

SUSTAINABLE ENTREPRENEURSHIP AND OPPORTUNITY IDENTIFICATION:

COMPARING LIVERPOOL AND MACAO

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ABSTRACT

As the field of sustainable entrepreneurship is relatively new, this research aims to explore the process of opportunity identification leading to the creation of sustainable businesses. We also intend to explore respondents' perception and prioritisation of stakeholders. Based on young entrepreneurs in two distinct locations (Liverpool and Macao) we examine how their narratives fit with various theories associated with sustainable entrepreneurship, entrepreneurial opportunity identification and effectuation. The preliminary findings show that entrepreneurs engage in the effectual process during opportunity development. Bootstrapping strategies and effective utilisation of social capital play an important role in the process. Prior entrepreneurial knowledge and sustainability-related knowledge were commonly possessed by these entrepreneurs. The findings also suggest that the entrepreneurs have a narrow perception of their stakeholder network and their impact on those stakeholders. However, many show altruistic attitudes towards others and perceive environmental issues as a threat to human-kind. Implications for policies are proposed to stimulate the growth of more sustainable business in Liverpool and Macao.

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1 EXECUTIVE SUMMARY

- The concept of sustainable entrepreneurship is gaining momentum in academic communities. Social and environmental responsibilities are viewed as means of developing future entrepreneurial potential. Given difficulties associated with access to resources for young entrepreneurs (Hickie, 2011), we suggest that an effectual approach will prove to be the most effective approach to the creation of sustainable businesses (Jones and Li, 2017).
- The effectuation framework suggests that entrepreneurs use resources within their control along self-selected stakeholders who bring in their commitments and constraints to create opportunities together (Sarasvathy, 2001; Wiltbank et al., 2006; Perry et al., 2012). Sarasvathy (2009) proposed five principles for effectuation: Bird-in-hand; affordable loss; crazy quilt; lemonade; pilot-in-the-plan. It is argued that these principles are practised by entrepreneurs during their opportunity development process.
- Factors such as their existing knowledge of sustainability, perception of threats to the environment, altruism and entrepreneurial knowledge (including their enterprising behaviours, attributes and skills) stimulate the identification of sustainable business opportunities (Patzelt and Shepherd, 2010).
- The finding suggests that the process of self-reflection starts internally (step 1), entrepreneurs accumulate and explore resources, information, knowledge and more importantly increase stakeholder membership *via* a series of expanding and converging cycles (step 2). In this process, stakeholders with their specific social capital help shape the goals of the venture leading to self-selected teams committed to the venture (step 3: the crazy quilt principle). This process gathers resources from as well as diversify risks to stakeholders. To some extent, this was a bootstrapping strategy was clearly used by entrepreneurs to develop their perception of 'affordable loss' (step 3).
- At the core of this process, entrepreneurs take uncertainty as a resources and trigger (lemonade principle) to support the discovery of ideas, direction and insight to help them evolve their means, goals, and stakeholders (step 4). Towards the end, with committed stakeholders, they act towards their goals (step 5).
- An important factor in this process is the use of a logic that assumes the role of human being can determine the shape of things to come. The effectuation principle is called 'pilot-in-the-plane' and reflects the concept of internal locus of control which is a belief that our fate is control by our actions and it is not determined by external factors (Rotter, 1966). We suggest that the acceptance of such logic is supported by their existing attitudes, knowledge and experience of sustainability and entrepreneurship.
- The entire process grows organically (lemonade principle) and outcomes derived from the process provide further stimuli for self-reflection to help refine the business and future actions (feedback loops).
- The findings also suggest that these entrepreneurs have a narrow perception of their stakeholder network and their impact on stakeholders. Although these entrepreneurs are in business for financial gain, many demonstrate altruistic attitudes towards others and perceive environmental issues as a threat to human-kind. Moreover, prior knowledge of entrepreneurship and sustainability are common among the entrepreneurs in this study and we suggest that these are important element in opportunity identification.
- There are implications for policy-makers to stimulate the growth of sustainable entrepreneurs among young entrepreneurs. For example, more interventions to enhance sustainability and entrepreneurial knowledge in schools and higher education. Stimulating greater self-reflection amongst young people during the effectuation process will promote a focus on sustainable business opportunities. Also, expanding nascent entrepreneurs' understanding of wider stakeholder networks is a key element of better enterprise education. Support for opportunity creation and development should focus on the triple-bottom-line (profit, people and planet).

