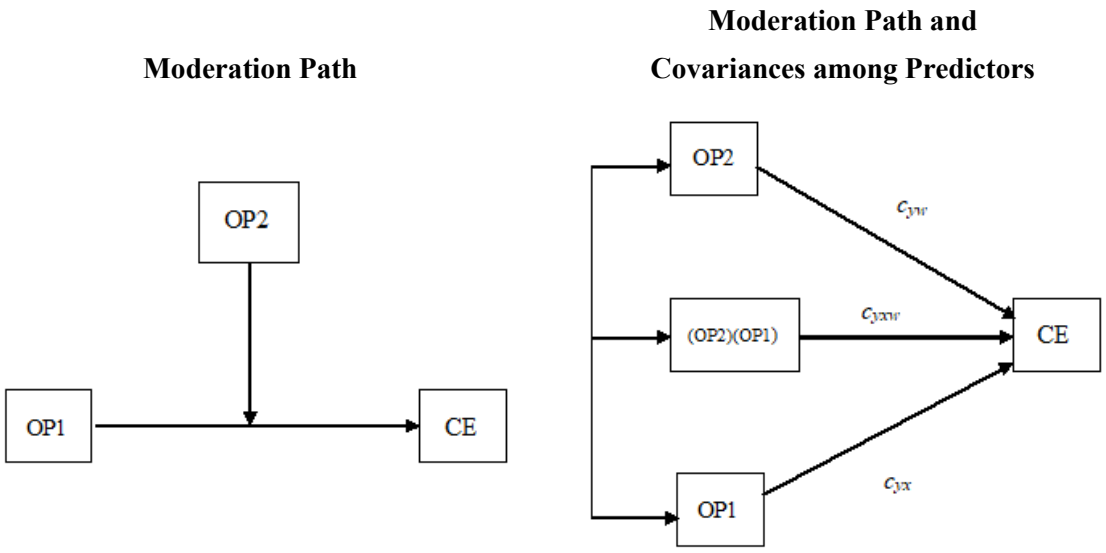
Moderation Model 1 (OP2 is moderator of the relationship between CI and CE)



C_{yw} is the effect of moderator "*OP2"* on *CE*; c_{yxw} is the effect of the interaction term "*OP2* × *CI"* on *CE*; c_{yx} is the effect of *CI* on *CE*.

Figure 4.4

Moderation Model 2 (OP2 is moderator of the relationship between OP1 and CE)



C_{yw} is the effect of moderator "*OP2"* on *CE*; c_{yxw} is the effect of the interaction term "*OP2* × *OP1"* on *CE*; c_{yx} is the effect of *OP1* on *CE*.

The statistical significance of c_{yxw} is examined to test for the moderation effect of "*OP2 × CI"* and "*OP2 × OP1" on CE* by computing the change in R-square[6](ΔR_Y^2) for the moderation model with interaction (Maslowsky *et al.*, 2015).

In accordance with the results of the moderated SEM models 1-2, hypothesis H2(i) and H2(ii) were confirmed by the significant partial R^2 (ΔR^2) suggesting an additional proportion of the variance of outcome variable being interpreted by the interaction term. Moderation models 1 indicated that additional 2.8% of the variance (ΔR^2) of "CE: Civic engagement in community and school" can be explained by the interaction effects between "OP2: civic activism of online participation" and "CI: identity" (c_{yxw} = *-.094, SE = .013, p < .001)* (**Figure 4.5**). This suggests that civic activism of online participation *negatively* moderated the relationship between civic engagement in school/community and identity. In view of this, H2(i) is confirmed.

Nevertheless, Moderation model 2 revealed that 7.7% of the variance (ΔR^2) of "CE: Civic engagement in community and school" can be explained by the interaction effects between "OP2: civic activism of online participation" and "OP1: self-perception/civic awareness of online participation" (c_{yxw} = *-0.075, SE = 0.013, p < .001*) (**Figure 4.6**). It is the evidence for

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[6] *Partial R-square is estimate by* $\Delta R_Y^2 = R_{Y1}^2 - R_{Y0}^2$, *in which* $R_{Y0}^2 = \frac{\beta_{YX1}^2\sigma_{x1}^2+\beta_{YX2}^2\sigma_{x2}^2+2\beta_{YX1}\beta_{YX2}}{\beta_{YX1}^2\sigma_{x1}^2+\beta_{YX2}^2\sigma_{x2}^2+2\beta_{YX1}\beta_{YX2}+\sigma_{Yres}^2}$ *and* $R_{Y1}^2 = \frac{\beta_{YX1}^2\sigma_{x1}^2+\beta_{YX2}^2\sigma_{x2}^2+2\beta_{YX1}\beta_{YX2}\left(\sigma_{x1}^2\sigma_{x2}^2+\left(\sigma_{x1x2}^2\right)^2\right)}{\beta_{YX1}^2\sigma_{x1}^2+\beta_{YX2}^2\sigma_{x2}^2+2\beta_{YX1}\beta_{YX2}+\beta_{x1x2}^2(\sigma_{x1}^2\sigma_{x2}^2+(\sigma_{x1x2}^2)^2)+\sigma_{Yres}^2}$, *where β are coefficients of first order effects;* σ_{x1}^2 *and* σ_{x2}^2 *are latent variable's variances;* σ_{x1x2}^2 *is latent variable's covariance;* σ_{Yres}^2 *is residual variance.* ΔR_Y^2 *estimate the portion of* R^2 *attributed by the interaction between variables (Klein, 2000).*

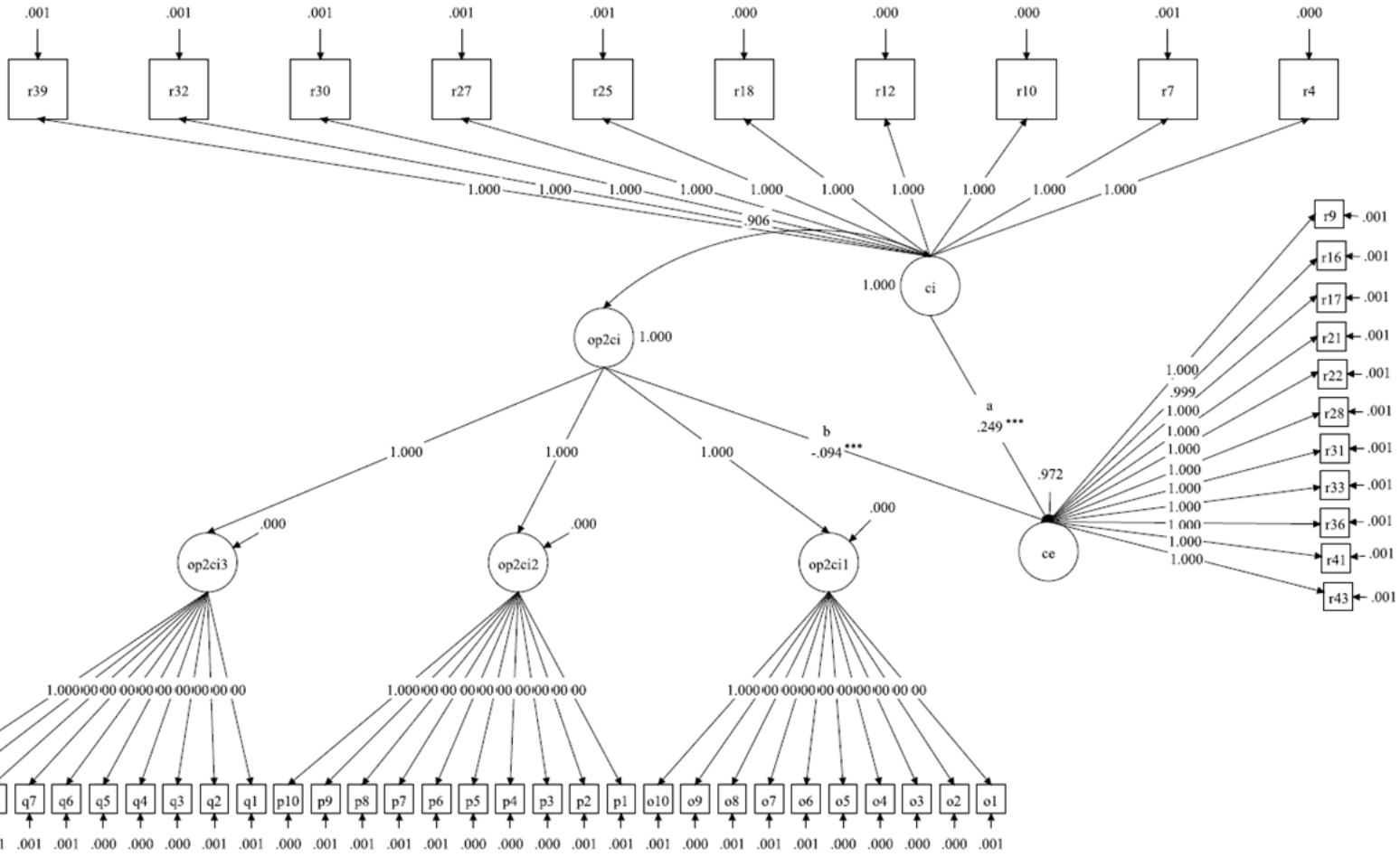
the *negative* conditional effects of civic activism of online participation on the relationship between self-perception/civic awareness of online participation and civic engagement in school/community. Therefore, the results show consistent support for H2(ii) moderating effects of civic activism of online participation on the relationship between (i) identity and civic engagement in school/community, and (ii) self-perception/civic awareness of online participation and civic engagement in school/community.

These relationships are found to be conditional upon civic activism of online participation while holding the effects of the *socio-demographic variables* constant. Minoritized students who use the Internet to join in protest or social movement, express their opinions about civic issues online, and discuss civic issues in social networking apps/sites are *less likely* to engage in civic activities in the community and in school.

To sum up, Hypothesis H2 is *strongly* supported by moderation models 1-2. There were consistent evidences that minoritized students' civic activism of online participation *negatively conditioned* the effects between identity and civic engagement, and between self-perception/civic awareness of online participation and civic engagement in school/community. Thus, this latent variable was chosen for further moderation analysis in order to inquire into its conditioning effect on the mediation pathway of the relationships between identity, self-perception/civic awareness of online participation and civic engagement in school/community.

5

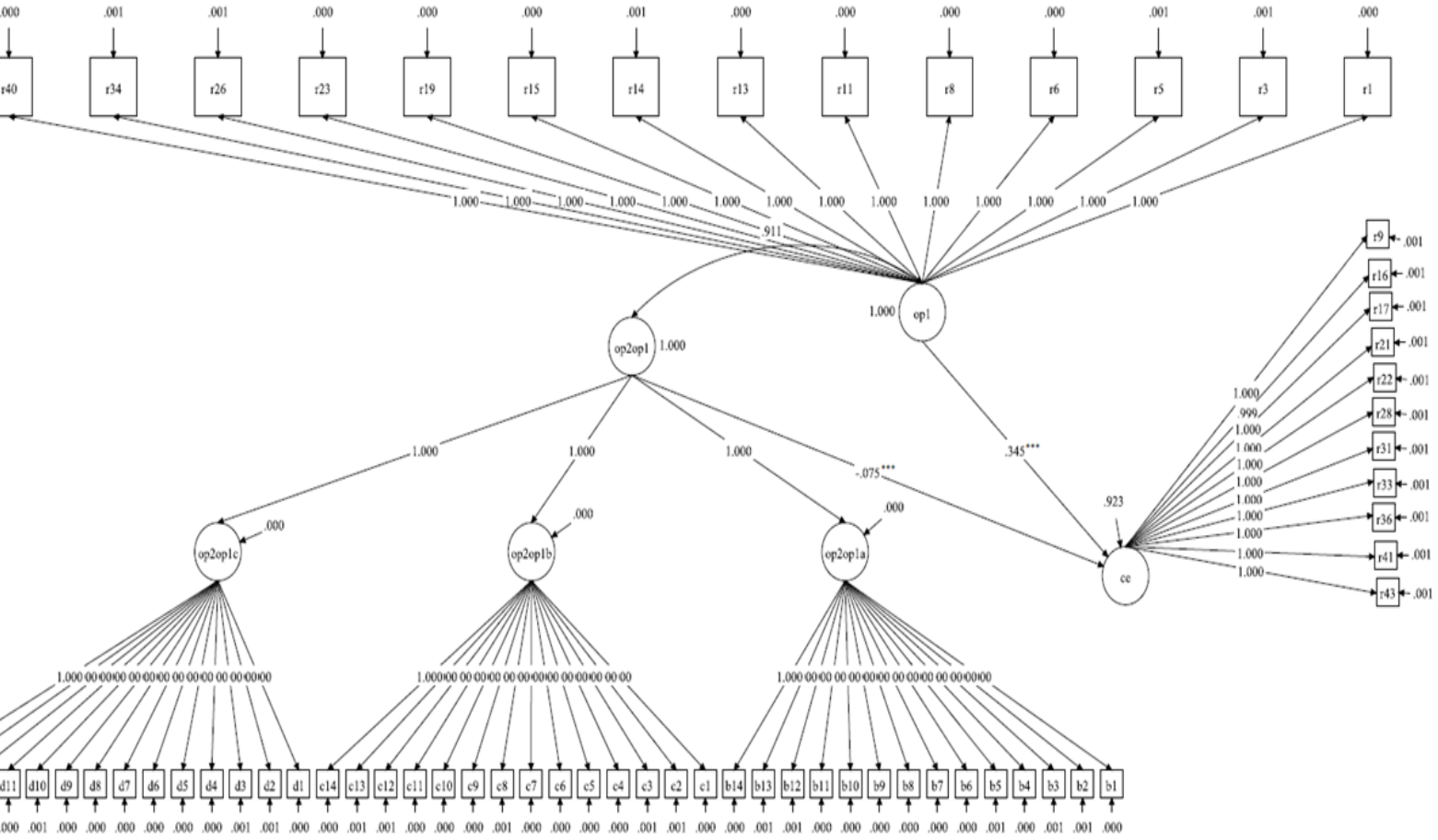
on Model 1 (OP2 is the moderator influencing the relationship between CI and CE)



*119; All the coefficients are standardized; *** p < .001, ** p < .01, * p < .05 (two-tailed)*

6

on Model 2 (OP2 is the moderator influencing the relationship between OP1 and CE)



*19; All the coefficients are standardized; *** p < .001, ** p < .01, * p < .05 (two-tailed)*

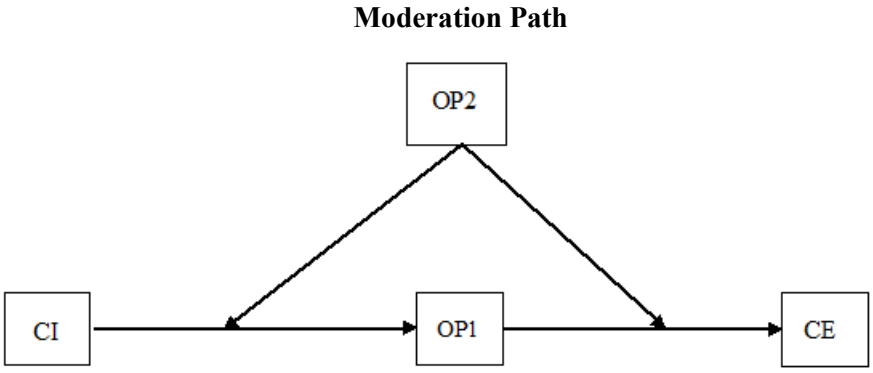
4.4 Hypothesis (H3): Test of the Third Conceptual Model

Based on the results of the mediation and moderation, the relationship between civic awareness/self-perception of online participation, civic engagement and identity is non-recursive, and the civic activism of online participation of minoritized students' (*i.e.,* moderator "*OP2*") is associated with the stronger effects in one direction rather than the other.

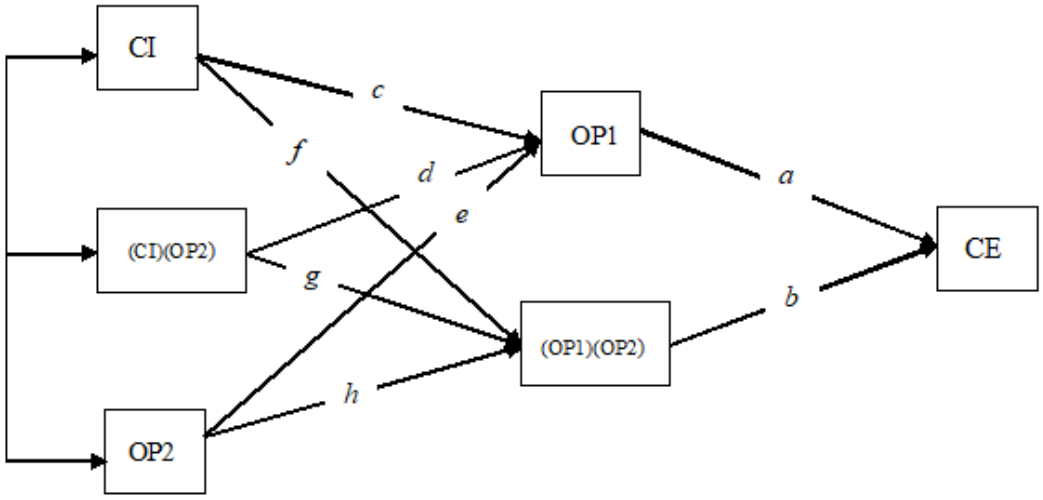
By considering the mediation and moderation effects, there are two locations within the model where "civic activism of online participation (OP2)" may serve as a moderator such that *a* is the 1st indirect effect's path, and *b* is the 2nd indirect effect's path. Moderated mediation model demonstrated that CI has an indirect effect on CE through OP1, and this indirect effect is moderated by *OP2* (*i.e.,* the effects of CI on CE are conditional and depending on the value of *OP2*) (**Figure 4.7**).

Figure 4.7

Moderation Model 3 (OP2 is moderator of the relationship between OP1, CI and CE)



Moderation Path and Covariances among Predictors



Note: *a and b* are the effect of "*OP1"* and "*OP1 × OP2"* on *CE* respectively; *c* is the effect of *"CI"* on "*OP1"; d* is the effect of "*CI × OP2"* on "*OP1"*; *e* is the effect of *"OP2"* on "*OP1"*; *f* is the effect of CI on the interaction term "*OP1 × OP2"; g* is the effect of the interaction term "*CI × OP2"* on the interaction term "*OP1 × OP2";* and *h* is the effect of "*OP2"* on the interaction term "*OP1 × OP2".*

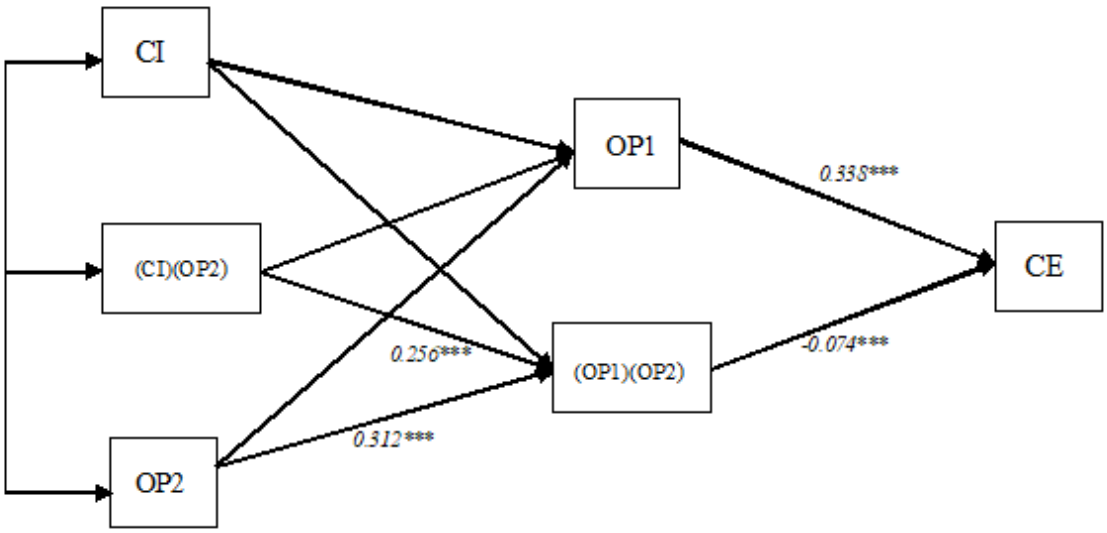
The data analysis in this section casts light on the multifaceted model developed from the mediation model and moderation models 1-2 in order to explore more specific and complex interrelationships among the three variables of OP, CI and CE using moderated mediation analysis. Moderated mediation model assumes unidirectional effects among these three variables and examines how their indirect relationship depends on the moderator "*OP2"* in order to test for hypothesis H3.

This model estimates the conditional effects of "OP2: civic activism of online participation", which can moderate identity and self-perception/civic awareness of online participation. Furthermore, moderator "OP2*"* is sensitive to different aspects of online participation for different level of civic activism of minoritized students' online participation.

Moderated mediation model indicated that 11.6% of the variance (ΔR^2) of "CE: Civic engagement in community and in school" can be explained by the *significant conditional indirect effect* moderating the relationship between "OP2: civic activism of online participation" and "OP1: self-perception/civic awareness of online participation" (c_{yxw} = *-0.074, SE = 0.012, p < 0.001*), and moderating the relationship between "OP2: civic activism of online participation" and "CI: identity" (c_{yxw} *= 0.256, SE = 0.072, p < 0.001)* (**Figure 4.8(i) and Figure 4.8(ii)**).

