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Thesis title: Effectiveness of community education on enhancing environmental value towards a sustainable food system in Hong Kong

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Summary

Education for sustainable development (ESD) plays a vital part in building urban community resilience and adaptive capacity (McFarlane & Ogazon, 2011) by constructing individuals' environmental values, including knowledge, attitude, and behaviour (Kollmuss & Agyeman, 2002) in light of the global food challenges. In recent decades, bottom-up community education has become more prominent for its potential to raise awareness, enhance social cohesion and thus engage people in driving sustainable food transitions that are less effective in formal education settings (Tilbury & Wortman, 2008). Nonetheless, conventional community education still faces challenges in scaling up its long-term impact (Fraser et al., 2006; Tilbury & Wortman, 2008).

In Hong Kong, despite pro-environmental values being positively expressed by the general public, a wide value-action gap is still prominent (Chung & Leung, 2007a). To bridge this gap, School of Everyday Life (SOEL) (生活書院), a local-level non-governmental organization (NGO) based in Hong Kong, has designed a community education model adopting various learning approaches to drive ESD in the past 8 years. In particular, empowering learners to acquire knowledge and nurture long-term behavioural change towards a sustainable food system (SFS), through hands-on co-creation processes (Choi, 2015).

This paper therefore aims to evaluate the effectiveness of SOEL's community education model on enhancing individuals' environmental values in driving a SFS, in addition, existing challenges and opportunities to scale up development of community education in the local context for sustainability transition in the long-run. The method adapted is a qualitative case study approach, coupled with document analysis and qualitative interviews with SOEL's volunteer, employees and founders.

The analysis showed that SOEL's community education model is highly effective in enhancing individuals' environmental values towards SFS in the long-run with the key adoption of social learning, transformative learning, experiential learning and empowerment through volunteering learning processes. The extent of effectiveness in individuals' environmental values varies based on personal and external factors, which also imply challenges or barriers to adopt community education in driving food transitions.

The result provides valuable insight on the enabling conditions of an effective learning model for nurturing community's environmental values, also challenges and opportunities of scaling up the impact of community education to co-create a SFS. Future research is recommended to study community education models of different cultural and social context for different target audience, also to explore the potentials of joint-effort amongst interested and relevant stakeholders to co-create a SFS, driving sustainability transition collectively.

Keywords

Community education, sustainable food system, qualitative interview, Hong Kong, environmental value

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Abbreviations

CBL	Community-based learning
CSO	Civic society organization
CSR	Corporate social responsibility
EFS	Education for sustainability
EL	Experiential learning
ESD	Education for sustainable development
ESG	Environmental, social and governance
ESL	Education for sustainable lifestyles
FAO	Food and Agriculture Organization of the United Nations
GHGE	Greenhouse Gas Emissions
IHS	Institute for Housing and Urban Development Studies
NGO	Non-governmental organization
SD	Sustainable development
SDD	Sustainable Development Division
SDG	Sustainable Development Goals
SFS	Sustainable food system
SL	Social learning
SLT	Social learning theory
SOEL	School of Everyday Life
TL	Transformative learning
UN	United Nations
UNDPI	United Nations Department of Public Information
UNEP	United Nations Environment Programme
UNESCO	The United Nations Educational, Scientific and Cultural Organization

Chapter 1: Introduction

1.1. Background Information and Problem Statement

There has been a prominent urgency to facilitate the process of sustainability transitions as illustrated by empirical literatures to address the increasingly pressing problem of climate change in the past decades (Geels, 2010; Hegerl et al., 2019; Loorbach et al., 2017). In particular, the global food system whose emissions accounts for almost 30% greenhouse gas emission (GHGE) (European Commission, 2023). Education for sustainable development (ESD), or education for sustainability (EFS), is therefore of utmost importance to enhance society's and individuals' environmental value, including knowledge, attitude and behaviour, for facilitating such transition (Bryant et al., 2021; Kollmuss & Agyeman, 2002).

Despite the strength of formal education setting in fostering environmental literacy and awareness (McFarlane & Ogazon, 2011), there is still lack of actionable and effective learning approach to influence the actual behaviour of individuals (Li et al., 2018), as seen from the ongoing unsustainable food consumption and production pattern (Thoresen et al., 2015). Civic participation in decision making process or hands-on experience to co-create a sustainable food system (SFS) is also limited as access to formal education is not equal for every socio-economic group (Ritchie, 2013). Generally, consumers are not aware or underestimate the impact of their food consumption pattern to the environment (de Boer et al., 2016). In the case of Hong Kong, for instance, adjusting existing food consumption pattern to low-carbon-oriented is estimated to reduce GHGE by 17-44% (Yip & Fielding, 2017). Yet, as a city grounded by heavy consumerism culture, general public and students indeed lack interest and capacity to address wider environmental problem due to the passive, result-oriented learning style (Luo et al., 2015).

On the other hand, non-formal community education, or community-based learning (CBL) driven by local organizations or community groups, is progressively acknowledged as a key enabler to equip community members with practical knowledge, value, skillsets towards sustainability, building collective capacity for participatory actions (Tilbury & Wortman, 2008). Unlike top-down formal education settings, CBL focuses on the collective learning process and development of people with long-term capacity building that address societal needs (Engelbrecht, 2005). As active engagement with local communities plays a vital role in sustainable urban development (Petronienė & Juzelėnienė, 2022), bottom-up community engagement carries transformative power towards sustainability transitions through levering on the enhanced social connections, while fostering mindset growth among individuals thus motivating behavioural change (Jónsdóttir, 2019).

Despite various studies on the qualitative benefits of community education on advocating sustainability in general, limited evidence is available in the academic field to demonstrate its effect on actual behavioural change towards a SFS (Middlemiss, 2011), and the corresponding enabling conditions and barriers to drive these changes and overcome the challenges (Shove, 2010). In addition, community education often faces challenges such as lack of financial resources, low priority in the city's agenda, an inappropriate design of community engagement approaches etc. (Heras et al., 2021; Jónsdóttir, 2019; Rogers, 2005; UNESCO, 2020b). There are only few studies that suggest ways overcome these challenges, but not in details how exactly bottom-up community groups should design their community engagement model so that CBL can be delivered in a more effective and empowering ways. For instance in Hong

Kong, NGOs or bottom-up community initiatives working towards a SFS tend to be single-solution focused. Citizens rarely have chance to participate in decision making or co-creation process of a more sustainable food production, consumption or food waste reduction & management (Choi, 2015; Jurgilevich et al., 2016).

Overall, effective community education models with high-level of community participation and engagement, and rich localization are needed to establish food transition pathway (Thoresen et al., 2015). There are very limited empirical studies to demonstrate the actual effectiveness of community education in the food regime as civic participation doesn't necessarily drive actual behavioural change (Thoresen et al., 2015), thus it would be beneficial to demonstrate a real-life case study of effective community education that drive long-term changes in community's environmental value, in particular behaviour that contribute to a SFS.

1.2. Relevance of the research topic

The academic motivation behind the thesis topic is based on collective literature gaps from the four key perspectives:

1. A lack of application of bottom-up community education by NGO to drive sustainable food transitions;
2. A lack of engagement with citizens in the co-creation of a SFS;
3. Insufficient insight to bridge individuals' environmental value-action gap; and
4. Challenges of NGO in upscaling sustainability effort in the long-run

First, traditional community programs are less effective in wide spreading long-term behavioural and motivational changes at individuals' level. In contrast, community organizations should explore more innovative, action-oriented, learner-centered, learning approaches to build capacity of community members and thus further scale up the impact (Jónsdóttir, 2019; Tilbury & Wortman, 2008). In light of limited civic action and community participation in decision marking (Thoresen et al., 2015), this thesis would like to explore the effectiveness of different pedagogical approaches and enabling conditions through the single case study of SOEL, which attempted to disrupt the current structural and cultural barriers that encourage unsustainable practices (Alam, 2022; Lotz-Sisitka et al., 2017).

Second, research showed that the general public, especially in Asia, neither have the appropriate knowledge or skill set in practicing sustainable diets, nor bottom-up opportunities to engage in co-creation of SFS (Jurgilevich et al., 2016; Sijtsema et al., 2020a). Grounded by heavy meat consumption culture, over-reliance on food import, and food waste culture (K. S. Ho & Chu, 2019), Hong Kong will be a highly relevant research location to start with.

Third, there is still insufficient academic insight on how we should overcome individual and cultural barriers that segregate environmental awareness from actual behaviour (Kollmuss & Agyeman, 2002). Most of the studies on environmental value-action gaps are western-based, and there is limited exploration towards the impact of social and external factors on personal environmental value, especially in the context of food system-related behaviour (K. Lee, 2010). Therefore, different types of value and behavioural intervention strategies are highly recommended (Yip & Fielding, 2017).

Lastly, despite proof of the strong role of NGO in community capacity and resilience building, there are still challenges in sustaining engagement with citizens and scaling up the impact in the long-run (Fraser et al., 2006; Okvat & Zautra, 2011). It is recommended to first understand

what the motivation and barrier of long-term civil participation are then coming up with relative strategies (Okvat & Zautra, 2011).

1.3. Research objectives

As such, this thesis aims to fill the above literature gaps by presenting the case study of SOEL in Hong Kong, which has empowered individuals and communities to collectively contribute to a SFS in the long-run through various learning processes (Choi, 2015). By studying the effectiveness of the community education model on individuals' environmental values regarding a SFS, it is expected to give insight on effective and innovative ways of community education and engagement model that can positively develop individuals' knowledge, attitude and behaviour in co-creating a SFS.

1.4. Main research question and sub-questions

The main research question is -

- **What is the effectiveness of School of Everyday Life's community education model on enhancing individuals' environmental value towards a sustainable food system in Hong Kong?**

The sub-questions are-

- **RQ1:** What are the key learning approaches of SOEL's community education model in nurturing community's environmental value towards SFS in Hong Kong?
- **RQ2:** How do learners' environmental values (knowledge, attitude, behaviour) regarding SFS change as a result of engaging in SOEL's community education?
- **RQ3:** What are the existing challenges and future opportunities to further scale up the impact of SOEL's community education in driving a SFS?

1.5. Thesis structure

This thesis will follow the below structure –

Chapter two critically studies the existing literatures on community education for sustainability. Specially, it examines the unique enabling approaches and conditions that enhance personal environmental value and drive effective community engagement. It also reviews theories that define environmental value and investigates relationship between knowledge, attitude and behaviour. The final section of chapter two introduces the conceptual framework of this thesis, which summarizes the proposed relationship between various conditions of community education model of SOEL and environmental value of a SFS.

Chapter three outlines the methodological and research approach for this thesis. First, it introduces and justifies the methodologies chosen, namely (1) a single case study of SOEL, (2) document analysis and (3) qualitative interview. It then details an operationalization of the studied independent variable (i.e. community education model of SOEL) and dependent variable (i.e. environmental value of a SFS). Lastly, it elaborates the potential challenges and limitation of the methodologies selected.

Chapter four therefore presents the combined results and findings of the case study, document analysis, and especially qualitative interviews. Herein, unique enabling conditions of SOEL's community education model are introduced for enhancing individual's environmental value of

SFS in Hong Kong. In a final step, we then reflect and discuss on the expected and unexpected results and findings.

Last but not least, chapter five provides a summary and conclusions of the result of this thesis, sharing the key insights and providing recommendations for future researches and supporting the development of community education model for transitions towards SFS in the long-run.

Chapter 2: Literature review and hypotheses

This chapter will first study existing literatures on community education model, and selective learning approaches that SOEL has adopted, namely transformative learning, experiential learning, social learning and empowerment through volunteering. Then it will research on theories of environmental value as a complex formulation of knowledge, attitude, behaviour, in the context of driving sustainable food transition. A conceptual framework will be presented to anticipate the positive association between community education and environmental values towards a SFS.

2.1. Education for Sustainable Development (ESD)

UNESCO defines ESD as a key element of quality education that "enhances the cognitive, socio-emotional and behavioural dimensions of learning" through building the necessary knowledge, value, and skills to tackle interlinked global challenges (UNESCO, 2023, p.1). ESD, or interchangeably EFS, is also defined academically as approaches to empower individuals to "critique status-quo values and social norms and to adopt sustainable principles and ethics by addressing unsustainable practices" (Rodríguez Aboytes & Barth, 2020, p.996). It envisions individual learning, cultural and institutional change for nurturing sustainable ways of living (Thoresen et al., 2015; WCU, 2011).

As pro-environmental attitude and behaviour are the pre-requisites for sustainability transitions, education plays a significant role in equipping people, especially the young generation, with necessary knowledge and attitude (Mihăilă et al., 2022). Nonetheless, global study has found that nearly 80% of the formal education curriculum in Asia countries have very minimal or no reference to climate change (UNESCO, 2021) [Figure 1]. 48% these contents mainly apply through cognitive learning, while overlooking the potentials of social, emotional and behavioural learning (UNESCO, 2020a). Considering such challenge, UNESCO has established the ESD for 2030 Roadmap to guide the design and execution of education with five priority actions (UNESCO, 2020a) [Figure 2]. Still, several empirical studies have pointed out the limitations of ESD at existing formal education settings, namely (1) academic focus on economic growth instead of sustainability, (2) lack of transformative learning approach to make learners feel significant to make an impact, (3) lack of empowerment to motivate learners taking proactive roles in the learning process (Lapayese, 2003; Li et al., 2018; McFarlane & Ogazon, 2011; Rodríguez Aboytes & Barth, 2020).

Given the urgency of leveraging education to address climate change, there has been a emerging trend where bottom-up organizations explore the adoption of community-based education, which help shift the conventional top-down approach to a new interactive learning model (Li et al., 2018). As actual regime change involves the transition of practices, the grassroot network is important to facilitate such change through scaling up new practices (Pesch et al., 2019). Further research is recommended to study application and synergies of transformative, innovative learning approach to other social and cultural context, for nurturing individuals' environmental value on SD empowered by social network and connections (Bryant et al., 2021; Luo et al., 2015).

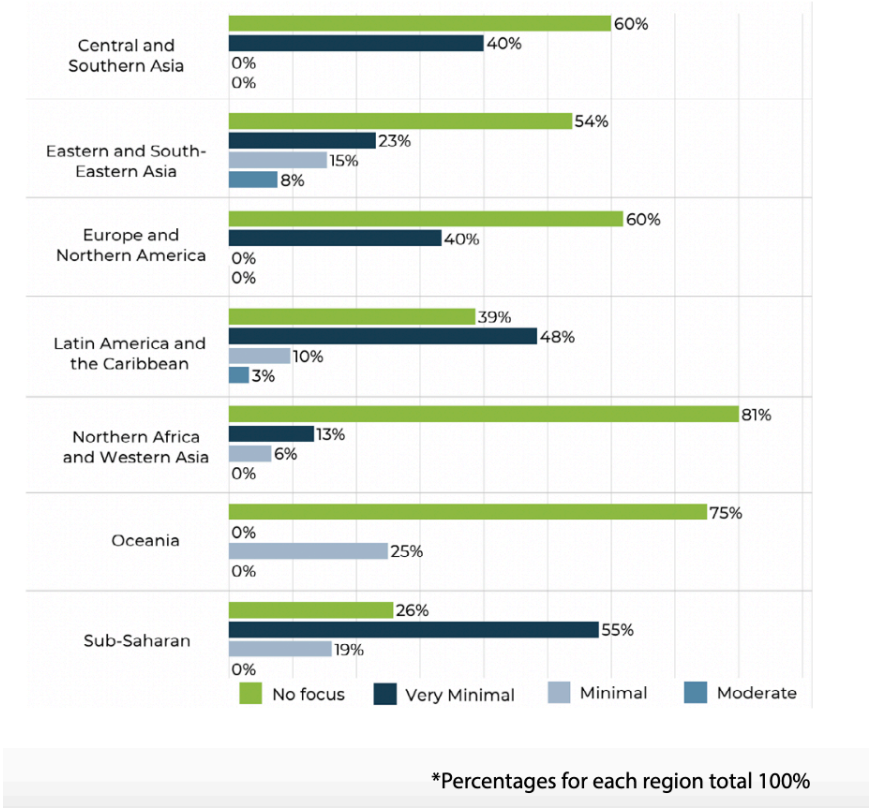

Figure 1. Percentage of climate change content in national education curriculum frameworks

(UNESCO, 2021)

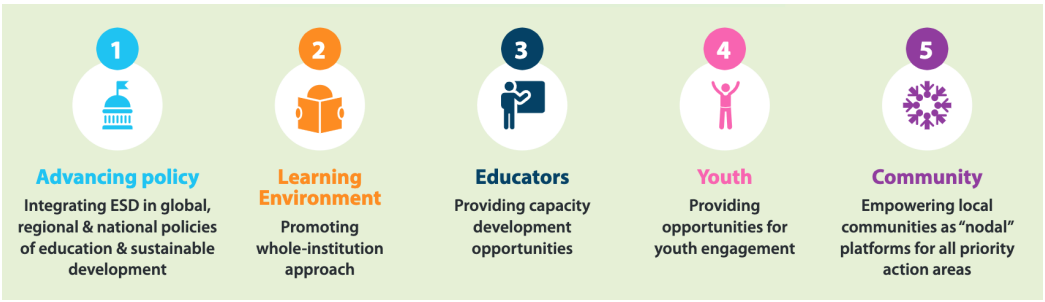

Figure 2. Five priority action areas outlined by The ESD for 2030 roadmap

(UNESCO, 2020a)

2.2. Community education model: State of the Art

On the other hand, community education, or interchangeably CBL is an open-ended, non-formal process that aspires to "equip community members with the necessary knowledge, insight and skills to function optimally in the community" (Engelbrecht, 2005, p.144), with the end goal to build an equal relationship between education and community. In the early 90s, scholars Schenck and Louw reinforced that the spirit of community education is the people-centred paradigm that empower people to share knowledge, skills, and learn collectively through discourse and participatory process (Schenck & Louw, 1995). As "people" is the key element that drives effective practices among social groups, community education is deemed a more engaging and direct way to facilitate the ongoing learning process through exchange of information and experiences for problem solving (Pahl-Wostl & Hare, 2004). Different researchers have their own approach in conceptualizing key elements of community education,

such as participation, empowerment, social capital etc.. (Engelbrecht, 2005; Schenck & Louw, 1995); meanwhile, the UNESCO Institute for Lifelong Learning has established a framework for CBL in recent year for communities to foster active citizenship and ownership in contributing to SD, with the six key action principles- (1) responding, (2) engaging, (3) enabling, (4) embedding, (5) sustaining, (6) transforming (UNESCO, 2017) [Figure 3].

Various studies show that the elements of capacity building and empowerment are most effective ways to enhance well-being of the community and pursue SD in the long-run (Abiddin et al., 2022; Nikkhah & Redzuan, 2010). According to UNDP, capacity building is defined as a transformative process of developing individual's or community's ability, skills and knowledge to address development needs (UNDP, 2015), which can be strengthened through education, skill training and organizational support (Frankish, 2003; Nikkhah & Redzuan, 2010). If thoughtfully designed, a more democratic co-creation process should motivate community members to challenge existing practices and explore viable alternatives. Different case studies from the West have demonstrated benefits of civic engagement in shifting power structure bottom-up practices (Fraser et al., 2006; Pesch et al., 2019). Co-creation and co-ownership driven by community engagement facilitates the process of knowledge sharing and transfer while enhancing public awareness on sustainability issues and social cohesion (Petronienė & Juzelėnienė, 2022).

Figure 3. Six action principles and four policy support mechanisms for community-based learning guided by UNESCO

(UNESCO, 2017)

Different community organizations adopt different learning approaches of community education model for ESD. The following sections will further study existing academic literature of key learning processes that constitute SOEL's community education model, based on the framework established from Rodríguez Aboytes & Barth (2020):

Element of analysis	Learning process adopted by SOEL
Learning process (i.e. how people learn)	2.2.1. Transformative learning 2.2.2 Experiential learning 2.2.3. Social learning 2.2.4. Empowerment through volunteering

Table 1. Element of analysis for SOEL's community education model

2.2.1. Transformative learning (TL)

The pedagogies of TL shifts from conventional knowledge transmission to emancipatory education, which focuses on the circular nature of learning and critical perspective transformation for adoption of new behaviour (Alam, 2022; Bryant et al., 2021). It was first introduced by Mezirow, who advocated the importance to disorient and challenge people's existing frame of reference that may delimit their understanding of the world (Mezirow, 2003; Rodríguez Aboytes & Barth, 2020).

Through sharing unfamiliar theoretical and practical content, under both unintended and structured situations, learners may receive information which conflicts with their prior understanding of a subject matter (Alam, 2022). For instance, showing how McDonald's burger was made of highly processed "pink slime" would surprise and even disguise the general population, provoking their critical reflection of what they eat and how food is produced in the urbanized environment (Bobo & Chakraborty, 2015). Further facilitated by social interaction and action-oriented engagement, TL envisions to trigger discourse of sustainability-related knowledge and perception, and conflicting resolution process (Alam, 2022; Rodríguez Aboytes & Barth, 2020).

This thesis will later share more what kind of content and approach SOEL shares to reshape learners' understanding about SFS in Hong Kong and worldwide.