2 AIMS AND OBJECTIVES OF THE STUDY

The concept of sustainable entrepreneurship is gaining momentum in academic communities. Social and environmental responsibilities are viewed as means of developing future entrepreneurial potential (Cohen and Winn, 2007; Dean and McMullen, 2007; Hockerts and Wüstenhagen, 2010; Pacheco et al., 2010; York and Venkataramam, 2010). This research was designed to explore the process of opportunity identification leading to the creation of sustainable businesses by drawing on existing theories. For example, one of the most significant research problems in entrepreneurship concerns the debate about whether opportunities are identified (Shane, 2003; Arend et al., 2015) or created (Saravathy, 2001). Recently, Ramoglou and Tsang (2015) attempt to reconcile these conflicting positions, which they suggest have been 'hindered by inadequate theorizing and overpowered by empiricist preconceptions'. Given difficulties associated with access to resources for young entrepreneurs (Hickie, 2011), we suggest that an effectual approach will prove to be the most effective approach to the creation of sustainable businesses established by young entrepreneurs (Jones and Li, 2017).

Advocates of stakeholder theory suggest that businesses should not only focus on shareholder value (Freeman, 1984). However, this leads to a number of questions: are the interests of a wider range of stakeholders a concern for young entrepreneurs establishing sustainable businesses? How much do they know about the depth and breadth of their stakeholders? How do they balance the so called three pillars of sustainability (economic, social and environmental bottom-line)? Which pillar is more important and what factors influence entrepreneurial choices? For example, Lourenço et al. (2013a) suggest that economically-driven entrepreneurs focus on economic sustainability whereas sustainability-driven entrepreneurs are more concerned to develop solutions which have an equal balance between the three pillars. This study aims to explore these questions in order to shed more light on the nature of opportunity identification and development among young entrepreneurs establishing sustainable and economically-driven business start-ups.

In essence, based on young entrepreneurs in two distinct locations, Liverpool, UK and Macao, China. We examine how their narratives fit with various theories associated with sustainable entrepreneurship, entrepreneurial opportunity identification and effectuation. These locations have comparable populations, policies to stimulate young entrepreneurship, as well as a desire to promote the sustainability agenda. Nevertheless, there are differences between these locations. Stimulating young entrepreneurship is a policy aimed at tackling the shortage of good quality graduate jobs (Hickie, 2011) and reducing youth unemployment in the UK. However, policies to stimulate young entrepreneurship in Macao focus on economic diversification and broadening the career perspectives of younger people. Currently Macao is heavily reliant on taxation income from the tourism and

hospitality sectors. In Macao understanding the importance of sustainability and the associated technologies lags major cities in developed countries. The main objective of this study is to compare the differences between Liverpool and Macao in terms of how young entrepreneurs value develop sustainable business opportunities.

3 BACKGROUND (LITERATURE REVIEW)

3.1 Sustainable development

The concept of sustainability is an increasingly important topic for business schools worldwide (Hall et al., 2010). The most widely used definition comes from the Brundtland Commission, led by the former Norwegian Prime Minister, Gro Harlem Brundtland. Sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987). To meet the goal of sustainable development, it is essential to give equal importance to the economic, social and environmental bottom-lines (Elkington, 1999; Haugh and Talwar, 2010). Nevertheless, the field is still fragmented and concepts undefined. It is noted recently that there are around three hundred definitions of sustainability and sustainable development (Santillo, 2017). Essentially, the core idea of sustainable development is that all natural systems have limits and in order to sustain the wellbeing of human beings for generations to come, it is necessary to live within those limits (Hall et al., 2010)

Initially environmental and social concerns were perceived by the business world as adding costs by imposing legal and ethical burdens (Starik et al., 2010). However, many organizations now recognize the need to incorporate sustainable business practices based on the principles of the triple-bottom-line (Gast et al., 2017). It is common to find a section on sustainability, environmental protection and/or corporate social responsibility on most large firm's websites, in their annual reports, and many organisations have created jobs dedicated to improving sustainability (Hall et al., 2010). Within Universities, there are new faculties and programmes with a focus on sustainability; business schools have chairs, institutes and centres for sustainability (Hall et al., 2010). Mainstream management and entrepreneurship journals, as well as journals from other disciplines, have an increasing amount of papers on sustainability (Hall *et al.*, 2010).