Figure 4.8(i)

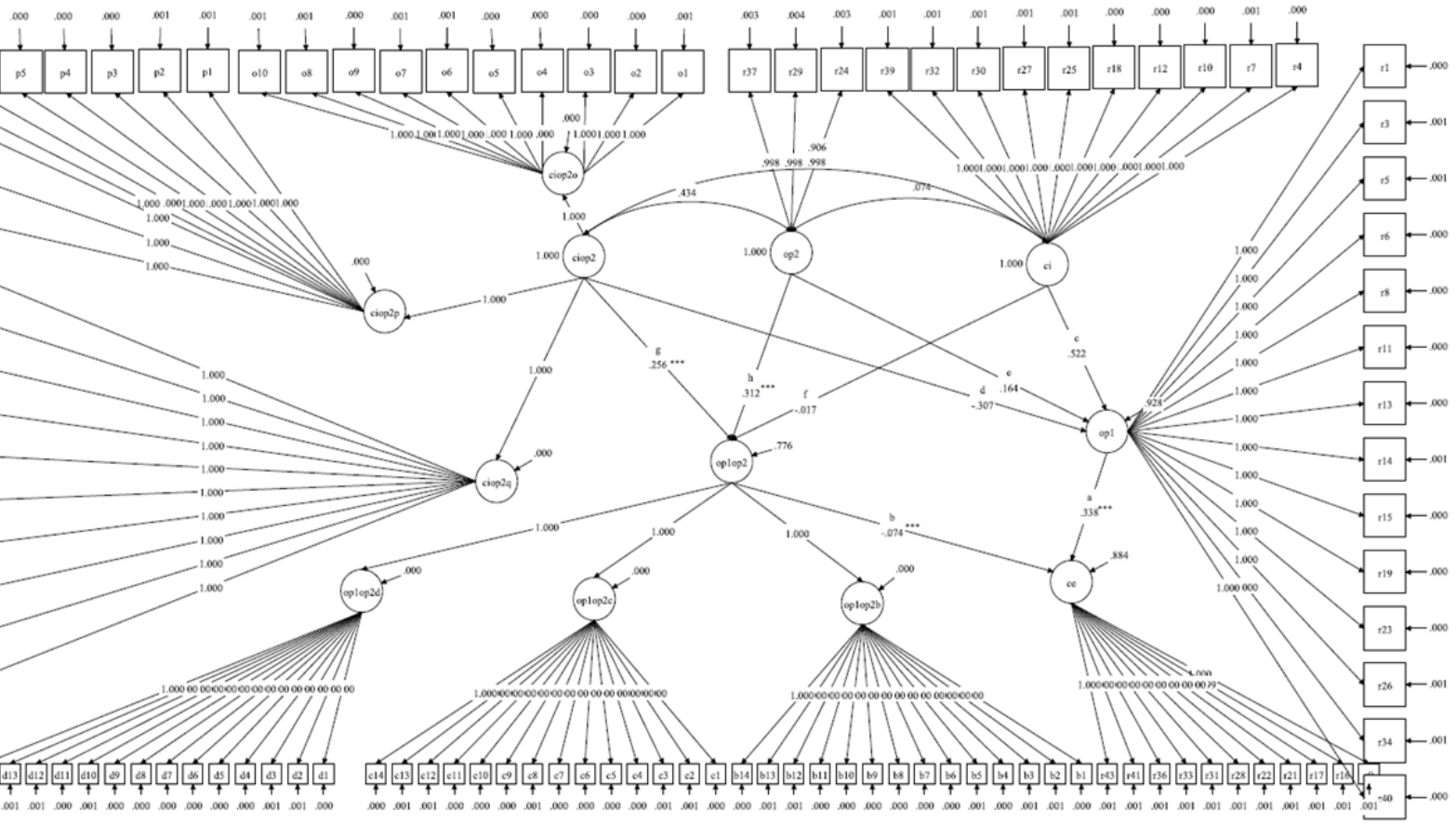
Moderated Mediation Model Indicating Latent Variables with Significant Paths (p < 0.05) (OP2 is the moderator with significant conditional indirect effect moderating the relationship between OP1 and CE)



*Note: n = 419; All the coefficients are standardized; *** p < .001, ** p < .01, * p < .05 (two-tailed)*

8(ii)

e Mediation Model with Significant and Non-significant Paths (OP2 is the moderator with significant conditional ng (i) the relationship between CI and OP1, and (ii) the relationship between OP1 and CE)



*119; All the coefficients are standardized; *** p < .001, ** p < .01, * p < .05 (two-tailed)*

Although there is evidence that "OP2: civic activism of online participation" moderates *positively* the relationship between "CI: identity" and "OP1: self-perception/civic awareness of online participation", there is *negative* conditional effect of "OP2: civic activism of online participation" moderating the relationship between "OP1: self-perception/civic awareness of online participation" and "CE: civic engagement in school/community". It suggests that if there are *more* minoritized students using the Internet to join the protests to express their opinions about civic issues online, and discuss civic issues in social networking apps/sites, there could be fewer of them intending to engage in civic activities in the community and in school. On account of this, H3 is justified.

By comparing the significant total effect of the fitted models, the moderated mediation model has the stronger total effect ($C_{mwxw}\ b_{ymw} + C_{mww}\ b_{ymw} + b_{ym} = 0.296$) and effect size ($\Delta R^2 = 11.6\%$) than other models such as mediation model (total effect = $a_{mx}\, b_{ym} + C_{yx} = 0.064$; $\Delta R^2 = 8.6\%$), moderation model 1 (total effect = $b_{ym} + C_{yxw} = 0.155$; $R^2 = 2.8\%$), and moderation model 2 (total effect = $b_{ym} + C_{yxw} = 0.270$; $\Delta R^2 = 7.7\%$).

In sum, both moderation model 1 and 2 show that there are significant *negative* conditional effects of *"civic activism of online participation (OP2)"* moderating the relationship between (i) identity and civic engagement in school/community ($C_{yxw} = -0.094$, $p<0.001$) and (ii) self-perception/civic awareness of online participation and civic engagement in

school/community (b_{ymw} = *-0.075, p<0.001*). In addition, moderated mediation model has also significant *negative conditional effect* of *OP2* moderating the relationship between self-perception/civic awareness of online participation and civic engagement in school/community (b_{ymw} = *-0.074, p<0.001*) (**Table 4.3**).

On the other hand, the moderation model 1 and 2 also showed that the interaction effect between OP2 and OP1, and between OP2 and CI is *weak* ranging from -0.075 to -0.094 (**Table 4.3**). This implies that only a small number of students used online social media platform to join the protests, express their opinions about civic issues and discuss it in social networking apps/sites. It also suggested that these students may be *less* likely to engage in school's and in community's civic activities.

The reasons for this are difficult to explain. It may be that having engaged online in vigorous and virtually hidden ways discourages them from actual engagement in real activities. They may prefer to be keyboard warriors rather than actual warriors as the former may feel empowered because of their unique context of ethnic minority backgrounds that may have cultural conflict with local Hongkongers. This seems to be related to the psychology of civic engagement, an area about which more needs to be known. Some further discussion will be continued in later chapter.

Table 4.3

Summary Table of Mediation, Moderation and Moderated Mediation Models Fit Statistics

	Mediation Model	Moderation Model 1	Moderation Model 2	Moderated Mediation Model
Hypothesis Test	H1	H2	H2	H3
Chi-square	1115.618	3439.203	5638.991	15250.755
Degree of freedom	557	1218	2138	5868
Log likelihood	-22869.072	-31209.103	-38903.220	-65441.973
Estimated paths[(i)]	108	159	207	347
RMSEA	0.049	0.066	0.063	0.062
CFI	0.994	0.976	0.972	0.960
TLI	0.993	0.974	0.971	0.960
SRMR	0.001	0.001	0.001	0.269
AIC	45954.144	62736.206	78220.439	131577.945
BIC	46390.234	63378.228	79056.279	132979.086
CI→OP1 (a_{mx})	0.256***			0.522(ns)
OP1→CE (b_{ym})	0.251***		0.345***	0.338***
CI→CE (C_{yx})	0.100(ns)	0.249***		
CIOP2→CE (C_{yxw})		-0.094***		
OP2OP1→CE (b_{ymw})			-0.075***	-0.074***
CIOP2→OP1 (a_{mxw})				-0.307(ns)
OP2→OP1 (a_{mw})				0.164(ns)
CI→OP1OP2 (C_{mwx})			0.004(ns)	-0.017(ns)
OP2→OP1OP2 (C_{mww})				0.312***
CIOP2→OP1OP2 (C_{mwxw})				0.256***
Ind Effect ($a_{mx}\, b_{ym}$)	0.064***			
Ind Effect ($C_{mwxw}\, b_{ymw}$)				-0.019***
Ind Effect ($C_{mww}\, b_{ymw}$)				-0.023***
Dir Effect (b_{ym})		0.249***	0.345***	0.338***
Dir Effect (C_{yx})	0.100(ns)			
Dir Effect (C_{yxw})		-0.094***	-0.075***	
Total Effect	0.064***	0.155***	0.270***	0.296***
R^2 on OP1	0.065(ns)			0.072*
R^2 on CE	0.086*	0.028***	0.077***	0.116**

*Note: n = 419. (i) Estimated path is equivalent to model's no. of free parameters; All the coefficients are standardized; ns = non- significant; *** p < .001, ** p < .01, * p < .05*

4.5 Hypothesis (H4): Test of the Fourth Conceptual Model

Overall, the results of hypothesis H1, H2 and H3 test suggested that participation online for civic activities has mediating effects on civic engagement and identity of minoritized students. Thus, online participation has a strong effect on reinforcing students' identity toward Hong Kong and their civic engagement in the community and in school. Based on the results of the mediation, moderation and moderated mediation, the relationship between OP, CI and CE was found to be non-recursive.

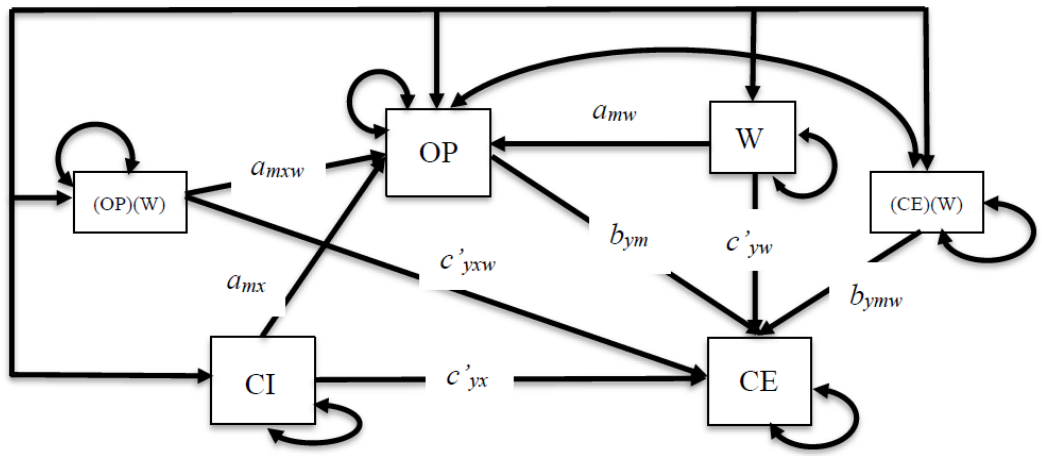
Moreover, the socio-demographic characteristics of minoritized students' (*i.e.,* moderator "*W*") may also be associated with the relationship that has stronger effects in one direction than the other. The effect of minoritized students' socio-demographic variables including *school background, education level, specific minority group, ethnic identity* and *years of using Internet* on the relationships between identity, self-perception/civic awareness of online participation, and civic engagement can be used in a moderated mediation analysis in order to inquire into its conditioning effect on the mediation pathway of these relationships (**Figure 4.9**).

By considering the moderated mediation effects, there are three locations within the model where *W* may serve as a moderator such that *a* is the 1st indirect effect's path, *b* is the 2nd pathway of indirect effect and *c* is the pathway of direct effect. For instance, the model

demonstrated that CI has an indirect effect mediated by OP and direct effects on CE, but that the direct and/or indirect effect of CI on CE is moderated by *W* (*i.e.,* the effects of CI on CE are conditional, depending on the value of *W*) (**Figure 4.9**). The data analysis of this section casts light on the multifaceted model developed from the mediation model in order to explore more specific and complex interrelationships among the three variables of OP, CI and CE using moderated mediation analysis.

Figure 4.9

Moderated Mediation Model (W is socio-demographic moderator of the relationship between CI and CE mediated by OP)



There are *eight* subsets of hypothesis H4:

H4(i): Minoritized students' school background (*W = SB*) is *assumed to moderate* the *"mediated"* relationship between self-perception and civic awareness of online participation, civic identity and engagement.

H4(ii): Minoritized students' education level (*W = ED*) is *assumed to moderate* the *"mediated"* relationship between self-perception and civic awareness of online participation, civic identity and engagement.

H4(iii): Minoritized students' gender (*W = GD*) is *assumed to moderate* the *"mediated"* relationship between self-perception and civic awareness of online participation, civic identity and engagement.

H4(iv): Minoritized students' age group (*W = AG*) is *assumed to moderate* the *"mediated"* relationship between self-perception and civic awareness of online participation, civic identity and engagement.

H4(v): Minoritized students' minority group (*W = MI*) is *assumed to moderate* the *"mediated"* relationship between self-perception and civic awareness of online participation, civic identity and engagement.

H4(vi): Minoritized students' specific ethnic group (*W = MN*) is *assumed to moderate* the *"mediated"* relationship between self-perception and civic awareness of online participation, civic identity and engagement.

H4(vii): Minoritized students' ethnic identity (*W = ID*) is *assumed to moderate* the *"mediated"* relationship between self-perception and civic awareness of online participation, civic identity and engagement.

H4(viii): Minoritized students' years of using internet (*W = YR*) is *assumed to moderate* the *"mediated"* relationship between self-perception and civic awareness of online participation, civic identity and engagement.

The moderated mediation model assumes unidirectional effects among these three variables and examines how their mediated relationship depends on the moderator *W*. This model is estimated as CE (outcome) to be a function of OP (mediator) and CI (predictor). In turn, the moderated mediation model estimates the effects of identity, which can positively affect civic engagement in school/community directly and indirectly via participation online for civic activities. Furthermore, moderator *W* can moderate all relationships and is sensitive to different aspects of identity for different socio-demographic backgrounds of minoritized students.

The hypothesis H4 predicted that minoritized students' socio-demographic background (i.e. (moderator *W*) is *assumed to moderate positively* the *"mediated"* relationship between online participation, civic engagement in school/community and identity. To test this hypothesis,

plausible values were estimated using a *Bayesian* approach in order to provide an estimation for the error of uncertainty through construction of *confidence intervals* to calculate the conditional direct and indirect effects (Muthen & Asparouhov, 2012; Muthen & Muthen, 2016).

By constructing *confidence intervals,* the *Bayesian* approaches can iteratively approximate the parameters' posterior distributions. Its computational algorithms are regarded as a Markov chain in which each parameter's conditional distribution can be used to draw other parameter values randomly and eventually ending up to an approximation of all parameters' joint distribution (Miočević *et al.,* 2018; Yuan & MacKinnon, 2009). There is, however, an argument that *plausible values* of latent variables may increase uncertainty and error in exchange for simplicity (Muthen & Asparouhov, 2012).

The model parameters have been estimated for the mediator, moderator and outcome variables in which the multiple effects of *W* and model constraint are specified in the *Mplus* output (**Appendix 9**). Since *W* is categorical data, the dummy variables (*W0 = 0*, *W1 = 1, W2 = 2*) were created for making comparisons of conditional direct and indirect effects in the moderated mediation models of minoritized students' perception of Hong Kong and Hongkonger on their civic engagement in the community/school via their civic awareness and self-perception of online participation.

4.5.1 Hypothesis H4(i) Test Using Moderator "School Background"

The model parameter estimates of "*W* = School background (SB)" is defined that SB = 0 is minoritized students in *non-religious schools*, and SB =1 is minoritized students in *religious schools*. **Figure 4.10** introduces the moderated mediation modeling results that the predictor *X* (OP1: civic awareness/self-perception of online participation), the mediating variable *M* (CI: perception towards Hong Kong), moderator *W* (SB: school background), and the interaction term (*X* × *W*) and (*M* × *W*) are entered in predicting outcome variable *Y* (CE: civic engagement).

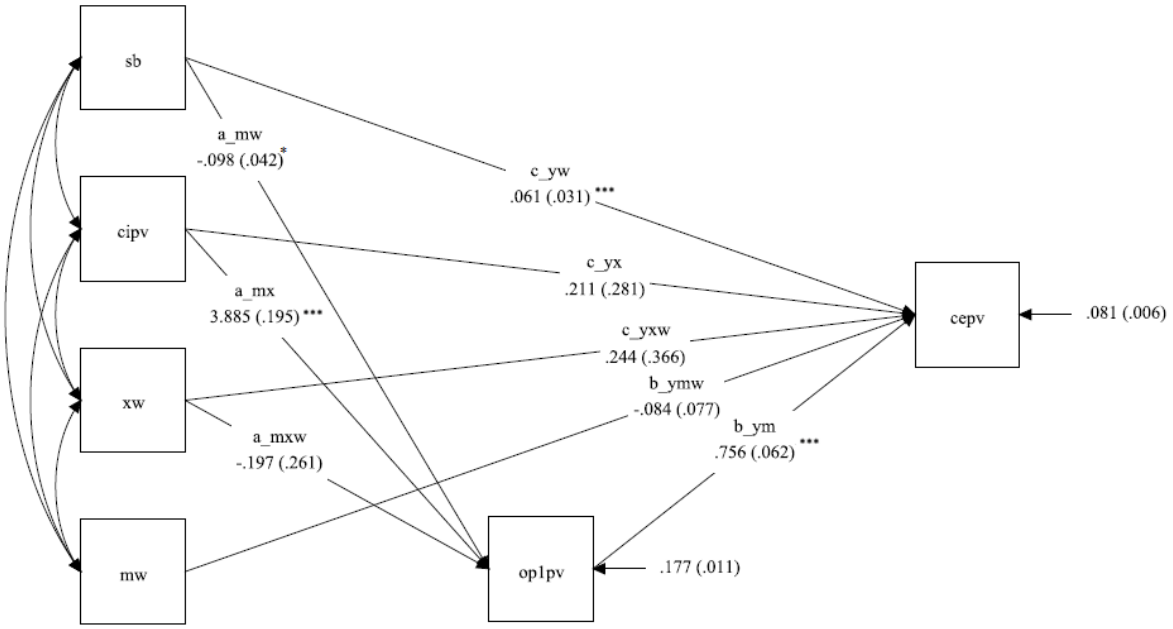
The hypothesis H4(i) test results of moderated mediation, in which school background *(W)*, and the interaction term (*X* × *W*) and (*M* × *W*) are included and illustrated that "OP1: Self-perception and civic awareness of online participation" is significantly related to "CE: Civic engagement in the school and community" ($b_{ym} = 0.756, SE = 0.062, p < .001$), and in turn is positively influenced by "CI: Perception and sense towards Hong Kong and people" ($a_{mx} = 3.885, SE = 0.195, p < 0.001$). Also, minoritized students' school religious background had a *positive direct effect* on minoritized students' engagement in school's and in community's civic activities ($c_{yw} = 0.061, SE = 0.031, p < 0.001$).

It is, however, worth noting that minoritized students studying in the *religious schools* were *less likely* to have a good civic awareness and self-perception of online participation ($a_{mw} = -0.098, SE = 0.042, p < 0.05$). Both the *interaction effect (X × W)* of perception/sense towards Hong Kong with school background, and the *interaction effect (M × W)* of civic

awareness/self-perception of online participation with school background were *positive* and *statistically non-significant ($p > 0.05$)*.

Figure 4.10

Hypothesis H4(i) Test: Moderated Mediation of "CI: Perception and Sense towards Hong Kong and People" on "CE: Civic Engagement in School and Community" via "OP1: Civic Awareness and Self-Perception of Online Participation" by "SB: School Background"



*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; SB = school background; W = moderator; M = mediator; X = predictor; PV = plausible values; Inside the brackets are standard errors; The indirect effect is contingent upon school background; *p < 0.05; **p < 0.01; ***p < 0.001*

The *conditional indirect effect* shows that the effect of perception/sense towards Hong Kong on civic engagement in school/community through civic awareness/self-perception of online participation is contingent on minoritized students' school background. **Table 4.4** reveals the deviating degrees of *conditional* direct, indirect and total effects with respect to the levels of school background. The *conditional indirect effect* for minoritized students in *religious*

schools (W1) is defined as the effect of *CI* on *CE* via *OP1* moderated by *W1*. It is equivalent to the *Mplus code "SSI_W1 = (a_mx+a_mxw*1)*(b_ym+b_ymw*1)"* and is 2.523 with 95% C.I. [2.135, 2.925], indicating that minoritized students in *religious schools* have *higher* civic engagement in school/community due to the effect of their perception/sense towards Hong Kong and people on their civic awareness/self-perception of online participation.

Similarly, the *conditional indirect effect* for minoritized students in *non-religious schools (W0)* is defined as the indirect effect of *CI* on *CE* via *OP1* for *non-religious schools*. It is equivalent to *Mplus code* "*SSI_W0 = (a_mx+a_mxw*0)* (b_ym+b_ymw*0)*" and is 2.996 with 95% C.I. [2.480, 3.505], indicating that minoritized students in *non-religious schools* also have *higher* civic engagement in school/community due to the effect of their perception/sense towards Hong Kong and people on their civic awareness/self-perception of online participation.

In comparison with the *conditional indirect effects*, the *conditional direct effect* of *CI* on *CE* for minoritized students in *religious schools* (SB = 1) is equivalent to *Mplus code* "*SSD_W1 = c_yx+c_yxw*1*" and is 0.458 with 95% C.I. [0.112, 0.898] that shows those in *religious school* have *higher* level of civic engagement in school/community. In parallel, the *conditional direct effect* for minoritized students in *non-religious schools* (SB = 0) is equivalent to "*SSD_W0 = c_yx+c_yxw*0*" and is 0.211 with 95% C.I. [-0.296, 0.852] that is not statistically significant ($p > 0.05$).

Table 4.4

Hypothesis H4(i) Test: Effects of Perception and Sense towards Hong Kong and People on Civic Engagement in School and Community via Civic Awareness and Self-Perception of Online Participation by School Background

Parameter	Estimate	95% C.I.		SE	P value	Sig
		Under 2.5%	Higher 97.5%			
Mediator						
Intercept (V_m)	0.048	-0.017	0.108	0.032	0.090	
CI→OP1 (a_{mx})	3.885	3.466	4.241	0.195	< 0.001	***
SB→OP1 (a_{mw})	-0.098	-0.177	-0.018	0.042	0.010	*
XW→OP1 (a_{mxw})	-0.197	-0.672	0.345	0.261	0.260	
Outcome						
Intercept (V_y)	-0.031	-0.082	0.01	0.022	0.070	
OP1→CE (b_{ym})	0.756	0.633	0.871	0.062	< 0.001	***
MW→CE (b_{ymw})	-0.084	-0.240	0.054	0.077	0.170	
CI→CE (c_{yx})	0.211	-0.296	0.852	0.281	0.210	
SB→CE (c_{yw})	0.061	0.010	0.126	0.031	< 0.001	***
XW→CE (c'_{yxw})	0.244	-0.563	0.963	0.366	0.230	
Moderator (W0)						
Indirect CI Effect	2.996	2.480	3.505	0.289	< 0.001	***
Direct CI Effect	0.211	-0.296	0.852	0.281	0.210	
Total CI Effect	3.167	2.827	3.612	0.198	< 0.001	***
Mediator OP1 Effect	0.756	0.633	0.871	0.062	< 0.001	***
Moderator (W1)						
Indirect CI Effect	2.523	2.135	2.925	0.193	< 0.001	***
Direct CI Effect	0.458	0.112	0.898	0.198	< 0.001	***
Total CI Effect	2.988	2.655	3.364	0.186	< 0.001	***
Mediator OP1 Effect	0.686	0.586	0.753	0.043	< 0.001	***
R^2 on OP1	0.665	0.627	0.705	0.021	< 0.001	***
R^2 on CE	0.803	0.765	0.840	0.018	< 0.001	***

*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; SB = school background; W = moderator; M = mediator; X = predictor; PV = plausible values; SE = standard error; C.I.= confidence interval that is estimated by Bayesian approach; The indirect effect is contingent upon school background; *p < 0.05; **p < 0.01; ***p < 0.001*

As per *conditional total effects*, the effect for minoritized students in *religious schools* (SB = 1) is equivalent to *Mplus code* "*SST_W1 = (a_mx+a_mxw*1)*(b_ym+b_ymw*1)+c_yx +c_yxw*1*" and is 2.988 with 95% C.I. [2.655, 3.364], implying that for minoritized students in *religious schools*, *CI* has an overall *positive* effect on *CE*, which is the overall effect of *CI* on *CE* for minoritized students in *religious schools*. For minoritized students in *non-religious schools* (SB = 0), the overall effect is equivalent to "*SST_W0 = (a_mx+a_mxw*0)* (b_ym+b_ymw*0)+c_yx+c_yxw*0*" and is 3.167 with 95% C.I. [2.827, 3.612], indicating that the perception/sense towards Hong Kong on the civic awareness/self-perception of online participation for minoritized students in *non-religious schools* has also *positive conditional total effect* on civic engagement in the school/community.