2.2.2. Experiential learning (EL)

EL was first introduced in the 80s that emphasizes on application of academic knowledge to direct sense of experience or experiment, contrasting with classroom learning (Keeton & Tate, 1978). Kolb's EL framework has laid out the key steps in developing a cycle of critical thinking, through reflection on the experience, conceptualization, and application (Heinrich et al., 2015; Kolb, 1984). It entails opportunities for hands-on experience with sustainable practices and behaviours, and at a higher level, empowers community members to engage in decision-making process and organizing initiatives (Alam, 2022). For instance, through engaging community member with urban farming, cooking and exploring new receipts of plant-based diets, people are empowered to apply and advance their knowledge and skillsets to develop sustainable practices in iterative cycles (Maher & Burkhart, 2017). EL is regarded as one of the effective pedagogies to equip citizens skillsets to approach complex urban and environmental problems (Goralnik & Nelson, 2014).

2.2.3. Social Learning (SL)

The development of social learning theory (SLT) can be categorized into three phrases. The classic school of thought was grounded by cognitive psychology, dated back to 1977, Bandura first proposed that individual behavioural change can also be impacted by social norms (Bandura & Walters, 1977). The second phrase comes in at 90s when organizational learning

was studied and academics explored how organization members learn and adapt through collective learning (Flood, 1999; Senge, 1990). The most recent development of SLT was put forward by Wildemeersch to put emphasis on ecological or natural resource management, which deemed to be the most effective to transform conventional worldview by empowering people to envision new pathways towards sustainability (Thoresen et al., 2015). Under this school of thought, SL in the context of sustainability, can be defined as approaches that strengthen collective learning processes among an interdisciplinary and diverse group of community members, to explore new ways to address threats for socio-ecological systems (Garmendia & Stagl, 2010).

Social learning is proved to drive cultural shift through mindset and behavioural intervention towards sustainable urban development (UNESCO, 2020b). There will be a circular loop of individual cognitive gain through engaging in collective activities, while giving feedback to strengthened social interactions between community members, redefining their roles and fostering exchange of knowledge and practices (Loorbach et al., 2017; Lotz-Sisitka et al., 2017). Various studies also demonstrated that an aligned organizational culture with long-term orientation and positive reputation will further motivate people to pursue sustainable practices collectively (Davis et al., 2018; Kucharska & Kowalczyk, 2019; Miska et al., 2018).

2.2.4. Empowerment through volunteering

Grounded by non-profit nature, community organizations often face operational challenges, such as lack of funding support and human resources that diminish their effectiveness and efficiency in fostering sustainable urban development (Abiddin et al., 2022). To sustain the engagement and operation of community organizations in long-run, engaging volunteers from the community in the participatory process would indeed help optimize social capital and develop strong leadership (Okvat & Zautra, 2011).

Multiple empirical studies have reinforced the importance of volunteerism in nurturing positive attitude towards sustainability, strengthen social learning of like-minded people and driving longer term engagement (Bhiri et al., 2004; Haigh, 2006). It is one of the key conditions for an effective learning community where volunteers can apply and refine their knowledge and skills as both learners and teachers (Thoresen et al., 2015). The UN has also stressed that when volunteerism is effectively managed and properly supported, volunteer can indeed help connect with marginalized and disadvantaged groups in the communities and make tangible contribution towards SD (United Nations, 2022). However, there are still lack of case studies of effective volunteer management that can achieve capacity building in the long-run (Bhiri et al., 2004). This thesis aims at reveal how SOEL attracts and sustains volunteers, especially young adults from the community, in supporting their vision in driving SD.

In summary, with the right design and execution of innovative learning approaches, community education serves to bridge the gaps of formal education setting in acquiring community the necessary knowledge and mindset. The next section will detail the academic definition of environmental value (namely the formulation from knowledge, attitude and behaviours) in the context of SFS.

2.3. Environmental value of sustainable food system (SFS)

To conduct a holistic review on the dependent variable “environmental value of SFS”, this section will first examine empirical literatures on the concept of environmental value, followed

by a short research on the notion of SFS, then a combined elaboration of the three key components – knowledge, attitude and behaviours towards SFS.

Environmental value

The concept of environmental value was introduced and studied under the scientific field of environmental psychology, which aims to examine the relationship between human beings' mind and behaviour, with our natural environment (Mihăilă et al., 2022). There have been several scholars establishing different models of environmental value that explore the interconnectedness of different components, namely knowledge, attitude and behaviour (Mihăilă et al., 2022). Earlier models inclined to explain the relationship in a more linear or simplified approach, for instance, Gray (1985) attempted to define ecological attitudes as a combined interpretation of individual personality and behaviours (Gray et al., 1985). Recent authors further developed models based on the complex relationship between different factors, such as personal attitude, interest, childhood experience with the nature, social norm etc.. (Iluţ, 2004; Torkar et al., 2020). It is also suggested that social and cultural traits, such as peer influence, also play a significant role in forming different individual and collective values towards our environment (Ajzen & Fishbein, 1977; Johnson et al., 2004; Kollmuss & Agyeman, 2002).

This thesis will define environmental value with three main components- (1) knowledge, (2) attitude, and (3) behaviour, in the context of SFS. Such composition was first introduced from the theory of reasoned action in 1980, which proposed that behaviours are formulated based on individual factual knowledge that further develop an attitude, also from social and moral values formed by the society (Ajzen & Fishbein, 1977) [Figure 4]. In the context of pro-environmental consciousness, Kollmuss & Agyeman (2002) has developed Ajzen & Fishbein's theory with consideration of potential barriers from internal and external factors, which suggested the complexity and non-linear relationship between different drivers, also the reasons for value-action gaps of pro-environmental behaviour (Kollmuss & Agyeman, 2002) [Figure 5].

Table 2 shows a table of general definition for the three main components of environmental value, where later section will offer a specific definition in the context of SFS.

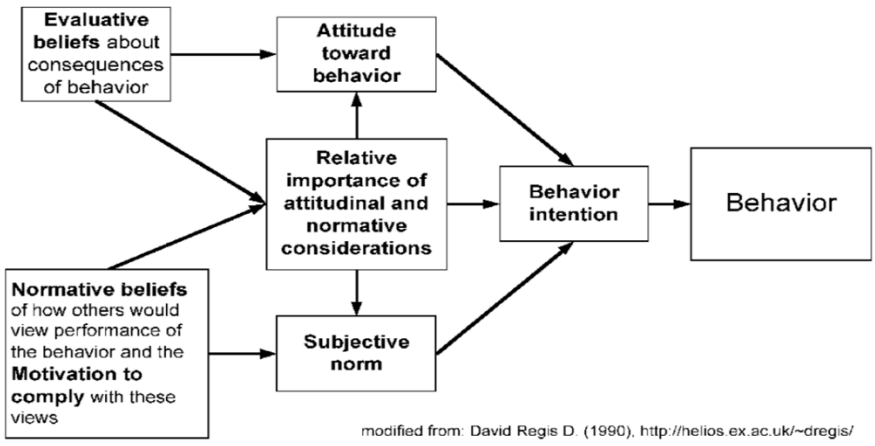

Figure 4. Figure of reasoned action

(Ajzen & Fishbein, 1977)

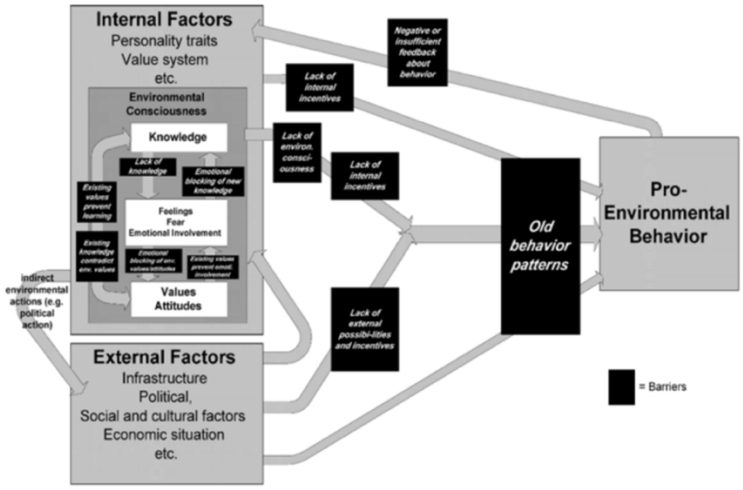

Figure 5. Model of pro-environmental behaviour

(Kollmuss & Agyeman, 2002)

Component of environmental value	**General definition from literatures** (Kollmuss & Agyeman, 2002; Mihăilă et al., 2022)
1) Knowledge	- Individual is aware of and understand the causes and impacts of the environmental problems - Individual understands how to lower his/ her impacts on the environmental problems
2) Attitude	- Individual feels environmentally responsible - Individual feels he/ she can make a positive impact towards the environmental problems
3) Behaviour	- Individual invests time, effort or money to act or nurture habits in daily life to reduce his/ her impacts on the environmental problem

Table 2. General definition of knowledge, attitude, and behaviour as key components of environmental values

(Kollmuss & Agyeman, 2002; Mihăilă et al., 2022)

The below section will first examine the concept of SFS then detail the definition and context of "environmental value towards SFS".

Sustainable Food System (SFS)

According to FAO, a SFS can be defined as a food system that delivers "food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised" (FAO, 2018, p.1) [Figure 6]. The ongoing industrialization of food in the past decades has resulted in emerging environmental and health risk, such as increasing GHGE, stretched food supply chain and security, loss of farmers' bargaining power etc. (Spaargaren et al., 2013).

From a lifecycle point of view, we can break down the existing challenges of SFS into 3 stages: (1) food production, (2) food consumption and (3) food waste management and prevention. First, industrialized agriculture and livestock industry result in biodiversity loss and environmental degradation (Tang & Sobko, 2019; Yip & Fielding, 2017); second,

unsustainable food consumption pattern is nurtured by globalization of food supply chain, which in turns accounts for huge GHGE; lastly, a desperate amount of unnecessary food surplus is produced throughout the whole food supply chain (Jurgilevich et al., 2016). Therefore, there is an increasing need to transform our existing social practice of food production, consumption and food waste reduction, which in turn will contribute to a sustainable global food network and system (Jurgilevich et al., 2016; Spaargaren et al., 2013).

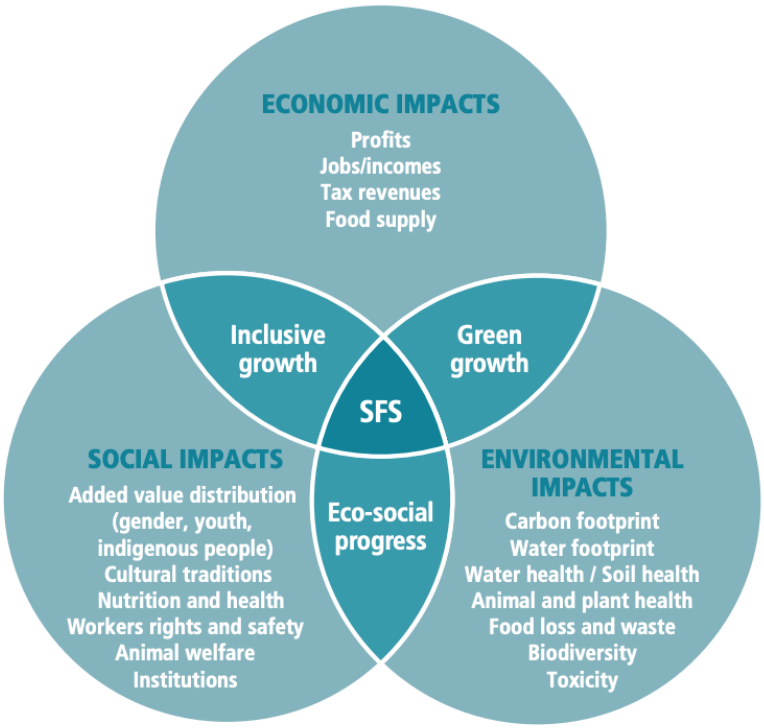

Figure 6. Components of a sustainable food system

(FAO, 2018)

Environmental value of SFS

With the above understanding and examination on environmental value, and SFS separately, this thesis aims to draw connections between the two concepts and offer specific definition for environmental value of SFS with elaboration [Table 3].

Component of environmental value	Specific definitions for "environmental value of SFS" developed from relevant literatures (do Canto et al., 2021; Kollmuss & Agyeman, 2002; Mihăilă et al., 2022; Muranko et al., 2018)
(1) Knowledge towards SFS	- Individual is aware of and understand the causes and impacts of an unsustainable food system - Individual understands alternative ways to lower his/ her environmental impact on the wider food systems
(2) Attitude towards SFS	- Individual feels environmentally responsible to contribute to a SFS - Individual feels he/ she can make a positive impact towards a SFS
(3) Behaviour towards SFS	- Individual invests time, effort or money to act or nurture habits in daily life to reduce his/ her impacts on the food system from (1) food production, (2) food consumption, (3) food waste reduction perspectives - Individual invests time, effort or money to participate, engage or lead relevant activities that support the development of a SFS - Individuals invests time, effort or money to pursue other non-food-related environmental behaviour such as recycling, reduce use of plastic etc.

Table 3. Specific definitions for "environmental value of SFS" developed from relevant literatures (do Canto et al., 2021; Kollmuss & Agyeman, 2002; Mihăilă et al., 2022; Muranko et al., 2018)

2.3.1 Knowledge towards SFS

Due to the complex interdependency between consumers' diet pattern and climate change, majority of the population are not aware of the impact human beings imposed on the food system, or the wider environment, let alone of the motivation to change their behaviour (de Boer et al., 2016). Knowledge is the first key internal factor to nurture further environmental consciousness and draw emotional connection with the food system, yet existing knowledge or values may hinder the development of new knowledge and perception (Kollmuss & Agyeman, 2002). In general, national government, industries players, environmental NGOs haven't been acting enough to inform consumer about the causes and impacts of an unsustainable food system, and what could be the alternative options and the corresponding benefits towards climate change mitigation (de Boer et al., 2016). Various studies, for instance, have advised the urge to enhance Hong Kong population' awareness on the importance of changing their diets towards a SFS (de Boer et al., 2016; Tang & Sobko, 2019; Yau et al., 2018; Yip & Fielding, 2017).

2.3.2 Attitude towards SFS

Attitude links to individual's intrinsic motivation, personality and personal worldview towards the environment, which can be defined as the level of environmental responsibility and confidence in making positive impact towards a SFS (Mihăilă et al., 2022). There are several factors hindering the development of building positive attitude towards a SFS. For instance, the lack of incentives or motivation explains the prominent gap between one's knowledge on sustainability and actual pro-environmental behaviour (Kollmuss & Agyeman, 2002). People who have strong egoistic value and focus heavily on his or her own interest, achievement, benefits are more less likely to connect themselves with the environment (Prakash et al., 2019).

Social influence that forms a certain form of social normal belief is also proved to be a crucial factor on individual's perception (Wang & Lin, 2017).

Studies have shown that there is a lack of awareness among Hong Kong population regarding their shared responsibility of contributing to a sustainable development of the ecosystem (Warren-Rhodes & Koenig, 2001), or some feel their individual contribution is indeed insignificant to the wider system (Chung & Leung, 2007b; Mihăilă et al., 2022). As engaging end-consumers is one of the most challenging stages in transiting to a SFS, understanding their intrinsic motivation and willingness, and make the transition attractive is a vital step to address lock-in in cultural context (do Canto et al., 2021).

2.3.3. Behaviour towards SFS

Based on different theories of environmental values, pro-environmental behaviours are regarded as the non-linear outcome of all the abovementioned components and factors. Behaviours related to SFS could refer to how individuals act to reduce his or her environmental impacts in food production, consumption, or food waste reduction process, or how individuals engage, support or lead activities that promote the building of SFS (do Canto et al., 2021).

Cases demonstrate that despite high awareness or knowledge, there are always tensions and gaps with actual behaviour (Higgins, 2013; Szerszynski, 2007). The extent of behavioural change also depends on the historical sustainability value of individuals, nature of community involvement, cohesiveness of community organization and the nature of organizations (Middlemiss, 2011). It is recommended to construct positive feedback loops for value creation and circular behavioural change, where end-consumers are highly educated, engaged and skilled to reduce environmental impact through shifting to more sustainable practices and low-carbon options, such as taking protein alternatives, consuming locally made products, reducing and upcycling food waste, innovating bio-degradable products etc.. (de Boer et al., 2016; do Canto et al., 2021) [Figure 7].

As engaging in sustainable food behaviour involves trade-off from convenience, time, or cost for consumers, we need strategic approach to support and motivate them to shift behaviour without sacrificing their own priorities (do Canto et al., 2021). Currently most research on sustainable food behaviour focus on Western world instead of emerging economies, population from Asia in particular, lack knowledge to pursue these behaviours (do Canto et al., 2021). Later section of this thesis will study how community education can cultivate a social culture for community members to experiment and practice circular food behaviour in long-run.

	Linear behaviors	Transitioning behaviors	Circular behaviors
Definition	Follow a linear logic	Go beyond the linear logic but lack a systemic view	Integrate into a systemic view
Consumers' role	'Purchasers,' 'users,' 'wasters'	'Learners'	'Doers,' prosumers
Sustainability goals	Short-term economic goals, with secondary environmental or social benefits	Medium-term goals, involving two sustainability dimensions	Long-term economic, social, and environmental goals
Engagement	Low engagement. Consumers believe other actors are responsible for the impact of their behaviors	Medium engagement. Consumers inform about the impact of their behaviors	High engagement. Consumers are skilled and take responsibility for their behaviors
Technology	Traditional technologies. Low complexity	New technologies, connecting niches and informing consumers. Medium complexity	Support consumers' education and connection. High complexity

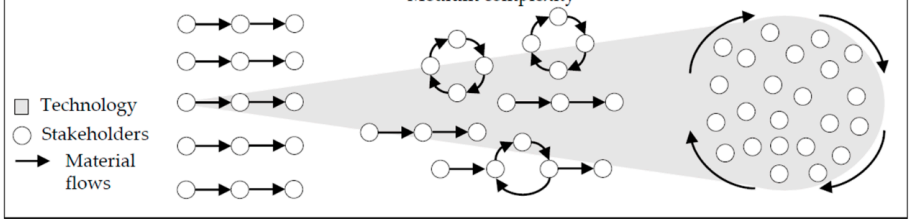

Figure 7. Transition towards circular food behaviours: three types of behaviours and their characteristic

(do Canto et al., 2021)

2.4. Summary and Conclusion

In summary, environmental values of SFS are outcomes of ideas and beliefs that constructed by mainly family and education system (Savelyeva, 2022), and grounded based on a knowledge-attitudes-behaviour hierarchy (Bandura, 1978; Campbell, 1963; Kraus, 1995). They can also be shaped by community education model that entails effective learning processes. In terms of learning process,

1) Transformative learning can feed new information that challenge learners' current worldview and build in new knowledge of SFS;
2) Experiential learning empowers learners to apply, experiment, and innovate skillsets in iterative cycles that advanced their knowledge and behaviours;
3) Social learning leverages on the collective power of community members and cultivate a positive culture to scale-up sustainable practices in the food arena;
4) Empowering volunteers to co-create the planning and organization of community initiatives as a participatory process can foster sustainable food practices and give them sense of achievement, building positive values towards their contribution.

While sustainability transition requires innovation and multi-disciplinary participatory process to address lock-in in social and cultural context (Loorbach et al., 2017), it is still highly uncommon to engage citizens in the co-creation of SFS (Sijtsema et al., 2020b). In order to bridge the value-action gap, many psychological and external barriers must be overcome. This can possibly be achieved by exploring effective communication education model to strengthen social support and civic engagement through transforming the social norms (Gifford, 2011; Steg & Vlek, 2009).

2.5. Conceptual Framework

Environmental value of a SFS can be conceptually broken down into three components, knowledge, attitude, behaviour [Figure 8]. The learning process adopted by SOEL's community education model discussed in section 2.1 are factors that determine the level of change in individuals' environmental value of a SFS, as the outcome.

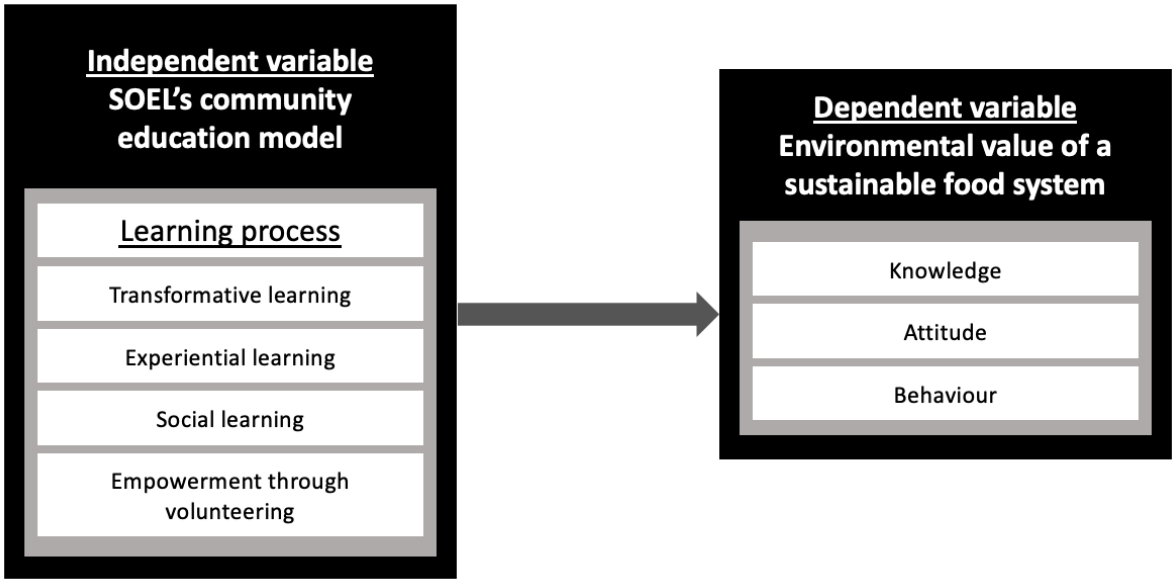

Figure 8. Conceptual framework

2.5.1. Outcome

The outcome can be conceptualized as a complex interaction between the three components-knowledge, attitude, and behaviour (Kollmuss & Agyeman, 2002; Mihăilă et al., 2022). Knowledge regarding the SFS will serve as a key foundation to understand the root causes and impacts of unsustainable food practices, and what could be the alternative options, that further drive attitudes. When one feels environmentally responsible and significant to make an impact towards the food system, they are more inclined to change their behaviour towards a SFS (de Boer et al., 2016). Mindset and behavioural intervention about SFS may also have potential positive spill over effect towards other pro-environmental knowledge or behaviour (de Boer et al., 2016).