3.2 Sustainable entrepreneurship

A recent systematic literature review of sustainable entrepreneurship in journals between 1996 and 2015 indicated an upturn in publications (Gast et al., 2017). However, the field of sustainable

entrepreneurship is still emerging where the concept and core assumptions remain ill-defined (Shepherd and Patzelt, 2011). The main obstacle is that scholars are still trying to understand the role of entrepreneurship in sustainable development and how it helps tackle environmental issues (Hall et al., 2010). However, there are many sustainability-related entrepreneurship concepts in the literature. For example, ecopreneurship, environmental entrepreneurship, environpreneurship, green entrepreneurship, social entrepreneurship, social enterprise and sustainable entrepreneurship (Gast et al., 2017). It is suggested that environmental entrepreneurs are motivated to earn financial benefits by tackling environmental and ecological degradation. Whereas, sustainable entrepreneurs aim to tackle environmental and societal problem *via* their entrepreneurial activities (Gast et al., 2017).

In order to clarify the concept of sustainable entrepreneurship, it is suggested that sustainability can be divided into two aspects (Shepherd and Patzelt, 2011): what is to be sustained and what is to be developed? (Parris and Kates, 2003; Leiserowitz et al., 2006). What is to be sustained consists of nature, life support and community (Parris and Kates, 2003; Leiserowitz et al., 2006). Nature includes the earth, biodiversity and the ecosystem which forms part of the overall physical world. Human existence and life on earth are threatened if nature is not preserved and sustained. Life support is represented by ecosystem services, resources and environment which provide important life support services to humankind. It was estimated that these services were worth US\$33 trillion per year in 1995 and US\$125 trillion in 2011 (Costanza et al., 1997; Costanza et al., 2014). In order to sustain life support, it is necessary to preserve nature. Community relates to a “complex web of relationships between a set of individuals who share values, norms, meanings, history, and identify” (Shepherd and Patzelt, 2011, 139). The essence of communities are their distinct cultures, groups and place. Sustainable entrepreneurship aims to create mechanisms for sustaining nature, life support and community (Shepherd and Patzelt, 2011). Economic gains focus on the generation of wealth, employment, increasing gross national product, development of productive sectors and consumerism. Non-economic gains relate to human development which focus on child survival, life expectancy, education, equity and equal opportunities (Parris and Kates, 2003; Leiserowitz et al., 2006). Moreover, on a collective level, non-economic gains also include social development to enhance the wellbeing of nations, regions, states, institutions and to enhance social capital and community ties. For example, enhancing life-satisfaction and happiness, protection against security threats from outside and inside, the rate of violence and corruption and interpersonal relationship.

Shepherd and Patzelt (2011: 140) combine Venkataraman's (1997) definition of entrepreneurship with the concept of sustainable development: “sustainable entrepreneurship is focused on the preservation of nature, life support, and community in the pursuit of perceived opportunities to bring into existence future products, processes, and services for gain, where gain is

broadly construed to include economic and non-economic gains to individuals, the economy and society". Concepts such as ecopreneurship, social entrepreneurship and corporate social responsibility are related but not necessarily sustainable entrepreneurship. Some suggest that entrepreneurs can discover or create opportunities by tackling social and/or environmental issues to generate financial wealth based on market failure (Cohen and Winn, 2007; Dean and McMullen, 2007). The process of opportunity development relies on entrepreneurs combining information and resources to create innovations to exploit market opportunities where information asymmetries play a strong role (Cohen and Winn, 2007; Patzelt and Shepherd, 2010); and to develop longer-term competitive advantage (Jenkins, 2009; Parrish, 2010; Clercq and Voronov, 2011). Others adopt an institutional theory perspective to suggest ways for entrepreneurs to create better conditions to develop and grow markets for sustainable businesses (Pacheco et al., 2010; York and Venkataramam, 2010). Alternatively, new entrants can disrupt the market with innovatory practices that begin to influence incumbent enterprises to grow the market for sustainable businesses, products and services (Hockerts and Wüstenhagen, 2010; York and Venkataramam, 2010). Motivating students to consider sustainable opportunities *via* entrepreneurship education have also been discussed (Lourenço, 2013; Lourenço et al., 2013a). Currently, the concept of sustainable entrepreneurship is gaining momentum in the academic community. Social and environmental responsibilities are viewed as means of developing future entrepreneurial potential (Lourenço, 2013; Lourenço et al., 2013a).