The *conditional direct effect of mediator* "civic awareness/self-perception of online participation" can also be estimated. For those in *religious schools*, this is equivalent to *"WD_W1 = b_ym + b_ymw*1"* which describes the effect of *OP1* on *CE* for *religious schools' students* while holding *CI* constant. This effect is 0.686 with 95% C.I. [0.586, 0.753], indicating that better civic awareness/self-perception of online participation leads to more civic engagement in the school/community for religious school students. The same effect for those in *non-religious schools* is "*WD_W0 = b_ym + b_ymw*0"* which describes the effect of *CI_2* on *CE_1* for *non-religious schools' students* while holding *CI* constant. This effect is 0.756 with 95% C.I. [0.633, 0.871], indicating that a better civic awareness/self-perception of online participation leads to more civic engagement in school/community.

The results show that there are *significant conditional* direct, indirect and total moderating effects, and *conditional* direct effect of mediator for minoritized students with different school religious backgrounds on the relationship between their perception and sense towards Hong Kong and their civic engagement in the school/community via their civic activism and self-perception of online participation. Therefore, hypothesis H4(i) can be accepted.

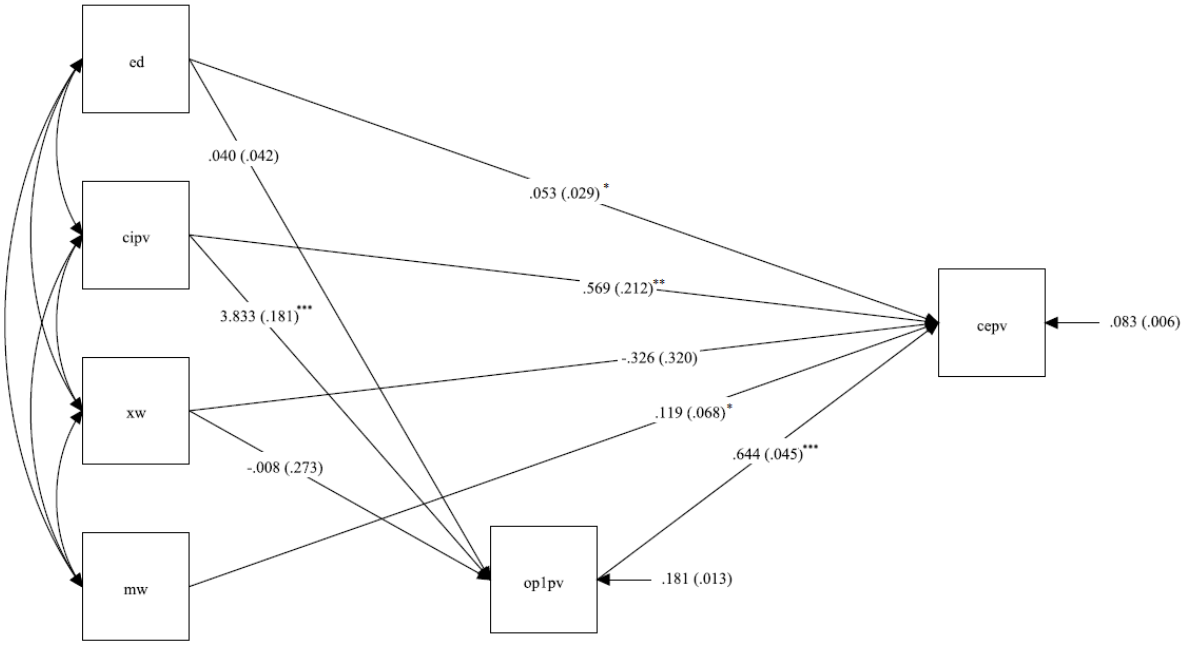
4.5.2 Hypothesis H4(ii) Test Using Moderator "Education Level"

The model parameter estimates of "*W* = Education Level (ED)" is defined that ED = 0 is minoritized students in *junior grade (Form 1-3)*, and ED =1 is minoritized students in *senior grade (Form 4-6)*. **Figure 4.11** introduces the moderated mediation modeling results that the predictor *X (i.e., CI)*, the mediating variable *M (i.e., OP1)*, the moderator *W (i.e., ED)*, and the interaction term (*X* × *W*) and (*M* × *W*) were entered in predicting outcome *(CE)*.

The hypothesis H4(ii) test results indicated that "OP1: Self-perception and civic awareness of online participation" is significantly related to "CE: Civic engagement in the school and in community" ($b_{ym} = 0.644, SE = 0.045, p < .001$), and in turn is positively influenced by "CI: Perception and sense towards Hong Kong and people" ($a_{mx} = 3.833, SE = 0.181, p < 0.001$). Also, both minoritized students' education level ($c_{yw} = 0.053, SE = 0.033, p < 0.001$) and perception and sense towards Hong Kong had a *positive direct effect* on minoritized students' engagement in school's/community's civic activities ($c_{yw} = 0.569, SE = 0.003, p < 0.01$).

Figure 4.11

Hypothesis H4(ii) Test: Moderated Mediation of "CI: Perception and Sense towards Hong Kong and People" on "CE: Civic Engagement in School and Community" via "OP1: Civic Awareness and Self-Perception of Online Participation" by "ED: Education Level"



*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; ED = education level; W = moderator; M = mediator; X = predictor; PV = plausible values; Inside the brackets are standard errors; The indirect effect is contingent upon school background; *p < 0.05; **p < 0.01; ***p < 0.001*

It is worthwhile to note that the *interaction effect* ($M \times W$) of their self-perception and civic awareness of online participation and their education level on their civic engagement in the school/community was *positive* and *statistically significant* (b_{ymw} = 0.119, SE = 0.068, p < 0.05). The results indicated that minoritized students' education level was *positively* correlated with their self-perception and civic awareness of online participation to improve their civic engagement in school/community.

Table 4.5 reveals the varying degrees of *conditional* direct, indirect and total effects with respect to the levels of education level. The *conditional indirect effect* for minoritized students in *senior grades (W1)* is defined as the effect of *CI* on *CE* via *OP1* moderated by *W1*. It is 2.914 with 95% C.I. [2.436, 3.425], indicating that minoritized students in *senior grades* have *higher* civic engagement in school and in community due to the effect of their perception and sense towards Hong Kong and local people on their self-perception/civic awareness of online participation.

Similarly, the *conditional indirect effect* for minoritized students in *junior grades (W0)* is defined as the indirect effect of *CI* on *CE* via *OP1* for *junior grades.* It is 2.463 with 95% C.I. [2.070, 2.872], indicating that minoritized students in *junior grades* also have *higher* civic engagement in school and in community due to the effect of their perception/sense towards Hong Kong and Hongkongers on their self-perception/civic awareness of online participation.

The *conditional direct effect* of *CI* on *CE* for minoritized students in *senior grades* is 0.246 with 95% C.I. [-0.222, 0.711] that shows the minoritized students in *senior grades* have *higher* level of civic engagement in the school and in community. In parallel, the *direct effect* for minoritized students in *junior grades* is 0.569 with 95% C.I. [0.150, 0.981], showing that the minoritized students of *junior grades* also have similar level of civic engagement in the school and in community.

Table 4.5

Hypothesis H4(ii) Test: Effects of Perception and Sense towards Hong Kong and People on Civic Engagement in School and Community via Civic Awareness and Self-Perception of Online Participation by Education Level

Parameter	Estimate	95% C.I.		SE	P value	Sig
		Under 2.5%	Higher 97.5%			
Mediator						
Intercept (V_m)	-0.027	-0.085	0.030	0.029	0.173	
CI→OP1 (a_{mx})	3.833	3.478	4.180	0.181	< 0.001	***
ED→OP1 (a_{mw})	0.040	-0.041	0.122	0.042	0.166	
XW→OP1 (a_{mxw})	-0.008	-0.543	0.522	0.273	0.489	
Outcome						
Intercept (V_y)	-0.017	-0.056	0.023	0.020	0.200	
OP1→CE (b_{ym})	0.644	0.554	0.731	0.045	< 0.001	***
MW→CE (b_{ymw})	0.119	-0.014	0.253	0.068	0.039	*
CI→CE (c_{yx})	0.569	0.15	0.981	0.212	0.003	**
ED→CE (c_{yw})	0.053	-0.003	0.109	0.029	0.033	*
XW→CE (c_{yxw})	-0.326	-0.958	0.293	0.320	0.154	
Moderator (W0)						
Indirect CI Effect	2.463	2.07	2.872	0.207	< 0.001	***
Direct CI Effect	0.569	0.15	0.981	0.212	0.003	***
Total CI Effect	3.034	2.7	3.368	0.168	< 0.001	***
Mediator OP1 Effect	0.644	0.554	0.731	0.045	< 0.001	***
Moderator (W1)						
Indirect CI Effect	2.914	2.436	3.425	0.251	< 0.001	***
Direct CI Effect	0.246	-0.222	0.711	0.240	0.154	***
Total CI Effect	3.164	2.741	3.566	0.208	< 0.001	***
Mediator OP1 Effect	0.762	0.662	0.864	0.051	< 0.001	***
R^2 on OP1	0.665	0.619	0.705	0.022	< 0.001	***
R^2 on CE	0.790	0.756	0.820	0.016	< 0.001	***

*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; ED = education level; W = moderator; M = mediator; X = predictor; PV = plausible values; SE = standard error; C.I. = confidence interval that is estimated by Bayesian approach; The indirect effect is contingent upon education; *p < 0.05; **p < 0.01; ***p < 0.001*

In accordance with *conditional total effects*, the effect for minoritized students in *senior grades* is 3.164 with 95% C.I. [2.741, 3.566], implying that for minoritized students in *senior grades, CI* has an overall *positive* effect on *CE*, which is the overall effect of *CI* on *CE* for minoritized students in *senior grades*. For minoritized students in *junior grades*, the overall effect is 3.034 with 95% C.I. [2.700, 3.368], indicating that for minoritized students in *junior grades*, their perception and sense towards Hong Kong/Hongkongers has also *positive conditional total effect* on their civic engagement in the school and in community.

On the other hand, the *conditional direct effect of mediator* "self-perception/civic awareness of online participation" can also be evaluated. For minoritized students in *senior grades,* this is 0.762 with 95% C.I. [0.662, 0.864], indicating that self-perception/civic awareness of online participation leads to more civic engagement in the school and in community for *senior* students. The same effect for minoritized students in *junior grades* is 0.644 with 95% C.I. [0.554, 0.731], indicating that self-perception/civic awareness of online participation leads to more civic engagement in school/community for *junior* students.

The results show that there are *significant conditional* direct, indirect and total moderating effects, and *conditional* direct effect of mediator for minoritized students with different education levels on the relationship between their perception and sense towards Hong Kong/Hongkongers and their civic engagement in the school/community via their civic activism and self-perception of online participation. Therefore, hypothesis H4(ii) can be confirmed.

4.5.3 Hypothesis H4(iii) and H4(iv) Test Using Moderator "Gender" and "Age Group"

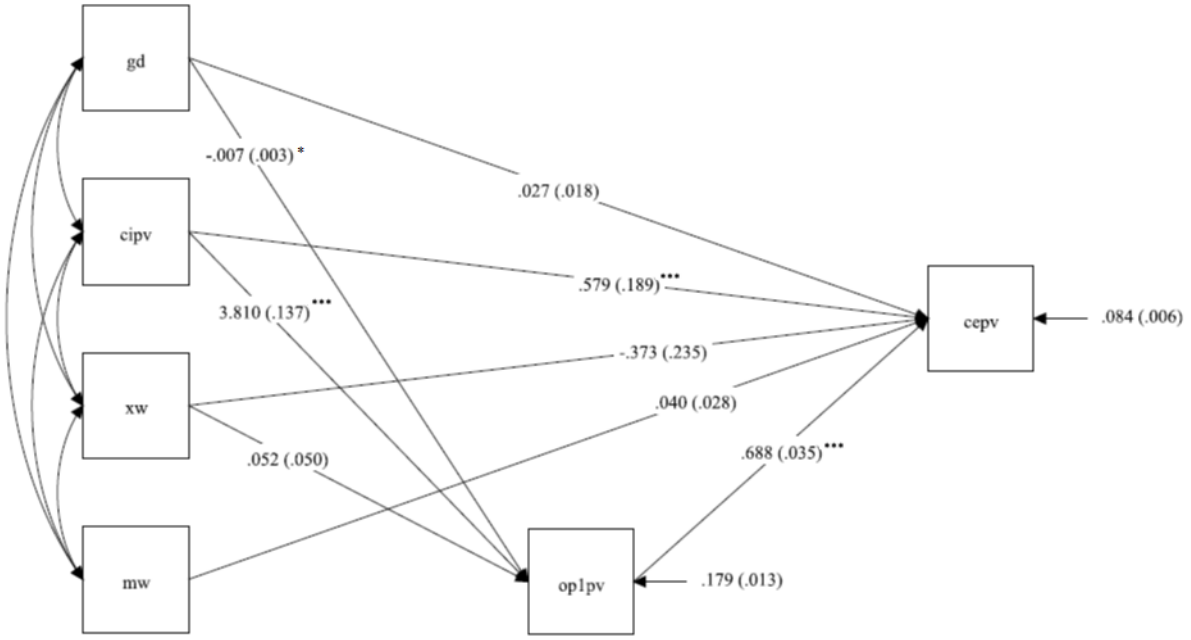
The model parameter estimates of "*W* = Gender (GD)" is defined that GD = 0 is boy and GD =1 is girl. In addition, "*W* = Age (AG)" is defined that AG = 0 is aged 11-15 and AG =1 is aged 16-20. **Figure 4.12 and Figure 4.13** introduces the moderated mediation modeling results where the predictor *X (i.e., CI)*, the mediating variable *M (i.e., OP1)*, moderator *W (i.e., GD or AG)*, and the interaction term ($X \times W$) and ($M \times W$) were entered in predicting outcome *(CE)*.

The hypothesis H4(iii) and H4(iv) test results indicated that minoritized students' self-perception and civic awareness of online participation" is significantly related to their civic engagement in school and in community" ($p < .001$), and in turn is positively influenced by their perception and sense towards Hong Kong and people" ($p < 0.001$). Moreover, their perception and sense towards Hong Kong had a *positive direct effect* on their engagement in school's and in community's civic activities ($p < 0.01$).

It is noteworthy that minoritized students' gender had a *negative direct effect* on their civic awareness/self-perception of online participation ($p < 0.05$), however, age group had a *positive direct effect* on their civic awareness/self-perception of online participation ($p < 0.01$). It indicated that the *boys* who are *aged 16-20* have better civic awareness/self-perception of online participation than *girls who are aged 11-15*.

Figure 4.12

Hypothesis H4(iii) Test: Moderated Mediation of "CI: Perception and Sense towards Hong Kong and People" on "CE: Civic Engagement in School and Community" via "OP1: Civic Awareness and Self-Perception of Online Participation" by "Gender"

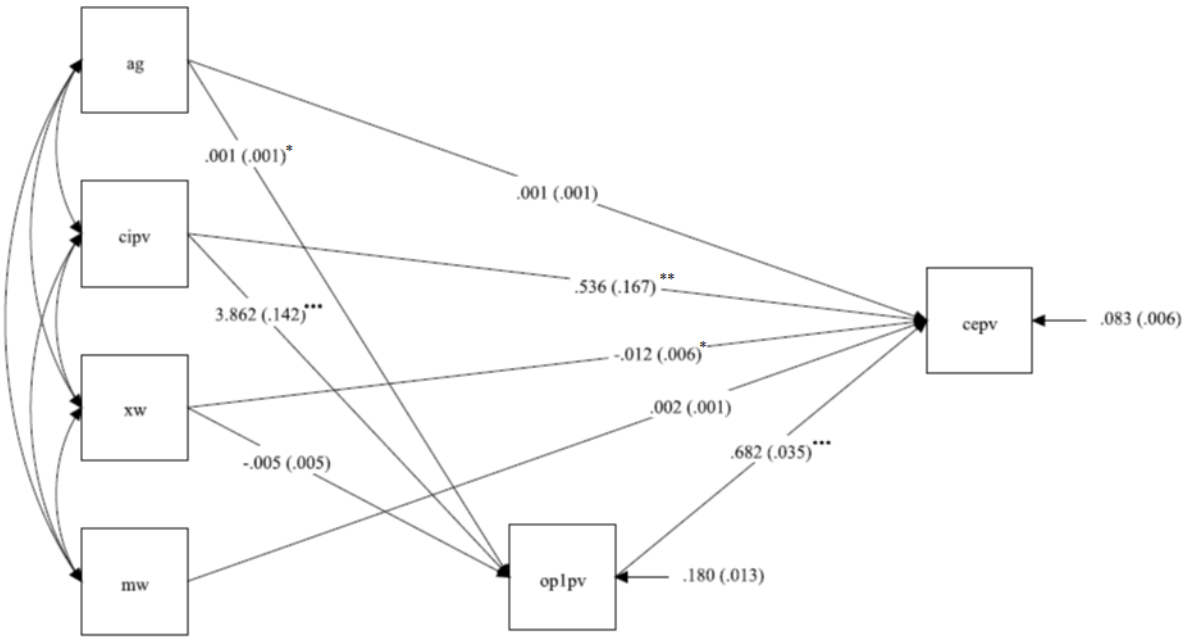


*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; GD = gender; W = moderator; M = mediator; X = predictor; PV = plausible values; Inside the brackets are standard errors; The indirect effect is contingent upon school background; *p < 0.05; **p < 0.01; ***p < 0.001*

By contrast, the interaction effect ($X \times W$) of perception/sense towards Hong Kong and age group on civic engagement in school/community was *negative* and *statistically significant* ($p < 0.05$). The results suggested that more juvenile minoritized students have better perception and identification towards Hong Kong/Hongkongers to reinforce their level of civic engagement in school/community.

Figure 4.13

Hypothesis H4(iv) Test: Moderated Mediation of "CI: Perception and Sense towards Hong Kong and People" on "CE: Civic Engagement in School and Community" via "OP1: Civic Awareness and Self-Perception of Online Participation" by "Age Group"



*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; AG = age group; W = moderator; M = mediator; X = predictor; PV = plausible values; Inside the brackets are standard errors; The indirect effect is contingent upon school background; *p < 0.05; **p < 0.01; ***p < 0.001*

Table 4.6 and 4.7 reveals the varying degrees of *conditional* direct, indirect and total effects with respect to the gender and age group. The *conditional indirect effect* for gender and age group (W1) is defined as the effect of *CI* on *CE* via *OP1* moderated by *W1*. It is statistically significant ($p < 0.001$) that minoritized students who are boys or aged 16-20 have *higher* civic engagement in school/community due to the effect of their perception/sense towards Hong Kong on their self-perception/civic awareness of online participation. Similarly, it is

also statistically significant ($p < 0.001$) that minoritized students who are girls or aged 16-20 also have *higher* civic engagement in school/community due to the effect of their perception and identification towards Hong Kong/Hongkongers on their self-perception/civic awareness of online participation.

In comparison with the indirect effects, the *conditional direct effect* of *CI* on *CE* for boy minoritized students is not statistically significant ($p > 0.05$), but for older age group, it is statistically significant ($p < 0.001$) that shows older students have *higher* level of civic engagement in school and in community due to the effect of their perception and identification of Hong Kong/Hongkongers. In parallel, the *conditional direct effect* for girls who are in older age group is statistically significant ($p < 0.001$) indicating older girl students have *higher* level of civic engagement in school/community because of their sense/perception toward Hong Kong/Hongkongers.

As per the *conditional total effects*, it is statistically significant ($p < 0.001$) that for minoritized students in different gender and age groups, *CI* has an overall *positive* effect on *CE*, which is the overall effect of *CI* on *CE* for minoritized students. It indicates that the perception and sense towards Hong Kong for minoritized students in different gender and age groups has also *positive conditional total effect* on their civic engagement in school and in community.

Table 4.6

Hypothesis H4(iii) Test: Effects of Perception and Sense towards Hong Kong and People on Civic Engagement in School and Community via Civic Awareness and Self-Perception of Online Participation by Gender

Parameter	Estimate	95% C.I.		SE	P value	Sig
		Under 2.5%	Higher 97.5%			
Mediator						
Intercept (V_m)	-0.001	-0.043	0.04	0.021	0.475	*
CI→OP1 (a_{mx})	3.81	3.539	4.078	0.137	< 0.001	***
GD→OP1 (a_{mw})	-0.007	-0.013	-0.001	0.003	0.011	*
XW→OP1 (a_{mxw})	0.052	-0.047	0.15	0.05	0.153	
Outcome						
Intercept (V_y)	-0.001	-0.033	0.032	0.016	0.481	
OP1→CE (b_{ym})	0.688	0.618	0.757	0.035	< 0.001	***
MW→CE (b_{ymw})	0.04	-0.015	0.095	0.028	0.078	
CI→CE (c_{yx})	0.579	0.214	0.949	0.189	0.001	**
GD→CE (c_{yw})	0.027	-0.009	0.063	0.018	0.072	
XW→CE (c_{yxw})	-0.373	-0.832	0.088	0.235	0.057	
Moderator (W0)						
Indirect CI Effect	2.618	2.301	2.94	0.165	< 0.001	***
Direct CI Effect	0.579	0.214	0.949	0.189	0.001	**
Total CI Effect	3.202	2.912	3.486	0.145	< 0.001	***
Mediator OP1 Effect	0.688	0.618	0.757	0.035	< 0.001	***
Moderator (W1)						
Indirect CI Effect	2.803	2.466	3.164	0.177	< 0.001	***
Direct CI Effect	0.209	-0.199	0.616	0.21	0.158	
Total CI Effect	3.016	2.718	3.31	0.15	< 0.001	***
Mediator OP1 Effect	0.727	0.652	0.802	0.038	< 0.001	***
R^2 on OP1	0.668	0.623	0.707	0.022	< 0.001	***
R^2 on CE	0.793	0.758	0.822	0.016	< 0.001	***

*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; GD = gender; W = moderator; M = mediator; X = predictor; PV = plausible values; SE = standard error; C.I. = confidence interval that is estimated by Bayesian approach; The indirect effect is contingent upon gender; *p < 0.05; **p < 0.01; ***p < 0.001*

Table 4.7

Hypothesis H4(iv) Test: Effects of Perception and Sense towards Hong Kong and People on Civic Engagement in School and Community via Civic Awareness and Self-Perception of Online Participation by Age Group

Parameter	Estimate	95% C.I.		SE	P value	Sig
		Under 2.5%	Higher 97.5%			
Mediator						
Intercept (V_m)	-0.017	-0.06	0.026	0.022	0.218	
CI→OP1 (a_{mx})	3.862	3.582	4.138	0.142	< 0.001	***
AG→OP1 (a_{mw})	0.001	0.000	0.003	0.001	0.05	*
XW→OP1 (a_{mxw})	-0.005	-0.014	0.005	0.005	0.174	
Outcome						
Intercept (V_y)	0.005	-0.024	0.035	0.015	0.365	
OP1→CE (b_{ym})	0.682	0.612	0.749	0.035	< 0.001	***
MW→CE (b_{ymw})	0.002	-0.001	0.004	0.001	0.113	
CI→CE (c_{yx})	0.536	0.205	0.861	0.167	< 0.001	**
AG→CE (c_{yw})	0.001	0.000	0.002	0.001	0.083	
XW→CE (c_{yxw})	-0.012	-0.023	0.000	0.006	0.022	*
Moderator (W0)						
Indirect CI Effect	2.629	2.312	2.954	0.166	< 0.001	***
Direct CI Effect	0.536	0.205	0.861	0.167	< 0.001	***
Total CI Effect	3.166	2.897	3.436	0.136	< 0.001	***
Mediator OP1 Effect	0.682	0.612	0.749	0.035	< 0.001	***
Moderator (W1)						
Indirect CI Effect	2.632	2.316	2.956	0.165	< 0.001	***
Direct CI Effect	0.525	0.198	0.846	0.166	< 0.001	***
Total CI Effect	3.157	2.891	3.425	0.135	< 0.001	***
Mediator OP1 Effect	0.683	0.614	0.751	0.035	< 0.001	***
R^2 on OP1	0.667	0.620	0.706	0.022	< 0.001	***
R^2 on CE	0.794	0.760	0.823	0.016	< 0.001	***

*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; AG = age group; W = moderator; M = mediator; X = predictor; PV = plausible values; SE = standard error; C.I. = confidence interval that is estimated by Bayesian approach; The indirect effect is contingent upon age group; *p < 0.05; **p < 0.01; ***p < 0.001*

Alternatively, the *conditional direct effect of mediator* "self-perception/civic awareness of online participation" is also estimated for minoritized students from different gender and age groups, it is statistically significant ($p < 0.001$) that good self-perception/civic awareness of online participation leads to more civic engagement in school and in community for all gender and age group.