2.5.2. Learning process (of independent variables)

The design of community education model cited as further strengthening individuals' environmental knowledge, willingness and building up pro-environmental behaviour in a consistent manner that contribute to a SFS in the long-run (Chung & Lo, 2004; Jones & Dunlap, 2010; Vencatasawmy et al., 2000). The presence and application of each learning process will affect the overall level of effectiveness of the community education model, which in terns will affect the extent of changes in environmental values of SFS, meanwhile it is assumed that other internal factors such as family influence, personal academic or professional background may hinder or strengthen such association (Savelyeva, 2022).

Transformative learning

It is expected that the adoption of TL approach, with the planning and execution of community initiatives that focuses on action-oriented engagement and disorientation dilemma will

positively enhance learners' knowledge and perception on their relationship with food, ecosystem and the world (Alam, 2022; Rodriguez-Labajos, 2022). It can be delivered in diverse forms and approaches, such as project-based, use of art medium, inter-disciplinary learning environment etc. that helps to facilitate the change of perception about SFS (Heras et al., 2021).

Experiential learning

The more the opportunities given to learners to apply, validate and experiment their knowledge in iterative cycles with hands-on experience, the more they can advance their skillset and capacity in driving sustainable food system with small-scale experiment or changes in food consumption, production, or waste pattern should be encouraged (de Boer et al., 2016) It is a very effective way of capacity building and enhancing community resilience (Abiddin et al., 2022).

Social learning

A supportive social network with positive, encouraging atmosphere in the community helps cultivate sense of social responsibility, intrinsic motivation, and enhance their confidence in making an impact towards SFS, regardless of the scale of the actions. Social influence plays a key role in reshaping the social culture especially among the younger generations (Liu et al., 2020; Tamar et al., 2020; Wang & Lin, 2017)

Empowerment through volunteering

The more the empowerment given to learners to engage in co-creation or decision-making of community initiatives or programmes that foster a SFS, the stronger the sense of achievement and belongings nurtured to motivate learners to advance their skillsets and scale up their behaviours or influence that drive a SFS collectively within the social network and community (Thoresen et al., 2015).

Chapter 3: Research design, methodology

3.1. Introduction & justification of research design and methods

The objective of this study is to evaluate the effectiveness of SOEL's community education model on enhancing participants' environmental value towards SFS. As construction of one's environmental value is a complex process related to the human and social world, where knowledge, attitude, and behaviour and other external factors are strongly independent with one another (Kollmuss & Agyeman, 2002; Malina et al., 2011), this research will adopt a qualitative case study method to gain contextually rich data and generate holistic insight on the main research question (Bernard et al., 2016; B. Lee et al., 2007). A tripartite data collection method is deployed, including (1) a single case study of SOEL, (2) qualitative document analysis and (3) semi-structure qualitative interview, to ensure high reliability and validity of analysis result (Broadbent & Unerman, 2011) [Table 4].

To help respondents to reflect and quantify the actual changes in their environmental values before and after joining SOEL, a pre-defined typology for the concept of knowledge, attitude, behaviour were presented with a likert-scale in the interview questions, so that the result can be used for a paired sample t-test to analyse whether the changes in the level of these three components are statistically significant (Smith, 2015). This gives a more objective, credible and valid analysis to support and complement the qualitative interpretation of the interview responses.

The strength of this research lies on the qualitative analysis of respondents' perception that are mainly based on the interviews conducted with SOEL's volunteers, employees and founders, who could give valuable insight on their journey to reconnect with the food system and pursue a more sustainable lifestyle.

Methodologies	Study subject	Data collection	Data analysis
1.Single case study of SOEL	• Vision/ mission of SOEL • Scope of service delivery • Target audience	• Official website • SOEL's social media	Qualitative analysis on learning process adopted by SOEL
2. Qualitative document analysis	• Previous community events organized • Milestone of SOEL along its establishment	8 Hong Kong's magazine articles on SOEL community education model from 2014-2019	
3. Semi-structured qualitative interviews	• Change in participants/ volunteers, employee's environmental value towards SFS (Knowledge, attitude, behaviour) • Challenges and opportunities of scaling up SOEL's impact	Qualitative interview with 22 respondents 45 minutes to one hour each • 2 founders • 5 employees • 15 participants/ volunteers	A paired sample t-test to analyze likert-scale of the change in environmental value using STATA Thematic/ coding analysis from qualitative responses using Atlas.ai

Table 4. A summary of research approach

3.2. Data collection

Semi-structured interviews are conducted with a total of 22 respondents (including two founders, 15 volunteer and 5 employees of SOEL). For the two founders, the interview mainly focuses on their rationale of establishing SOEL, challenges and opportunities of educating the general public and younger generation about SFS thus the importance of sustainable lifestyle. Meanwhile, for the rest of the 20 respondents, they are the "learners" who were asked to reflect the changes in environmental values towards SFS after they join SOEL in short- and long-term. Qualitative interview guides and questions were first designed in English and later translated to traditional Chinese in early April. Interview questions were sent 1-2 days to the interviewees prior to the interview held between 1- 15 May, 2023. Each interview lasted around 45 minutes to one hour. Remote interviews were conducted through Google meet and only audio was being recorded with a separate digital device. Sample size is based on 10% of the population size [Table 5], and eligible interviewees were invited based on personal network from first-hand volunteering experience in SOEL.

Categories of interviewees	Population	Number of interviewees
1. Active participants/ volunteers in SOEL	Around 140	15
2. SOEL's employee	15	5
3. Founder of SOEL	3	2
Total		22

Table 5. Categories of interviewees

3.3. Data analysis methodology

Through single case study, document analysis and interviews, the community learning process, and its effectiveness of changing community's environmental values towards SFS is studied from different perspectives. A total of 22 qualitative interviews were transcribed and coded using ATLAS.ai. First, analysis was first done with inductive coding, as a bottom-up data-driven approach to create thematic codes based on raw transcription. As patterns emerge along with the data analysis process, deductive coding was then adopted based on the predetermined set of codes. New codes were also created if unexpected insight is identified from the transcription. At the later stage of analysis, codes were grouped further under relevant variables.

In parallel, for the likert-scale result obtained from the qualitative interviews, the level of knowledge, attitude and behaviour of individuals before and after joining SOEL are manually input into excel and bar charts are generated to learn about the high-level change in volunteers and employee's environmental values. Paired sample t-tests are also conducted to analyse the statistical significance on the level of change (Smith, 2015). Yet, since this thesis will not conduct any regression analysis that demonstrates statistical relationship between independent and dependent variables, qualitative analysis is the key method to ensure validity and reliability of the result and further understand the social and cultural context of the case.

At last, few categories of insights are identified- (1) Reasons behind the level of knowledge, attitude, and behaviour towards SFS at different stages, (2) the enabling conditions that results in changes of environmental values towards SFS after joining SOEL, (3) current challenges and future opportunities of SOEL to scale-up its impact to drive SFS, which directly address the main and sub-research questions of this thesis.

3.4. Expected challenges and limitation of data

A handful of limitations must be addressed for the research design of this thesis. First, since this is a single case study of SOEL in Hong Kong, the result is bounded by cultural and social context, which wouldn't be representative enough to conclude the necessary enabler for an effective community education model that enhance one's environmental value of a SFS. Effectiveness may vary across geographical and cultural context.

Despite following the 10% sampling rules, the sample size of the qualitative interviews is still relatively small. Volunteers and employee from SOEL who were willing to take up the interviews are usually people who have pro-environmental worldview or less egoistic value, which means that the sample may discriminate the other spectrum of people by nature, for instance, participants who have joined SOEL for once but were not impressed and didn't further engage with SOEL.

During the qualitative interviews, respondents were also asked to rate their level of understanding, attitude and behaviour towards SFS based on the set definition, yet the self-evaluation could be subjective. They may feel obliged or ethically responsible to answer positive changes as a result of engaging in SOEL for a long period of time. The result may not reflect the extend of actual effectiveness of SOEL's community education model in nurturing environmental value towards SFS.

Also, since the target group of SOEL tend to be young adults aged 18-35, the result leans towards common patterns from younger generation, lacking insight on how community organizations should engage people from different demographics backgrounds and the corresponding potential challenges of nurturing environmental values towards SFS among them.

3.5. Operationalization of key concepts and expected relationships

Independent variable: School of Everyday Life (SOEL)'s community education model				
Sub-variable	Description	Indicator	Source of variable	Data source
Learning process adopted by SOEL	Transformative learning	The practical content, knowledge, activities related to SFS delivered by SOEL to SOEL's participants, volunteers, or employees	(Rodríguez Aboytes & Barth, 2020; Bryant et al., 2021) summarized three key components of a learning model (learning process, learning conditions, learning outcomes) with priori categories. This thesis will focus on the selected sub-variables, which are particularly adopted by SOEL with its own established community education model and learning approach.	Case study and document analysis on learning process adopted by SOEL (Methodology 1&2) Qualitative interview to examine the changes in respondents' environmental value towards SFS and corresponding enablers (Methodology 3)
	Experiential learning	Opportunities to gain hands-on experience related to food production, consumption, waste reduction through applying with practices while engaging with SOEL		
	Social learning	Opportunities for individuals' to share perspectives, knowledge, and practice sustainable behaviours towards SFS with other learner in SOEL, in additional to an open culture to experiment new behaviours		
	Empowerment through volunteering	Opportunities for individuals to co-create, contribute or lead community activities that contribute to SFS		

Dependent variable: Individuals' environmental values of a sustainable food system (SFS)				
Sub-variable	Description	Indicator	Source of variable	Data source
1.Knowledge towards SFS	1a. Being aware of and understand the causes and impacts of an unsustainable food system 1b. Being aware of and understand how to lower individuals' impacts on the food system	1a, b. Change (before and after) in individuals' awareness and knowledge on causes, impacts of an unsustainable food system, and how to lower one's impacts on the existing system	(Kollmuss, A., & Agyeman, 2002) defined knowledge and attitude in the context of environmental value (FAO, 2018) gives definition for "sustainable food system" and related concepts	Qualitative Interview to understand the extent of change in individuals' environmental value after engaging in SOEL's community education model (Methodology 3)
2.Attitude towards SFS	2a. Sense of environmental responsibility 2b. Locus on control – individuals feel significant or powerful to make a positive change	2a. Change in individuals' sense on personal responsibility in making food system more sustainable 2b. Whether individuals feel there will be an impact from his or her own action to the wider food system		
3.Behaviour towards SFS	3a. Adoption of sustainable food behavior 3b. Participation in or leading co-creation of sustainable food system 3c. Development of other pro-environmental behavior or habits	3a. Change in individuals' behavior regarding food production, consumption, food waste practices 3b. Change in individuals' engagement in community activities regarding sustainable food system 3c. Change in individuals' lifestyles and daily behavior	(do Canto et al., 2021) summarized a wide range of sustainable food behavior from (1) food production; (2) food consumption and (3) food waste management perspectives	

Table 6. Operationalization table

Part 4. Results, analysis and discussion

This chapter will first briefly depict the current state and challenges of driving SFS in Hong Kong, especially the limitations from formal education system. Then, the chapter will structure based on the sequence of sub-research questions, first exanimating the learning process adopted by SOEL in Hong Kong in driving SFS, then evaluating the actual change in volunteers and employees' level of knowledge, attitude and behaviours towards SFS after joining SOEL and corresponding driving forces behind, lastly generating insights of current challenges and future opportunities in scaling up community education in driving SFS in Hong Kong.

This sub-chapter presents combined findings and analysis from single case study, document analysis and qualitative interviews, that build up to the main research question at chapter 1. When necessary, interviewees' responses are quoted as "R" (for SOEL's volunteers and employees) or "F" (for SOEL's founders). Further details of the interviews can be founded in Appendix 1-4.

4.1. Challenges of driving SFS in Hong Kong

Various scientific studies have concluded that the current food system is Hong Kong is highly unsustainable, in the process of production, consumption and food wate management and reduction (Tang & Sobko, 2019; Yip & Fielding, 2017). Over-reliance on import, coupled with heavy meat consumption, have contributed to 57% and 53% of total carbon footprint (CF) and water footprint (WF) of the average Hong Kong diet, which is way higher than other types of diets and cause significant environmental impacts on land use, water consumption and GHGE (Tang & Sobko, 2019; Yau et al., 2018; Yip & Fielding, 2017). Meanwhile, serious food waste problem accounts for almost one-third of the municipal solid waste in Hong Kong, contributing to more than 3,300 tonnes of food sent to landfill every day (HKEPD, 2020a, 2020b).

Nonetheless, under Kyoto Protocol, Hong Kong is not formally obliged to meet any mandatory GHGE target, therefore there hasn't been many cutting-edge agenda or progressive measures that tackle climate change, from food-agriculture domain in particular (Higgins, 2013). From the perspective of education, not until 2003 was Education for Sustainable Development Association (ESDA) established to align formal education curriculum agenda with UN's SD goals (Luo et al., 2015), yet the focus of SD in Hong Kong has been inclined towards economic development rather than striking a balance between economic, social and environmental needs (Savelyeva, 2022).

The existing formal education system are facing two key challenges in filling the knowledge gap in Hong Kong. First, Hong Kong education system is knowledge-oriented with narrow vision when it comes to the topic of food and agriculture (W. Y. Chan, 2014; Choi, 2015). There hasn't been a holistic educational strategy and comprehensive coverage on food production, consumption, food security, safety and its relations to human health and the environment, let alone any experiential or emotional learning opportunities embedded for students (F1, F2). Grounded by result- and exam-oriented culture, students aren't taught with sufficient practical life skill nor equipped with systemic worldview about the food system or the environment (W. Y. Chan, 2014). Second, due to the absence of agriculture economy and top-down food security policy to ensure local self-sufficiency (Y. W. Chan, 2016; H. T. Ho, 2020), general population are not aware of the interdependencies between food-agriculture system and their daily lives. This knowledge gap in between end-consumers and food system

has further been widened by commercial-oriented, consumerism and fast-food culture in Hong Kong (F1, F2).

Few bottom-up community organizations have emerged in recent years to build a closer connection between the general public and the food-agriculture industry through community education (Siu, 2023). These organizations adopt different engagement approaches in nurturing public environmental values but there was minimal scientific evidence on the actual effectiveness of these community education models. The following parts will focus on the single case study of SOEL, which has adopted an innovation-led empowering, participatory approach to enhance public knowledge, attitude and behaviours towards SFS.

4.2. Data analysis

4.2.1. Sub-research question 1

What are the key learning approaches of SOEL's community education model in nurturing community's environmental value towards SFS in Hong Kong?

School of Everyday Life (生活書院), a local-level NGO based in Hong Kong, was founded in 2014 by three experienced local educators. Its vision is to reconnect general public with the environment through (1) ESD, (2) life education and (3) art & culture , thus bringing positive impacts to the society (SOEL, n.d.). The objective is to cultivate a sustainable community culture through a diverse range of innovative and engaging community programme listed in table 7 (W. Y. Chan, 2014; Oriental Daily, 2014). SOEL emphasizes the interconnectedness between human beings and the environment, by offering opportunities for public to review the end-to-end process of food production, food consumption, and food waste reduction through physical and experiential learning (Eunice, 2014). SOEL's physical office also serves as a venue for community education in the neighbourhoods (W. Y. Chan, 2014).

SOEL insists in adopting some key learning approaches on nurturing public environmental value towards SFS [Photo 1-6]. In terms of learning process, transformative learning (TL) is applied to uncover the truth behind industrialized food production and provoke public reflection on their consumption pattern and corresponding environmental impact, through designing unconventional curriculum, fostering exchange between guest speaker and public, and creating interactive educational studio and discussion forum (Eunice, 2014; Tse, 2014). Participants, volunteers and employees of SOEL are also given lots of hands-on opportunities to learn about organic farming and plant-based cooking as part of the experiential learning (F1). Meanwhile, social learning is the key learning condition that SOEL embeds into every programme, which enables critical discussion, sharing of worldview and information among learners Another differentiated strategy is that SOEL founders or employees will invite any former participants to continue their engagement as a volunteer, who can contribute to the participatory process of planning, designing and executing the next cohort of community engagement programme (F1, F2).

Based on different magazine articles, these learning approaches are particularly intriguing for students and young adults, who are more engaged with interactive and fun ways of learning (Choi, 2015; Eunice, 2014). Founders of SOEL also contended that young adults have stronger self-autonomy, personal pursue, sense of environmental responsibility, and most importantly, more action-oriented when fed with the right motivation and incentives (F1).

#	Programme Name	Chinese name	Target audience	Frequency	Duration	Objectives
1	**Lifewalker programme**	行者班	Young adults aged 18-35	2 times a year	3 months	To boost personal development and nurture environmental value for young adults through experiential and collective learning approach
2	**Lifewalker camp**	行者營	Young adults aged 18-35	Annually	3 days	
3	**Skill sharing workshop**	技能分享	General public	Monthly	1 day	To enable sharing of life skills or practical skills amongst volunteers and community members
4	**Training for educators**	教師培訓	Working educational professional	Varies	1-2 day	To empower education professional to reflect and explore education of mindfulness , food-agriculture, and sustainable development
5	**Community market**	市集	General public	Bi-annually	2 days	To provide a platform to connect general public with local business owner or farmers who sell local eco-friendly or organic products
6	**Community workshop with organizations or schools**	團體及機構活動	Specific demographics based on organizations' needs	Upon demand	Varies	To cultivate a sustainable community culture through life education, education for sustainability, and art & culture

Table 7. Overview of SOEL's community engagement programme (SOEL, n.d.)

Photo 1. Transformative learning at "Food for Life" studio exhibition

Photo 2. Social learning amongst community members

Photo 3. Experiential learning through plant-based cooking

Photo 4. Social learning amongst participants and volunteers

Photo 5. Experiential-based learning at local organic farms

Photo 6. Empowerment through volunteering

4.2.2. Sub-research question 2

How do learners' environmental values (knowledge, attitude, behaviour) regarding SFS change as a result of engaging in SOEL's community education?

A total of 20 respondents (excluding the two SOEL's founders) were interviewed to observe their change in knowledge, attitude and behaviour towards SFS after engaging with SOEL, including 5 employees and 15 volunteers (who continue their engagement after being a participant at the first time). This sub-chapter will present findings for each of the sub-variables, and examine the relationship between SOEL's community education approach and changes in environmental values.

4.2.2.1. Knowledge towards SFS

To understand the change in the level of knowledge after engaging in SOEL, the 20 interviewees were asked to evaluate their level of knowledge before and after joining SOEL, both in short-term (within a year of engagement) and long-term (more than one year of engagement), based on the provided definition in table 8.

Level of knowledge	Definition of the level of knowledge
Level 1	No awareness, no understanding towards SFS
Level 2	Aware, with minimal understanding towards SFS
Level 3	Aware, with basic understanding towards SFS
Level 4	Considerable level of understanding towards SFS
Level 5	High level of understanding towards SFS

Table 8. Definition of "level of knowledge" towards SFS

In summary, in the long-run, we see an upward shift of the overall level of understanding towards SFS amongst the interviewees [Figure 9]. To test whether the differences between the paired observations are normally distributed, a paired t-test is further conducted using STATA to validate whether the change in the level of understanding is statistically significant at 99% confidence interval (Smith, 2015). It takes the likert-scale of "before" and "after" (in the long-run) respondents joining SOEL. The below hypothesis is set:

Null hypothesis (H_0): There is no effect on respondents' level of knowledge towards SFS after they join SOEL in the long-run.

Alternative hypothesis (H_A): There is an effect on respondents' level of knowledge towards SFS after they join SOEL in the long-run.

From the t-test result [Figure 10], the mean score in "after" (in the long-run) (mean= 3.85, SD= 0.59) is significantly higher than that of "before" (mean= 2.1, SD= 0.79) . The t-value is -9.95, the p-value is less than 0.01, therefore we can reject the null hypothesis and conclude that there is a statistically significant difference in means between the level of understanding before and after the respondents joining SOEL at 99% confidence interval.

While this high-level overview demonstrated an overall increase in the level of knowledge among the interviewees, in-depth qualitative analysis is still needed to further understand the contextual reasons behind such changes and how the changes differ for different respondents.