There is a gap in literature exploring the process of opportunity identification and development by examining entrepreneurial attitudes towards stakeholders and exploring their understanding of their stakeholders. To what extent do sustainable entrepreneurs have a concern for a wider-range of stakeholders? How do they balance the so called three pillars of sustainability (economic, social and environmental bottom-line)? Which pillar is more important and what factors influence entrepreneurial choices? For example, Lourenço et al. (2013a) suggest that economically-driven entrepreneurs will focus on economic sustainability whereas sustainability-driven entrepreneurs are more concerned to develop solutions which have an equal balance between the three pillars.

3.3 Young entrepreneurs and effectuation

Young entrepreneurs are defined as business founders below the age of 25 (Hulsink and Koek, 2014). In the 21st century with more competition in the job market and an increase in teaching entrepreneurship in higher education (Jones et al., 2014), many young people are considering setting-up their own businesses (Hickie, 2011). For most young entrepreneurs their families are their earliest and most immediate influence (Edelman et al., 2016) with some growing-up within entrepreneurial families (Hickie, 2011) where they learn about business creation through parents, close relatives and

friends (Hulsink and Koek, 2014). Existing literature suggests that it is riskier for young people to become entrepreneurs due to their lack of business experience, limited financial support and weak credibility (Conway, 2014) as well as a lack of creativity (Lorrain and Raymond, 1991). However, others feel that that young people are suited to engage in entrepreneurship (Edelman et al., 2016). Since many new graduates cannot trade their degree for a well-paid job, increasingly universities are encouraging students to consider careers in entrepreneurship (Lourenço et al., 2013b). Young entrepreneurs must develop strategies such as bootstrapping (Jones and Jayawarna, 2010) and effectuation (Sarasvathy, 2001) to overcome financial constraints and mobilise family and friends (Hulsink and Koek, 2014).

Sarasvathy (2001) developed effectuation theory as an alternative to what she describes as the 'causal' approach (Shane, 2000). Effectuation theory suggests entrepreneurs use resources within their control along with self-selected stakeholders who bring in their commitments and constraints to create opportunities (Sarasvathy, 2001; Wiltbank et al., 2006; Perry et al., 2012). Sarasvathy (2009) proposed five principles for effectuation: Bird-in-hand; affordable loss; crazy quilt; lemonade; pilot-in-the-plan. It is suggested that these five principles are enacted through two concurrent cycle (Sarasvathy and Dew, 2005): expanding means and converging goals. During the expanding cycle, entrepreneurs increase stakeholder membership in their effectual networks in order to increase the resources available to new ventures. The convergent cycle accumulates constraints on the venture that will eventually form specific goals created by the self-selected stakeholders who will be committed to the venture.

In recent years literature adopting effectuation theory as a framework for the study of entrepreneurship has grown rapidly. Read et al. (2016) in response to criticism of effectuation by Arend et al. (2015) identified almost 300 research papers based on Sarasvathy's (2001) concept. For example, Jones and Li (2017) discuss the case of two young brothers who established a business while still in school. The business opportunity was 'created' rather than planned and within six years, the business had grown from a schoolboy hobby into a business with an annual turnover of £4.5 million. The case study provides a detailed examination of the microprocesses underpinning an effectual approach to entrepreneuring a start-up business (Sarasvathy, 2001; Steyaert, 2004; Rondi, 2015). It is also acknowledged that the effectual approach is a more practical basis of entrepreneurship education than the traditional causal approach based on preparing a business plan (Jones et al., 2014).

4 RESEARCH METHODS

4.1 Research Context

This study takes an exploratory approach and examines a small cohort of young entrepreneurs (between 20 and 30 years of age when they started the first business) in Liverpool (UK) and in Macao (China) to better understand the process of opportunity identification in the area of sustainable entrepreneurship. Both Liverpool and Macao have policies to stimulate young entrepreneurship as well as a desire to promote the sustainability agenda. Nevertheless, there are differences between these locations in terms of promoting young entrepreneurship. In the UK young entrepreneurship is generally promoted as a policy to tackle the shortage of good quality graduate jobs (Hickie, 2011) and reduce youth unemployment. Macao, the Las Vegas of Asia, promotes youth entrepreneurship to stimulate economic diversification and broaden the career opportunities for young people. Although unemployment in Macao is relatively low, the City is heavily reliant on the tourism and hospitality sectors. Revenue from gaming accounts for 85% of total tax income in the City. Knowledge and exposure to sustainability concepts and technologies in Macao lags major cities in developed countries including the U.K. Although Macao has its unique characteristics when it comes to entrepreneurship, it is under-researched, and no comparative research has carried out to identify how the concept of sustainable entrepreneurship varies with the West. Hence this study will aim to compare findings from Liverpool and Macao to shed light into how young entrepreneurs value sustainability and develop opportunities in these two locations. The finding will contribute to the area of entrepreneurial research and practice communities by capturing and depicting the processes of entrepreneurs from contrasting locations to inform future policies as well as theory development.