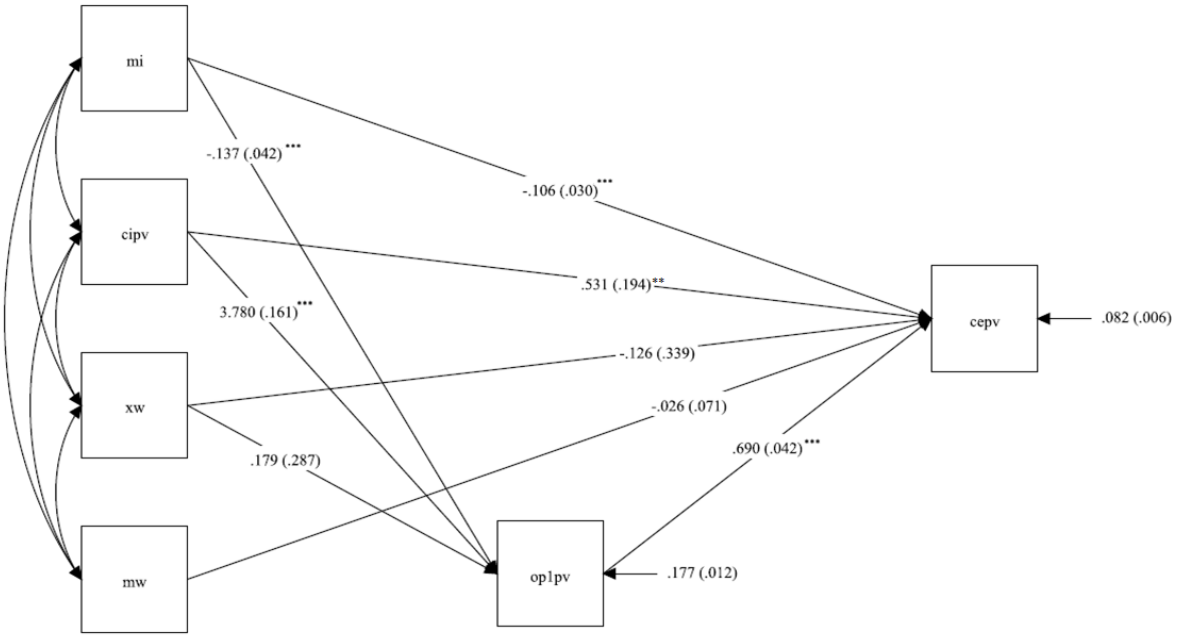
The results show that there are *significant conditional* direct, indirect and total moderating effects, and *conditional* direct effect of mediator for minoritized students who belong to different gender and age groups on the relationship between their perception and sense towards Hong Kong/Hongkongers and their civic engagement in the school/community via their civic activism and self-perception of online participation. Therefore, hypothesis H4(iii) and H4(iv) can be supported.

4.5.4 Hypothesis H4(v) Test Using Moderator "Minority Group"

The model parameter estimates of "*W* = Minority Group (MI)" is defined that MI = 0 is minoritized students from *Indian/Nepalese/Pakistani group*, and MI =1 is minoritized students from *Filipino/Indonesian/Other-Asian/White/Mixed group*. **Figure 4.14** introduces the moderated mediation modeling results where the predictor *X (i.e., CI)*, the mediating variable *M (i.e., OP1)*, the moderator *W (i.e., MI)*, and the interaction term ($X \times W$) and ($M \times W$) were entered in predicting outcome *(CE)*.

Figure 4.14

Hypothesis H4(v) Test: Moderated Mediation of "CI: Perception and Sense towards Hong Kong and People" on "CE: Civic Engagement in School and Community" via "OP1: Civic Awareness and Self-Perception of Online Participation" by "MI: Minority Group"



*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; MI = minority group; W = moderator; M = mediator; X = predictor; PV = plausible values; Inside the brackets are standard errors; The indirect effect is contingent upon school background; *p < 0.05; **p < 0.01; ***p < 0.001*

The hypothesis H4(v) test results indicated that minoritized students' self-perception and civic awareness of online participation" is significantly related to their civic engagement in school/community" (b_{ym} *= 0.690, SE = 0.042, p < .001*), and in turn is positively influenced by their perception and sense towards Hong Kong/Hongkongers" (a_{mx} *= 3.780, SE = 0.161, p < 0.001*). Moreover, their perception and sense towards Hong Kong/Hongkongers had a *positive direct effect* on their engagement in school and in community's civic activities (c_{yx} *= 0.531, SE = 0.194, p < 0.01*). Yet, their minority group had a *negative direct effect* on

minoritized students' engagement in school/community's civic activities (c_{yw} = *-0.106, SE = 0.030, p < 0.001*). It indicated that the *Filipino/Indonesian/Other-Asian/White/Mixed group* was *less likely* to engage in civic activities.

It is noteworthy that minoritized students from *Filipino/Indonesian/Other-Asian/White/Mixed* group were *less likely* to have good self-perception/civic awareness of online participation (a_{mw} = *-0.137, SE = 0.042, p < 0.001*). By contrast, both (i) the interaction effect ($M \times W$) of self-perception/civic awareness of online participation and minority group (b_{ymw} = *-0.026, SE = 0.359, p > 0.05*), and (ii) the interaction effect ($X \times W$) of perception and sense towards Hong Kong/Hongkongers and minority group on civic engagement in school/community were *negative* and *statistically non-significant* (c_{yxw} = *-0.126, SE = 0.353, p > 0.05*). The results suggested that minoritized students' minority group was *not significantly* correlated with their self-perception/civic awareness of online participation or identification towards Hong Kong to reinforce their level of civic engagement in school/community.

Table 4.8 reveals the varying degrees of *conditional* direct, indirect and total effects with respect to the minority group. The *conditional indirect effect* for minoritized students from *Filipino/Indonesian/Other-Asian/White/Mixed group (W1)* is defined as the effect of *CI* on *CE* via *OP1* moderated by *W1*. It is 2.624 with 95% C.I. [2.106, 3.182], indicating that minoritized students from this minority group have *higher* civic engagement in school/community due to the effect of their perception and sense towards Hong Kong/ Hongkongers on their self-perception/civic awareness of online participation. Similarly, the

conditional indirect effect for minoritized students from *Indian/Nepalese/Pakistani group (W0)* is 2.605 with 95% C.I. [2.238, 2.985], indicating that minoritized students in this minority group also have *higher* civic engagement in the school and community due to the effect of their perception and identification towards Hong Kong on their self-perception/civic awareness of online participation.

In comparison with the indirect effects, the *conditional direct effect* of *CI* on *CE* for minoritized students from *Filipino/Indonesian/Other-Asian/White/Mixed group* is 0.406 with 95% C.I. [-0.139, 0.947] that shows the minoritized students in this minority group have *higher* level of civic engagement in school/community. In parallel, the *conditional direct effect* for minoritized students from *Indian/Nepalese/Pakistan group* is 0.531 with 95% C.I. [0.150, 0.905], showing that the minoritized students from this minority group also have similar level of civic engagement in school/community.

As per the *conditional total effects*, the effect for minoritized students from *Filipino/Indonesian/Other Asian/White/Mixed group* is 3.035 with 95% C.I. [2.574, 3.472], suggests that for minoritized students in this minority group, *CI* has an overall *positive* effect on *CE*, which is the overall effect of *CI* on *CE* for minoritized students in this minority group. For minoritized students from *Indian/Nepalese/Pakistan group*, the overall effect is 3.137 with 95% C.I. [2.832, 3.442], indicating that the perception and sense towards Hong Kong for minoritized students in this minority group has also *positive conditional total effect* on civic engagement in school/community.

Table 4.8

Hypothesis H4(v) Test: Effects of Perception and Sense towards Hong Kong and People on Civic Engagement in School and Community via Civic Awareness and Self-Perception of Online Participation by Minority Group

Parameter	Estimate	95% C.I.		SE	P value	Sig
		Under 2.5%	Higher 97.5%			
Mediator						
Intercept (V_m)	0.046	-0.006	0.098	0.026	0.042	*
CI→OP1 (a_{mx})	3.78	3.463	4.093	0.161	< 0.001	***
MI→OP1 (a_{mw})	-0.137	-0.22	-0.056	0.042	< 0.001	***
XW→OP1 (a_{mxw})	0.179	-0.386	0.74	0.287	0.266	
Outcome						
Intercept (V_y)	0.051	0.016	0.087	0.018	0.002	**
OP1→CE (b_{ym})	0.69	0.607	0.771	0.042	< 0.001	***
MW→CE (b_{ymw})	-0.026	-0.165	0.116	0.071	0.359	
CI→CE (c_{yx})	0.531	0.15	0.905	0.194	0.002	**
MI→CE (c_{yw})	-0.106	-0.164	-0.048	0.03	< 0.001	***
XW→CE (c_{yxw})	-0.126	-0.794	0.529	0.339	0.353	
Moderator (W0)						
Indirect CI Effect	2.605	2.238	2.985	0.193	< 0.001	***
Direct CI Effect	0.531	0.15	0.905	0.194	0.002	**
Total CI Effect	3.137	2.832	3.442	0.155	< 0.001	***
Mediator OP1 Effect	0.69	0.607	0.771	0.042	< 0.001	***
Moderator (W1)						
Indirect CI Effect	2.624	2.106	3.182	0.277	< 0.001	***
Direct CI Effect	0.406	-0.139	0.947	0.278	0.075	
Total CI Effect	3.035	2.574	3.472	0.225	< 0.001	***
Mediator OP1 Effect	0.663	0.551	0.777	0.057	< 0.001	***
R^2 on OP1	0.673	0.627	0.711	0.022	< 0.001	***
R^2 on CE	0.801	0.767	0.829	0.016	< 0.001	***

*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; MI = minority group; W = moderator; M = mediator; X = predictor; PV = plausible values; SE = standard error; C.I. = confidence interval that is estimated by Bayesian approach; The indirect effect is contingent upon minority group; *p < 0.05; **p < 0.01; ***p < 0.001*

Alternatively, the *conditional direct effect of mediator* "self-perception/civic awareness of online participation" is also estimated for minoritized students from different minority groups, this is 0.663 with 95% C.I. [0.551, 0.777], indicating that good self-perception/civic awareness of online participation leads to more civic engagement in school/community for those from *Filipino/Indonesian/Other Asian/White/Mixed group*. The same effect for minoritized students from *Indian/Nepalese/Pakistan group* is 0.690 with 95% C.I. [0.607, 0.771], indicating that this minority group's students also have better self-perception/civic awareness of online participation that leads to more civic engagement in school/ community.

The results show that there are *significant conditional* direct, indirect and total moderating effects, and *conditional* direct effect of mediator for minoritized students who belong to different minority group on the relationship between their perception and sense towards Hong Kong and their civic engagement in the school/community via their civic activism and self-perception of online participation. Therefore, hypothesis H4(v) can be supported.

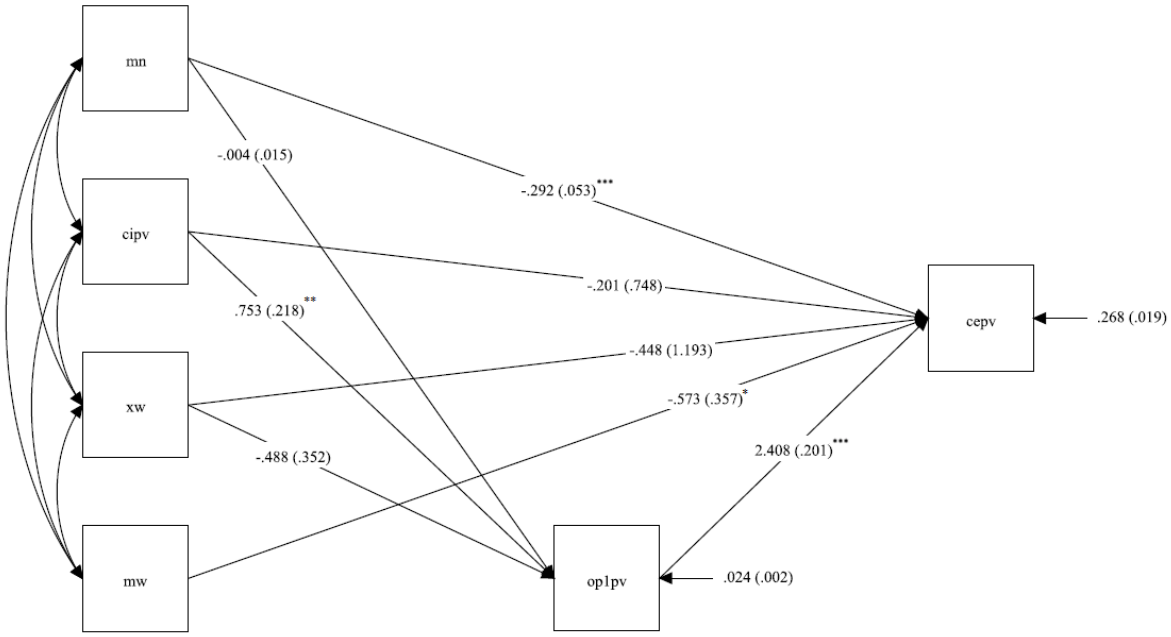
4.5.5 Hypothesis H4(vi) Test Using Moderator "Specific Ethnic Group"

The model parameter estimates of "*W* = Specific Ethnic Group (MN)" is defined that MN = 0 is minoritized students from *Indian group*, MI = 1 is minoritized students from *Nepalese group*, and MI = 2 is minoritized students from *Pakistani group*. **Figure 4.15** introduces the moderated mediation modeling results where the predictor *X (i.e., CI)*, the mediating variable *M (i.e., OP1)*, the moderator *W (i.e., MN)*, and the interaction term ($X \times W$) and ($M \times W$)

were entered in predicting outcome *(CE)*.

Figure 4.15

Hypothesis H4(vi) Test: Moderated Mediation of "CI: Perception and Sense towards Hong Kong and People" on "CE: Civic Engagement in School and Community" via "OP1: Civic Awareness and Self-Perception of Online Participation" by "MN: Specific Ethnic Group"



*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; MN = specific ethnic group; W = moderator; M = mediator; X = predictor; PV = plausible values; Inside the brackets are standard errors; *p < 0.05; **p < 0.01; ***p < 0.001*

The hypothesis H4(vi) test results indicated that minoritized students' self-perception and civic awareness of online participation" is significantly related to their civic engagement in school/community" (b_{ym} *= 2.408, SE = 0.201, p < .001*), and in turn is positively influenced by their perception and sense towards Hong Kong and people" (a_{mx} *= 0.753, SE = 0.281, p < 0.01*). Yet, their specific ethnic group had a *negative direct effect* on minoritized students' engagement in school/community's civic activities (c_{yw} *= -0.292, SE = 0.053, p < 0.001*). It

indicated that the *Pakistani* and *Nepalese group* were *less likely* than *Indian group* to engage in the civic activities.

By contrast, the interaction effect (*M* × *W*) of self-perception/civic awareness of online participation and specific ethnic group was *negative* and *statistically significant* (b_{ymw} = *-0.573, SE = 0.357, p < 0.05*). However, the interaction effect (*X* × *W*) of perception and sense towards Hong Kong and specific ethnic group on civic engagement in school/community were *negative* and *statistically non-significant* (c_{yxw} = *-0.448, SE = 1.193, p > 0.05*). The results suggested that minoritized students' specific group was *negatively* correlated with their self-perception/civic awareness of online participation to reinforce their level of civic engagement in school/community that was increasing reversely from the specific ethnic group in the order of *Pakistani* < *Nepalese* < *Indian*.

Table 4.9 reveals the varying degrees of *conditional* direct, indirect and total effects with respect to the specific ethnic group. The *conditional indirect effect* for minoritized students from *Indian (W0)* is defined as the effect of *CI* on *CE* via *OP1* moderated by *W0*. It is 1.801 with 95% C.I. [0.752, 2.907], indicating that minoritized students from this specific ethnic group have *higher* civic engagement in school/community due to the effect of their perception and sense towards Hong Kong on their self-perception/civic awareness of online participation. On the contrary, the *conditional indirect effect* for minoritized students from *Nepalese group (W1) and Pakistani group (W2)* is not statistically significant *(p > 0.05*).

Table 4.9

Hypothesis H4(vi) Test: Effects of Perception and Sense towards Hong Kong and People on Civic Engagement in School and Community via Civic Awareness and Self-Perception of Online Participation by Specific Ethnic Group

Parameter	Estimate	95% C.I.		SE	P value	Sig
		Under 2.5%	Higher 97.5%			
Mediator						
Intercept (V_m)	0.005	-0.014	0.024	0.01	0.299	
CI→OP1 (a_{mx})	0.753	0.326	1.172	0.218	0.001	**
MN→OP1 (a_{mw})	-0.004	-0.035	0.026	0.015	0.397	
XW→OP1 (a_{mxw})	-0.488	-1.189	0.196	0.352	0.084	
Outcome						
Intercept (V_y)	0.116	0.052	0.181	0.033	< 0.001	***
OP1→CE (b_{ym})	2.408	2.004	2.799	0.201	< 0.001	***
MW→CE (b_{ymw})	-0.573	-1.271	0.136	0.357	0.054	*
CI→CE (c_{yx})	-0.201	-1.655	1.268	0.748	0.396	
MN→CE (c_{yw})	-0.292	-0.395	-0.189	0.053	< 0.001	***
XW→CE (c_{yxw})	-0.448	-2.763	1.902	1.193	0.356	
Moderator (W0)						
Indirect CI Effect	1.801	0.752	2.907	0.546	0.001	**
Direct CI Effect	-0.201	-1.655	1.268	0.748	0.396	
Total CI Effect	1.6	-0.163	3.373	0.895	0.036	*
Mediator OP1 Effect	2.408	2.004	2.799	0.201	< 0.001	***
Moderator (W1)						
Indirect CI Effect	0.48	-0.508	1.532	0.515	0.168	
Direct CI Effect	-0.637	-2.46	1.173	0.933	0.242	
Total CI Effect	-0.168	-2.209	1.949	1.059	0.437	
Mediator OP1 Effect	1.837	1.263	2.41	0.294	< 0.001	***
Moderator (W2)						
Indirect CI Effect	-0.194	-2.167	1.318	0.842	0.363	
Direct CI Effect	-1.09	-5.071	2.828	2.008	0.29	
Total CI Effect	-1.369	-5.695	2.957	2.191	0.265	
Mediator OP1 Effect	1.26	0.047	2.487	0.622	0.021	*
R^2 on OP1	0.035	0.01	0.075	0.017	< 0.001	***
R^2 on CE	0.386	0.298	0.469	0.043	< 0.001	***

*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; MN = specific ethnic group; W = moderator; M = mediator; X = predictor; PV = plausible values; SE = standard error; C.I. = confidence interval that is estimated by Bayesian approach; The indirect effect is contingent upon specific ethnic group; *p < 0.05; **p < 0.01; ***p < 0.001*

In comparison with the indirect effects, the *conditional direct effect* of *CI* on *CE* for minoritized students from *the specific ethnic group* is not statistically significant *(p > 0.05*). As per the *conditional total effects*, the effect for minoritized students from *Indian group* is 1.600 with 95% C.I. [-0.163, 3.373], suggests that for minoritized students in this ethnic group*, CI* has an overall *positive* effect on *CE*, which is the overall effect of *CI* on *CE* for minoritized students in this ethnic group. For minoritized students from *Nepalese* and *Pakistani group*, the overall effect is not statistically significant *(p > 0.05*).

Alternatively, the *conditional direct effect of mediator* "self-perception/civic awareness of online participation" is also estimated for minoritized students from different ethnic groups*,* this is 2.408 with 95% C.I. [2.004, 2.799], indicating that good self-perception/civic awareness of online participation leads to more civic engagement in school and in community for those from *Indian group*. The same effect for minoritized students from *Nepalese group* is 1.837 with 95% C.I. [1.263, 2.410] and from *Pakistani group* is 1.260 with 95% C.I. [0.047, 2.487] indicating that these two ethnic group's students also have better self-perception/civic awareness of online participation that leads to more civic engagement in school/ community.

The results show that there are *significant conditional* indirect and total moderating effects, and *conditional* direct effect of mediator for minoritized students who belong to specific ethnic group on the relationship between their perception and sense towards Hong Kong/ Hongkongers and their civic engagement in the school/community via their civic activism

and self-perception of online participation. Therefore, hypothesis H4(iv) can be accepted.

4.5.6 Hypothesis H4(vii) Test Using Moderator "Ethnic Identity"

The model parameter estimates of "*W* = Ethnic Identity (ID)" is defined so that ID = 0 is minoritized students claiming Ethnic Minority (EM) identity, ID = 1 is minoritized students claiming Hong Kong Ethnic Minority (HKEM) identity, ID = 2 is minoritized students claiming Hongkonger identity. **Figure 4.16** introduces the moderated mediation modeling results where the predictor *X (i.e., CI)*, the mediating variable *M (i.e., OP1)*, the moderator *W (i.e., ED)*, and the interaction term (*X* × *W*) and (*M* × *W*) were entered in predicting outcome *(CE)*.