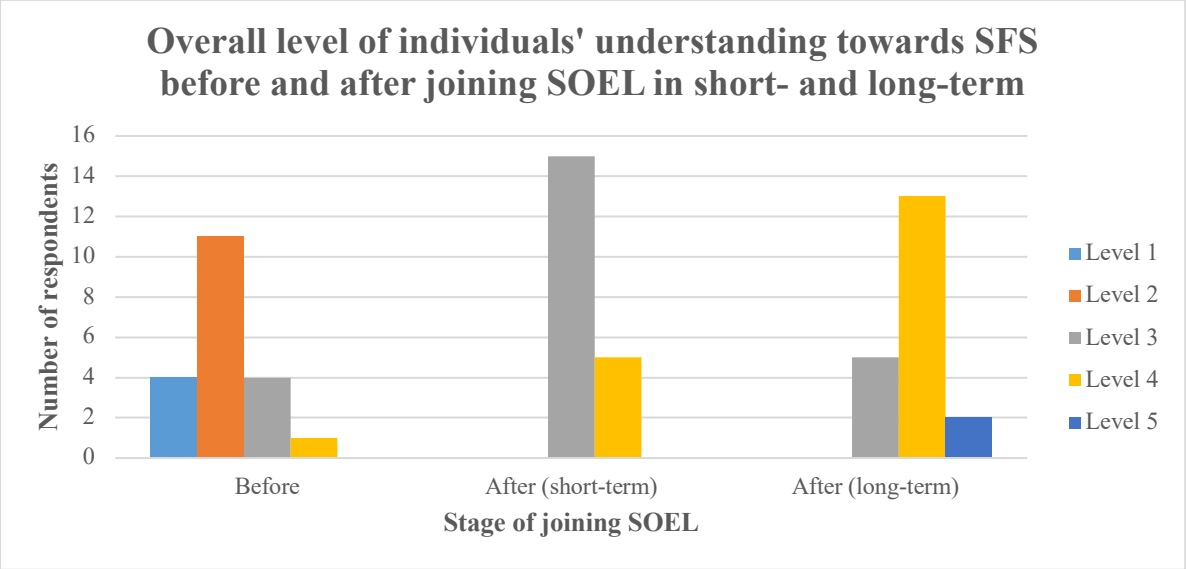

Figure 9. Overall level of individuals' understanding towards SFS before and after joining SOEL

```
. ttest KBefore == KAfter, level(99)

Paired t test
```

Variable	Obs	Mean	Std. err.	Std. dev.	[99% conf.	interval]
KBefore	20	2.1	.1762176	.7880689	1.595853	2.604147
KAfter	20	3.85	.1312892	.5871429	3.47439	4.22561
diff	20	-1.75	.1758438	.7863975	-2.253078	-1.246922

```
    mean(diff) = mean(KBefore - KAfter)                      t =  -9.9520
H0: mean(diff) = 0                          Degrees of freedom =       19

 Ha: mean(diff) < 0           Ha: mean(diff) != 0           Ha: mean(diff) > 0
 Pr(T < t) = 0.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 1.0000
```

Figure 10. A paired t-test at 99% confidence interval for level of understanding towards SFS before and after joining SOEL

Level of knowledge before joining SOEL

While respondents were asked about the reason of their self-evaluation of knowledge level before joining SOEL, majority of them expressed challenges in gaining basic understanding about food and agriculture in general. First, information obtained from textbook, mainstream media or news have constrained the depth of respondents' understanding on actual facts about the wider food system and its relevance with climate change (R1- R3, R5- R7, R12, R18) (Tse, 2014). Weak connection between the wider food system and their education, or occupational background in daily life also limits respondents' exposure and interest towards the subject matter (R1-R5, R7, R8). The consumerism culture in Hong Kong (R4, R12) and over-convenience to obtain food (R2, R6, R13, R20) have also resulted in a dearth of understanding of food supply chain among the general public (Oriental Daily, 2014).

"I only get minimal understanding about food nutrition from my high-school education, yet I am totally not familiar with in-depth knowledge about food source, production, distribution, or how our consumption pattern is impacting the environment" (R7)

In contrast, the minority of respondents who had a considerable level of understanding towards SFS generally have prior personal interest (R9, R17, R19) or related educational or professional background (R10, R11, R14) before joining SOEL. The contrasting result illustrates a general knowledge deficiency towards the food system amongst interviewees.

Level of knowledge after joining SOEL

This analysis aims to evaluate change in respondents' level of knowledge towards SFS after joining SOEL based on the same scale of definition, and the corresponding enablers and examples. While all of the respondents reported an overall increase in their understanding towards SFS in the long-run, experiential learning appears to be the most effective enabler that triggers such changes. Respondents emphasized the importance of hands-on experience for them to advance their understanding towards SFS (R1, R2, R4, R6, R9- R11, R13- R20), specifically, regularly engage in local organic farming activities and preparing plant-based meals collectively with other SOEL peers are the two key activities respondents find impactful in provoking their interest and building up their knowledge in food production through iterative practices (W. Y. Chan, 2014; Choi, 2015).

"Previously I had shallow level of knowledge about food system, yet with hands-on experience helping with organic farming, and talking to Ms. Chuk the farmer, I understand more about the relationship between weather, biodiversity, and our food, also the challenges in sustaining agriculture industry." (R9)

Community and social network plays a significant role in enhancing respondents' understanding on related topics through critical discussion and information sharing among SOEL peers from interdisciplinary background (R1, R3, R4, R7- R10, R12, R13, 15). For instance, they will share where to purchase local organic products and tips of pursuing sustainable practices through social learning. Community creates a supporting system that motivate them to challenge their existing understanding towards food system and also build up a positive attitude (R4, R13-15, R18, R20) and the kind, accommodating culture of SOEL has also made them feel more encouraged to share and experiment new knowledge (R2, R5- R7, R10).

"Peer influence is important. I love being in a group and as we become friends, we encourage one another to cook and eat plant-based together." (R4)

As empowerment is a key principle of an effective community education environment (UNESCO, 2020b), respondents acknowledged the importance of volunteering opportunities where they are invited to co-create and lead certain community programmes as a participatory process that provokes their interest to advance their knowledge through self-research and group discussion (R1, R3, R4, R8, R10, R11, R13, R15, R17, R18). As taking a contributing role enhances their sense of ownership and accountability (Thoresen et al., 2015), they feel responsible to research and prepare more before leading a public activity, which further advances their knowledge towards SFS.

"As I was responsible in guiding the tour of 'Food for Life' Studio, I did more readings and research on food supply chain… such empowerment helps nurture a holistic and systemic thinking of the entire food system, and what could be the alternative options". (R17)

Transformative learning content and process is another supplementing enabler that triggers respondents' learning towards SFS. Respondents agreed that critical group discussion, and sharing from industry professional serve as a channel to build up a systemic and holistic worldview about the wider food system and their relationship with the nature, and the impact of own behaviours on climate change and environment (R1, R3-5, R8, R12, R13, R17, R20). The adoption of innovative, interactive engagement method plays a vital role in enhancing participants' knowledge, compared to the traditional one-way teaching method, which echoes with what have been studied in the literature review (Lotz-Sisitka et al., 2017; Rodríguez Aboytes & Barth, 2020).

Other factors that affect the level of knowledge

Throughout the interviews, it is also found that personal interest, an internal factor, helps motivate respondents to learn about SFS through doing researching, reading related books or news (R2, R6, R8, R12, R15-17, R19, R20) while they are engaging with SOEL. This demonstrates a feedback loop of enhancing environmental interest from exposing to more related information and activities (de Boer et al., 2016; do Canto et al., 2021). Meanwhile, SOEL has made local organic vegetables and products purchase easily accessible for the community, and served remarkably tasty plant-based meals to the community during activities, which interest learners to explore more about the role of local agriculture and alternative consumption patterns (R2, R3, R7, R16). In contrast, few respondents have shared that the challenges of further enhancing their understanding towards SFS are the lack of priority of related aspects in daily life (R1, R3, R5, R7, R16). Applying new perception or behaviours in daily life is not easy for beginners (Novacek, 2008). All these other factors have validated the complexity of environmental values that are bounded by a number of internal and external drivers and barriers (Kollmuss & Agyeman, 2002).

In summary, SOEL's community education model has considerably enhanced participants' and employee's understanding towards SFS with a mix of learning approaches and conditions. Deep learning has taken place through continuous exploration, critical discourse, and exchange of knowledge between participants, volunteers and employees. As knowledge serves as the pre-requisite for behaviours (Bord et al., 2000), the above analysis illustrates that SOEL lays a key foundations for learners to build up their environmental values towards SFS.

4.2.2.2. Attitude towards SFS

Attitude, or perception, is a key component of environmental value towards SFS that explains the emotional and cognitive motives behind a behaviour (Kollmuss & Agyeman, 2002). To understand if SOEL community education model has changed respondents' motivation, respondents were asked to evaluate their attitude before and after joining SOEL, mainly focusing on their sense of environmental responsibility and how impactful their feel about their own action towards the environment [Table 9].

Level of attitude	Definition of the level of attitude
Level 1	I didn't feel responsible nor influential in making any impact towards a sustainable food system
Level 2	I had little sense of environmental responsibility, but skeptical about the impact of my action on the wider food system
Level 3	I have some sense of environmental responsibility, and think I can only make a small impact to the wider food system
Level 4	I have fair sense of environmental responsibility and think I can make some impact to the wider food system
Level 5	I have strong sense of environmental responsibility and believe I can make a significant impact to the wider food system

Table 9. Definition of "level of attitude" towards SFS

Overall, all respondents record a positive build-up of attitude after joining SOEL in the long-run, which imply a considerable sense of environmental responsibility and feel that their actions have certain positive impact towards SFS [Figure 11]. Again, a pair t-test is conducted to analyse the statistical significance at 99% confidence interval on respondents' attitude before and after joining SOEL. The below hypothesis is set:

Null hypothesis (H_0): There is no effect on respondents' attitude towards SFS after they join SOEL in the long-run.

Alternative hypothesis (H_A): There is an effect on respondents' attitude towards SFS after they join SOEL in the long-run.

From the t-test result [Figure 12], the mean score in "after" (in the long-run) (mean= 4.1, SD= 0.64) is significantly higher than that of "before" (mean= 2.35, SD= 0.93). The t-value is -8.6, the p-value is less than 0.01, therefore we can reject the null hypothesis and conclude that there is a statistically significant difference in means between the level of attitude before and after the respondents joining SOEL at 99% confidence interval. This demonstrates an overall positive shift in the belief of making a contribution as an end-consumer. Further qualitative analysis will be followed to reveal the contextual reasons behind these changes at different stages.

Figure 11. Overall level of individuals' attitude towards SFS before and after joining SOEL in short-term and long-term

```
. ttest ABefore == AAfter, level(99)

Paired t test
```

Variable	Obs	Mean	Std. err.	Std. dev.	[99% conf.	interval]
ABefore	20	2.35	.2086927	.933302	1.752944	2.947056
AAfter	20	4.1	.1432701	.6407233	3.690114	4.509886
diff	20	-1.75	.2035863	.9104655	-2.332447	-1.167553

```
    mean(diff) = mean(ABefore - AAfter)                      t =  -8.5959
H0: mean(diff) = 0                          Degrees of freedom =       19

Ha: mean(diff) < 0           Ha: mean(diff) != 0           Ha: mean(diff) > 0
Pr(T < t) = 0.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 1.0000
```

Figure 12. A paired t-test at 99% confidence interval for level of attitude towards SFS before and after joining SOEL

Attitude towards SFS before joining SOEL

Before joining SOEL, majority of the respondents have a relatively passive or pessimistic attitude towards SFS. First, as illustrated in last section, those people who have a low level of understanding prior are unable to build up a sense of responsibility due to lack of knowledge (Kollmuss & Agyeman, 2002). Second, respondents feel powerless or insignificant about their own individual actions, in light of the complex global problem of climate change, which seems to be "too big" to solve (R5, R6, R13, R14, R16, R20); some feel ignorant or indifferent about related food challenges due to the weak connection or shallow understanding about the environment and climate change (R1, R3, R8, R11). In contrast, some respondents had a prior sense of responsibility driven by their own understanding, and feel ethnically responsible to stand for animal welfare or fair trade consumption (R2, R4, R6, R9, R10, R15, R17, R19). These has demonstrated a general gap in the emotional and intrinsic connection between individuals and the environment.

"Sometimes I will eat plant-based, yet I don't think I will make any significant impact or change as the problem of climate change is too complex and big." (R14)

Attitude towards SFS after joining SOEL

In long-term, there is a general attitude shift among the respondents where they feel more environmentally responsible or impactful from their own action. Social learning emerges as the most significant enabler that drive such changes. Respondents asserted that the SOEL community has enhanced their sense of responsibility among like-minded peers through social influence and critical discussion, where they feel more motivated, powerful, less lonely to pursue sustainable behaviours, for instance, enjoying the fun atmosphere while preparing plant-based meals together (R2- R6, R8-R10, R12- R16, R19, R20).

"The importance of social learning is that you don't feel alone. SOEL peers share similar vision in life and very kind personality, which gives me stronger motivation to act sustainably and feel that my action is not as insignificant as I think." (R13)

Some respondents also expressed the importance of transformative learning process that help to develop the sense of responsibility and motivation towards SFS, for instance, the sharing of local farmers have provoked personal interest and reflection on how individuals can do more to contribute to SFS at personal level (R1-R3, R7, R8, R10, R11, R13, R16, R20). Video of successful case studies from a Taiwan community organization in cultivating a sustainable food-agriculture system also inspired respondents about the power of collective group. Meanwhile, experiential learning helped respondents visualize the impact of their new behaviour despite being small-scale (R1, R6, R7, R11, R12). Few respondents also felt more environmentally responsible when they are empowered to lead public events through volunteering that need to disseminate the correct knowledge and build the positive attitude among high school students (R9, R15, R17).

"When I am responsible to teach kids about the negative impact of our current diets, I need to be sincere in sharing the correct knowledge as I am given ownership. The kids turned out to be more interested in connecting with the environment, where I can feel the direct impact of my contribution." (R15)

Other factors that affect the level of attitude

Besides SOEL's learning process, respondents contended that they would have a more optimistic attitude when they witness the impact of their sustainable behaviours on family or peers around in the long-run (R7, R10, R13, R15, R19). In contrast, some respondents still feel the impact from their personal action is very small even after joining SOEL (R5, R7, R14, R15, R17, R18, R20). It is also difficult to influence how others behave, or the wider culture in Hong Kong (R2, R4, R16, R17, R20).

"At the beginning, my family doesn't care about meat consumption. One year after I joined SOEL and started eating plant-based, my family starts to follow to purchase plant-based products and reduce meat consumption together. This is an encouraging result to see." (R7)

Herein, attitudes play a key role in shaping intrinsic motivation and filling the knowledge-action gap (Mihăilă et al., 2022). The above analysis validates that SOEL's community education model has considerably built up a positive and optimistic attitude amongst the respondents in driving a SFS, although there are still challenges to be overcome, namely

external influence from family and social culture. By building up a strong community network, welcoming and encouraging culture, learners slowly build up a more optimistic attitude towards making small-scale changes in their daily food production, consumption and food waste reduction pattern.

4.2.2.3. Behaviour towards SFS

Behaviours are perceived as the key outcomes and component of environmental values, shaped by knowledge, attitude, and other factors (Kollmuss & Agyeman, 2002). Behaviour towards SFS can be defined as individuals' action to reduce his/ her impact on the food system, or initiate to engage or lead relevant activities that support the development of a SFS (do Canto et al., 2021; FAO, 2018). To better illustrate, interviewees were given the below examples of sustainable behaviour towards SFS for self-evaluation [Table 10].

Aspects	Examples of behaviour contributing to a sustainable food system
A. Food production	Participate in urban farming activities
	Use food surplus to make by-products (e.g. clothes dye)
	Produce food with upcycled ingredients
	Consume locally made/ grown products
	Support fair trade for farmers/ food producers
B. Food consumption	Purchase plant-based products
	Reduce meat consumption/ Increase plant-based diets
	Reduce plastic food packaging/ nude buying
	Purchase in reference to eco-labels
	Reduce food consumption/ food waste
C. Food waste reduction	Recover food waste for composition
	Reduce food waste
	Recycle food waste
	Donate food waste to NGO or people in need
	Recycle/ reuse of materials
D. Engaging in or leading co-creation of a sustainable food system	Volunteer in farming or plant-based cooking activities
	Engage in designing community programmes that promotes sustainable food system
	Lead community education programmes that promote sustainability and pro-environment values
	Explore alternative food/ plant-based recipe
E. Others	Please specify: _____

Table 10. Examples of sustainable behaviour that contribute to a SFS

In summary, there is an overall positive change in respondents' behaviour contributing towards SFS in the long-run [Figure 13] based on the pre-defined typology [Table 11]. Here, a pair t-test is again made to test the statistical significance at 99% confidence interval on respondents' behaviour before and after joining SOEL. The below hypothesis is set:

Null hypothesis (H_0): There is no effect on respondents' behaviour towards SFS after they join SOEL in the long-run.

Alternative hypothesis (H_A): There is an effect on respondents' behaviour towards SFS after they join SOEL in the long-run.

From the t-test result [Figure 14], the mean score in "after" (in the long-run) (mean= 3.85, SD= 0.59) is significantly higher than that of "before" (mean= 2, SD= 0.86) . The t-value is -10.2, the p-value is less than 0.01, therefore we can reject the null hypothesis and conclude that there is a statistically significant difference in means between the level of behaviours before and after the respondents joining SOEL at 99% confidence interval.

This high-level overview shares similar pattern with the previous analysis, where majority of the respondents report a low level of knowledge and pessimistic attitude towards SFS before joining SOEL, implying a similar behavioural patterns. Further qualitative analysis will be followed to examine the motives behind such changes.

Level of behaviour	Definition of the level of behaviour
Level 1	I was not involve in any sustainable or pro-environmental behavior at all
Level 2	I had minimum level of pro- environmental behavior but not about SFS
Level 3	I had minimum level of behavior that contributes to SFS
Level 4	I had a considerable level of behavior that contributes to a SFS
Level 5	I had a significant level of behavior that contributes to a SFS

Table 11. Definition of "level of behaviour" towards SFS

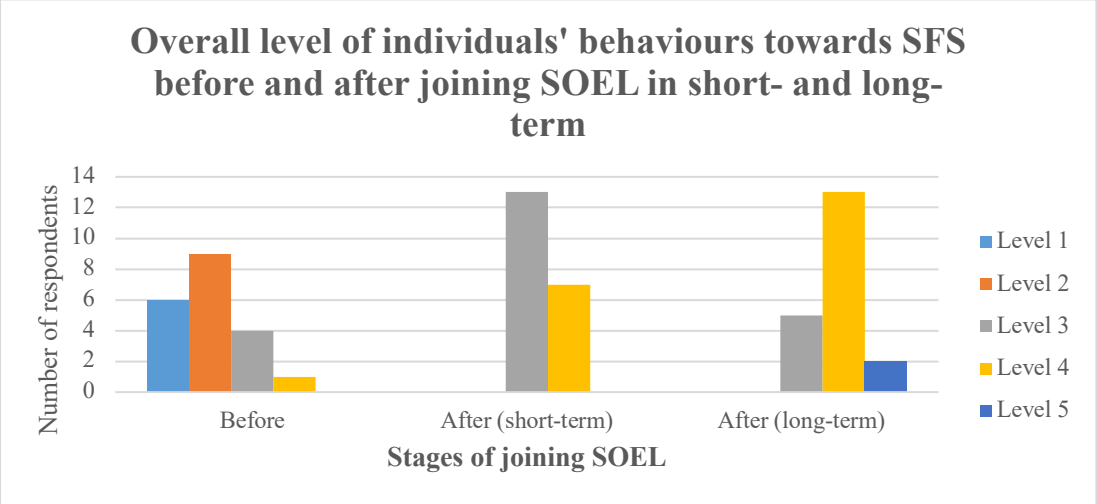

Figure 13. Overall level of individual's behaviours towards SFS before and after joining SOEL in short- and long-term

```
. ttest BBefore == BAfter, level(99)

Paired t test
```

Variable	Obs	Mean	Std. err.	Std. dev.	[99% conf.	interval]
BBefore	20	2	.191943	.8583951	1.450864	2.549136
BAfter	20	3.85	.1312892	.5871429	3.47439	4.22561
diff	20	-1.85	.1817314	.8127277	-2.369922	-1.330078

```
    mean(diff) = mean(BBefore - BAfter)                          t = -10.1799
H0: mean(diff) = 0                              Degrees of freedom =       19

 Ha: mean(diff) < 0           Ha: mean(diff) != 0           Ha: mean(diff) > 0
 Pr(T < t) = 0.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 1.0000
```

Figure 14. A paired t-test at 99% confidence interval for respondents' behaviour towards SFS before and after joining SOEL

Behaviour contributing to a SFS before joining SOEL

When respondents were asked about their daily habit before joining SOEL, they reflect that they are quite indifferent to take up any pro-environmental behaviours. Some would only focus on reducing plastic usage or do basic recycling (R3-R5, R8, R9), while some feel ignorant or significance in making any impact towards the environment (R1, R2, R8, R11). This reflects similar challenges as previous section for general public to get a deeper understanding and connection with the ecosystem around them.

"I was not too aware or motivated to take any pro-environmental behaviours, also the culture and education in Hong Kong is not encouraging any changes anyway." (R9)

Behaviour contributing to a SFS after joining SOEL

As all of the respondents recorded a change in behaviour after joining SOEL in the long-run, they have shared the types of new behaviour that they have picked up [Table 12]. Most of the respondents pursued more plant-based diets or reduce meat consumption (all except R12 and R14), similarly, they purchase organic food or eco-friendly product from local farmers and small business owners more regularly (all except R1 and R19). Meanwhile, volunteers and employees feel empowered and have engaged in co-design, planning and execution of community activities that drive SFS, such as preparing plant-based meals for public audience, being a tour guide to "Food for Life" studio for the public etc.(R1-R4, R6, R8-10, R13,, R15, R16-18, R20). Other new observed behaviours include using less plastic and avoiding purchase of packaged food (R1, R2, R4, R6, R9, R10-R12, R15, R18, R20).

New behaviour picked up by respondants in daily life that contribute to a sustainable food system	% (#)
Pursue plant-based diets/ reduce meat consumption	90% (18)
Purchase local organic products/ food from SOEL's partnership with local farmers and small business owners	90% (18)
As volunteers/ employee, engage in co-design and execution of community activities which drive SFS such as preparing plant-based meals for public audience, guiding tour to enhance public knowledge on SFS, support local organic farms	70% (14)
Reduce use of plastic/ avoid purchase of packaged food/ avoid single-use bottle/ bring their own bottle/ utensils/ lunchbox	55% (11)
Collect, store and recycle food waste for composition (farming)	35% (7)
Upcycle wasted masterials or food waste to transform into new products	25% (5)
Encourage peers/ family around to pursue sustainable food behaviour	20% (4)
Reduce food waste	20% (4)
Purchase expired products	10% (2)
Check food labells to purchase healthier products	10% (2)
Recycling in general	5% (1)

Table 12. New behaviour picked up by respondents in daily life after joining SOEL that contribute to a SFS

In light of such behavioural shift, respondents were asked about the enabling conditions behind such changes. Social learning is ranked the most important enabler as peers in the SOEL community are persistent in pursuing sustainable behaviours and sharing relevant information or tips on how to practice in daily life, which make it easier for new learners to follow and learn from the social group (R1-R5, R7, R9, R12, R13, R16-R19). Some also agreed that the value of kindness, and accommodating, open, encouraging culture of SOEL has further enhanced their sense of achievement and motivation to take up more pro-environmental behaviour despite built-in challenge to change daily habits (R1-R3, R5, R6, R10, R11, R20) (Gernert et al., 2018).

"I was used to dine-out with meat lovers. Since joining SOEL, we will purposely find a plant-based restaurant to hang-out after Lifewalker programme ends. We left no food waste, which even surprised the restaurant owners. This is the power of collective group." (R17)

Empowerment through volunteering or work also marks as a key opportunity for respondents to advance their practices in pursuing behaviour contributing to SFS, as any participants, regardless of age or backgrounds, are invited to become volunteer (R1-R4, R6, R8-R10, R13, R15-R18, R20). Next, SOEL's transformative learning approach, such as guest speakers' sharing, community market, have made related information more transparent where respondents can pick up alternative behaviours and lifestyles and apply in daily life (R2, R3, R6, R7, R17, R18, R20). Experiential learning gives opportunities for respondents to practice and excel in skillsets to contribute to SFS, such as urban farming knowledge and skills (R8, R14, R15, R17, R19, R20).

"I was responsible in designing one of the community programme 'Eat at 1.5 degree', in which I have to curate educational materials and share it both online and offline settings for kids and middle-age audience. The opportunity empowered me to enhance public awareness on climate change." (R4)

Other factors that affect the level of behaviour

For respondents who have proactively transit to new behaviour, personal interest and sense of environmentally responsibility play a key role in driving such changes (R1-R3, R5, R9- R14, R17-20). It is also found that the motivation to pick up sustainable behaviours is bigger when the incurred cost is lower, for instance, if it is cheaper prepare plant-based meal rather than heavy meat consumption. Nonetheless, there are also challenges when maintaining these behaviours in daily life. The weak sustainability culture among peers, family and in local context makes it difficult to insist pro-environmental behaviour, for instance, it is challenging to change family's perception and their diet pattern as it is related to personal choice (R2, R5-R7, R10, R16, R19). The lack of infrastructure to support sustainable behaviour in the society, for instance food waste collection facilities, in addition to extra time and monetary cost incurred, will discourage respondents to maintain the same level of behaviours in daily life (R3, R4, R7, R14, R18).

"There are still lots of barriers to be sustainable at individual level in Hong Kong. Lack of plant-based restaurant option, plastic-free stores, lack of public awareness, the massive usage of single-used plastic... all these factors make it difficult to persuade family and peers around to act collectively." (R10)

The above analysis validated that SOEL's community education model, the strong community bonding and empowerment in particular, has helped participants and employee nurture certain types of sustainable behaviour, coupled with enhanced knowledge and build-up of a positive attitude as demonstrated in previous sections. Deep learning has taken place from multi-perspective in the long-run where learners feel satisfied and fulfilled. Such positive change in environmental values collectively contribute to the development of a SFS.

4.2.3. Sub-research question 3

What are the challenges and future opportunities to further scale up the impact of SOEL's community education in Hong Kong?

Despite proven effectiveness of SOEL's community education model in nurturing individuals' environmental values towards SFS in sub-RQ2, they are facing various challenges to scale up their impact in Hong Kong.

Including the two founders, overall 22 interviewees pointed out some existing challenges of SOEL to scale up their impact in driving SFS, based on their volunteering and working experiences. First, the current scale of SOEL is small and only limited to local neighbourhood level, which may not be as accessible to people living in other district (F1, F2, R1-3, R5, R6, R8, R13, R15, R17, R18, R20). Second, current target audience has limited to similar spectrum of people, for instance, young adults who share similar interest or have more leisure time in boosting personal development (F1, R1, R6, R9, R13, R16-R20). Resources have also emerged as key constraints for typical NGO's operation (Abiddin et al., 2022). The lack of human resources with the relevant skillsets and community building capacity has limited the scope and format of community engagement approach of SOEL (F1, F2, R4, R5, R7, R9, R14, R15, R17, R18), while some employee have expressed stress in overworking. Relatively small physical space of new SOEL location also limits the possibilities of large-scale events, exhibition, urban farm that help to further promote food-agriculture education (F1, F2, R3, R9, R12, R15, R18). Other constraints include limited long-term partnership with local or

international organizations, lack of long-term community engagement programme, limited access for ethnic minority group etc..

On the other hands, these challenges imply future opportunities for SOEL to explore and make collective effort in driving a SFS. First, in terms of partnership, more long-term partnership with community organizations can be established to form a collective network and initiatives by leveraging each's strength and resources, such as creating community kitchens at different neighbourhoods for general public to learn about kindness farming and cooking more easily (F1, F2, F3, R4, R6, R10, R12-R14, R16, R17, R19). Developing longer term strategic partnership with primary and secondary school would also foster food-agriculture education and nurture the appropriate environmental values among younger generation, adults and teachers by establishing innovative curriculum, organizing interactive activities and providing experiential learning experience (F1, F2, R2, R4, R6, R10, R13). In addition, SOEL could support environmental, social and governance (ESG), or corporate social responsibility (CSR) strategies and initiatives of small and medium-enterprise by leveraging their financial support and expending their network (R1, R4, R6, R10, R13, R19).

In terms of target audience, instead of mainly focusing on young adults, there could also be potentials in exploring new groups of audience such as middle-aged housewife, working class, or related-industry professional, in order to enhance public awareness on their relationships with wider food system and the environment (F1, R1, R2, R6, R10, R17, R19, R20). Similarly, SOEL could partner with local schools or community spaces to expand their physical presence in order to access a wider range of audience from different demographics (F1, F2, R15, R16).

4.3. Discussion of findings

Interpretation and implication of findings

Complexities and challenges are ubiquitous for sustainability transition within the food regime, yet bottom-up community education emerges as a vital tool to reconnect end-consumers with the food system and positively nurture their environmental value in the long-run, as demonstrated in the case study analysis.

The unconventional community education model of SOEL has showcased the necessary learning process and conditions to cultivate a space and culture for advancing SD by fostering learning, engagement, and action (UNESCO, 2017), for young adults in Hong Kong in particular. The analysis in section 4.2. has validated that the learning approach of SOEL, namely TL, EL, SL, and volunteering, fulfilled the six action principles of (1) engaging, (2) enabling, (3) embedding, (4) sustaining, (5) transforming, (6) responding, as guided by UNESCO (UNESCO, 2017) [Figure 3]. Such people-focused engagement model is highly effective in strengthening civil engagement (Fifka et al., 2016), and this case study gives insight to both formal and informal education on the existing limitations in engaging end-consumer in the co-creation of a SFS, and how to redesign a more inclusive and accessible community environment for general public to participate.

In short, the analysis in section 4.2 proves that SOEL's community education model is highly effective in advancing individuals' environmental values towards SFS. Before joining SOEL, majority of the interviewees have a minimal level of knowledge, pessimistic attitude and unsustainable behaviour due to a weak connection between their daily life with the wider food

system, in addition to the lack of priority and focus on SD in Hong Kong. It is worth noting the complex dynamics between the three sub-variables between knowledge, attitude and behaviour. When respondents had a low level of knowledge regarding SFS (level 1 or 2), they usually have low engagement level to act sustainably (level 1 or 2). Vice versa, when their knowledge enhances after joining SOEL (level 3 or above), their behaviour will follow accordingly (level 3 or above). This validates the theory that knowledge is the pre-requisite of guiding the corresponding behaviour (Bord et al., 2000), and there is a positive association between the two of them. Acquiring systemic worldview on the food system and transmitting the correct understanding therefore becomes the first vital step to lay a solid foundation in transforming consumer behaviour (Graça et al., 2022; Kollmuss & Agyeman, 2002). There is also a feedback loop among the three sub-variable that increase in one value would lead to a non-linear increase in another value (de Boer et al., 2016; do Canto et al., 2021). Meanwhile, having a positive attitude and strong sense of environmental responsibility doesn't necessarily translate to actual behaviour, as there are always personal inertia and external challenges in changing the status quo (Novacek, 2008). Here, an effective community education model comes into place to overcome these challenges leveraging on the power of mixed learning approaches.

Effectiveness of learning approach

To understand which learning process enables a positive change in knowledge, attitude, behaviour, an integrated analysis is conducted by counting the number of relevant quotes from respondents with Atlas.ti [Table 13]. Overall, social learning emerges to be most effective enabler to enhance environmental value through critical discussion, encouragement and exchange of experience among SOEL peers. While individual's action appears to be insignificant and discouraged, a strong community bonding and culture helps motivate community members to understand and engage in the co-creation of a SFS in the long-run. This gives insights to community organizations that social elements must be considered and embed into the design of community programme to enhance its effectiveness. Transformative learning content and curriculum came into second place where participants value disorientation dilemma that challenge their existing frame of reference and provokes critical thinking through discourse and self-reflection. Instead of one-way teaching approach, more innovation and engaging ways of sharing such as discussion forum, discussion with guest speakers and industry professional helps to enhance participants' knowledge towards SFS in particular, which can also be applied in both formal and informal education settings.

Meanwhile, experiential and volunteering learning play equal part in promoting community members' participation. While hands-on experience is important for individuals' to understand where food comes from, and explore alternative consumption pattern, empowering them with responsibility also helps enhance their sense of ownership, achievement thus level of engagement in supporting community development (Cohn, 2008; Fifka et al., 2016). This case study clearly demonstrates that volunteering opportunities have a positive impact on the level of civil engagement in long term, as citizens are empowered to engage in decision-making process (Fifka et al., 2016).

The analysis has also showcased that behavioural intervention generally impose positive effect on other pro-environmental knowledge or behaviour in the long-run, such as recycling and reducing plastic in this case (de Boer et al., 2016; Evans et al., 2013; Lanzini & Thøgersen, 2014; Truelove et al., 2014). Therefore, not only does SOEL's community education helps to enhance community members' engagement in the food system, it enhances the average environmental consciousness and awareness of the general public.

*Number of respondents' quotes (non-mutually exclusive)				
Learning process	**Knowledge**	**Attitude**	**Behaviour**	**Overall**
Transformative learning	26	10	7	43
Experiential learning	15	5	6	26
Social learning	23	20	22	65
Empowerment through volunteering	10	3	14	27
Others: Personal interest	9	11	10	30

Table 13. Number of interview quotes on enabling learning approach that increase the level of knowledge, attitude and behaviour towards SFS

The above learnings may also be useful for other organizations or education institutes to target young generation in driving a SFS. The case study echoes with empirical evidence that young consumers have a higher degree of environmental awareness and ability to change, who also influenced tremendously by their peers and family (K. Lee, 2010). To attract their interest, organization should well understand their needs and core value, in order to design programme that lock in their engagement. Another implication is that any community programme has to first identify existing loopholes and limitation of food-agriculture education based on the local and cultural context, so to decide what models fit well for what kind of audience in order to enhance the effectiveness. It would also require a long-term intervention for deep learning and cognitive, behavioural change to take place. Community engagement programme therefore has to take in this factor into consideration during design and planning of activities, to drive effectiveness in the long-run.

The power of community education

As an ideal vision, community education can pursue bottom-up sufficiency where local communities are empowered to collectively build knowledge, skillsets to make changes in their food production, consumption and waste reduction practices (de Boer et al., 2016). With the feature of low-tech innovations, decentralized governance, this case study of SOEL illustrates that the youth community in Hong Kong are educated to be self-efficient, resilience, and build long-term behavioural transition towards a resilient, regenerative food system (do Canto et al., 2021; Liaros, 2021). Therefore, an effective community education model on SFS will help address lock-in within social and cultural regime, fostering practice-based transition in food consumption, production and food waste management through social learning and experimenting (Loorbach et al., 2017). Through such transition, it is envisioned to acquire the community with adaptive capacity and enhance their resilience level towards the future state (Meerow et al., 2016).

Limitation of this paper

While this paper provides insight to sustainable transition for the existing food regime through leveraging community organizations and power of community education, there are some limitations to be aware of. First, the analysis is based on a single case study that contributes better understanding on local and cultural context in Hong Kong, yet it couldn't cover challenges to nurture environmental values of another demographics or target audience from another background. Due to limited time and resources for data collection, the case study only focuses on SOEL instead of including few more other community organizations, therefore analysis may not be holistic enough to understand the effectiveness of different kind of community education models on nurturing environmental values towards a SFS, and what kind of models work better for specific spectrum of target audience to drive food transitions.

Also, as qualitative interviewees were conducted, interviewees evaluated the change in their knowledge, attitude and behaviour towards SFS based on their own subjective judgement, where the likert-scale may not be totally representative of their cognitive and emotional learning process. Majority are not familiar with the theoretical definition of SFS defined by FAO [Figure 6], who tend to focus more about the cultural or environmental aspect of SFS but less on economic aspect while they are evaluating during the interviews. Lack of systemic understanding on this subject matter could affect the accuracy of the self-evaluation result. Also, while interviewees were asked to rate their changes in knowledge, attitude, and behaviour, a minority of them appear to be humbler and avoid rating themselves a "5", while few of them tend to report a positive change in their environmental value towards SFS as they may take the interview as an ethical "judgement" on their involvement in sustainability transition. Such tendency may affect of the level of change in likert-scale result, thus analysis of the main research question.

In addition, while the interviews have covered SOEL's participants, volunteers, employees, and founders, who may have prejudice or personal buy-in towards SOEL, the analysis could have been more holistic and objective if other community or industry professionals were invited to comment on the impact of SOEL or their insight on effectiveness of community education, for instance, community organizations, partners, food industry professional who have engaged in other community engagement programme could share their analysis and insight on the subject matter.

Part 5. Conclusions

The main research objective of this paper is to evaluate the role and effectiveness of community education on enhancing individuals' environmental values (namely knowledge, attitude, and behaviour) towards a SFS in the long-run. As advised by a significant number of empirical literatures, more aggressive and proactive measures from various actors are needed to drive sustainable food transitions and reduce environmental impacts, yet relatively less attention was paid to discuss strategies in changing consumer perception, practices and engaging them in the co-creation of a SFS, let alone insight from the emerging economies in Asia. While education is identified as one of the key areas to drive large-scale societal changes through intervention (Loorbach et al., 2017), the academic field needs more insight on how community educations, or CBL, serves to bridge the gaps in acquiring community members with necessary knowledge, attitude, and skillsets to drive food transitions, more importantly, to increase community resilience and adaptability against environmental challenges.

Through the single case study of SOEL, a local NGO that focus on food-agriculture education in Hong Kong, this thesis examines the essential learning approaches that drive positive changes amongst community members, as a key step of sustainability transition. The analysis and insight driven from this study are highly significant in two senses- (1) Scientifically, it provides actual evidence on the extent of changes in environmental values towards a SFS among SOEL's volunteers and employees, and the respective enabling learning conditions and driving forces behind. The qualitative interviews also reveals the challenges and motivation for individuals to connect themselves with the food system and changing their production, consumption and waste reduction patterns; (2) Societally, the analysis elucidates the potentials of community education and the role of community or bottom-up organizations in enabling capacity building and changing consumer practices in light of the global food system challenges, especially impact on young adults and consumption-heavy culture like that of Hong Kong. This chapter also concludes the paper with recommendations for different actors to take proactive actions in contributing potential directions for future research.

Response to the main research question- "What is the effectiveness of School of Everyday Life's community education model on enhancing individuals' environmental value towards a sustainable food system in Hong Kong?"

The mixed-method research approach and corresponding analysis of this paper has validated that SOEL's community education model is highly effective in enhancing environmental values towards a SFS in Hong Kong, which aligns with the expected relationship between the two variables of the conceptual framework illustrated in chapter 2.4.. With the vision to reconnect community members with the environment and bring positive impact through environmental education, SOEL has embraced few key learning approaches as part of its community education model (independent variable), namely TL, EL, SL and empowerment through volunteering, cultivating an effective learning environment for young adults to enhance their knowledge, build up positive perception and change their behaviour (dependent variable) contributing to a SFS. Despite different extent of changes in environmental values due to personal and external challenges, the qualitative interviews analysis revealed the important enablers in driving such positive changes.

In summary, the analysis in chapter 4 shows that interviewees (i.e. SOEL's volunteers or employees) have recorded an overall positive shift in the level of knowledge, attitude and behaviour towards SFS after engaging with SOEL in the long-term (after a year). Prior to

joining SOEL, majority of the interviewees had a relatively low level of understanding, pessimistic attitude and indifferent behaviour to act sustainably. This echoes with the literature reviews in chapter 2 that the formulation of environmental value is a complex process with lots of internal inertia and external barrier (Chung & Leung, 2007b; Kollmuss & Agyeman, 2002; Mihăilă et al., 2022; Tamar et al., 2020). In terms of personal factor, the lack of connections with food system in daily life, lack of personal interest or motivation towards the subject, feeling insignificant or inconvenient act sustainably, are all barriers that hinder one's interest to further understand and change their practices towards a sustainable food production, consumption, or waste reduction. The lack of supporting infrastructure and unsustainable social culture as external factors in Hong Kong also discourage the general public to do so.

Yet, with SOEL's community education model that incorporates various learning principles, it is proven to be significantly effective in advancing community's environmental value and addressing the abovementioned barriers. The overall effectiveness of different learning principles come in the below sequence, providing insight what should be considered when designing a community or educational programme to influence consumers' behaviour and drive food transitions [Table145].

Learning enabler	Insight driven to better drive transitions towards a sustainable food system
1. Social learning	- Community organizations or education institutions should embed social element and create a social network in the design and execution of educational programme to make learning about SFS fun and interesting to learners, who can advance their understanding, practice their skillsets and new behaviour by learning from other peers and changing their practices. - Organization or social culture is a key factor that sustains people's interest in engaging in food transition in the long-run. It is important to cultivate an accommodating, welcoming, friendly culture that make people feel motivated to experiment new practices and feeling higher level of achievement and ownership in the co-design of a SFS, supported by strong and cohesive community bonding.
2. Transformative learning	- Instead of conventional one-way transmission of knowledge, it is more engaging to challenge learners' frame of reference with innovative and interactive ways of learning, for instance disorientiation dilemma and critical discussion with industry professionals and peers about the truth and scientific facts behind current food production consumption, and waste management process. It triggers independent thinking and self-reflection, enhancing their knowledge through iteratice research and discussoin.
3. Empowerment through volunteering	- Through establishing a community-based volutneering initiative or programme community organizations or education institutions can invite volutneers to engage in the co-design and planning of food & agriculture programme, or lead a small-scale activitiy or initiative, so to empower learners with a sense of ownership, accountability and ownership that they feel responsible and motivated to advance their knowledge and act resopnsibly for driving a SFS in the long-run.
4. Experiential learning	- It is vital for community organizations or education institutions to provide sufficient hands-on experience for learners to apply new knowledge and experiment new practices e.g. designing and cooking plant-based recipe, engaging in organic farming. These opportunities allow them to learn with trial and error, advancing their capacity through iterative learning.