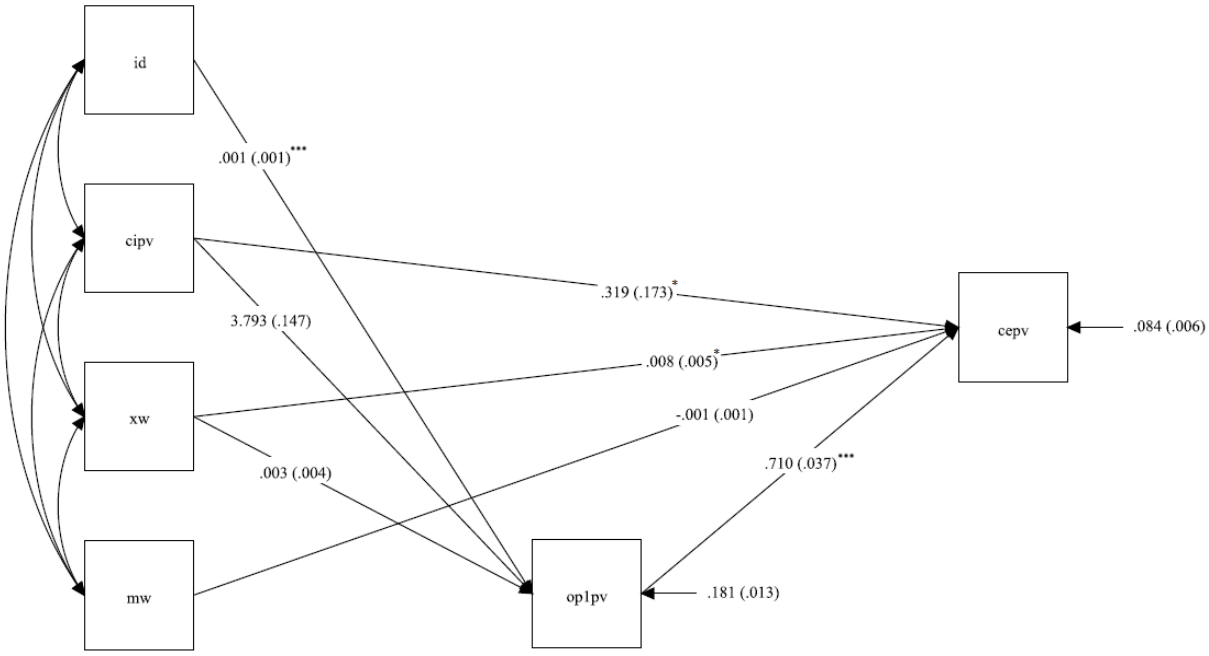
The hypothesis H4(vii) test results indicated that minoritized students' self-perception and civic awareness of online participation" is significantly related to their civic engagement in the school and community" (b_{ym} = *0.710, SE = 0.037, p < .001*), and in turn is positively influenced by their perception and sense towards Hong Kong and people" (a_{mx} = *3.793, SE = 0.147, p < 0.01*). In addition, it is an interesting case that minoritized students claiming the identity of Hongkonger had a *positive direct effect* on their engagement in school/community's civic activities (c_{yw} = *0.319, SE = 0.173, p < 0.05*).

Also, the interaction effect (*X* × *W*) of perception and sense towards Hong Kong and ethnic identity on civic engagement in the school and community were *positive* and *statistically significant* (c_{yxw} = *0.008, SE = 0.048, p < 0.05*). The results suggested that minoritized

students' ethnic identity was *positively* correlated with their perception and sense towards Hong Kong to improve their level of civic engagement that was increasing in the order of *Hongkonger* > *Hong Kong EM* > *EM*. By contrast, the interaction effect (*M* × *W*) of self-perception/civic awareness of online participation and specific ethnic group was not statistically significant *(p > 0.05*).

Figure 4.16

Hypothesis H4(vii) Test: Moderated Mediation of "CI: Perception and Sense towards Hong Kong and People" on "CE: Civic Engagement in School and Community" via "OP1: Civic Awareness and Self-Perception of Online Participation" by "ID: Ethnic Identity"



*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; ID = ethnic identity; W = moderator; M = mediator; X = predictor; PV = plausible values; Inside the brackets are standard errors; *p < 0.05; **p < 0.01; ***p < 0.001*

Table 4.10 discloses the changing degrees of direct, indirect and total effects with respect to the ethnic identity. The *conditional indirect effect* for minoritized students claiming *EM identity* is 2.691 with 95% C.I. [2.357, 3.033], indicating that minoritized students claiming *EM identity* have *higher* civic engagement in school/community due to the effect of their perception and sense towards Hong Kong on their self-perception/civic awareness of online participation.

Moreover, the *conditional indirect effect* for minoritized students claiming *HKEM identity* is 2.689 with 95% C.I. [2.358, 3.029], indicating that minoritized students claiming *HKEM identity* also have *higher* civic engagement in school/community due to the effect of their perception and sense towards Hong Kong on their self-perception/civic awareness of online participation. In the same way, the *conditional indirect effect* for minoritized students claiming *Hongkonger identity* is 2.688 with 95% C.I. [2.358, 3.029], indicating that minoritized students claiming *Hongkonger identity* also have *higher* civic engagement in school/community due to the effect of their perception and sense towards Hong Kong on their self-perception/civic awareness of online participation.

The *conditional direct effect* of *CI* on *CE* for minoritized students claiming *EM identity* is 0.319 with 95% C.I. [-0.022, 0.655] that shows the minoritized students with *EM identity* have *higher* level of civic engagement in school/community. In parallel, the *conditional*

direct effect for minoritized students claiming *Hong Kong EM identity* is 0.328 with 95% C.I. [-0.010, 0.659], showing that the minoritized students with *Hong Kong EM identity* have similar level of civic engagement in school/community. Furthermore, the *conditional direct effect* for minoritized students claiming *Hongkonger identity* is 0.336 with 95% C.I. [0.003, 0.664], showing that their *Hongkonger identity* also have similar level of civic engagement in school/community.

In accordance with the *conditional total effects*, the effect for minoritized students claiming *EM identity* is 3.011 with 95% C.I. [2.727, 3.294], implying that for minoritized students with *EM identity, CI* has an overall *positive* effect on *CE*, which is the overall effect of *CI* on *CE* for minoritized students with this identity. For minoritized students claiming *Hong Kong EM identity*, the overall effect is 3.018 with 95% C.I. [2.739, 3.298], indicating that the civic activism of online participation for minoritized students with *Hong Kong EM identity* also has a *positive conditional total effect* on civic engagement in school/community. For those claiming *Hongkonger identity*, the overall effect is 3.025 with 95% C.I. [2.748, 3.302], indicating that the perception and sense towards Hong Kong for minoritized students with *HKEM identity* has a *positive conditional total effect* on civic engagement in the school/community either.

Table 4.10

Hypothesis H4(vii) Test: Effects of Perception and Sense towards Hong Kong and People on Civic Engagement in School and Community via Civic Awareness and Self-Perception of Online Participation by Ethnic Identity

Parameter	Estimate	95% C.I.		SE	P value	Sig
		Under 2.5%	Higher 97.5%			
Mediator						
Intercept (V_m)	0.181	0.157	0.207	0.013	< 0.001	***
CI→OP1 (a_{mx})	3.793	3.504	4.078	0.147	< 0.001	***
ID→OP1 (a_{mw})	0.001	-0.001	0.002	0.001	0.160	
XW→OP1 (a_{mxw})	0.003	-0.005	0.011	0.004	0.227	
Outcome						
Intercept (V_y)	0.084	0.073	0.096	0.006	< 0.001	***
OP1→CE (b_{ym})	0.710	0.637	0.782	0.037	< 0.001	***
MW→CE (b_{ymw})	-0.001	-0.003	0.001	0.001	0.173	
CI→CE (c_{yx})	0.319	-0.022	0.655	0.173	0.032	*
ID→CE (c_{yw})	0	-0.001	0.001	0	0.353	
XW→CE (c_{yxw})	0.008	-0.001	0.018	0.005	0.048	*
Moderator (W0)						
Indirect CI Effect	2.691	2.357	3.033	0.174	< 0.001	***
Direct CI Effect	0.319	-0.022	0.655	0.173	0.032	*
Total CI Effect	3.011	2.727	3.294	0.144	< 0.001	***
Mediator OP1 Effect	0.710	0.637	0.782	0.037	< 0.001	***
Moderator (W1)						
Indirect CI Effect	2.689	2.358	3.029	0.172	< 0.001	***
Direct CI Effect	0.328	-0.010	0.659	0.171	0.027	*
Total CI Effect	3.018	2.739	3.298	0.142	< 0.001	***
Mediator OP1 Effect	0.709	0.636	0.780	0.036	< 0.001	***
Moderator (W2)						
Indirect CI Effect	2.688	2.358	3.024	0.171	< 0.001	***
Direct CI Effect	0.336	0.003	0.664	0.169	0.024	*
Total CI Effect	3.025	2.748	3.302	0.140	< 0.001	***
Mediator OP1 Effect	0.708	0.636	0.779	0.036	< 0.001	***
R^2 on OP1	0.665	0.618	0.705	0.022	< 0.001	***
R^2 on CE	0.796	0.762	0.825	0.016	< 0.001	***

*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; ID = ethnic identity; W = moderator; M = mediator; X = predictor; PV = plausible values; SE = standard error; C.I. = confidence interval that is estimated by Bayesian approach; The indirect effect is contingent upon ethnic identity; *p < 0.05; **p < 0.01; ***p < 0.001*

On the other hand, the *conditional direct effect of mediator* "self-perception/civic awareness of online participation" for minoritized students claiming *EM identity,* is 0.710 with 95% C.I. [0.637, 0.782], indicating that good self-perception/civic awareness of online participation leads to more civic engagement in the school/community for those with *EM identity*. The same effect for minoritized students with *Hong Kong EM identity* is 0.709 with 95% C.I. [0.636, 0.780], indicating that the students with this identity also have a better self-perception/civic awareness of online participation that leads to more civic engagement in school/community. The same effect for minoritized students with *Hongkonger identity* is 0.708 with 95% C.I. [0.636, 0.779], indicating that the students with this identity have a better self-perception/civic awareness of online participation leading to more civic engagement in school/community.

The results show that there are *significant conditional* direct and total moderating effects for minoritized students who claim different ethnic identity on the relationship between their perception and sense towards Hong Kong and their civic engagement in the school/community via their civic activism and self-perception of online participation. Therefore, hypothesis H4(v) can be confirmed.

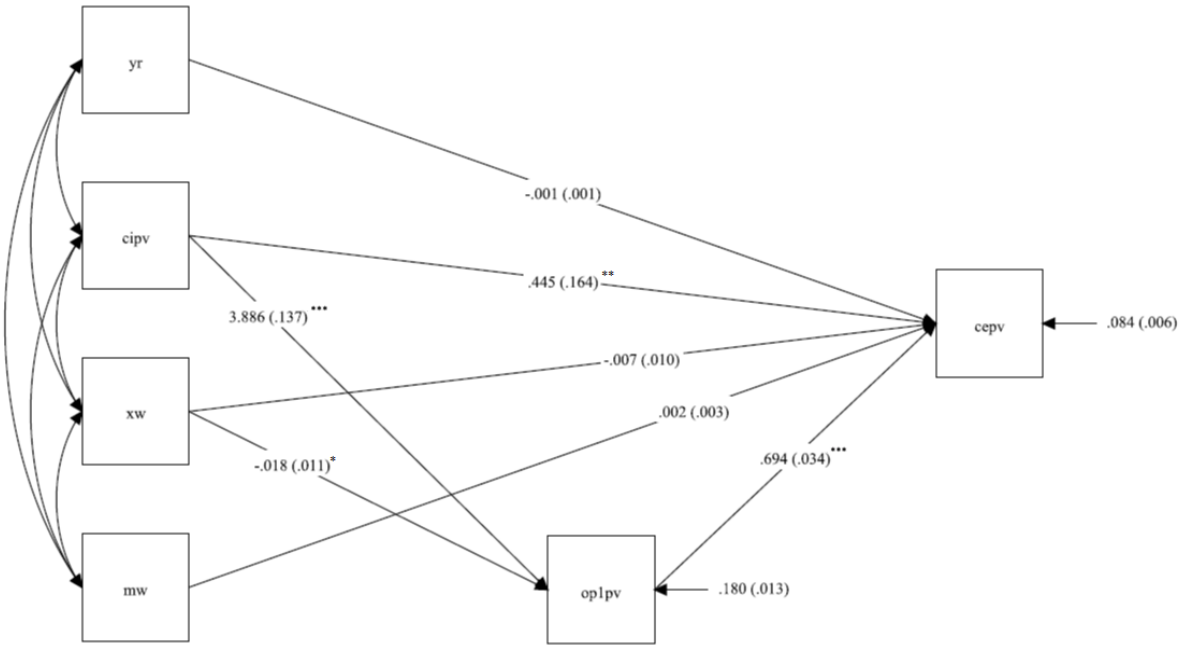
4.5.7 Hypothesis H4(viii) Test Using Moderator "Years of Internet Use"

The model parameter estimates of "*W* = Years of Using Internet (YR)" is defined so that YR = 0 is minoritized students using Internet for less than 5 years, YR = 1 is minoritized students using Internet for 5-10 years, YR = 2 is minoritized students using Internet for more than 10

years. **Figure 4.17** introduces the moderated mediation modeling results where the predictor *X (i.e., CI)*, the mediating variable *M (i.e., OP1)*, the moderator *W (i.e., YR)*, and the interaction term ($X \times W$) and ($M \times W$) were entered in predicting outcome *(CE)*.

Figure 4.17

Hypothesis H4(viii) Test: Moderated Mediation of "CI: Perception and Sense towards Hong Kong and People" on "CE: Civic Engagement in School and Community" via "OP1: Civic Awareness and Self-Perception of Online Participation" by "YR: Years of Internet Use"



*Note: Entries are unstandardized regression coefficients; OP1 = civic awareness/self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; YR = years of Internet use; W = moderator; M = mediator; X = predictor; PV = plausible values; Inside the brackets are standard errors; *p < 0.05; **p < 0.01; ***p < 0.001*

The hypothesis H4(viii) test results present that minoritized students' self-perception and civic awareness of online participation" is significantly related to their civic engagement in the school and community" (b_{ym} *= 0.694, SE = 0.034, p < .001*), and in turn is positively influenced by their perception and sense towards Hong Kong/Hongkongers" (a_{mx} *= 3.886, SE*

= 0.137, p < 0.01). Moreover, their perception and sense towards Hong Kong and people also had *positive direct effect* on their engagement in school/community's civic activities (c_{yx} = *0.445, SE = 0.164, p < 0.01*).

The interaction effect (*X* × *W*) of their "perception and sense towards Hong Kong" and "years of Internet use" on their self-perception and civic awareness of online participation, however, was *significantly negative* (a_{mx} = *-0.018, SE = 0.011, p < 0.05*). It indicated that minoritized students using Internet for long years were *less likely* to have good perception and sense towards Hong Kong. The effect implied they may suffer from Internet addiction that leads to *less* general trust in other people due to long years at-risk Internet use.

Table 4.11 discloses the conditional levels of direct, indirect and total effects with respect to the years of using Internet. The *conditional indirect effect* for minoritized students using Internet for less than 5 years is 2.694 with 95% C.I. [2.38, 3.016], indicating that they have *significantly higher level of* civic engagement in school/community due to the effect of their perception and sense towards Hong Kong/Hongkongers on their self-perception/civic awareness of online participation.

Nevertheless, the *conditional indirect effect* for minoritized students using Internet for 5-10 years is 2.69 with 95% C.I. [2.377, 3.01], indicating that they have *significantly higher* level of civic engagement in school/community due to the same effect. In the same way, the *conditional indirect effect* for their use of Internet over 10 years is 2.686 with 95% C.I. [2.376, 3.003], indicating that they also have *significantly higher* civic engagement due to the effect.

Table 4.11

Hypothesis H4(viii) Test: Effects of Perception and Sense towards Hong Kong and People on Civic Engagement in School and Community via Civic Awareness and Self-Perception of Online Participation by Years of Using Internet

Parameter	Estimate	95% C.I.		SE	P value	Sig
		Under 2.5%	Higher 97.5%			
Mediator						
Intercept (V_m)	-0.009	-0.051	0.033	0.021	0.34	
CI→OP1 (a_{mx})	3.886	3.615	4.151	0.137	< 0.001	***
YR→OP1 (a_{mw})	0.000	-0.003	0.004	0.002	0.478	
XW→OP1 (a_{mxw})	-0.018	-0.04	0.002	0.011	0.044	*
Outcome						
Intercept (V_y)	0.014	-0.015	0.043	0.015	0.17	
OP1→CE (b_{ym})	0.694	0.625	0.761	0.034	< 0.001	***
MW→CE (b_{ymw})	0.002	-0.004	0.008	0.003	0.24	
CI→CE (c'_{yx})	0.445	0.121	0.763	0.164	0.003	**
YR→CE (c'_{yw})	-0.001	-0.004	0.001	0.001	0.156	
XW→CE (c'_{yxw})	-0.007	-0.027	0.013	0.01	0.236	
Moderator (W0)						
Indirect CI Effect	2.694	2.38	3.016	0.164	< 0.001	***
Direct CI Effect	0.445	0.121	0.763	0.164	0.003	**
Total CI Effect	3.14	2.878	3.402	0.133	< 0.001	***
Mediator OP1 Effect	0.694	0.625	0.761	0.034	< 0.001	***
Moderator (W1)						
Indirect CI Effect	2.69	2.377	3.01	0.162	< 0.001	***
Direct CI Effect	0.438	0.119	0.752	0.162	0.003	**
Total CI Effect	3.129	2.869	3.389	0.132	< 0.001	***
Mediator OP1 Effect	0.696	0.628	0.763	0.034	< 0.001	***
Moderator (W2)						
Indirect CI Effect	2.686	2.376	3.003	0.161	< 0.001	***
Direct CI Effect	0.431	0.117	0.742	0.161	0.003	***
Total CI Effect	3.117	2.86	3.376	0.131	< 0.001	***
Mediator OP1 Effect	0.698	0.631	0.765	0.034	< 0.001	***
R^2 on OP1	0.667	0.62	0.706	0.022	< 0.001	***
R^2 on CE	0.793	0.758	0.822	0.016	< 0.001	***

*Note. Entries are unstandardized regression coefficients; OP2 = civic activism of online participation; CI2 = perception of Hong Kong people; CE1 = civic engagement in the community; ID = ethnic identity; W = moderator; M = mediator; X = predictor; SE = standard error; CI = confidence interval that is estimated by Bayesian approach; The indirect effect is contingent upon years using Internet; *p < 0.05; **p < 0.01; ***p < 0.001*

The *conditional total effect* of perception and sense towards Hong Kong/Hongkongers on civic engagement in school/community for minoritized students using Internet less than 5 years is 3.14 with 95% C.I. [2.878, 3.402], implying that they have *higher* level of civic engagement in the school/community. Similarly, the *conditional total effect* for them using Internet for 5-10 years is 3.129 with 95% C.I. [2.869, 3.389], showing that they have similar higher level of civic engagement. Furthermore, the *conditional direct effect* for them using Internet for more than 10 years is 3.117 with 95% C.I. [2.86, 3.376], indicating that they also have more civic engagement in school/community.

On the other hand, the *conditional direct effect of mediator* "civic activism and self-perception of online participation" for minoritized students using Internet for less than 5 years is 0.694 with 95% C.I. [0.625, 0.761], indicating that their civic activism and self-perception of online participation leads to more civic engagement in the school/community. Moreover, those using the Internet for 5-10 years is 0.696 with 95% C.I. [0.628, 0.763], showing that their civic activism and self-perception of online participation leads to more civic engagement. The same effect of those using for more than 10 years is 0.698 with 95% C.I. [0.631, 0.765], indicating that their perceptions are associated with more civic engagement in school/community.

The results show that there are *significant conditional direct, indirect* and *total* moderating

effects, and *conditional effect* of *mediator* for minoritized students who use Internet for different length of years on the relationship between their perception and sense towards Hong Kong/Hongkongers and their civic engagement in the school/community via their civic activism and self-perception of online participation. Therefore, hypothesis H4(vi) can be supported.

4.5.8 Difference in Conditional Indirect, Direct, Total, and Mediator Effects

The modified table of the moderated mediation model of socio-demographic variables is presented in **Table 4.12**. The hypothesis H4 test results of moderated mediation models provide insights into the conditional direct, indirect and total effects of minoritized students' "CI: civic awareness and sense towards Hong Kong" on their "CE: civic engagement in the school/community", the mediation effects of their "OP1: civic activism/self-perception of online participation", and the moderating roles of socio-demographic factors on the relationship.

It indicates the difference in conditional indirect, direct, total and mediator effects of minoritized students' *CI* on their *CE* via their *OP1* moderated by school religious background, educational level, specific ethnic group, ethnic identity and years of Internet use. The *conditional indirect effec*t of *CI* on *CE* via *OP1* is contingent on individual minoritized student's socio-demographic backgrounds.

Table 4.12

Summary Table of Difference in Conditional Indirect, Direct, Total, and Mediator Effects (Moderated by School Religious Background, Educational Level, Specific Minority Group, Ethnic Identity and Years of Internet Use) between Minoritized Students

Difference in Conditional Effect	Moderator	Estimate	95% C.I. Lower 2.5%	95% C.I. Upper 97.5%	p-value	Sig
△Indirect Effect OP→CI→CE	Gender (W1 - W0)	0.187	-0.034	0.405	0.047	*
	Specific Ethnic Group (W1 - W0)	-1.333	-2.82	0.158	0.041	*
	Specific Ethnic Group (W2 - W0)	-2.065	-4.408	0.123	0.032	*
	Specific Ethnic Group (W2 - W1)	-0.692	-1.995	0.081	0.036	*
△Direct Effect OP→CE	Age Group (W1 - W0)	-0.012	-0.023	0.000	0.022	*
	Ethnic Identity (W1 - W0)	0.008	-0.001	0.018	0.048	*
	Ethnic Identity (W2 - W0)	0.016	-0.003	0.035	0.048	*
	Ethnic Identity (W2 - W1)	0.008	-0.001	0.018	0.048	*
△Total Effect	Age Group (W1 - W0)	-0.008	-0.018	0.001	0.038	*
	Ethnic Identity (W1 - W0)	0.007	-0.001	0.015	0.046	*
	Ethnic Identity (W2 - W0)	0.014	-0.002	0.029	0.046	*
	Ethnic Identity (W2 - W1)	0.007	-0.001	0.015	0.045	*
△Mediator Effect CI→CE	Educational Level (W1 - W0)	0.127	-0.401	0.646	0.039	*
	Specific Ethnic Group (W1 - W0)	-0.573	-1.271	0.136	0.054	*
	Specific Ethnic Group (W2 - W0)	-1.147	-2.543	0.273	0.054	*
	Specific Ethnic Group (W2 - W1)	-0.573	-1.271	0.136	0.054	*

*Note. Entries are unstandardized regression coefficients; △= difference in conditional effects; OP1 = civic awareness and self-perception of online participation; CI = perception of Hong Kong and people; CE = civic engagement in the community and in school; Education (W0 = F1-3; W1 = F4-6); Gender (W0 = Boy; W1 = Girl); Age Group (W0 = 11-15; W1 = 16-20); Ethnic Identity (W0 = Ethnic Minority Identity; W1 = Hong Kong Ethnic Minority Identity; W2 = Hongkonger Identity); Specific Ethnic Group (W0 = Indian; W1 = Nepalese; W2 = Pakistan); CI = confidence interval that is estimated by Bayesian approach; *p < .05; **p < .01; *** p < .001*

The difference of *conditional indirect effect* between minoritized students can be simplified as a contingent effect of moderator (*W*) on the indirect effect of *CI* on *CE* through *OP1* while conserving the direct effect of *OP1* as constant. The difference is equivalent to *Mplus code* "*SSI_diff = SSI_W1 - SSI_W0*". The difference of *conditional direct effect* between

minoritized students is equivalent to "*SSD_diff = SSD_W1-SSD_W0*". In contrast, the difference of *conditional total effects* between minoritized students is equivalent to "*SST_diff = SST_W1-SST_W0*". In turn, the difference of direct effect of the mediator *"WD_diff = WD_W1 - WD_W0"* indicates the contingent effect of the moderator (W) on the direct effect of *OP1* on *CE* when keeping *CI* constant (see **Appendix 9**).