Table 14. Integrated insight for community organizations or education institutions to adopt various learning approaches to drive SFS

Scaling up the impact of community education

The proven effectiveness of SOEL's community education model implies great opportunities to scale up its impact beyond the community thus expediting the process of sustainable food transitions, however, with the challenges presented in chapter 4.2.3., various internal and external challenges limit the scale and development of such model in a meat carnivore city. The challenges may also apply to other small- or neighbourhood-scale community organizations that have relatively less resources and support in fostering capacity building and community development in emerging economies. As such, below recommendations are made to different stakeholders and actors to build collective effort in driving a SFS thus community resilience-

Stakeholders	Recommendations to scale up the impact of community organizations in driving a SFS
1. Government or public sectors	• Initiate structural policy change to redesign and incentivise the emergence and development of bottom-up community organizations that focus on food & agriculture education • Mobilize financial resources and political support to facilitate the growth and scaling of community organizations such as physical space for community programme, training programme for talents, grants for city-level scale programme • Build a collaborative eco-system and platform to connect all relevant actors for knowledge and experience sharing on a regular basis and collectively drive sustainable food production, consumption and waste reduction
2. Community organizations	• Enhance public awareness on sustainable food transition and organization exposure online and at social media platforms to attract talents and volunteers • Engage multi-stakeholder in bottom-up decision making process and design of community programme • Establish long-term partnership with other community groups or organization to scale up the impact in food & agriculture education by leverage each's strength and resources and expanding to a new spectrum of target audience
3. Education institutes	• Explore both short- and long-term partnership with community organizations to design educational curriculum and experiential activities that enhance students' exposure and environmental value towards SFS
4. Private sectors	• Corporates/ small and medium enterprises: Explore collaboration with community organizations on their CSR programme or ESG standard with tailor-made community programme for their employees • Financial institutions: Set up social impact funds for investing in emerging organizations or community programmes that foster the development of a SFS
5. Individuals	• Participate and engage in bottom-up community programmes and organizations that support the development of a SFS

- Apply new knowledge and experiment scall-scale changes in daily behaviour that contribute to sustainable food consumption, production or food waste reduction practices

With the right design of supporting mechanism and ecosystem, the role and power of bottom-up community organizations is proved to be multi-scalar- (1) Strengthen capacity and enhance self-resilience at individual level, (2) Strengthen social connection, empower marginalized groups through democratic participation at social level, and (3) Optimize resources to enhance urban resilience and sustainable urban development at systematic level (Abiddin et al., 2022; Fraser et al., 2006; Pesch et al., 2019).

Recommendations for future research

Given the significant effectiveness of bottom-up community education in driving sustainable food transitions demonstrated in this paper, future research can thus benefit from the operationalization table and recommendations of this chapter to bridge the gaps and overcome the challenges in changing consumer practices. Nonetheless, as this thesis only focuses on a single case study in Hong Kong, more holistic and international studies are needed to draw a solid conclusion on the effective enabler in making such positive changes.

It would be more scientifically valid and insightful if future research can evaluate the effectiveness of different community education models from a wide range of bottom-up community organizations from different cities or cultural contexts. This can make comparison between models that may adopt distant learning conditions and approach for different target audience giving insights to neighbourhood-scale community organizations on enhancing civic participation in the long-run and scaling up their impact in a city-level. Such research approach can also be applied to other aspects of sustainability transition, such as energy transition, water circularity etc., or sustainability in general.

Future research can also investigate the interdependencies and roles amongst powerful and interested actors in the food transition regime, in order to explore the existing challenges and future potentials of inter-disciplinary collaboration and synergies between stakeholders by providing actual case studies of the effectiveness of these collaborations in co-creation of a SFS. Meanwhile, more in-depth city-level specific studies and evaluations are advised to make more effective policy making in changing consumers' mindsets and their consumption pattern (Yip & Fielding, 2017).

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Appendix 1: Work plan

Phase/ Action	Timeline
Desktop research and identify interested thesis topics with literature reviews	Feb- April 2023
Identify, engage and inform potential research audience (i.e. volunteer, employee and founders of SOEL) about research objectives and data collection	Early March 2023
Design qualitative interview questions and interview guide	March- early April 2023
Submission of draft proposal	5 April 2023
Send out interview questions to research audience	Late April 2023
Thesis writing	Late April – mid-June 2023
Data collection & analysis	Early May 2023
Submission of thesis draft	15th June 2023
Submission of final thesis	13th July 2023

Table 15. Work plan

Appendix 2: Interview guide

A. Interview protocol

The consent provided by the 22 interviewees (2 founders, 20 SOEL's volunteers or employees) included the following:

- The result of the qualitative interview will contribute insights to the thesis of "effectiveness of community education on enhancing environmental value towards a sustainable food system in Hong Kong"
- The interview contents will be kept strictly confidential and anonymous
- Only the audio of the online interview will be recorded (no video) on the basis that the recording and transcription will only be shared with the thesis supervisor. After the thesis has been completed, the recording and transcription will also be deleted.
- Final outcome of the thesis can be shared with the interviewees for their learnings and references

B. Profile of the interviewees obtained

- Gender and age of interviewees
- Monthly income level of interviewees
- Occupational background of interviewees
- Role in SOEL (Volunteers, participant, employees, founders)
- Number of years engaged with SOEL

C. Key interview questions

Actors	Variable	Indicator	Key interview questions
SOEL's volunteers and employees	Knowledge towards SFS	Change in the level of knowledge before and after joining SOEL (with a pre-defined likert-scale)	- What was your level of knowledge about food, or food system, before joining any events by SOEL? (Scale 1 to 5) - After your engagement with SOEL, what is your level of knowledge about food, or a sustainable food system? Follow-up questions: - If you rate 1 or 2 in the previous question, what are the challenges you have faced in understanding more about the sustainable food system? Why? - If you rate 3 to 5 in the previous question, what are the driving forces or enabling conditions that you find helpful in enhancing your level of knowledge on sustainable food system? Why?
SOEL's volunteers and employees	Attitude towards SFS	Change in attitude before and after joining SOEL (with a	- What was your attitude towards the food system, before joining any events by SOEL? (Scale 1 to 5)

		pre-defined likert-scale)	- After your engagement with SOEL, how is your attitude towards the sustainable food system? Follow-up questions: - If you rate 1 or 2 in the previous question, what were the challenges you have faced in feeling more environmentally responsible or impactful about the sustainable food system? - If you rate 3 to 5 in the previous question, what are the driving forces or enabling conditions that you find make you feel more environmentally responsible or can make an impact on a sustainable food system?
SOEL's volunteers and employees	Behaviour towards SFS	Change in the level of behaviour before and after joining SOEL (with a pre-defined likert-scale)	- What was your behaviour pattern towards the sustainable food system, before joining any events by SOEL? (Scale 1 to 5) - After your engagement with SOEL, what is your behaviour pattern towards the sustainable food system? Follow-up questions: - If you rate 1 or 2 in the previous question, what were the challenges you have faced in pursuing sustainable food behaviours? - If you rate 3 to 5 in the previous question, what kind of sustainable food behaviour do you pursue? - What are the driving forces or enabling conditions that help you nurture such sustainable behaviours?
- SOEL's volunteers, employees and founders	Challenges and opportunities of scaling up SOEL's impact	Personal insight and experience	- What are the existing limitation of SOEL's community education model in nurturing long- term towards sustainability food transition? Please elaborate. - What do you think are the opportunities to further scale up the development and impact of SOEL's community education model in Hong Kong?

Table 16. Key interview questions

D. List of Respondents

Sn.	Category	Source	Interview duration (hh:mm:ss)
1	SOEL's volunteer	Personal connection	42:37
2	SOEL's employee	Personal connection	47:56
3	SOEL's volunteer	Personal connection	52:39
4	SOEL's employee	Personal connection	58:00
5	SOEL's volunteer	Personal connection	49:42
6	SOEL's volunteer	Personal connection	53:01
7	SOEL's volunteer	Personal connection	48:56
8	SOEL's volunteer	Personal connection	43:27
9	SOEL's volunteer	Personal connection	36:18
10	SOEL's employee	Personal connection	51:40
11	SOEL's volunteer	Personal connection	37:20
12	SOEL's volunteer	Personal connection	40:06
13	SOEL's volunteer	Personal connection	1:19: 26
14	SOEL's volunteer	Personal connection	39:29
15	SOEL's employee	Personal connection	54:58
16	SOEL's volunteer	Personal connection	41:10
17	SOEL's employee	Personal connection	1:05:52
18	SOEL's volunteer	Personal connection	30:45
19	SOEL's volunteer	Personal connection	48:25
20	SOEL's volunteer	Personal connection	39:04
21	SOEL's founder	Personal connection	59:43
22	SOEL's founder	Personal connection	1:11:51

Table 17. List of respondents

Appendix 3: Background/ demographics of interviewees

Background of the 20 interviewees (15 SOEL's volunteer and 5 employees) are as below: (The two founders of SOEL were excluded from this demographic analysis since they are not the target actors for measuring a change in environmental values towards SFS)

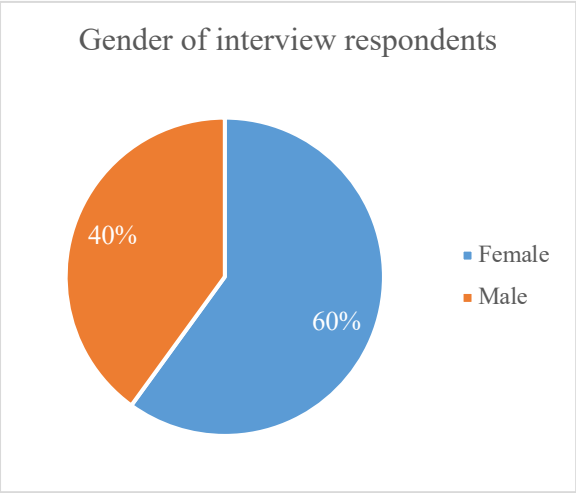

Figure 15. Gender of interview respondents

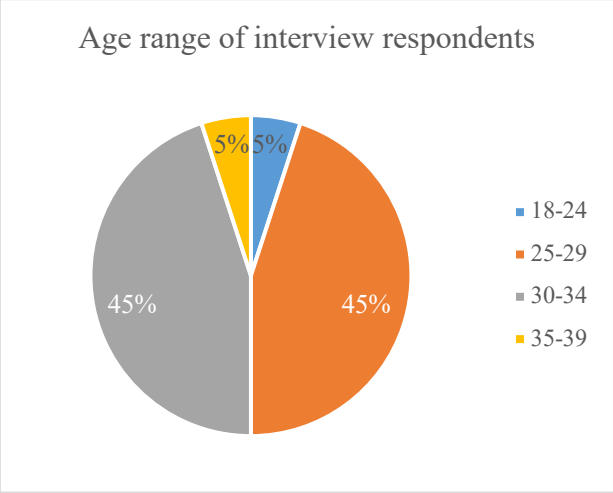

Figure 16. Age range of interview respondents

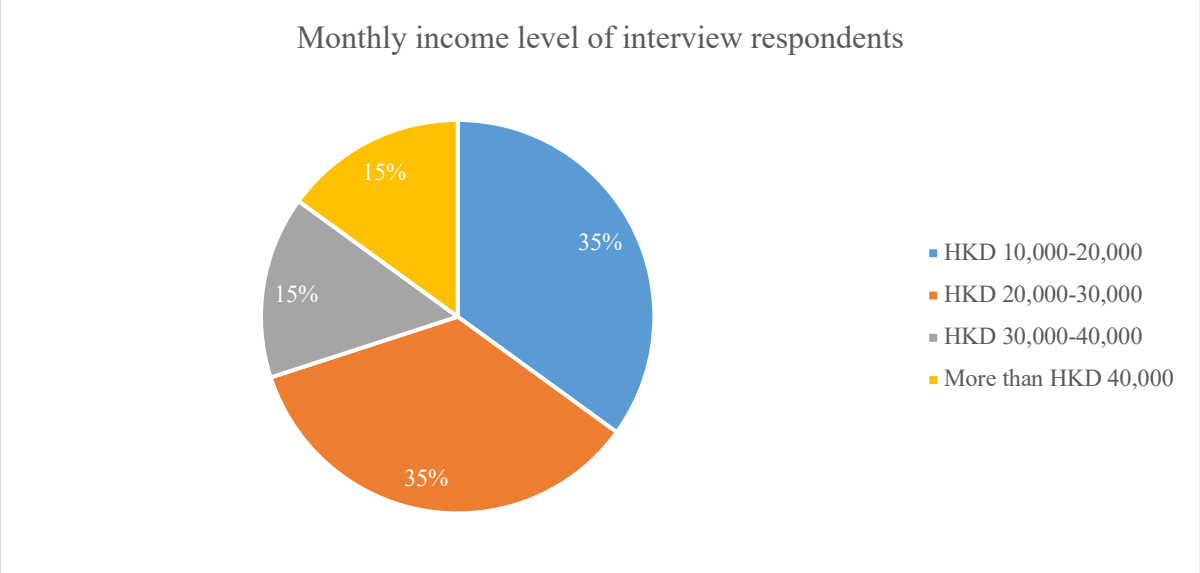

Figure 17. Monthly income level of interview respondents

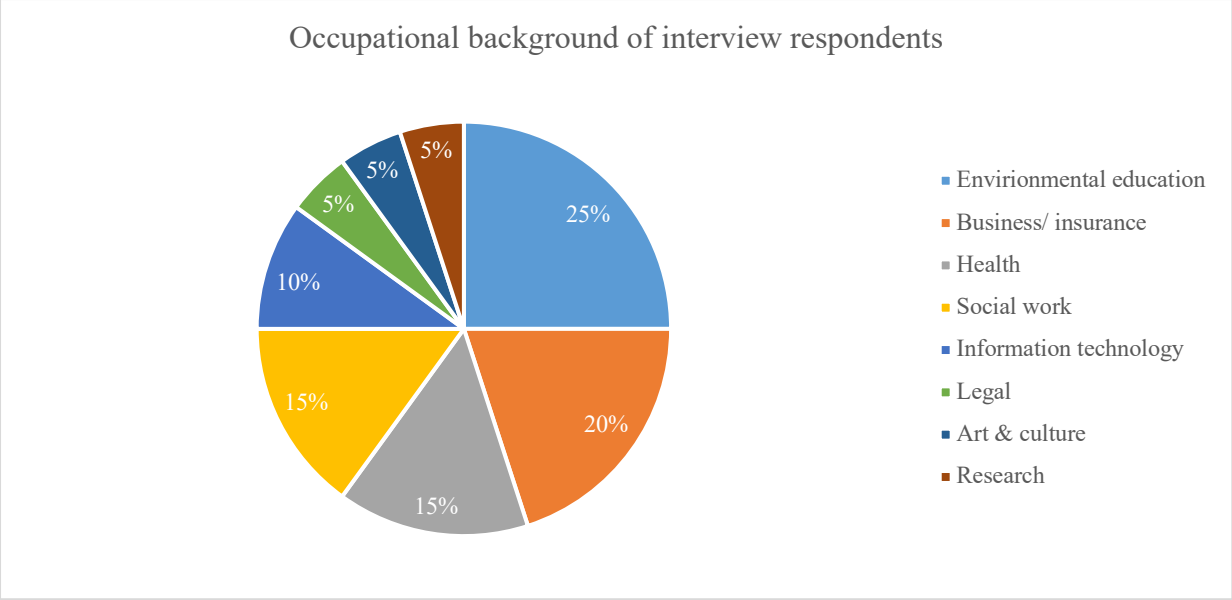

Figure 18. Occupational background of interview respondents

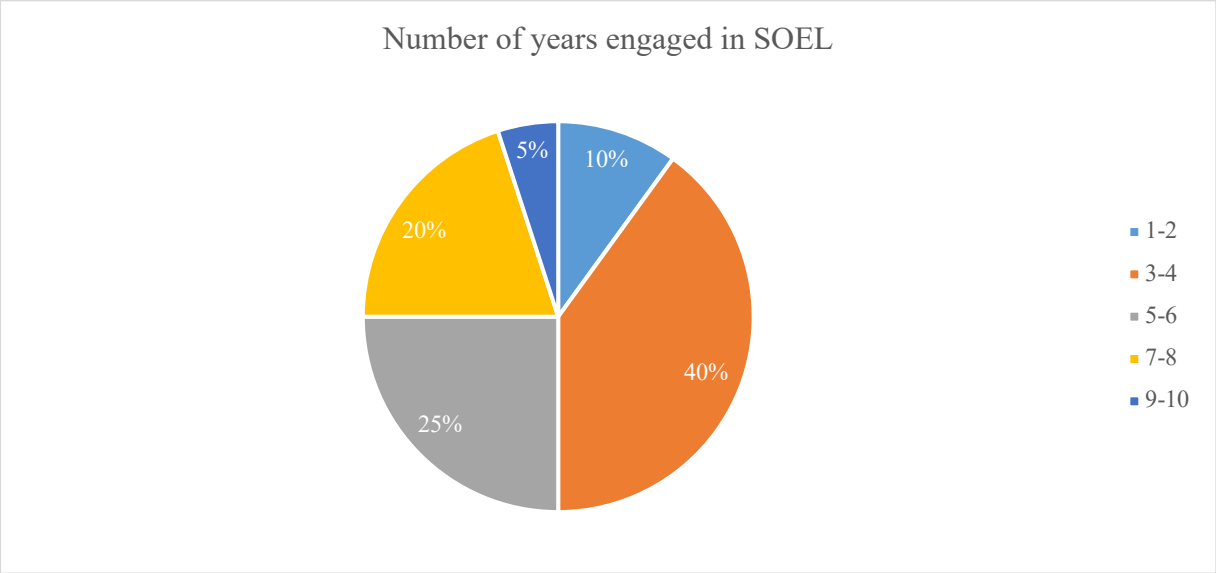

Figure 19. Number of years engaged in SOEL

Appendix 4: List of key quotations from qualitative interviews

Respondents	Key quotes (that are helpful to the analysis in chapter 4)
R1	Knowledge towards SFS after joining SOEL *"Through cooking and farming together, I have learnt to experience the taste of organic food, use better ingredients, and the interdependency between the ecosystem and food production process."* *"I don't have further motivation to advance my understanding towards related topic because I believe it is sufficient to tackle with my daily needs."* Behaviour towards SFS after joining SOEL *"The early stage of picking up a new habit or lifestyle is difficult, but when time goes by, it becomes less troublesome and annoying and it becomes a new routine instead."* Others pro-environmental behaviour *"I have more sense of urgency towards environmental issue and am more aware of global news, such as what organizations are working on what kind of policies to address climate changes."* Opportunities of scaling up SOEL's impact *"SOEL can explore to target middle-aged people or working class, who have less knowledge, motivation and access to environmental topic but are grounded by consumerism culture."*
R2	Knowledge towards SFS after joining SOEL *"I have gained more knowledge about the social and environmental aspect of SFS, such as animal welfare, kindness-farming, organic farming with the use of pesticide, but I have less understanding on the economic aspect."* *"SOEL has a core value of kindness- to care about people, animals, and the environment around us, so that we are more aware of our own impact."* Attitude towards SFS after joining SOEL *"In Hong Kong, it is quite challenging to feel positive about the environment. From economic perspective, poor people are generally more unhealthy as they always consume cheap fast food. From social aspect, we consumer many processed food and rarely care about the impact to the future generation and animal welfare. From environmental perspective, Hong Kong is very urbanized and has less focus on the topic of sustainable development."* *"The activities of SOEL helped me nurture a positive attitude towards making an impact. For instance, while guest speakers are sharing their view on sustainable development, they motivate me to think more about what I can act more responsibly. Sometimes I also feel powerless and insignificant in making any individual actions, yet peers in SOEL make me feel possible to influence."*

	Behaviour towards SFS after joining SOEL *"Sometimes there is still a gap between knowledge and behaviour. In some situations in daily life, I still eat meat, or use plastic, due to the lack of motivation and determination, also influence from peers around."* Challenges of scaling up SOEL's impact *"Current scale of SOEL is very small and its community engagement program can only achieve a certain goal or stage. Many events are once-off, which may affect longer-term engagement with the community."* Opportunities of scaling up SOEL's impact *"SOEL may try to establish a community economy, where community members can regularly purchase locally grown vegetables from local organic farms."*
R3	Knowledge towards SFS before joining SOEL *"I understood there is hunger in the world, vegetables will get more expensive during typhoons, but I couldn't connect the topic of food system or food production with my daily life."* Attitude towards SFS after joining SOEL *"I personally feel responsible to be healthy and consumer more organic food. During farming activities, farmers will also talk about water source, so that I become more aware of where our food comes from."* *"Peers in SOEL share similar vision of making the earth a better place. I feel more positive, motivated, and less desperate to act sustainably."* Behaviour towards SFS after joining SOEL *"I was curious why peers in SOEL act in certain way, for instance consuming plant-based meal, and the motives behind. When I try to learn from them, I feel it is not as difficult as I think."* *"It is still difficult to change the consumption habit of family members."* Others pro-environmental behaviour *"has shared how birds in Midway Island suffer from plastic pollution, I was very shocked and I become very persistent in avoiding the use of plastic bag. SOEL."* Differences between SOEL and other community organizations *"SOEL focuses deeper engagement with each individuals, pushing for critical thinking and building interdependencies between people and the environment; while other organizations tend to be more result-oriented for transmitting knowledge of certain subject."*
R4	Knowledge towards SFS after joining SOEL *"Peer influence is important. I love being in a group and as we become friends, we encourage one another to cook and eat plant-based together."*

	"Being an employee, I am responsible to organize and plan community activities, therefore I need to do research and understand the subject first, which I develop further personal interest." Attitude towards SFS after joining SOEL *"SOEL cultivates a sustainable culture and form a strong community network where peers learn from one another to act sustainably. Previously I felt difficult to do it alone, but feel more motivated when doing with groups. For instance, I had no knowledge about eating plant-based prior, but I can learn from the community."* Behaviour towards SFS after joining SOEL *"I was responsible in designing one of the community programme 'Eat at 1.5 degree', in which I have to curate educational materials and share it both online and offline settings for kids and middle-age audience. The opportunity empowered me to enhance public awareness on climate change."* Opportunities of scaling up SOEL's impact *"Opening a community restaurant, partnering with corporate for retreat activities, establishing sustainable store within the community… these are all ideas we can further promote sustainable development."*
R5	Knowledge towards SFS before joining SOEL *"I was aware the topic of food nutrition but lack of experience on the actual food production process, for example how to farm without using pesticides. There was no access to this aspect in my daily life."* Knowledge towards SFS after joining SOEL *"Farmer Ms. Chuk shared her farming experience and I am surprised by her effort in taking care of animal welfare and organic farming. It triggers my reflection on the feasibility to balance environmental and social needs in real life."* Attitude towards SFS after joining SOEL *"As time goes by, I start learning from peers and accumulate more knowledge related to the food system. They recommend me some plant-based restaurants, then I start joining more activities related to sustainability."* *"The culture in SOEL is very encouraging and welcoming, which make it easier for first-time learner to experiment different new behaviours. It enhances my sense of achievement and avoid the sense of failure."* Others pro-environmental behaviour *"I start to make my own sandlewood by using recycled wooden packaging. The traditional production process will cause damage to environment, therefore I would source good-quality ingredients from less commercialized or urbanized places."*

	Challenges of scaling up SOEL's impact *"Current operational scale of SOEL is limited to neighbourhood scale while focusing on the depth of learning, it may need more human resources and talents to support scaling up its impact."*
R6	Knowledge towards SFS after joining SOEL *"SOEL has once invited a Japanese food security expert Watanabe Yuji to share his research journey on food additives and how shocked he was when his wife and daughter's health were affected, in which I just learnt that how much unhealthy food I have been eating."* Attitude towards SFS after joining SOEL *"Peers in SOEL often pursue sustainable habits that motivate me to act responsibly together. I don't feel as lonely. For instance, we will prepare and have plant-based meals together, and share relevant news."* Behaviour towards SFS after joining SOEL *"The community market and guest speakers invited by SOEL give opportunities for me to understand more about sustainable food system and how I can apply in daily life. Some people will use food waste to make DIY products, which has inspired me."* *"COVID has encouraged the use of disposable plastic and takeaway, which has refrained me from acting sustainably."*
R7	Knowledge towards SFS before joining SOEL *"I only get minimal understanding about food nutrition from my high-school education, yet I am totally not familiar about in-depth knowledge about food source, production, distribution, or how our consumption pattern is impacting the environment."* Knowledge towards SFS after joining SOEL *"Farmer Ms. Chuk shared about her journey to organic farming, in addition to SOEL's network, it becomes easier and more convenient to access related information."* *"There was an intern from SOEL who used 9 hours to make a tofu for participants to taste and she was very dedicated to elaborating on the production process. Her passion inspired me."* Behaviour towards SFS after joining SOEL *"I personally don't feel organic farming can really address the problem of world hunger, it is more for luxury purpose. However, I still purchase locally grown organic vegetables out of passion and compassion for animal welfare."* *"Hong Kong is not plant-based friendly and there is lack of options."* Others pro-environmental behaviour *"I become less materialistic and feel intrinsically rich. SOEL's has helped me nurture a minimalist lifestyle where I will prolong the usage of different*

	items by recycling or covering them. SOEL's peers have similar lifestyle which is encouraging." Differences between SOEL and other community organizations *"SOEL can drive more penetration and perpetual changes by building a community and strong relationship with member while other community organizes tend to focus on one-way transmission of knowledge."* Opportunities of scaling up SOEL's impact *"In the UK, psychologically ill people are invited to participate in farming as therapy, prescribed by mainstream doctors. They will be given a certificate after the programme to further build career for those patients. This gives insights on how we can spread awareness on the interconnectedness between the environment and our inner happiness."*
R8	Knowledge towards SFS after joining SOEL *"As volunteers, I am interested in investigating and experiment new plant-based recipe with other peers, such as turning food waste into a new dish."* Attitude towards SFS after joining SOEL *"Collective effort is always more powerful than individuals' action."*
R9	Knowledge towards SFS after joining SOEL *"Previously I had shallow level of knowledge about food system, yet with hands-on experience helping with organic farming, and talking to Ms. Chuk the farmer, I understand more about the relationship between weather, biodiversity, and our food, also the challenges in sustaining agriculture industry."* Behaviour towards SFS before joining SOEL *"I was not too aware or motivated to take any pro-environmental behaviours, also the culture and education in Hong Kong is not encouraging any changes anyway."* *"I become more aware of my own behaviour and have less materialistic pursue in recent years. I try to fly less by plane, and do more recycling in daily life."* Differences between SOEL and other community organizations *"SOEL culture is very open and flexible, which allows volunteers to co-design the community program and curriculum, lead activities. It builds a community for like-minded people which I have befriended with. Comparatively, other organizations tend to have a more fixed structure."* Opportunities of scaling up SOEL's impact *"There are always opportunities to scale up, but the key question is effectiveness and resources needed to support such actions. We need to first understand the challenges of the society and operation model of SOEL."*

R10	Knowledge towards SFS after joining SOEL *"The first time I joined Lifewalker programme, there was a plant-based BBQ which I was very impressed by the diversity and variety of food offered. It has unlocked my imagination about plant-based and reconnected me with food."* *"Peers in SOEL always share latest news about sustainable development and products, which helped enhance my observation and awareness."* Attitude towards SFS after joining SOEL *"I see the impact of my own action. At the beginning, my family doesn't care about their consumption pattern. Yet after a year when I changed to plant-based, they start to follow and sometimes have plant-based diets together. It also helps building closer relationship with them."* Behaviour towards SFS after joining SOEL *"There are still lots of barriers to be sustainable at individual level in Hong Kong. Lack of plant-based restaurant option, plastic-free stores, lack of public awareness, the massive usage of single-used plastic... all these factors make it difficult to persuade family and peers around to act collectively."* Opportunities of scaling up SOEL's impact *"We should promote food education in school as agriculture and value education is more common nowadays. Students, parents and teachers can benefit and further influence their network and consumption choice."*
R11	Knowledge towards SFS after joining SOEL *"I have joined the guided tour to 'Food Studio', which has enhanced my understanding about farming, agriculture, livestock industry, and how unsustainable our current food production process is."* *"Through volunteering, I have done more research on related topic before head so that I can share the correct information about food and agriculture to students and elderly."* Attitude towards SFS after joining SOEL *"It takes long time to nurture a positive attitude and sustainable lifestyle. As time goes by, my lifestyle slowly changes as inspired by people around. I have joined more environmental activities to build up my sense of responsibility such as more recycling, reducing waste and consumption etc.."* Opportunities of scaling up SOEL's impact *"Hong Kong government tends to have short-term and commercial-driven goals regarding sustainable development, thus there is a need to change the mindset through education in the long-run."*
R12	Knowledge towards SFS before joining SOEL *"I only had basic understanding about Hong Kong food culture from mainstream media and advertisement."*

	Knowledge towards SFS after joining SOEL *"Through dialogue and discussion with SOEL's peers, in addition to SOEL's social media, I have learnt more relevant information about sustainable food consumption."* Attitude towards SFS before joining SOEL *"I had a general sense of awareness about recycling but it was difficult to sustain any significant behaviour in long term due to peer influence and the wider social culture."* Attitude towards SFS after joining SOEL *"The environment in SOEL encouraged learners to experiment any small-scale practices, and I would reflect what could I do more personally. SOEL builds a collective community network consisted of people sharing similar vision."* Others pro-environmental behaviour *"I will now reflect more on the trust cost behind a t-shirt production and am more aware of the use of recycled materials."* Opportunities of scaling up SOEL's impact *"There could be more collaboration and synergy to work with other NGOs on longer-term projects."* *"SOEL can establish its own brand by having volunteer to prepare plant-based meals, selling locally grown food to the communities, and educating the general public."*
R13	Knowledge towards SFS after joining SOEL *"The Food Studio of SOEL in Tai Po enhanced my awareness towards processed food and how unhealthy they are. It also visualizes the relationship between food, biodiversity and weather."* *"SOEL builds a supportive system where you can how others pursuing sustainable practices with faith and collective force, and I am motivated to do the same."* Attitude towards SFS after joining SOEL *"The importance of social learning is that you don't feel alone. SOEL peers share similar vision in life and very kind personality, which gives me stronger motivation to act sustainably and feel that my action is not as insignificant as I think."* Behaviour towards SFS after joining SOEL *"I have established my own brand called Garlic Grandma, which I ordered ingredients from local farmers to produce our own garlic."* *"Personally, I want to align my vision, purpose of life with my daily life. SOEL's community also helps facilitate knowledge exchange amongst volunteers where I can learn from others."*

	Differences between SOEL and other community organizations *"Other NGOs have less focus on knowledge exchange and education, while SOEL covers a diverse range of topic with fun and interesting learning experiences."* Opportunities of scaling up SOEL's impact *"Hong Kong has a silo segregation between urbanized and rural context, therefore we need more education on food and agriculture, and promote plant-based culture in Hong Kong. Environmental education should explore a combination of emotional and cognitive learning instead of solely being technical-focused."* *"SOEL can partner with other NGO who have access to more diverse range of target audience from different neighbourhoods, demographics and age."*
R14	Knowledge towards SFS after joining SOEL *"Hong Kong education focus on knowledge, but not teaching students WHY we need to be sustainable. In contrast, SOEL adopted spiritual and emotional learning which encourage people to extend our care and love to other aspects of our live."* Attitude towards SFS before joining SOEL *"Sometimes I will eat plant-based, yet I don't think I will make any significant impact or change as the problem of climate change is too complex and big."* Attitude towards SFS after joining SOEL *"During the camp, I have witness farmer Ms. Chuk preparing ingredients, cook for an audience of 80+, which was very impressive and encouraging for me to pursue similar vision."* Behaviour towards SFS after joining SOEL *"Experiential learning serves as a bridge as Hong Kong has less opportunities to try our organic farming. I gained practical experiences in growing organic vegetables and beach cleaning, which draws closer emotional connection with my daily life."* Opportunities of scaling up SOEL's impact *"We need more chances for urbanized population to reconnect with the nature, for instance, a community hub for neighbours to join anytime to cook and farm together."*
R15	Knowledge towards SFS after joining SOEL *"As an event organizer, I was responsible to design the food studio and prepare for guided tour. During research, I gained better understanding on the long-term impact of pesticide on biodiversity."* *"From farmer's sharing, I am encouraged to make more responsible food consumption choices and be more proactive in experimenting plant-based meals."*

	Attitude towards SFS after joining SOEL *"When I am responsible to teach kids about the negative impact of our current diets, I need to be sincere in sharing the correct knowledge as I am given ownership. The kids turned out to be more interested in connecting with the environment, where I can feel the direct impact of my contribution."* Behaviour towards SFS after joining SOEL *"I start recycling food waste for further composition, farming and cooking,"* *"Enhanced awareness will drive sustainable behaviour, which in turns further strengthened my awareness. It is a feedback loop. I will reflect what I can do more, such as preparing really tasty plant-based meals for others."* Employee experience *"SOEL's vision aligns very much with their actual behaviour and actions. The founder also helps me with personal development and communications skills, which aligns with my personal core value as well."* Challenges of scaling up SOEL's impact *"Some teachers are not engaged in the educational activities which becomes barriers to build closer relationship between teachers and students. In light of this situation, sometimes we will invite teachers to join the activities and learn with the students together."* Opportunities of scaling up SOEL's impact *"Social media as a huge potential in driving a new culture, SOEL can leverage more on Instagram to target the younger audience."*
R16	Attitude towards SFS before joining SOEL *"It is very difficult to convince and change the habits of family, as others have different lifestyle and consumption pattern. The global food challenge is a complex big problem which is too big to solve by individuals."* Attitude towards SFS after joining SOEL *"SOEL shows video of how community organizations in Taiwan make collective sustainable effort that has impressed me."* *"Sometimes I feel I have lost control on food when I don't know the source of food my family brought. I also wasn't determined enough to cook sustainable meals by myself due to inconvenience."* Behaviour towards SFS after joining SOEL *"I am used to bring my own bag, however after COVID, I become lazy, and it becomes inconvenient to do so. I spend less time with SOEL, in addition to the mainstream culture, sometimes I failed to pursue sustainable habits in long-run."*

	Opportunities of scaling up SOEL's impact *"It is important to build a community bonding. It would be more appealing when there is easier access to eco-friendly stores at any neighbourhood instead of going to a particular place. Community organizations can achieve this by collaborating with talents living in the neighbourhood and make it accessible in everyday life by leveraging existing resources and network."*
R17	Knowledge towards SFS after joining SOEL *"As I was responsible in guiding the tour of 'Food for Life' Studio, I did more readings and research on food supply chain, for instance, the long-term environmental impact of using pesticide to biodiversity, the unhealthy living environment of animals in the livestock industry. Such empowerment helps nurture a holistic and systemic thinking of the entire food system, and what could be the alternative options".* *"Experiential learning in Lifewalker class offered hands-on experience for me to learn plant-based cooking."* Attitude towards SFS after joining SOEL *"As an employee, I am engaged in decision-making and design of curriculum for secondary school students. These opportunities empower me to innovate ways to better engage with the target audience. What's challenging is that we cannot influence much on city-level policy making, yet once there is a trend in the community, the government will actually consider policy or campaign in reference to the mainstream culture and support relative initiatives. This proves that community organizations have a strong role in cultivating a sustainable culture."* Behaviour towards SFS after joining SOEL *"I was used to dine-out with meat lovers. Since joining SOEL, we will purposely find a plant-based restaurant to hang-out after Lifewalker programme ends. We left no food waste, which even surprised the restaurant owners. This is the power of collective group."* *"I start to teach secondary school students in 2021, which I have stepped out of my comfort zone to deliver the correct information about food and agriculture. Nonetheless, I feel empowered and more confident in making an impact to people around me through this job."* Opportunities of scaling up SOEL's impact *"We need more financial resources to hire more talents and carry out more projects, so that we can expedite personal development. Also, it is beneficial to exchange more with industry players, yet current collaboration is still short-term focus."*
R18	Knowledge towards SFS after joining SOEL *"After I became volunteer, I need to do more research on related information before planning and organizing events, such as how to prepare plant-based food."*

	Attitude towards SFS after joining SOEL *"When I understand that I can make small-scale change in my consumption pattern, which can contributes largely in my daily life, consumers then play a big role in driving a sustainable food system and affecting market supply."* Behaviour towards SFS after joining SOEL *"When you see other SOEL peers act sustainably, such as purchasing local organic food, eating plant-based, collecting food waste, I am interested in learning from them. However, collecting food waste is still difficult in daily life as it is hard to change family's daily habits."* Differences between SOEL and other community organizations *"I love volunteering in SOEL because it gives so much empowerment and flexibility for volunteers to unleash their creativity to co-design curriculum and activities together, training up our independent thinking."*
R19	Knowledge towards SFS after joining SOEL *"There was a retreat programme by SOEL, which we were offered to taste dried banana and understand the source of that kind of balance. It triggered personal reflection on food production process and be aware of more locally grown food."* Volunteering experience *"There are lots of interesting topics to discover in SOEL, such as art therapy, life and death, it never gives you a serious feeling, but rather a chilled learning environment. Its events and activities are also very well designed and facilitated, which create lots of interaction amongst learners."* Opportunities of scaling up SOEL's impact *"Current language used in SOEL is only Cantonese, which may overlook ethics minority, it may be more beneficial to expand the diversity of target audience."* *"In general Hong Kong NGOs work is a very silo way focusing on different service area. The impact is not significant enough. We should form a collective network to leverage each strength and explore cross-disciplinary synergy."*
R20	Knowledge towards SFS before joining SOEL *"As a high school student, I only cared about convenience and filling my stomach when I need food. I am not aware of any social topic."* Knowledge towards SFS after joining SOEL *"After joining SOEL, I get in touch with people who act sustainably, which I find it not as difficult and motivated to understand more about the motives behind plant-based diets, animal welfare. I also learnt the impact of livestock industry to the environment."*

	Attitude towards SFS after joining SOEL *"There is actually a circular feedback loop between personal interest and SOEL's influence. For example, I start to engage in beach cleaning, and reducing intake of meat after engaging with peers from SOEL."* Behaviour towards SFS after joining SOEL *"SOEL provides opportunities for personal practices. It introduces the concept of kindness farming and permaculture, and offers experiential learning for us to get hands-on understanding about local agriculture industry and farmers."* Opportunities of scaling up SOEL's impact *"I suggest SOEL changing their community education style. We usually attract the same spectrum of target audience, and make no connection between food or agriculture, with other aspects of life. Perhaps we can innovate and create more inter-disciplinary synergy and collaboration so that more people are interested in the topic."* *"Current policy in Hong Kong is not effective in driving sustainable practices, we need better recycling system and infrastructure to change consumers' habits in longer-term."*
F1	Challenge of EFS in Hong Kong *"Food is very important in our daily life, yet the relationship between Hong Kong consumers and local food production becomes irrelevant due to heavy import and commercial-oriented nature. Consumers indeed have less option as bounded by consumerism and fast-food culture. In contrast, in Japan, there is national law to guide food nutrition, secure local food source, and develop relationship between food and the society."* *"Hong Kong education system is very knowledge-focus, with limited hands-on experience and narrow vision of teaching about food safety and security. In addition, Hong Kong has no agriculture economy, and neither agricultural nor industrial food production was taught in formal education curriculum."* Vision of founding SOEL *"Formal education model has many limitations. There is less time to invest and less chance to explore non-academic-related topics, such as food, personal development. Therefore, we want to establish an unique education model to fill the gap and equipping individuals with daily life skills such as being thankful, interpersonal skills, reducing usage of plastic etc.."* *"We mainly target younger generation as our service audience, because they tend to have a stronger cognition, self-autonomy, and more action-oriented. It is easier to build up their sense of environmental responsibility in the long-run."* *"It is important to align young people's life goals with their personal value, by equipping them with a holistic vision on their relationship with the world."*

	Effectiveness of community education *"8 years ago, the topics ESD is still immature with less public awareness; in recent years, there are more political priorities in Hong Kong and more people start to understand the concept better. The challenge of EFS is still striking a balance between the scale and depth of community education."* Challenges of scaling up SOEL's impact *"Since SOEL is non-government funded, our projects are only financially supported by private foundation. Most of them are once-off programme and have to reapply funding again afterwards, which will affect learning continuity for participants and volunteers in the long-run."* *"We want to scale up SOEL's impact by targeting groups from different age group within the community, however our employee are lack of expertise and* experience of social work. It would take time to train up necessary skillsets." *"Our current office is quite small and doesn't own a farm. The limited physical space has limited the learning experience. It would be great if there is a community kitchen for community members to cook togethers and learn more about sustainable food consumption and plant-based diets."* Opportunities of scaling up SOEL's impact *"It would be ideal to collaborate more with other NGOs to expand our target audience, such as establishing a community kitchen and dining room, or preparing plant-based meals with locally grown products to local schools."* *"The influence from collective learning is significant. Everyone in the social group becomes motivated, fulfilled and achieved, who are more willing to contribute and make a positive impact to the community and environment."*
F2	Challenge of EFS in Hong Kong *"I observed that the food option we have as consumers in Hong Kong are mostly imported or fast food. In the past, Hong Kong agriculture industry contributes up to 70% of our food, now it is only 2%. There is a significantly low self-sufficiency. In contrast, other places like Taiwan have their own food supply policies in case of disaster."* *"Formal education in Hong Kong doesn't aim to equip students with daily life skills, and the younger generation consumer mostly processed and unhealthy food."* Vision of founding SOEL *"Our vision is to put environmental education, art and cultural, and life education into the context of everyday life. We see that the younger generations have lots of personal pursue, but feel frustrated and lost as there isn't much guidance from family or school. Therefore SOEL envisions fostering personal development, building positive value and reconnecting younger generation with the environment."*

	"The younger generation nowadays are too well protected by family and the environment in Hong Kong, they are lack of life skills. SOEL aims to train up their interpersonal and critical thinking skills through experiential learning like cooking and farming." Effectiveness of community education *"SOEL has an important role in building environmental effort in Hong Kong. There has been ripple effects where participants or volunteers explore their own career and impact the others. For instance, there is a volunteer who start salt faming, another makes her own tofu and share her values to others. They become role models and spread the impacts within the community."* *"Volunteers are also learning in the process. They feel empowered with ownership, which help to cultivate a longer-term engagement."* Challenges of scaling up SOEL's impact *"Despite all operational difficulties, I believe as long as there is faith, passion and strength, things will work out at the end. The key is to optimize strength of different talents, and to understand the local needs and cultural context so to design a localized community education model."* *"Working in SOEL doesn't offer our employee any career path. It mostly replies on their passion."* Opportunities of scaling up SOEL's impact *"We plan to facilitate long-term employee personal development, for instance to develop an Asian community for education and health in Canada. Also, we hope to support personal and career development for our participants and volunteers by collaborating with relevant stakeholders within our network."* *"It is important to collaborate with primary and secondary school to promote food education, as there are lots of teachers leaving Hong Kong now. This will also help scale up SOEL's impact by expanding more physical spaces."*

Table 18. Key quotes from respondents

Appendix 5: Magazine articles of SOEL (For document analysis)

Article 1: 生活書院 大埔新綠點 (Eunice, 2014)

Article 2: 重返校園 學習好生活 (W. Y. Chan, 2014)

Article 3: 學習自然生活 (Oriental Daily, 2014)