Consecutively, the difference in *conditional direct effect of mediator* between minoritized students in *junior* and *senior grades* can be simplified as a contingent effect of education level on the direct effect of *OP1* on *CE* while keeping the direct effect of *CI* constant. It is 0.119 with 95% C.I. [-0.014, 0.253], indicating a *significant difference* between minoritized students studying in *junior* versus *senior grades* in the mediator direct effect of *OP1* on *CE*. The difference of 0.119 implies that minoritized students' civic awareness and self-perception of online participation appears to be *more positive* for minoritized students in *senior grades*.

In addition, the difference in *conditional direct effect of the mediator* between minoritized students in specific ethnic groups (i) *Indian*, (ii) *Nepalese*, and (iii) *Pakistani* are all *negative* and *statistically significant ($p < 0.05$)*. It can be ranked in the descending order of *Indian > Nepalese > Pakistanis*. Thus, minoritized students from an Indian background have the highest level of civic engagement in school/community on account of their high levels of civic awareness and self-perception of online participation. Alternatively, Pakistani students

have the lowest levels of civic engagement in school/community on account of their low levels of civic awareness and self-perception of online participation. These results may be related to their socioeconomic status since Indian students are wealthy and better adapted to Hong Kong local community than Pakistani students (Arat *et al.*, 2016; Cheung & Chou, 2018).

Nonetheless, the difference of *conditional indirect effect* between minoritized students in specific ethnic groups (i) *Nepalese(W1)* and *Indian(W0)*, (ii) *Pakistani(W2)* and *Indian(W0)*, and (iii) *Pakistani(W2)* and *Nepalese(W1)* are also all *negative*. However, the difference between boys (*W0*) and girl (*W1*) is positive. The difference is *statistically significant* and can be ranked in the descending order of *Indian > Nepalese > Pakistani, and Girl > Boy*. Therefore, minoritized students who are girls and/or from Indian group have the highest civic engagement in school/community due to the effect of their perception and sense towards Hong Kong/Hongkongers on their civic awareness and self-perception of online participation.

The difference of *conditional direct effect* between minoritized students with ethnic identities of (i) *EM(W1)* and *HKEM(W0)*, (ii) *Hongkonger(W2)* and *HKEM(W0)*, and (iii) *Hongkonger(W2)* and *EM(W1)* are all *positive* and *statistically significant ($p < 0.05$)*. The difference between students aged 11-15 (*W0*) and students aged 16-20 (*W1*) is *negative* and *statistically significant ($p < 0.05$)*. It can be ranked in the descending order of *Hongkonger >*

EM > *HKEM*, and *Aged 11-15* > *Aged 16-20*. Thus, minoritized students with a *Hongkonger* identity and more juvenile have the *highest* civic engagement in school/community due to the effect of their civic awareness and self-perception of online participation.

Meanwhile, the difference of *conditional total effect* (*i.e.,* the moderating effect of ethnic identities) between minoritized students of (i) *EM(W1)* and *HKEM(W0)*, (ii) *Hongkonger(W2)* and *HKEM(W0)*, and (iii) *Hongkonger(W2)* and *EM(W1)* are all *positive*, and between students aged 11-15 (*W0*) and students aged 16-20 (*W1*) is *negative*. The difference is *statistically significant* ($p < 0.05$) and can be ranked in the descending order of *Hongkonger* > *EM* > *HKEM* and *Aged 11-15* > *Aged 16-20*.

Thus, it is *statistically significant* that minoritized students who are older boy with identity of *HKEM* have the *lowest* civic engagement in school/community and those who are girls and more juvenile with identity of *Hongkonger* have the *highest* civic engagement in school/community due to the *conditional indirect effect* of their perception and sense towards Hong Kong/Hongkongers on their civic awareness/self-perception of online participation, and the *conditional direct effect* of civic awareness/self-perception of online participation.

The results show that there are *overall weaker* moderating effects for minoritized students who are boys and claim *HKEM* identity on the relationship between their perception and sense toward Hong Kong/Hongkongers and their civic engagement in school/community via

their civic awareness/self-perception of online participation.

The hypothesis H4 test suggests that the *conditional direct, indirect, and total effect* of perception and sense towards Hong Kong/Hongkongers on civic engagement in the school/community via civic awareness and self-perception of online participation turns out to be stronger for the minoritized students who are *girls aged 11-15*, coming from *Indian* group, and having *Hongkonger* identity. On the contrary, minoritized students from *Nepalese* and *Pakistani* groups studying in *junior grades* have a low-level civic engagement in school/community respectively. This is associated with the effect of their civic awareness and self-perception of online participation and possibly there is also an association with the level of poverty they experience (Cheung & Chou, 2017).

4.6 Multi-level Analysis

Multi-level SEM of mediation, moderation and moderated mediation were modelled according to the specifications of the hypothesis H1, H2, H3 and H4. The modeling results, however, indicated that the interclass correlations were zero suggesting that variance in the results could not be accounted for at the classroom level (**Appendix 10**).

4.7 Summary

This chapter has examined the relationships between identity and civic engagement in school/community by providing evidence of the mediating and moderating effect of online

participation for civic activities. Although there is literature proposing that participation online may have a positive influence on students' civic engagement in school/community and identity, it has rather focused on the discrete direct effects than the moderated indirect effects.

Specifically, there is a slightly negative conditional effect of civic activism of online participation moderating the relationship between self-perception/civic awareness of online participation and civic engagement in school/community. As a result, if few minoritized students frequently join online protests to express their views and discuss civic issues on the social media platform, they may either involve in cyberbullying as keyboard warriors or become victims of being bullied by others. They may be discouraged from engaging in regular civic activities in school and in community because their real participation may not provide them with the same degree of empowerment.

The moderated mediation results of socio-demographic factors suggest that minoritized students coming from both *non-religious and religious schools,* and studying in *senior grades* desire to participate online in order to be more informed and aware of civic issues using the Internet. They tend to become general netizens and have a favorable impression of Hong Kong people who appreciate environmental protection. They tend to believe that Hong Kong people are the finest in the world, not selfish and more cohesive than people of other countries. As a consequence, they engage more in school/community's civic activities.

Notwithstanding, the data analysis reveals that minoritized students who are *girls, more juvenile* and belonging to *Indian* groups engage more in school/community's civic activities since they have been impressed by Hongkongers. Moreover, they are inclined to have more civic engagement in school/community through online participation for civic activities. In addition, there is a significant difference between minoritized students claiming to be either *Hong Kong Ethnic Minority, Ethnic Minority,* or *Hongkonger* for overall moderating effects on the relationships between their online participation, civic engagement in school/community and identity. However, they may also suffer from risk behavior due to participating online for longer years which leads to their poor perception and sense towards real offline living environment of Hong Kong.

The results of the analysis will be crucial for deducing the role of online participation in civic engagement in school/community and identity of a small group of minoritized students in this online social media era. It supports the hypothesized models regarding the role of online participation as a reinforcer mediating and moderating minoritized students' civic engagement in school/community influenced by their identity. It also demonstrates that minoritized students' socio-backgrounds moderate the relationship between online participation and individual minoritized student's variations in identity and civic engagement in school/community. There is limited literature about the moderated indirect pathway of

identity on civic engagement in school/community via online participation for minoritized students. In summary, the hypothesized models were tested to provide empirical evidence that identity may influence civic engagement in school/community via online participation indirectly. The next chapters will discuss in detail the implication of these results for theory, policy and practice.

Chapter Five

Discussion

5.1 Introduction

This chapter discusses in detail the results that were set out in the previous chapter. The most important result is that the frequency of minoritized students' online participation could lead to more or less civic participation. There are two reasons depending on how they used Internet and whether it was with or without teacher and parental guidance. The results also interestingly convey that participation online for civic activities also influences the relationships between civic engagement in school/community and identity which is contingent on minoritized students' socio-demographic characteristics such as *school background, education level, specific ethnic group, ethnic identity,* and *years of Internet use*.

Broadly speaking, minoritized students' higher levels of education, favorable perception toward Hong Kong and its people, strong civic activism/self-perception of online participation, studying in either non-religious or religious school, identifying themselves as Hongkongers, belonging to specific minority groups, and using Internet for a reasonable period of time are likely to moderate the relationship between their identity and civic engagement in school/community via their online participation. Therefore, minoritized students having such socio-demographic characteristics are likely to engage more in civic events in school and in community compared to their peers.

This thesis explored the relationship among these important aspects of citizenship engagement by collecting survey data from a sample of minoritized students in Hong Kong. It systematically compared conditional levels of socio-demographics among minoritized students and explored their potential differences due to school background, age, gender, education, minority group, specific ethnic groups, ethnic identity and years of Internet use. In this chapter, the purpose is to explore the implications for the results as they apply to their impact on theory, school level practice and policy development. Hopefully, these analyses will lead to a deeper understanding of the social experiences of minoritized students at an important time in Hong Kong's development.

Specifically, this chapter will discuss the results with respect to the defined research questions and the hypotheses related to the research questions.

R1: How do minoritized students' civic awareness/self-perception of online participation relate to civic engagement and identity?

H1: Minoritized students' civic awareness/self-perception of online participation is *assumed to mediate* the relationship between civic engagement and identity.

R2: How do minoritized students' civic activism of online participation relate to civic activism/self-perception of online participation, civic engagement and identity?

H2: Minoritized students' civic activism of online participation is *assumed to moderate* the

relation between (i) identity and civic engagement, and (ii) civic activism/self-perception of online participation and civic engagement.

R3: How do minoritized students' civic activism of online participation relate to the *"mediated"* relationship between civic activism/self-perception of online participation, civic engagement and identity?

H3: Minoritized students' civic activism of online participation is *assumed to moderate* the *"mediated"* relationship between civic activism/self-perception of online participation, civic engagement and identity.

R4: How do minoritized students' socio-demographic background relate to the *"mediated"* relationship between civic activism/self-perception of online participation, civic engagement and identity?

H4: Minoritized students' socio-demographic background is *assumed to moderate* the *"mediated"* relationship between civic activism/self-perception of online participation, civic engagement and identity.

The aims of the four research questions were to evaluate the mediating, moderating and moderated mediating relationship between online participation, civic engagement and identity in a small sample of minoritized students. Its importance was that online participation has become a popular phenomenon in Hong Kong as more and more minoritized students use mobile phones with online social media apps (Chen, 2017; Dong *et al.*, 2017;

Lannegrand-Willems *et al.*, 2018; Lin *et al*., 2010; Skoric & Ng, 2009). There have been few studies, however, that have examined the relationship of online participation, civic engagement and identity for minoritized students in Hong Kong.

In the following sections, Section 5.2 will examine the results in connection with research question RQ1. Section 5.3 will assess the results with regard to research question RQ2. Section 5.4 will review the results with reference to research question RQ3. Section 5.5 will evaluate the results with respect to research question RQ4. Section 5.6 will explain the theory, practice and policy that are implied in the research. Section 5.7 will briefly summarize the chapter.

5.2 Mediation Effects of Online Participation on the Relationship between Civic Engagement and Identity

Hypothesis H1 examined a three variables' mediation model where the influence of minoritized students' identity (X) was assumed to be directly related to their civic engagement (Y) or indirectly related to their civic engagement (Y) via civic awareness/self-perception of online participation for civic activities (M). This addresses RQ1. The mediation model of hypothesis H1 proposed that civic awareness/self-perception of online participation can *reinforce* the identity of inactive minoritized students to engage in civic activities. By noting the important role of identity in shaping minoritized students' civic engagement (Chan, 2013; Chor, 2019; Gitelman, 2006), hypothesis H1 focused on the mediating effects of civic awareness/self-perception of participation online for civic activities

and provided empirical evidence whether or not minoritized students' identity has a positive impact on their civic engagement via their civic awareness/self-perception of online participation.

As revealed by the test results in Chapter 4, hypothesis H1 was justified by *full mediation* model with *strong* indirect effects. For this reason, minoritized students' civic awareness/self-perception of online participation was considered to have *strong mediating effect* for reinforcing the relationship between their identity and civic engagement in school/community. The results have illustrated that identity positively influences civic engagement in school/community. Moreover, it also showed that civic awareness/self-perception of online participation has a positive mediating effect to *reinforce* minoritized students' positive perception and sense toward Hong Kong/Hongkongers.

The results of hypothesis H1 test suggest that minoritized students, who discuss civic issues on social networking apps/sites and express their opinions about civic issues through online social media platform are those who were already interested in civic activities. In turn, their perceived engagement in school/community is associated with their involvement in community organizations (*e.g.,* youth alliance associated with a political group, environmental organization, artistic affiliation in accordance with ethnicity, religious organization or group, and concern group advocating for a civic matter).

Minoritized students participate in online activities because their connections and networks in

online social media platform are based on interpersonal relationships (Boyd & Ellison, 2007; Chen, 2017; Gil de Zuniga et al., 2010). Therefore, the *full mediation* model, which accounts for 8.6% of the variance in civic engagement (*i.e.*, $R^2 = 0.086$), argues that minoritized students' identity is *directly* related to civic engagement or *indirectly* related to civic engagement through civic awareness/self-perception of online participation. This important finding not only suggests the centrality of identity in understanding any propensity for civic engagement in school/community for minoritized students; but also reveals the importance of civic awareness/self-perception of participation online for civic activities as a reinforcer that can provide opportunities for them to realize the values underpinning their identity.

In addition, minoritized students whose identity influences their civic engagement in school/community are also more likely to have a favorable impression toward Hong Kong and its people. They perceive Hongkongers to have values such as appreciating environmental protection, very friendly toward people, and more cohesive than people of other countries, etc. These favorable attitudes seem to shape their civic interest as well as their awareness of civic issues about Hong Kong, thus promoting their levels of civic engagement in school/community.

On the other hand, hypothesis H1 test results indicated that minoritized students' identity exerted a strong *stimulating* effect on their civic awareness/self-perception of online

participation and civic engagement in school/community. It was sufficiently supported by the *full mediation* model. As hypothesized, the findings supported research question RQ1 that identity contributes directly to civic engagement behaviors or indirectly via civic awareness/self-perception of participation online for civic activities.

A positive relationship between students' identity and civic engagement behaviors has been consistently found in previous research. Online participation can be considered as an online social network in which students share equal status and opportunities to communicate with each other and exchange civic information. This network relationship between students is important for understanding the effect of identity on engagement in civic activity. In this relationship, online participation is best understood as a social network of ethnic groups and ties through which the students' interactions lead them into civic affairs (Gil de Zúñiga *et al*., 2012). This social function of online participation should not be underestimated since it can unite disparate individuals creating common understandings and purposes. Alternatively, it may also have negative effects if exchanges themselves are negative. This is an important area for additional consideration.

Some studies have shown that networks can promote civic engagement. Banks (2008) indicated that equivalent status among different ethnic groups is important for effective intergroup interactions and communication. Likewise, Putnam (1993) indicated that social

networks must be organized horizontally among diversified groups in order for democracy to work. Engagement in different social groups provide a setting for civic interactions as well as a platform for addressing civic needs (Brennan et al. 2009).

Vermeulen (2006) emphasized that network relationships between individuals from different ethnic groups give rise to democracy by promoting civic interest and trust in civic engagement. Moreover, there is creation of network relations on the grounds of online participation because it promotes interpersonal networks, strengthens interpersonal trust, provokes civic participation, and reinforces sense of belonging to the community among specific ethnic groups (Zaleskiene 2008).

Furthermore, Harris (2010) found that networks are one of the most important factors for cultivating civic connection. Thus, minoritized students are building networks for civic engagement through online participation because they may sense that schools, which should enhance their interactions with peers, may not meet their need of socialization. Actually, schools can be alienating for Hong Kong's ethnic minorities (Bhowmik & Kennedy 2016).

Given the important role of networks in providing a means for communication between minoritized students, the hypothesis H1 test results also pointed towards additional factors that appear to facilitate civic engagement in school/community. They showed that a positive perception of and identification towards Hong Kong people was a stimulator for online

participation and civic engagement in school/community, whereas civic awareness/self-perception of participation online for civic activities also mediated the relationship between civic engagement in school/community and identity.

5.3 Moderation of Minoritized Students' Civic Activism of Online Participation on the Relationship between Civic Awareness/Self-perception of Online Participation, Civic Engagement and Identity

In addition to evaluating a mediation mechanism, hypothesis H2 sought to explore the moderating effects of minoritized students' civic activism of online participation on the relationship of civic awareness/self-perception of online participation, civic engagement in school/community and identity in order to address RQ2. Hypothesis H2 suggested that the relationships may be contingent on minoritized students' personal civic activism of online participation.

By inspecting the moderating effect, hypothesis H2 illustrates the differential conditions in which the latent relationship may diverge. Specifically, by assessing civic activism of online participation as a moderator (W), the individual effect of civic activism of online participation on civic awareness/self-perception of participation online for civic activities, civic engagement in school/community and identity was assessed. The results of moderation models 1-2 discussed in Chapter 4 enabled the following relationships to be examined (i) identity and civic engagement in school/community, and (ii) civic awareness/self-perception

of online participation and civic engagement in school/community. It was hypothesized that identity and online participation differed depending on individual minoritized student's civic activism of online participation.

When interaction effects (*i.e.,* partial R^2 (ΔR^2)) between the civic activism of online participation and latent factors are examined, significant interactions were identified for predicting minoritized students' identity, civic awareness/self-perception of online participation, and civic engagement in school/community. There is an interesting statistical artifact that is related to the small effect size measure of ΔR^2. It shows the variance explained by the interaction term of predictor (X) and moderator (W) in the outcome variable (Y) (Cohen *et al.*, 2013). It is expected that the ΔR^2 would be small in accordance with the simulation results of numerous statistical measurements that reveal a downward bias in the magnitude of observed moderating effects. Champoux and Peters (1987) demonstrated that ΔR^2 interprets approximate 1% - 3% of the dependent variable's variance. Actually, the small ΔR^2 has also been reported in other quantitative researches (Aiken & West, 1991; Stone-Romero & Liakhovitski, 2002). Thus, the moderating effect size (ΔR^2) explaining even 0.1% of the variance may be meaningful and have practical importance (Abelson, 1985; Evans, 1985; McClelland & Judd, 1993). The two moderation models are explained and discussed in detail in the following sections.

5.3.1 Moderation of Minoritized Students' Civic Activism of Online Participation on the Relationship between Identity and Civic Engagement

The hypothesis H2(i) test results of the first moderation model confirmed that the inclusion of minoritized students' civic activism of online participation in the relationship of their identity and civic engagement in school/community has a significant *negative* moderating effect on their identity in changing their level of civic engagement in school/community ($\Delta R^2 = 0.028$, $p < 0.001$). The moderating effect of their civic activism of online participation accounted for 2.8% of the variance of their civic engagement in school and in community.

This suggested that minoritized students, who were frequently using the Internet to join in protest or social movement, expressing their opinions about civic issues online, and discussing civic issues in social networking apps/sites, perceived Hong Kong and its people less favorably. In addition, the results also revealed that these students may prefer to be keyboard warriors due to their feelings of empowerment and the concealment of their identity from local people during online participation. This is an issue of psychology of civic engagement under the influence of online participation. It has been debated by scholars without common consensus.

Some scholars suggested that netizens would like to enjoy the freedom of using online resources to participate in civic activities (Yang, 2003; Dai, 2008). On the contrary, another group of scholars argued that netizens feel empowered to use Internet for personal

entertainment rather than civic participation purposes (Damm, 2007; So & Westland, 2009; Leibold, 2011). The hypothesis test results implied that the minoritized students have their own identity that the enhancement of autonomy during participation online for civic activities may eventually empower few of them to be keyboard warriors rather than actual warriors for civic purposes.

This might be associated with being at the risk for cyberbullying during online participation that resulted in their low self-esteem (Campbell and Bauman, 2018; Ghazali *et al*., 2017; Soni and Singh, 2018), and low level of engag*ement* in the normal civic activities in school and in community. Therefore, their civic activism of online participation *negatively* moderated the relationship between their identity and civic engagement in school/community.

In addition, the results were also consistent with the view of Chambers (2006) who claimed that the increasing prominence of 'networked individualism' through online participation is negatively reshaping the ways in which students identify and relate to others. Earlier, Turkle (1995) had identified new forms of "online identity" that were independent or disassociated with offline lives. She stated that the cyber world was separated and the emphasis was often on using the Internet to connect with others who were not known offline, thus it created new virtual worlds and values for online users.

Therefore, a lot of minoritized student netizens in school and in community might be directly

or indirectly bullied by keyboard warriors and become the potential victims of bullies (Rodelli *et al*., 2018). Since the cyberbully can easily conceal his/her identity using anonymous e-mail addresses, pseudonymous names, fake profile pictures or avatars in the online social media platform, many teachers and parents might not identify them (Campbell & Bauman, 2018; Hinduja & Patchin, 2014). In this case, few of them would continue to perform cyberbullying as keyboard warriors to harm other netizens. It implies that a few minortized students may continue their civic activism of online participation that may lead them to join in the protests or social movements, expressing their civic opinions and discussing civic issues in online platform. Thus, it could give rise to the weakening of their civic engagement in school/community that do not provide them with the same power of autonomy or anonymity.

5.3.2 Moderation of Minoritized Students' Civic Activism of Online Participation on the Relationship between Civic Awareness/Self-Perception of Online Participation and Civic Engagement

The hypothesis H2(ii) test results of the second moderation model demonstrated that minoritized students' civic activism of online participation *negatively* moderated the relationship of "civic awareness/self-perception of online participation" and "civic engagement in school and in community", and it accounted for 7.7% of the variance of "civic engagement in school and in community" ($\Delta R^2 = 0.077, p < 0.001$). It is the evidence for the significant *negative* conditional effects of their civic activism of online participation on the

relationship. The results are in line with hypothesis H2(i) that minoritized students, who are using the Internet frequently to join in the social movement, express civic opinions and discuss civic issues, are *less likely* to engage in the community and in schools' civic activities.

Shah *et al.* (2001) predicted that the use of Internet was often asocial or anonymous, and may erode the individual-level engagement of civic activity. The results of hypothesis H2(ii) test has strengthened the knowledge concerning whether civic activism of online participation is promoting or eroding civic engagement in school/community among Hong Kong's minoritized students. Moreover, the test results supported the claim of Skoric & Kwan (2011) that civic activism of online participation has a significant impact on civic awareness/self-perception of participation online for initiating and enhancing its relationships with civic engagement in school/community.

A group of researchers indicated positive relationships (Lenhart *et al.*, 2008; Lin *et al.*, 2010), however, another group of scholars had found negative relationships between use of internet and civic participation (Sci-Hill, 2007; Zhang & Chia, 2006). Although there was existing discrepancy between two points of view, this argument has been addressed by the results which have shown that minoritized students' civic activism of online participation could negatively moderate the relationship of their civic awareness/self-perception of online participation and their civic engagement in school/community.

Therefore, there is strong evidence from the results concerning minoritized students' civic activism of online participation that eroded their civic awareness/self-perception of online participation leading to their decline in civic engagement in school/community. This may again be involved with psychological issues of feeling empowered to be keyboard warriors to use Internet for personal entertainment rather than civic purposes (So and Westland, 2009; Leibold, 2011). It may in turn be associated with the risk of cyberbulling due to the heavier use of online social media that may lead to psychological health problems such as social isolation, anxiety and depression (Lin e*t al.*, 2016; Peper & Harvey, 2018; Primack *et al.*, 2017).