A11 東方日報 2014.07.16 星期三

綠色先鋒

學習自然生活

你懂得生活嗎？現今都市人深受媒體資訊薰陶，大概已忘記如何過簡易的好生活。香港兆基創意書院兼任導師嚴惠英（Eno）及藝術工作者蔡芷筠（Ger）聯同一眾志同道合的義工開辦生活書院，透過舉辦不同的工作坊、綠色市集及分享會，教導大大小小的學生如何作出最適合自己的選擇，在簡單的事物裏，尋回生活的樂趣。

■圖：李子輝／文：胡蔣明

「全世界的學校都係教技術，但偏偏生活咁基本嘅事就無人教。」Ger眼見都市人公式化的生活常要於生活選擇上妥協，因此希望成立生活書院教導他們如何作出一個最佳選擇，在生活上「搵番自己」。

學成後返城市實踐

生活書院與佛教慈善基金會大光園合作，利用大埔錦山已停辦的佛教大光中學校舍成立大本營。Eno笑言生活書院雖與鐵路站相隔十多分鐘步程，環境卻恍如深山，讓人可以抽離熟悉的城市生活，重新去認識自然的生活。「但生活書院唔會同市區隔絕，因為學成之後，大家要返城市實踐學到嘅嘢。」

「喺呢度會有蛇出沒，蛇可能會食咗我隻貓，呢樣喺鬧市係唔會見到。」Eno更指生活書院內飼養了數隻小動物，其中曾有一隻陸龜因情緒問題而離家出走，令她更明白到生活其實也要學懂協調自然。

書院亦會讓一些工作者於書院環保市集設攤位介紹其手作產品及農產品，其中更有由台灣遠道而來推廣再用棉布縫製的衛生棉。「不少人還抗拒使用，因為用完要包起來再洗，不是那麼容易改變。」攤主方小糖坦言因布衛生棉可以度身訂造，在台灣已有不少人轉用，期望本港可以有更多人接受。

「其實仲有好多選擇」

Eno直言麵包工作坊讓學生可以明白到簡單的麵粉、鹽及水就可以造出無添加、健康的美食。除味覺外，嗅覺也要再培訓，另一個工作坊讓學生試聞自然的香味及人造的「假香味」，Eno亦希望藉此教會學生在選購香薰等產品時，學會避免買香精製成的假香味。Ger坦言「唔係話最自然嘅一定係最好，而係希望大家明白其實仲有好多其他選擇。」

教授花道推廣藝術無價

社會上被扭曲的不只是生活，更有我們對事物的價值觀。「香港人講藝術，係講賣唔賣得出。」Ger感嘆現時世界對藝術的理解都十分消費性，於本港舉行的大型藝術展覽，不少都淪為猶如藝術超市般的買賣會。因此生活書院其中一個工作坊教授來自日本有數百年歷史的花道，以藝術去糾正錯誤的價值觀。

「花道作品係唔可以賣，因為花好快就會凋謝，所以想擁有作品，只可以自己跟師傅學。」Ger坦言因為無人可以於一日內插好十數個作品，因此花道師傅不可能擺個人展覽，只可以舉辦師生展，老師的成果只可以在學生的身上體現。「真係一個好大的衝擊，東方藝術同消費性嘅藝術好唔同。」Ger期望可以透過藝術的精神教導，讓大家可以有更好的生命。

■書院亦會讓一些工作者於書院環保市集設攤位介紹其手作產品及農產品。

■Eno（左）及Ger（右）聯同一眾志同道合的義工開辦生活書院，讓市民尋回簡單好生活。

■方小糖坦言期望本港可以有更多人接受環保的布衛生棉。

住客廢物建摩天大樓

綠色建築已成全球大趨勢，在世界各地都有零碳建築或垂直綠色花園大廈等。最近有建築師設計出以住客的廢物建成環保摩天大樓，概念相當新穎。

根據建築師提出，回收住客產生的廢紙及廢塑膠，升級再造成建築材料，用以加建於建築物製作成綠色外牆。建築師構想收集住戶一年的垃圾，便足夠展開工程。此概念不但有效將垃圾循環再用，減少了浪費外，更能減低建築成本，一舉兩得。

除了使用環保建築材料外，建築物的設計亦有助節能。建築師參考亞洲常用的搭棚建築方法，將廢物再造成的建築材料，猶如棚架一樣組合在建築物外，建築工程完成後，亦會成為建築物的一部分。建築師指，設計有助通風，而建築物內會加裝小型風力發電機，節約能源。

■建築師提出以住客的廢物建成的環保摩天大樓的建築概念。

Article 4: 向好生活學習 (Tse, 2014)

C3 2014年7月19日-20日 星期六、日 經濟日報 ET

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向好生活學習

隨着新界東北發展的爭議升溫，有關發展與保育的議題又再被提起。和反高鐵一役相比，抗拒唯發展論的人明顯增多，但仍有不少人高舉中環價值，認為發展可以壓倒一切。也許他們都應向新開辦的生活書院借鏡，體驗另一種可持續的生活方式、學習另一組更具人文關懷的生活價值。

▲跳蚤市集出售的貨品都符合「生命教育、文化藝術及永續環境」的理念。

生活書院位於大埔錦山，從太和站出發要走 15 分鐘才能到達，途中還要上一段山路。書院開幕當天，烈日當空，筆者上山時想，如此偏僻之地，有多少人願意冒着暑熱上山赴會？及至校舍，但見人潮擠滿校內的操場、禮堂和課室，真的不少人關心如何才能生活得更好呢！

生活書院由曾德平、嚴惠英和蔡芷筠 3 位文化藝術教育工作者創立，目的是透過舉辦課程和活動，推動社會思考「生命教育、文化藝術及永續環境」等課題。

當天的開幕禮題為「活生生生活嘉年華」，那他們又如何定義「活生生」的生活呢？正在吃午飯的曾德平聞言後用筷子指指飯盒中的素菜説：「就拿我的飲食習慣做例子吧，你知道嗎？畜牧有違人道，而且耗費的地球資源比種菜多，又基於健康理由，我選擇不吃肉。同樣，我們也要反省生活中的一切細節做得對不對，凡事多一點思考，才能『活生生』地生活。」蔡芷筠亦説，我們大部分人都受傳媒影響，消費習慣非常相近，卻不知在主流的生活方式以外，可以有更豐富的選擇，「若想活得好一點，就要來生活書院學習了！」她笑説。

嘗鮮生活體驗

開幕當天，生活書院籌辦了「綠色跳蚤市集」，邀請近 50 個理念相符的團體和個人單位到書院擺攤。這些攤位進駐校內的有蓋操場和課室，在場內走一圈，筆者看見擺賣的貨品，都不是主流商店售賣的貨式，全都取材天然，例如中藥製的面膜濕疹膏潤唇膏、用回收玻璃造成的飾物、新菜園村出產的農作物、有機植物油製的洗衣粉、薑製的驅蟲粉肥皂洗髮液等等，果然非常「活生生」。大熱天時，筆者見有攤檔售賣有機飲品，當即買了一支烏龍茶，喝了兩口發覺沒有便利店出售的甜，檔員知道後笑道：「當然啦，你平時喝的加了很多調味料，這才是烏龍茶的真味啊！」

當日生活書院亦舉辦了 5 個生活工作坊，包括教人如何在家裏種有機菜、如何以按摩自療傷患、如何提煉紅洋葱和黃薑的色素來染布等。Green Monday 創辦人楊大偉和年輕農夫謝穎芯則辦了一場「實現生活」講座，楊大偉分享他如何運用市場營銷的手法推廣綠色飲食，本身是癌症患者的謝穎芯，則細説她如何在電療後的翌日就拿起農具下田，目的是為了贈送瓜菜給做義工時認識的基層小孩。因她認為，雖然他們負擔不起有機食物，亦該有品嘗的機會，畢竟綠色生活不應是某階層人士的專利。

荒校轉出生機

生活書院的前身是佛教大光中學，由於該校與另一間學校合併，校舍因此丟空兩年，曾德平、嚴惠英和蔡芷筠因與擁有校舍的辦學團體相熟，在免租優惠下，開辦了現在的生活書院。其實，3 位創辦人多年來一直在不同的院校教授藝術或設計，亦有在校內推動相關議題，為何還要另設生活書院？嚴惠英説，體制內的教育需要符合考試的標準、社會的要求，也較着重職業技術的訓練，但生活書院希望做到的，是讓人學到能應用於生活的概念和知識，相比起來，應更有趣。

好像生活書院在暑期期間將邀請幾位文化教育工作者，開辦一系列名為「上山學藝」的課程，其中包括講解如何利用環保物料自製手工書和天然護膚品的青少年工作坊、帶領長者觀察及描繪花草樹木的繪畫班、教導如何自製玩具的親子工作坊等，名副其實的老中青各適其適！此外，嚴惠英亦將親自開辦一個教導如何製作「手作動物」的暑假課程：「我們會教學員用廢紙製作可愛的紙塑動物，但我們不想課程就止於此，我們還會引導參加者思考人類和動物的關係，例如為甚麼我們會偏愛貓和狗呢？又為何會視曱甴與蚊為害蟲？惟有想清這些問題，我們才可與動物和睦共存吧。」

除了課程工作坊，生活書院下月舉辦以中學生為對象的「山中三日」夏日營，營友會在校舍閉關 3 天，期間參與不同講座、集體遊戲，3 位創辦人更會教營友焗麵包、用粟米皮造環保紙、用蒜頭皮造精巧的小燈籠。蔡芷筠笑説：「我們教人整的東西都是很漂亮，一些工作坊雖然同樣着重環保概念，但忽略了美感的教育，製成品甩皮甩骨的，多麼可惜！」

◀（左起）生活書院的創辦者曾德平、蔡芷筠和嚴惠英，身後的彩虹梯由他們和義工一起親手翻新。

◀開幕禮當日，生活書院和「非牟利獸醫服務協會」合作，讓到訪者即場登記領養被遺棄的小動物。

◀跳蚤市集內有小朋友親手煮的茶果、缽仔糕和冬瓜水出售。

▲用舊報紙、膠紙和顏料製成的紙塑動物，生活書院將開班教授製作方法。

Info

「生活書院」

網址：www.everydaylife.org.hk

Article 5: 從體制到民間：教育的另類實踐 (Choi, 2015)

從體制到民間：教育的另類實踐

Text by 蔡倩怡 Photo by Noel Jones & Kei So

2014 年 9 月 22 日，中文大學的百萬大道擠滿罷課學生。翌日，添馬公園舉行公民講堂，草地上坐滿莘莘學子，大家高舉「罷課不罷學」的旗幟，走出課室，思考民主與社會。

「罷課不罷學」，關鍵在於「學」，怎樣才算是「學習」？我們不斷指出本地教育的問題：教學語言的選擇、評核機制的方式等；但龐大的體系猶如一頭僵化的獸，我們無從擊破，只能從隙縫裡，孕育草苗，種出未來。例如一直在教學制度中覓求突破的兆基創意書院，亦有在制度以外實踐生命教育的生活書院。還有繁多的讀書會與民間學院，試圖在固有模式以外，嘗試將知識的傳播穿越制度的巨牆。

香港教育的未來，正在靜靜地革新，形塑著這一代的香港人。

電視上時有報道，中小學派位，子女進了名校，家長揚言比結婚更開心。狹窄的教育制度扭曲了大眾對教育的觀念，抹殺不少可能性。家長與學生的選擇大多是職業導向的課程，但更多深化內在的教育卻無能為力，例如學生的溝通與想像能力，甚至是生活的體驗。是故近年出現不少另類教育，透過文化藝術，或與自然的接觸，補足學生貧乏的經驗。體制內外，如何讓更多的知識土壤，耕植生命之樹，栽出一個圓滿的社會？

體制內外的抵抗

本地資深教育工作者馮美華（MAY FUNG），年輕時候受益於民間團體如「火鳥電影會」，學習電影藝術，故深明藝術教育的重要性。她觀察到現有制度的問題，是故參與創建兆基創意書院（下略稱為兆基），希望在中學階段帶給學生更多不同形式學習的可能性。兆基成立於 2006 年，以創意專業導向課程作校本評核，重視不同藝術範疇的教育，例如電影藝術、空間與戲劇等，成為體制內外的調解與融和，更是香港另類教育的顯例。

除了像兆基這種明顯地於固有體制內大膽嘗試的另類學校外，亦有不少團體努力在框架內外尋求空隙。例如曾任兆基助理校長的教育工作者嚴惠英（ENO），去年離職創辦了生活書院。生活書院雖不是正規學校，但定期舉辦不同活動與課程，利用文化藝術與永續自然，推行生命教育。去年 12 月下旬，生活書院剛在油街實現舉辦了讀書會，參加者在完結後仍未離去，與導師繼續熱烈討論；當日讀書會之外，生活書院亦與不同團體於此地協辦「生活現場」展覽，與社區連結，更有滿室衣車的製衣工坊，讓大眾將舊衣物重新縫紉。ENO 更透露，生活書院在同一天，亦在學校裡與其他團體一起舉辦了「自家祭墟市」，售賣不同類型的手作。忙個不停的生活書院，正正實踐了體制外教育的活力與可能性。

「體制內的教學需要符合某些系統的要求，以致可以評核，讓系統有效運作，而且成為社會篩選的工具。但體制外已沒有了這種評核，而且當這種社會篩選的過程和要求消失了，那教學的闊度可以說是無限的。」由於體制外的教育自由度更大，故有不少家長自組教學團體，抵抗已然僵化的教育體制。例如由家長組成的「綠腳丫」教學組織，便策劃「爸爸學堂」、「媽媽學堂」等親子讀書會作教育方式。ENO 續稱：「其實大家對體制內的教育已經愈來愈不滿，所以未來會出現更多另類教育團體，及不同自發性的教育方式。好像『自然學校』一直多年在體制外努力掙扎。而現在亦有不少組織在努力進行中，例如華德福，是由一班有心的老師和家長組成幼稚園，自發性質地辦校。他們都在努力嘗試，希望讓學生不用進入體制內學習。而 HOME-SCHOOLING 政府亦變得『隻眼開隻眼閉』。由此可見，很多體制外的教育模式，以往也會受到法律規管，但現在政府亦容許它們存在。」

普及教育之外，ENO 提到藝術教育亦由正規教育走向自發性的另類教育。「在香港，我們學習演藝或表演藝術，只有演藝學院這間正規學校的選擇，但其實裡面的教育亦有很多毛病，很單一。所以好像鄧樹榮便自組課程，以他自己的方法培訓一些表演者。」同樣多年從事藝術教育的 MAY FUNG，在 2012 年離開兆基後繼續積極策劃不同形式的教育。她留意到香港的藝術教育漠視本地低下階層的學生。她希望未來能在體制外的教育上，多一點將藝術帶給低下階層的兒童。「我也在想不同的方法。其中之一是找一個喜歡小朋友的藝術家，我給予他一些資助和一年時間，讓他帶著幾個小朋友，充當他們的 MENTOR，嘗試參與不同的藝術形式，例如跳舞、戲劇等，讓他們能享受藝術的快樂。」

MAY FUNG 認為未來的藝術教育更需要擴展至不同階層與年齡，例如俞若玫（CALLY）策劃的「銀髮計劃」，讓老人家參與藝術創作。而 MAY FUNG 亦透過藝鵠這類文化空間舉行更多讓大眾能參與的藝術課程，如「野花亂舞」此類跨媒介學習（舞蹈、文學及錄像等），讓體制外的藝術教育從廟堂回到人間，達到大眾對藝術的啟蒙。

經驗的實踐

除了學制的分野，本地教育的另一趨勢是由課本上的知識，轉向經驗的實踐。ENO 提到，「其實體驗式或探索式的教育已不是新鮮，不論香港與外國都已經講了很多年，但由於我們的評核方式仍是以寫作為主，是故便限制了教學進行的方式。但現在已經是網絡泛濫的年代，我們更需要學習的是生活上的體驗，具體的人際溝通，學習如何關懷和觀察身邊的事物。當經濟模式也變得 INDIVIDUALIZED 的時候，這種體驗式或探索式的教育必定是重要的趨勢。而且這種體驗式教育能夠將不同知識融合於經驗當中。」她指出不論外國或鄰近地區也正朝著這個方向發展。例如台灣便有一所教授廚藝的學校，將不同學科融合於其中：從食譜中學習中英文，在買材料中學習數學。

這種體驗式或探索式的教育，更可見於很多另類教育中對自然的重視與關懷，例如體制內外的教學也漸次主張學生落田耕作，不少學校如生活書院的校舍內亦有農田。MAY FUNG 曾經策劃「香港河流再想像」的活動，以錄像、舞蹈等藝術，同時讓年輕人親身接觸河流，以身體力行的實踐方式在大自然中學習：「我希望透過一些 ART PROJECT 讓更多年輕人知道河流是什麼狀態，應該怎麼對待大自然。其實我過去更舉辦過其他有關大自然的學習計劃，有試過是農村的，亦有試過是海島，讓年輕人重新感受大自然。尤其是年輕人已經不覺得 NATURE 是他們的一部份。所以我希望透過這些計劃讓他們重回郊外，RE-EDUCATE 他們對自然的珍惜。」

更多民間的知識傳播

不同的教育方式在不斷發酵，而近日的社會運動亦成了一道助力，讓許多介入社會的教育模式出現。例如長期在旺角佔領區的「小麗民主教室」及何式凝與陳景輝等合辦的「未來民主大學」，教授正規體制內接觸不到的知識。而由「本土研究社」及「實現會社」創辦的「民間學院」亦於近日成立，初期舉辦的課程分別是「邁向本土農業世紀」及「法治作為政治」，鮮明地以知識碰撞社會，實踐知識自主。創辦人之一李達寧提到：「『民間學院』從佔領運動前已開始籌備，我們希望能擺脫主流的教學體制，以一種民間體制來推行知識普及。讓知識在民間建立，同時推向民間，成為完整的知識生產過程，思考民間、知識及社會的關係。這種民間辦學的模式將會是未來的趨勢。」

每一場運動也是一個社會改革的缺口。運動結束，我們仍需深思與深耕廣場外的教育，在巨牆的裂縫中種下未來的果實。

01-02: 生活書院位於大埔錦山的校舍。原址前身是佛教大光中學，現已翻新作舉辦活動之用。
03: 本地資深教育工作者馮美華（MAY FUNG）於其籌辦的藝鵠（ACO）。
04: 生活書院創辦人嚴惠英（ENO）身處生活書院的活動課室。
05: 生活書院與本地家長自發組成的教學團體「綠腳丫」合作，在校舍內舉辦親子「砌積木」活動。
06: 生活書院雖並非正規學校，但仍有豐富設備，以供義工與活動的參加者使用。

Article 6: 自然研習室見學 (Aiko, 2017)

Article 7: 探尋食物由來　學懂尊重生命環境 (Cheng, 2018)

Article 8: 邊緣中學變身心靈小社區 把生活一手一腳活出來 (SOEL, 2019)

邊緣中學變身心靈小社區
把生活一手一腳活出來

前身

曾幾何時，大埔市民只要一聽到「佛教大光中學」，皆會嗤之以鼻，敬而遠之，皆因該校學生被認為是「邊緣青年」。校友Beatle回想當年，不無感慨：「的確我們不是典型乖學生，但也未至於外界所認為般作奸犯科。遺憾的是，學校曾因收生不足，取錄自閉、過度活躍及學習障礙的學生，間接令學生之間衝突增加，學校名聲變得更差，終於在2012年殺校。」

◀Beatle上進努力，如今已是旺角髮廊Hair Kiss的專業髮型師，每天客似雲來。

理念

殺校固然可惜，但好消息是，一群熱心的文藝人士把空置的校舍傾注新希望，打造成「生活書院」。雖然名為書院，卻不是一所學校，而是一個分享生活的空間。創辦人致力推動生命教育、環境教育、文化教育和藝術教育，透過創意和親身體驗學習自然生活。有活動參加者形容「進入書院一刻，覺得去了另一個世界，感覺很奇妙，既夢幻又真實。」

定期課程

生活書院舉辦的定期課程十分有趣，例如「生活行者班」鼓勵每星期抽一天上山，騰出時間和空間，實實在在地投入自然環境，認認真真地思考生命價值。另外，「已讀不回讀書組」嚴選好書共讀，配合實踐課，希望交換彼此想法的同時，可以一起實踐美好的價值，在洪流中彼此激勵。「食物研習室」更是相當有意思，從種、養、製、買到煮食，與食物一起經歷它的旅程，過往曾製作傳統泡菜、懷石料理等。書院邀請專人教導參加者檢視食物的「內涵」，一起學習「如何食」，令「食」這回事，不只是一個慣性的消耗動作，更是一種生活藝術、一種感恩練習。

特別活動

今年年頭，生活書院將與世界自然基金會合辦「走塑年貨市集」，實行「裸買」過年食品用品，謝絕即棄包裝，做節同時避免傷害環境，與所有生命普天同慶。除了走塑地攤，還有走塑概念館、社區走塑站、走塑商戶走訪、惜物再造工作坊和音樂分享等活動，歡迎大家熱鬧！

▶義工阿晞有份協助籌備市集，他認為每年的走塑市集都相當受歡迎，相信今年也不例外。

順帶一題，二月的情人節料理班和三月的智能氣功班現已接受報名，有興趣就不要錯過了。

走塑年貨市集
地點：生活書院 (大埔錦山178號)
日期：2019年1月26-27 日 (六-日)
時間：11am－6pm
聯絡：2638 0053

Appendix 6: IHS copyright form

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1. A summary of 400 words must be included in the thesis.
2. The number of pages for the thesis does not exceed the maximum word count.
3. The thesis is edited for English.

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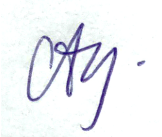
Your Signature(s) : 

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