Since online social media has become a vital platform that enables civic life in ethnic communities, it is imperative to avoid the risk of cyberbulling. Guidance needs to be provided to minoritized students for using the Internet correctly so as to allow them to build and maintain good interpersonal relationships. Rather than routinely discussing civic issues, expressing civic opinions or joining in social movement though online participation, they should be taught and guided about for how to use online social media to keep in touch with classmates, friends and families that are important for their harmonious civic engagement in school and in community. This raises an important issue about the role of online participation and its purposes, and such issues need further research as well as debate and discussion.

5.4 Moderation of Minoritized Students' Civic Activism of Online Participation on the "Mediated" Relationship between Identity, Civic Awareness/Self-perception of Online Participation and Civic Engagement

Hypothesis H3 tested the moderated mediation model to estimate the conditional direct, indirect and total effects of minoritized students' "OP2: civic activism of online participation" on their "CI: identity" and "OP1: self-perception/civic awareness of online participation". The test results indicated that 11.6% of the variance of "CE: Civic engagement in community and in school" can be explained by significant conditional effects.

Since moderator "OP2" was sensitive to different aspects of online participation for different conditional levels of civic activism of minoritized students' online participation, there was significant statistical evidence that civic activism of online participation moderates positively the relationship between identity and self-perception/civic awareness of participation online for civic activities. There was, however, a negative conditional effect of civic activism of online participation moderating the relationship between self-perception/civic awareness of online participation and civic engagement in school/community.

The reasons behind these findings could be that they may perform cyberbullying as keyboard warriors or become victims of being bullied by others after frequently using online social media platform to express civic opinion, join protest and discuss civic issues (Balakrishnan, 2017; Soni and Singh, 2018). Since it was found in the study that keyboard warriors who are addicted to cause someone's life to be miserable through cyberbullying may have "Internet

Addiction" disorder (Kuss and Lopez-Fernandez, 2016), they might support radical actions by joining protest and social movement as keyboard warriors through using the Internet, and then became depressed and isolated which leaded them to be less willing to engage in civic activities in their schools and community.

Because their use of Internet may have become a daily activity at home and in the school as part of the students' daily lives, they may be overdependent and unable to control their online participation (Lee and Chae, 2007). Eventually, the problem of uncontrollable online participation would also lead to Internet addiction that is a type of pathological and abnormal behavior which may be hazardous to their social and emotional development (Valcke *et al*., 2010). Moreover, Van den Eijnden (2008) suggested that their mental and physical health is still developing at an early age. Thus, they would easily be prompted by other Internet users to participate in improper online activity that is not suitable for them and prevent them from engaging in normal civic events (Van den Eijnden, 2008).

Furthermore, Tang *et al.*, (2020) suggested that the more were students exposed to online radical information, the more likely they would become addicted to the Internet. They may not be able to distinguish what is wrong or correct about the online information at such a younger age. Few of them may develop depression that is related to the psychological symptom of radicalism. Thus, their civic activism of online participation might be altered and negatively affected by their behavior of cyberbulling as keyboard warrors that undermines their level of civic engagement in school/community.

5.5 Moderated Moderation of Minoritized Students' Socio-Demographics on the "Mediated" Relationship between Identity, Civic Awareness/Self-perception of Online Participation and Civic Engagement

Hypothesis H4 theorized that "OP1: Self-perception and civic awareness of online participation" is significantly related to "CE: Civic engagement in the school and community" and in turn is positively influenced by "CI: Perception and sense towards Hong Kong and local Hongkonger", and this mediation relationship may be contingent on minoritized students' personal socio-demographic characteristics. The important role of socio-demographic factors influencing the hypothesized relationships has been noted in previous research (Zukin *et al.,* 2006, Campbell, 2006; Klofstad, 2007).

In this study, the specific socio-demographics to be controlled and explored were *school background, education level*, *gender, age group, minority group, specific ethnic group, ethnic identity* and *years of using Internet*. It is important to explore for the socio-demographic effects in the analysis since House and Williams (2000) indicated that failure to explore for these effects may lead to under-estimation of group difference.

The following sections discuss the moderating effects of *school background, education level*, *minority group, gender, age group, minority group, specific ethnic group, ethnic identity* and *years of using Internet* in the relationship where civic awareness/self-perception of online participation mediates the effect of identity on civic engagement in school/community.

5.5.1 Moderated Mediation Role of "School Background"

Minoritized students studying in *non-religious school* may have relatively stronger sense and identification toward Hong Kong and local Hongkongers, however, those studying in *religious school* may have relatively higher level of civic engagement in the school/community due to the mediated relationship. By including the contingent effect of school background, the H4(i) hypothesis test result explained 80.3% of the variance of civic engagement in the school/community. It suggests that the *conditional direct, indirect* and *total effect* appears to be *positive* for minoritized students in both *non-religious school* and *religious school*.

In addition, the test result claimed a significant *conditional indirect effect* for their school religious background on the mediated relationship between identity and civic engagement in school/community via civic awareness and self-perception of online participation. The conditional indirect effect is stronger than direct effect in both types of schools in which they may develop stronger identity of identification toward Hongkongers strengthening their civic awareness/self-perception of online participation that fosters their desire to engage themselves as active citizens in the Hong Kong school/community.

Thus, minoritized students from both non-religious and religious schools generally demonstrate a higher level of civic engagement in school/community. In addition, the similar

moderating roles of school religious background were identified in terms of the *conditional mediator effect* of their civic awareness/self-perception of online participation that enhance the relationship between identity and civic engagement in the school/community.

The result resonates with previous research of Cheung, Kennedy, Leung & Hue (2016) that has suggested students in religious schools have conservative attitudes to civic and social values. On the other hand, the context of non-religious schools may provide more scope for local identification in local schools' civic events (Jones-Correa & Leal, 2001; Putnam & Campbell 2010; Van der Meer & Van Ingen, 2009; Wilcox & Sigelman, 2001). This would be an important area for future research.

Hypothesis H4(i) test also identified what appears to the conservative nature of the religious engagement of minoritized students. For that reason, it is better to treat their school religious background as a contributor to their conservative character. In this sense, religious beliefs are not always the same for everyone everywhere, they may be altered on account of the socio-cultural factors such as faith and psychological development (Putnam & Campbell 2010; Van der Meer & Van Ingen, 2009; Wilcox & Sigelman, 2001). This can be as true for adolescents as it can be for adults.

Hypothesis H4(i) test generated meaningful insights into the effects of identity on civic engagement in school/community via civic awareness/self-perception of online participation

that is contingent on school religious background. This finding is consistent with other research conducted in Asian contexts. Overall, the test result elaborated the schools' religious influence on minoritized students' civic engagement in school/community by exploring the effects of identity and civic awareness/self-perception of online participation. It also illustrated the complex moderated mediation mechanisms through which school religious background played a role.

5.5.2 Moderated Mediation Role of "Education Level"

Hypothesis H4(ii) suggested that minoritized students' civic awareness/self-perception of online participation in general, regardless of purposes and motivations, reinforced the relationship between their identity and civic engagement in the school/community. The relationship may depend on their grade levels. The *senior grades* students have a better sense and perception toward local Hongkongers which may in turn increase their level of civic engagement in school/community since there is a significant difference of the *conditional indirect effect* between minoritized students in *junior* and *senior classes*.

In addition, the difference of *conditional mediator effects* of education level between minoritized students in junior and senior grades indicates *senior grade* students are more likely to participate online to discuss civic issues and engage in the school/community's civic activities because of their stronger civic awareness and self-perception of online participation. By including the contingent effect of education level, the hypothesis H4(ii) moderated

mediation model explained 79% of the variance of civic engagement in school/community.

Hypothesis H4(ii) suggested that there is meaningful *conditional mediator effect* of education level on the civic awareness and self-perception of online participation that is positively related to civic engagement in school/community. This supports the argument that people learn civic knowledge and acquire norms of civic duty through education to enhance civic engagement. (Campbell, 2006; Klofstad, 2007). Kahne *et al*., (2016) also indicated that the educational programs of information literacy in the school is also essential for the students from different grades to learn how to use computers and solve the problems of the digital divide.

These results were also reflected by Valsiner (2000) who argued that education has played dual functions of not only teaching students to acquire necessary civic knowledge and skills, but also provided them with guidance in correcting attitudes towards the others and engaging well in society. The moderating effect of education level reveals the higher students' grade level, the more likely it is that they will have a higher level of civic engagement. It also implied that education level has an influence on minoritized students who are studying in the senior grades and likely to be civically active since there is an association between civic engagement and education (Campbell, 2009; Henderson & Chatfield, 2011; Lake & Huckfeldt, 1998).

Moreover, online participation as suggested by previous research may reinforce civic engagement in a number of different ways (Gil de Zúñiga *et al.*, 2013). Studies have recently argued that education for information literacy is very important to the students to use digital devices for online participation because they need to have the necessary internet knowledge to evaluate and use online information, and interact with other users (Mossberger *et al.*, 2003). Information literacy applied to the online context also requires students to have the ability to understand and think about the reliability of online information that can be adopted to tackle some daily studying and living issues (Warschauer, 2003).

In this context, hypothesis H4(ii) suggested that civic awareness and self-perception of participation online for civic activities is a significant mediator between civic engagement in school/community and identity which is contingent upon the educational level. It may be that the higher the educational level, the more developed are the skills of information literacy acquired by the minoritized students to help them to participate online and engage in civic activities.

Thus, studying in *senior grades* had a higher moderating effect than studying in the *junior grades* that also influences the relationships between their sense and perception of Hong Kong/Hongkongers, and civic engagement in school/community. The higher the grade level of minoritized students were, the more positive was their identification toward local

Hongkongers and the higher their level of engagement in school and society were. These results were broadly consistent with Western literature (Dee, 2004; Galston, 2001; Westholm et al., 1990).

5.5.3 Moderated Mediation Role of "Gender" and "Age Group"

Nevertheless, hypothesis H4(iii) and H4(iv) demonstrated that gender and age group *are statistically significant* to moderate the mediated relationship and accounted for 79.3% and 79.4% of the variance of "civic engagement in school/community" respectively. The *conditional indirect effects* indicated that minoritized students who are boys and girls aged 16-20 have *higher* civic engagement in school/community due to the effect of their perception/sense towards Hong Kong/Hongkongers on their self-perception/civic awareness of online participation ($p < 0.001$). It was consistent with the literature that explain gender and age are one of the demographic factors that influence civic engagement (Zukin *et al.,* 2006). It had also been revealed by the result that there was different tendency of civic engagement between boys and girls. Traditionally, boys had higher intention than girls to engage in civic activities (Enns *et al.,* 2008).

On the contrary, the results of H4(iii) and H4(iv), however, indicated there is statistically significant difference between the *conditional indirect effects* of gender inferring the girls' minoritized students appeared to be slightly *stronger* than boy ones to have *higher* civic engagement in school/community due to the effect of their perception/sense towards Hong

Kong/Hongkongers on their self-perception/civic awareness of online participation ($p < 0.05$). In addition, there is also statistically significant difference between the *conditional direct effects* of age group that minoritized students aged 11-15 have slightly *higher* level of civic engagement in school/community due to the direct effect of their perception of Hong Kong and identification towards Hongkongers ($p < 0.05$). Furthermore, there is statistically significant difference between the *conditional total effects* of this age group mirroring the same tendency as *conditional direct effects* ($p < 0.05$).

Therefore, the hypothesis H4(iii) and H4(iv) test results are not completely harmonious with the literature that explained student's online social platform was often used by a group of people informally discussing about civic affairs at the same time with the others who have same age (Gil de Zuniga, 2009). The test results have implied that the younger minoritized students prefer to chat online with the others who are in their age group. Their sense/perception toward Hong Kong/Hongkongers and civic awareness/self-perception of online participation are different from other age group, and this situation is similar for older students.

Therefore, their informal discussion with the same aged minoritized students in the online platform facilitates them to learn about opportunities for civic action within their same age group. It encourages the younger students to think about problems facing the people around

them, and exchange civic information with others in their same age group more often than students of older age group. Therefore, the way of younger students' online participation for civic awareness under the influence of their identity among the same age group has tremendous effect on their civic engagement in school/community than older students.

5.5.4 Moderated Mediation Role of "Minority Group"

Hypothesis H4(v) showed that membership of minority group had a *negative direct effect* on their civic awareness/self-perception of online participation and civic engagement in school/community. It indicated that the *Filipino/Indonesian/Other-Asian/White/Mixed group* was *less likely* to engage in the schools' civic activities, and that the *Indian/Nepalese/Pakistan* students have increasing interest in civic engagement in school/community. The effect size of the conditional effect of moderated mediation model was high explaining 80.1% of the variance of civic engagement in the school/community. Additionally, the significant *conditional direct, indirect and total effect* also indicated that the minoritized students from *Indian/Nepalese/Pakistan group* had fewer civic competencies to envision themselves as active citizens engaging in school/community.

Although the findings might imply that the *Indian/Nepalese/Pakistan* groups had a diminished interest, fewer competencies in civic engagement in school/community and did not see themselves as active citizens, they had a positive sense and identification of Hong Kong and local Hongkongers. It might suggest that they still held a positive view of the local

community despite their lack of intention to engage civically. It might also be that their lack of intention to engage could be a result of poorer educational opportunities and poverty. However, this does not seem to prevent them from seeing the local community positively because they would still have strong local identity even if they would not wish to engage civically. This outcome was echoed by Norris (2001) suggesting there was inequality of access to information technology among minority groups due to poverty and unequal chances in education.

Furthermore, there would also be some Nepalese and Pakistanis students who were not able to use information technology because of the digital divide resulting from their poor families (Cheung & Chou, 2017). Actually, it has been statistically shown that Nepalese and Pakistanis have the lowest levels of economic status in comparison with other ethnic groups (C&SD, 2012). As a result, their lower level of socioeconomic well-being may account for their lower level of civic engagement in school/community (Arat *et al.*, 2016; Cheung & Chou, 2018).

Nonetheless, H4(iii) implied that belonging to the *Indian/Nepalese/Pakistan* minority groups was significant in predicting their better identification toward Hong Kong and its local people. It may suggest minoritized students' civic engagement in school/community may differ by their minority group's background that may influence their particular sense and perception toward Hongkongers (Littenberg-Tobias & Cohen, 2016).

Therefore, their perception toward Hong Kong/Hongkongers was associated with the enhancement of their civic engagement level. Furthermore, there were a variety of civic subcultures among the minority groups suggesting each group had their own attitudes and behaviors about the civic life (Sánchez-Jankowski, 2002). The results may convey that for minoritized students from *Indian/Nepalese/Pakistan* ethnic groups, their willingness to engage in school/community civic activities would be estimated by their specific civic awareness, attitudes and efficacy beliefs about online participation that reinforce their level of civic engagement (Scott & Šerek, 2015).

5.5.5 Moderated Mediation Role of "Specific Ethnic Group"

On the other hand, the test results of hypothesis H4(vi) demonstrated that specific ethnic groups *negatively* moderated the mediated relationship and accounted for 38.6% of the variance of "civic engagement in school/community". The moderating effect of minoritized students from Nepalese and Pakistani ethnic groups appeared to be *weaker* than those from Indian ethnic groups. This suggested that Nepalese and Pakistan ethnic groups have *less* civic awareness/self-perception of online participation leading to *lower* levels of civic engagement in school/community.

The Census and Statistic Department (2012) reported that Nepalese and Pakistanis have the lowest levels of economic status and satisfaction with life compared to other ethnic groups. As a result, Indian ethnic groups seemed to have better life satisfaction and social adaptation

than Nepalese and Pakistanis students. This lower level of socioeconomic well-being may account for these groups' lower level of civic engagement in school/community (Arat *et al.*, 2016; Cheung & Chou, 2018).

At the same time, belonging to the Nepalese and Pakistan ethnic groups was significant in predicting their poor sense and perception toward Hong Kong and local people because of the significantly negative interaction effect of their self-perception/civic awareness of online participation and specific ethnic group. The results suggested that minoritized students' level of civic engagement in school/community was reversely increasing from the specific ethnic group in the order of *Pakistani* < *Nepalese* < *Indian* due to the negative interaction effect between their specific ethnic group and their self-perception/civic awareness of online participation. The test results also implied for the continued significance of ethnicity that there was an issue of inequality and unequal chances in access to education for these groups (Norris, 2001). It might be possible that some Nepalese and Pakistanis students who remain offline do so because they were lacked of computing skills on account of their economic disadvantage (Cheung & Chou, 2017).

In addition, hypothesis H4(vi) test predicted that the difference in *conditional effect of mediator* between minoritized students' specific ethnic group is negative and can be ranked in the descending order of *Indian* > *Nepalese* > *Pakistanis*. Thus, minoritized students from

Indian have the highest civic engagement in school/community and those from *Pakistani* groups have the lowest civic engagement in school/community due to the mediator effect of their civic awareness/self-perception of online participation. Nonetheless, the differences of *conditional indirect effects* between minoritized students with specific ethnic group are also negative that can be ranked in the descending order of *Indian* > *Nepalese* > *Pakistani*. Therefore, minoritized students from Indian group have the highest civic engagement in school/community due to the effect of their perception and sense towards Hong Kong/Hongkongers on their civic awareness and self-perception of participation online for civic activities.

Therefore, both mediator effect and conditional indirect effect of Indian ethnic group were higher than those from Nepalese and Pakistan groups. For this reason, belonging to Indian group was statistically significant in predicting their improved perception toward Hong Kong and local Hongkongers. At the same time, belonging to the Nepalese and Pakistan ethnic groups was significant in predicting their poor identification and perception toward Hong Kong/Hongkongers. The results were in line with Ito et al., (2010) that have confirmed that there were wide disparities in how students participate in online social media. It also reinforces the inadequacy of referring to "minoritized groups" in general according to this study, and there are significant differences between them (Jugert *et al.,* 2013; Titzmann & Jugert, 2015).

5.5.6 Moderated Mediation Role of "Ethnic Identity"

Hypothesis H4(vii) test results suggested that there were significantly different *conditional direct and total effects* of ethnic identity between minoritized students. It was *statistically significant* that minoritized students with a *Hong Kong Ethnic Minority identity* had the *lowest level of* civic engagement in school/community. Those with *Hongkonger identity*, however, had the highest level of civic engagement in school/community due to the mediated effect of their perception and sense toward Hong Kong/Hongkongers and through their civic awareness/self-perception using online participation. This indicated that ethnic identity might be a moderating influence on their engagement level in school/community civic activities. The contingent effect of ethnic identity explained 79.6% of the variance of their civic engagement in school/community.

It seems that a *Hongkonger identity* is more likely to bring about more civic awareness through online participation, and lead to more civic engagement in the school/community compared to students with other local identities. Minoritized students seeing themselves as "Hongkongers" may, as Harris *et al.*, (2010) suggested, view online social media as recognized platform for socialization into the local community. They may or may not be well socialized into the actual community, but social media provides the opportunity for them to express their thoughts.

Furthermore, minoritized students identifying themselves as Hong Kong Ethnic Minority are *less* likely to participate online to discuss local civic issues with their friends and engage *less* in the civic activities. Their *higher* level of online participation is associated with a *lower* level of civic engagement in school/community contingent on their ethnic identity via their civic awareness and self-perception of online participation. Thus, the *conditional direct and total effect* was *weaker* for those who are Hong Kong Ethnic Minority than those identifying themselves as a Hongkonger or Ethnic Minority.

On the other hand, the test results could not detect a significant *conditional mediator effect* when the interaction of their "ethnic identity" and "sense and perception of Hong Kong and local Hongkongers" was assumed to have a positive effect on civic engagement in school/community. Nevertheless, the inter-relationship between their ethnic identity and perception of Hong Kong and Hongkongers may not encourage them to struggle for Hong Kong. Thus, the results of hypothesis H4(vii) draw attention to the effect of ethnic identity on the mechanism of moderated mediation relationship between their identity and civic engagement in school/community via their awareness/self-perception of online participation.

Although it identified the *conditional direct and total effect* of ethnic identity on the mediated relationship, it failed to find the *conditional indirect effect* of ethnic identity on the moderated mediation process. This may be because online participation precludes in-depth conversations

among minoritized students. Also, for those who have already been interested in civic events would likely have more civic engagement in school/community motivated by their ethnic identity. The *conditional direct and total effect* of ethnic identity and origin on the moderated mediation processes may also be explained by the different levels of heterogeneity of online participation and civic engagement in school/community. This may be the reason there was a significant *conditional direct and total effect* but not the *conditional indirect effect* of ethnic identity.

This could be explained by the disparity effect of online participation on civic engagement in school/community. Brundidge (2010) indicated that online participation tends to be diversified among people. Tang & Lee (2013) stated that civic engagement would be encouraged by similarity of community. Since online participation could promote a communication network among the people with diversified cultures across the world by eliminating geographic boundaries, it may provide unlimited information sources to the people with different ethnic backgrounds. Thus, it may be that civic awareness and self-perception of online participation within these diversified communication network of people with different ethnic identity would reinforce civic engagement in school/community as direct and total effect rather than relying on indirect effects in isolation.

5.5.7 Moderated Mediation Role of "Years of Internet Use"

The test results also indicated that there were *significant conditional direct, indirect* and *total* moderating effects, and *conditional effect of mediator* for minoritized students who use Internet for different length of years on the relationship. These conditional effects, however, were not significantly different which implied not very strong association between minoritized students' sense/perception toward Hong Kong/Hongkongers, their civic awareness/self-perception of online participation, and their civic engagement in school/community due to the conditional effect.

The results of hypothesis H4(viii) test had just shown that there is negative interaction effect between minoritized students' sense and perception toward Hong Kong/Hongkongers, and their years using Internet. It inferred there is discrepancy in minoritized students' perceived sense and identification toward Hong Kong/Hongkongers and their use of Internet for different lengths of time. The years of Internet use had a *negative* significant moderating impact on the relationship between their sense/perception of Hong Kong/Hongkongers and civic engagement in school/community.

The inclusion of years of using Internet explains 79.3% of the variance of civic engagement in school/community. Those who claim to use Internet for longer years were likely to have poor perceived sense toward Hong Kong and identification of Hongkongers that lead to their lower levels of civic engagement in school/community. This may be explained by what is

called Internet addiction disorder known as “problematic Internet use or pathological use of Internet” (Kuss and Lopez-Fernandez, 2016). The longer the years of using Internet, the less effect the Internet is seen to have.

This suggested that minoritized students’ progressive loss of control for their online participation activities may give rise to Internet Addiction. Wu *et al*., (2016) explained that students of this age were undergoing important social adaptation and psychological change. The long hours’ non-stop usage of Internet may cause them to become addicted that is not appropriate for their psychological health. Some of them could eventually become “house boy or girl” who may develop poor sense of Hong Kong/Hongkongers and foster them not to engage in formal civic activities in the school/community.

In summary, the hypothesis H4 moderated mediation models hypothesized that the effect of sense/perception of Hong Kong and Hongkongers on minoritized students’ civic awareness/self-perception of online participation, and engagement behavior may be contingent on their socio-demographics. In other words, although there was an overall positive impact of identity on students’ engagement in civic activities, this influence may change depending on their school background, levels of education, gender, age, minority groups, specific ethnicity, ethnic identity and length of years using Internet.

The results, therefore, indicated that the moderating effects of *education level, gender, age, specific ethnic group* and *ethnic identity* exceeded the linear relationship between civic

engagement in school/community and identity. This supported similar results conducted largely in US contexts (Henderson & Chatfield, 2011; Kahne *et al.,* 2013, Kahne *et al*., 2016; Lake & Huckfeldt, 1998). The current study indicated that similar theoretical framing can also be applied to the moderating influences of socio-demographics on Hong Kong's minoritized students.

These analyses have suggested a complex moderated mediation relationship of socio-demographic factors on online participation, civic engagement in school/community and identity. Nevertheless, hypothesis H1-H3 did not test whether the "indirect path" from identity to civic engagement in school/community via online participation is contingent on individuals' socio-demographics. Hypothesis H4 tested whether either or both direct and indirect mediation effect was stronger or weaker for minoritized students conditioned by different levels of socio-demographic backgrounds in order to address research question R4.

5.8 Summary

The findings compare the conditional indirect, direct and total effects of identity on civic engagement in school/community contingent upon their socio-demographics so as to understand the relationship better. It supports the claim that the effects of identity on civic engagement in school/community via online participation may be contingent upon minoritized students' socio-demographics including their *school background, education level, gender, age group, minority group, specific ethnic group, ethnic identity* and *years of Internet*

use. It shows that only under certain circumstances online participation may reinforce their civic engagement in school/community and identity in order to nurture their intention to become active citizens.

The results indicated significant differences in the conditional effects between minoritized students' civic engagement in school/community depending on *educational level, gender, age group, specific ethnic group, ethnic identity*. Overall, minoritized students studying in upper grades responded to have higher levels of civic engagement in school/community than lower grade's students. Comparing civic engagement levels across gender, age group, and specific ethnic groups confirm that those who are girls and more juvenile, and belonging to the Indian group are more active overall with regard to their level of civic engagement in school/community.

The findings also show that their identification toward Hong Kong/Hongkongers is a determining factor promoting their civic engagement in school/community. It means there are more minoritized students who claim membership of *Indian/Nepalese/Pakistan group* have favorable impression on Hongkongers, and think that Hongkongers are not selfish and more cohesive than people of other countries. Therefore, they are more possible to declare the intention to engage in school/community's civic events. These findings are especially critical given that there have been worries about decreasing interest regarding civic engagement in school/community for *Indian/Nepalese/Pakistan* students (Erni & Leung, 2014). It suggests

that online participation is associated with improvement in the identity that seems to be associated with dynamic civic engagement in school/community. Inter alia, the results imply that a better perception of and identification with Hong Kong as well as Hongkongers may contribute to a better civic awareness and self-perception of online participation that in turn may have a positive reinforcing effect on civic engagement in school/community.

Moreover, the analysis also indicated that minoritized students' sense and perception of Hong Kong such as loving Hong Kong, having respect for Hong Kong, being proud to live in Hong Kong, considering Hong Kong to be a better city to live in than most other cities is an important stimulating mechanism. These findings were confirmed by the moderated mediation models to demonstrate that participation online for civic activities mediates the relationship between identity of minoritized students' perception of Hong Kong and identification towards Hong Kong people, and level of civic engagement in school/community, and this relationship is contingent upon their socio-demographic backgrounds. It suggests that online participation for civic activities may expand individual students' variation of identity, which give rise to different level of civic engagement in school/community.

However, teachers' and parental guidances should be provided to them for using the Internet correctly since online social media have become a vital platform to enable civic life in ethnic communities. It is important for them to avoid the risk of cyberbulling due to heavy use of

Internet to discuss civic issues, express civic opinions or join in social movement though online participation. They should be taught and guided about for how to use online resources to keep in touch with classmates, friends and families that are important for their harmonious civic engagement in school/community.

One of the major reasons for a significant mediating relationship between civic engagement in school/community and identity via online participation is possibly because of the rapid revolution of civic technologies (Fuller and Hester, 1998; Inglehart, 1997; Scheufele, 1999). The influence of online participation is greater for minoritized students who are girls and more juvenile, studying in upper grades, identifying themselves as Hongkonger but not Hong Kong ethnic minority, using Internet with appropriate guidance, and belonging to Indian group.

This study has explored whether online participation encourages or discourages engagement in civic activities since civic engagement in school/community has performed a key role in the operation of a democratic society (Putnam, 2000). In order to improve citizenship education for minoritized students from lower grades, Nepalese and Pakistan groups, those with Hong Kong EM identity and inappropriate use of Internet, it is necessary to address the policy concerns about their continuous declining levels of civic engagement in school/community, the low levels of civic knowledge, as well as their widespread distrust of societal leaders and local government of Hong Kong.

Chapter 6

Conclusion

6.1 Introduction

The thesis can now be brought to a close after a complex theoretical review of literature, detailed methodology plan, statistical data analysis and discussion. There are six sections in this chapter. Section 6.1 will provide a schematic summary of this chapter. Section 6.2 describes the main features of the thesis including its aim and how the research questions have been addressed. Section 6.3 highlights the contributions of the study to address the research gap, theory, policy and practice. Section 6.4 explains the limitations of the study. Section 6.5 highlights the main implications that can be drawn from the research and recommendation for further research. Section 6.6 presents the conclusion.

6.2 Main Features of the Study

Overall, this study aims to address research questions relating to online participation and its influence on minoritized students' level of civic engagement in school/community. A number of hypothesized models were developed to provide empirical evidence for any identified relationships. Hypothesis H1 addressed the first research question by using mediation model to test whether there was positive mediating effects of minoritized students' online participation on their relationship to civic engagement in school/community and identity. Hypothesis H2 addressed the second research question by testing another set of moderation

model that are hypothesis H2(i) and H2(ii) for the moderating effects of minoritized students' civic activism of online participation on their relationship between (i) identity and civic engagement in school/community and (ii) civic awareness/self-perception of online participation and civic engagement in school/community.

Briefly, hypothesis H2(i) found that the civic activism of online participation played a *negative* role in moderating the identity to influence minoritized students' civic participatory behavior. In the cyberspace in which minoritized students shared civic information and discussed civic affairs, their civic activism of online participation in this space acted as a moderator on their sense and perception of Hong Kong/Hongkongers for their engagement in civic activities in school and in community.

Beyond this moderating relationship, the hypothesis H2(ii) explored the moderating role of civic activism of online participation on civic awareness/self-perception of online participation in another relationship in order to understand its conditional indirect mechanisms by which it influenced minoritized students' levels of civic engagement in school/community. This moderation model showed again a *negative* conditional indirect relationship of their civic activism of online participation on their civic awareness/self-perception of online participation which influence their level of civic engagement in school/community.

Therefore, the test results of hypothesis H1 suggested that their civic awareness and self-perception of online participation mediated the effects of their sense and perception toward Hong Kong/Hongkongers on their civic engagement in school/community. In addition, the hypothesis H2 test results indicated that their civic activism of online participation negatively moderated the effects of their sense and perception toward Hong Kong/Hongkongers and the effects of their civic awareness/self-perception of online participation on their civic engagement in school/community.

Apart from evaluating mediation and moderation mechanism, hypothesis H3 sought to address the third research question by exploring the moderated mediation effects of minoritized students' civic activism of online participation on both (i) their sense/perceived identification toward Hong Kong/Hongkongers and (ii) their civic awareness/self-perception of online participation. It was tested with a moderation model for the effect of both interaction effects on civic engagement in school/community depending on their civic activism of online participation. The findings supported hypothesis H3 that there were significant negative moderating effects of civic activism of online participation on the mediated relationship between their online participation, civic engagement in school/community and identity.

Hypothesis H1/H2/H3, however, did not test for the indirect mediation effect of their identity on civic engagement in school/community via online participation depending on their socio-demographics. As a result, hypothesis H4 sought to address the fourth research question to test whether the indirect mediation effect was stronger or weaker for minoritized students depending on different levels of their socio-demographic background. It systematically compared conditional levels of socio-demographics among the moderated mediation models and explored any potential differences due to school background, education, gender, age group, minority groups, specific ethnic group, ethnic identity, and years of Internet use. The test results of the hypothesis H4 confirmed a positive relationship between their civic engagement in school/community and identity through online participation after controlling for their socio-demographic factors.

6.3 Contributions of the Study

6.3.1 Contribution to Research Gap

The literature review suggests that minoritized students' online participation for civic activities has a profound impact on the development on their self-perception and awareness of civic responsibilities. However, the extent that Hong Kong minoritized students' engagement in online social media has possible effects on the formation of their self-perceived identity and responsibilities in civic activities has not been addressed in the literature. There is research gap that was addressed in this thesis.

In relation to the extent of engagement in online social media, this study has explored ecologies of online participation that are collective rather than individual in nature (Agur & Frisch, 2019; Mascheroni, 2013; Lee & Chan, 2018). It is expected that different students with different ethnic backgrounds will have different configurations of online ecologies and these will influence their forms of self-perceived identity and responsibilities in civic activities (*i.e.,* civic engagement). As a result, this study has highlighted the complexities and emergent norms governing appropriate civic awareness and activism embedded within online social media.

The findings of this research indicated that, for some minoritized students, online participation is reflected in Hong Kong's netizen culture. A netizen is a person who typically intends to conceal its actual identity and uses the Internet to express feelings, thoughts, and criticisms (Agur & Frisch, 2019; Ma, 2014). However, a netizen is different from an Internet addict who uses online resources in a pathological way such as keyboard warrior. In this study, a number of statistical models were used to investigate how minoritized students' online participation reinforce civic engagement in school/community through their identity and the influence of their socio-demographic backgrounds.

The study showed that the mediation role of online participation between minoritized students' identity and their civic involvement may be moderated by their socio-demographic background. In particular, it suggested that online participation could be useful space for

minoritized students in particular circumstance and for particular groups such as those who are girls and more juvenile, identifying themselves as Hongkonger or ethnic minority but not Hong Kong ethnic minority, studying in upper grades, and belonging to Indian group and using Internet with appropriate guidance.

6.3.2 Contribution to Theory

The mediation, moderation and moderated mediation models hypothesized in this study were extended from the Theoretical Models of Media Effects. The moderated mediation models not only showed minoritized students' changing civic landscape in the technological age, but also the processes by which they achieve and perpetuate civic efficacy. Yet these processes do not operate in the same way for all minoritized students. While the mediation models have shown that social media use appears to be widespread amongst minoritized students, it has also shown that the contexts in which this kind of internet-based online engagement occurs seems to exert important effects on the level of that offline civic engagement in school/community. The moderation models have highlighted the important moderating role that socio-demographics play in relation to civic engagement in school/community for minoritized students.

This modeling result may be explained in psychological terms with reference to the internal efficacy of minoritized students. As some researchers have suggested internal efficacy is

dependent on personality and less susceptible to external factors (Valentino, Gregorowicz, & Groendyk, 2008). The differences between minoritized students as reflected in their socio-demographics may have resulted in different levels of internal efficacy. At the same time, their endogenous values and dispositions may also have interacted with their internal efficacy and moderated it (Balch, 1974; Bandura, 1971). This is an important area for better understanding the differences between different groups of minoritized students as shown in this study. These differences are important to be recognized because they support the well accepted view that "minoritized students" cannot be treated as a single entity. This study has suggested that these differences could well account for difference in attitude towards civic engagement and civic issues in general.

The hypothetical models have also shown how online participation as a form of network decentralization led to the minoritized students' independence from group-based civic paradigms in which they may (or may not) have been welcomed. Instead of direct participation in formal civic groups which may well be difficult for minoritized students always on the edge of Hong Kong society, they may develop control over the social media environment and engage in multiple loosely defined and digitally mediated social networks reflecting their civic interest.

This kind of online community can result in the decentralization of the consumption of information, culture, and knowledge. This means that minoritized students may have direct access to online sources from which they are able to make their own meaning, rather than rely on pre-selected and processed information from traditional media such as television and radio. They are also able to participate in this way free from racism or other forms of social discrimination to which they are often the subjects (Bhowmik & Kennedy, 2016).

Therefore, the results of modeling have advanced the literature on civic engagement not only about the causes and outcomes of engaged and informed online participation by minoritized students, but also about what influences their civic engagement in school/community. This can lead to new research questions about the kind of decisions students make to engage in this way and whether decision making processes are similar for different ethnic groups.

In addition, there is an issue concerning the status of minoritized students in Hong Kong and online engagement. Do they see it as a safe mechanism in a city where they are seen as a 'minority? It is clear from the study that minoritized students see themselves interacting in different ways with the local community as Hongkongers, as ethnic minorities, and as Hong Kong ethnic minorities. Do these different kinds of identities and the ways students see themselves have different orientations toward online versus active engagement? This is an important idea to be followed up in the future.

While the focus of this thesis has been on minoritized students, how applicable are the results to Hong Kong Chinese students? Like minoritized students, Chinese students can also be categorized in terms of their identity as Hongkongers, Hong Kong Chinese and Chinese. It could be that identity is more important as a marker of potential for engagement than citizenship. This is also an important area for the further research exploration in the future.

6.3.3 Contribution to Policy

Given the ambiguity of Hong Kong's Moral and National Education (MNE) Policy and Curriculum Guide (CDC, 2012; CDC, 2014; Hong Kong Unison 2015) and the lack of any system-wide civic education curriculum, the results of this study has implications for both policy makers and schools in Hong Kong. What is more, the Umbrella Movement of 2014 and Anti-Extradiction Bill protests of 2019 have shown the alienation of many Hong Kong young people from both the Chinese and local government. Minoritized students were part of these protest movements (Walsh, 2019) and as this study has shown, some identify closely with aspirations expressed by young Chinese people in the community. Schooling experiences, therefore, are important for all of Hong Kong's students.

The 2012 Moral and National Education (MNE) Curriculum Guide indicated that "In line with the multicultural characteristic of the Hong Kong society, the implementation of the MNE subject should start with the development of students' personal qualities, and gradually

extend to the understanding of their family, society and country, and finally to the fostering of the qualities as world citizens, as well as the understanding of universal values.

When planning the curriculum, teachers may modify the curriculum contents, taking into consideration the races and cultural backgrounds of students. However, regardless of their ethnic or cultural backgrounds, students living in Hong Kong should first understand their local society and then the national situation of China. They should learn to adopt an open-minded attitude, accept and appreciate different countries, regions and people to promote social harmony" (CDC, 2012, p. 74).

In this context, Hong Kong educators should reconsider the MNE Curriculum Guide. While it may have originated as a mainstream system document, it could be rethought of as a way to bring minoritized students and local Chinese students together. Civic engagement in school/community could be a shared concern for all students whether it is online or on the ground. This study has shown how civic engagement in school/community can be enhanced and how different students require different forms of motivation. Teachers can build on this in their own classrooms, in debate and discussion of issues. In this way, students are not left to resolve complex issues on their own - they can work together with the support of the teacher. This kind of collaborative work could be an important way of building bonds and connections between minoritized and Chinese students.

Since the study has provided a link for online participation between civic engagement in school/community and identity as an important observation in today's changing civic landscape for minoritized students, both policy makers and teachers may take into consideration the importance of minoritized students' identity on their civic engagement in school/community via their online participation for civic activities. In particular, from both a policy and practice perspective, the important role of identity and online participation needs to be better understood. This study has shown, for example, having a positive view of Hong Kong/local Hongkongers, and civic awareness/self-perception of online participation enhances the civic engagement in school/community of minoritized students. This could be an important teaching objective. Yet the reverse should also apply that Chinese students would also benefit from understanding more about the cultural contexts of minoritized students.

6.3.3 Contribution from the School

While the work of teachers has been referenced above, work can also take place at the school level. The school should emphasize the importance of MNE as one of the important subjects in the school in order for teachers to contribute to a successful moral and civic education for the minoritized students. Teacher should also develop a common goal to work with colleagues collaboratively. Since there may be different strategies of teaching civic education in the school, the school should provide explicit guidelines to the teacher for their methods of instructions in this subject for the minoritized students. In accordance with the findings of the

study, the teachers should make use of direct and effective method of instructions through online platform that is systematically designed to encourage minoritized student to participate in online learning and interaction. School leaders would need to encourage this kind of collaboration. This is what Wong, Lee & Kennedy (2020) refer to as 'leadership for civic learning'.

Schools have recently gained much more experience with online learning as a result of COVID 19. While the benefits of such learning remain contested, it may work in favor of minoritized students. Online teaching may assist minoritized students to internalize moral values because they shall also be given enough opportunity to express their opinions about moral and national education in what might be described as a 'safe environment'. Online learning can be more easily moderated, and this might help minoritized students to be more engaged. Their experience with more general online participation as shown in this study may well help them in relation to their classroom learning.

Moreover, the schools should propose to use online teaching and learning resources for the teachers and students to create a moral school climate for their interactions and sharing of knowledge and ideas on moral and civic issues within the schools. The online learning platform shall be able to help transforming the schools into moral and democratic communities that enhance minoritized students' level of civic engagement in school and in community. As teachers have influential roles that may shape minoritized students' interest in

learning a subject, it is suggested that teacher may share and disclose their beliefs and experiences through online participation to show benefits of sharing across media.

Apart from the discussion in the lessons related to moral and national education, the teacher may consider using the online learning platform to initiate more discussion on civic issues through online participation in order to increase the openness experienced by minoritized students. Since the quality of learning depends on the teaching methods to promote discussions, online participation may provide another strategy to improve students' moral maturity. According to the findings of the study, it is suggested that more effort should be used by teachers to focus on helping the minoritized students with socio-demographic backgrounds from both non-religious and religious schools, lower grades, Nepalese/Pakistan group, those with Hong Kong EM identity and inappropriate use of Internet by using new teaching strategies of online participation to facilitate their learning of the moral and civic courses in the schools.

6.4 Limitations

6.4.1 Cross-sectional Survey Data, Sample Size, and Control Variables

Despite the contribution this study provides, the study has some limitations. Since the study is based on data collected in the cross-sectional survey, it restricts inference about causality. Thus, the cause-effect relationships between online participation, civic engagement and identity cannot be assumed from the data used in this study.

Although the sample size (n = 419) of the study was small, it still implied adequate statistical power. This small sample collected from five schools may provide a clustered structure with measurement nested in class levels since there has been a mean of 3 or more students per class. It was, however, impossible to do multilevel analysis as there were no variances at the class levels because the intra-class correlations were zero. Statistical analysis and modeling therefore remained at single-level models with existing number of predictors rather than multi-level models.

6.4.2 Parameter Estimation Methods

There is a statistical issue encountered in the Structural Equation Modelling (SEM) of mediation, moderation and moderated mediation because of too many variables in the models. This issue can be solved by fitting the SEM model with latent variables' estimated values in order to make the SEM more parsimonious. Residual centering procedures have been adopted to orthogonalize the data in order to eliminate multi-collinearity and control for covariation that is justified for modeling interaction between latent variables.

Moreover, plausible values that are generated using multiple imputations as the measures for the SEM model have been used as the estimated values of latent variables. The plausible values have been imputed using the Bayesian approach that are more reliable than those obtained by the Maximum Likelihood estimator. These Bayesian plausible values quantify any uncertainty arising from the interactions between latent variables that depend on the observed variables of online participation, civic engagement and identity.

6.5 Implications and Recommendation for Future Research

The findings of the research implied that civic awareness and self-perception of online participation was linked to minoritized students' sense and perceptions of Hong Kong/Hongkonger that in turn resulted in different levels of civic engagement in school/community. In other words, it suggested that identity has a direct effect on civic engagement in school/community and an indirect effect on civic engagement in school/community through their civic awareness and self-perception of online participation. Moreover, the findings also inferred that the interrelationships between sense/perception of Hong Kong/Hongkonger, civic awareness/self-perception of online participation, and civic engagement in the school/community may depend on their civic activism of online participation and socio-demographics. There are multiple possibilities for future research.

The relationship between civic engagement and identity was reinforced by online participation. This was true for the minoritized students in this study, but not all of them. Thus, this issue needs to be followed up to investigate the differences between minoritized students. In addition, as mentioned previously, there is the issue of Chinese students and whether the results reported here also apply to them.

Although participation in online social media can serve as a discussion forum, the results suggested that minoritized students use such participation to look for what they see as favorable online information, connecting to websites with similar ideology. This suggests the

importance of social media platforms for minoritized students. We need to know, however, why these platforms are important to them and whether they can be used for other purposes. More research is needed on the social impact of online social media in other context. This study has shown that identity can influence civic engagement in school/community through online participation. Moreover, it might also work to bring Chinese and minoritized students together that in turn could facilitate civic engagement in school/community even more.

A good reason to support research that brings together minoritized students and Chinese students is because this study showed that minoritized students' civic awareness, perception and identification concerning Hong Kong/Hongkonger seems to improve after interacting more with local Chinese students through online social platforms. Thus, further research is needed for the effect of this interaction.

There are many other mediating and moderating variables that could operate in the models used in this study such as interpersonal discussion, civic efficacy, and reasoning behaviors that could be explored for other contexts in future research. Earlier reference was made to the importance of internal political efficacy, and this is another variable that could be used in the models constructed in this study. At the same time, reference could also be made for external political efficacy and its effects on different groups of minoritized students.

Finally, there is the important issue of longitudinal research. The study reported here was cross-sectional in nature. Yet Hong Kong's protests have continued long after the data for this

study was collected. The Anti-Extradiction Bill protests took place in the second half of 2019 and lasted throughout 2020. Were the civic attitudes and behaviors of minoritized students influenced by this new round of protests and do they continue to be influenced even now those protests have subsided? With generalization of the research findings, and particularity of this study's Hong Kong context including the school background, education, gender, age group, minority group, specific ethnic group, ethnic identity, and years using internet, it seems important to follow up these issues with ongoing and longitudinal research on minoritized students, and their identity and civic engagement in school/community.

6.6 Conclusion

The study has addressed citizenship issues in relation to minoritized students in the highly connected and technologically sophisticated society of Hong Kong. Its findings showed who might be the netizens among the minoritized students by focusing on their specific uses of Internet, social media, and learning platform for online participation. It also identified who might be the keyboard warriors among the netizens whom were foreseen to have lower level of civic engagement in school and in community that was influenced by their online participation for civic activism on their perception of Hong Kong, identification toward Hongkongers, and civic awareness/self-perception of online social network.

All research questions have been addressed by hypotheses that minoritized students' civic engagement in the school and community was associated with self-perceived civic identity

mediated by their increased levels of online participation and moderated by their socio-demographic background. The hypothesized models extended from the Theoretical Models of Media Effects have been tested to justify that online participation could be useful cyberspace for minoritized students in particular circumstance and for particular groups of netizens whether they saw themselves as Hongkongers and Ethnic Minorities, but not Hong Kong Ethnic Minorities. Minoritized students who are girls, more juvenile, studying in upper grades, belonging to Indian/Nepalese/Pakistan group and using Internet with appropriate guidance will be more engaged than others. The major new finding of this study was that those netizens from minoritized students who regularly participate in online platform were more possible to have civic engagement in the school and community for promoting their personal civic experience. The research findings may be generalized to other contexts that have a similar situation to Hong Kong.

Nevertheless, this research has employed a range of statistical modeling techniques to gain authentic and deep understanding of minoritized students' behavior of civic engagement in school and in community, and their identity contexts and outcomes in the digital era. Contextually, specific factors have been identified to explain what factors contribute to the findings in Hong Kong that may or may not be different from the literature. The theoretical, policy and practice contributions developed through this study may provide a foundation for any future studies of the relationship between online participation, civic engagement and identity of minoritized students in Hong Kong.

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