4.2 Research Design

Due to limited research on sustainable entrepreneurship this exploratory study adopts a qualitative research method to investigate young entrepreneurs who have recently established new businesses based on the principles of sustainable entrepreneurship. Rather than aiming at generalisability, this study is designed to further our understanding of sustainable entrepreneurship amongst young entrepreneurs. Individual interviews were chosen over focus group as they provided the opportunity for each individual (entrepreneur) to share their business start-up experiences and their views on sustainable entrepreneurship without external influence.

In total, the researcher identified 10 young entrepreneurs in Liverpool and Macao using existing networks in each location. Young entrepreneurs were identified by the researchers, in the

first instance, using purposive sampling to identify entrepreneurs who started a sustainable or non-sustainable business in both locations. The criteria for the selection were as follows:

- 1) Each entrepreneur had either started a sustainable/green or non-sustainable business;
- 2) The entrepreneurs were under the age of 30 when they started the businesses (to be considered as young entrepreneurs)

A total of 20 semi-structured interviews with young entrepreneurs were conducted, including five conventional start-ups in each location (see Appendix 3: Interview schedule). Each interview lasted between one-hour and one-hour and thirty minutes. All interviews were audio recorded and transcribed. Interview protocol was produced in advance and the focus of the interviews was: a) the young entrepreneurs' opportunity process; b) the support and barriers associated to the entrepreneurial process; c) their attitudes towards young entrepreneurship; d) their attitudes and perceptions of their contribution towards multiple stakeholders via their entrepreneurial actions. Thematic analysis and content analysis were conducted to analyse the data generated from the interviews to draw out key views and findings. Although a total of 20 interviews were conducted, only 10 interviews (with the sustainable entrepreneurs) are used for this report due to the sheer size of the data set. This report primarily explores the entrepreneurs who started sustainable business in terms of their process of opportunity identification and perceptions towards stakeholder contribution. The characteristics of each interviewee are depicted in Table 1.

Interviewee and age	Age when started	Gender / Family status	Education	Business nature	Sustaining	Developing	Staff / Turnover in GBP
1. Ms. MH Macao 29 YO	29	F / Not married	Polytechnic Institute of Macau, Bachelor in Law	Online platform (rental of products and services)	Concept of shared economy: reduce consumption and disposal of unwanted goods, encourage reuse and to extend the life of products	Create opportunities for anyone to offer product and services to the public (social development), personal economic-gains	2 partners / under one £100,000
2. Mr. GC Macao 32 YO	30	M / Not married	Universidade Nova de Lisboa, Faculdade de Ciências e Tecnologia, Bachelor in Computer Science and Engineering	Diversified portfolio of business (IT services, webdesign, phone application). Has a company offering green packaging products.	Profit sharing scheme for his biodegradable plastic bags where shops would stock and sell the bags to consumers	Profit sharing with collaborators (economic-gains), personal economic-gains	1 owner and 1 PT employee / under one £100,000
3. Mr. SC Macao 25 YO	24	M / Not married	The Chinese University of Hong Kong, bachelor in Environmental Science	Workshops, tours and research	Sustainability activities and workshops such as eco-tours / sustainability research	Environmental education (social development) / creating employment opportunity for environmentalists (social development), personal economic-gains	2 partners and 3 employees / under one £100,000
4. Mr. KL Macao 28 YO	27	M / Married with children	University of Macau and Jinan University, bachelor and Master in Media Studies	Construction material with green line of product	Promoting and selling green-tiles	Personal economic-gains	3 partners and 2 employees / under 3 million
5. Mr. AC Macao 36 YO	30	M / Married with children	The Hong Kong University, bachelor and Master in Mechanical Engineering, Diploma in Finance	Diverse portfolio: Property development, property management and services, marketing, a line of green building design and consultancy service	Green building design, green building certification and consultancy	Personal economic-gains	undisclosed
6. MS. GP U.K. 33 YO	30 (first business startup at 14)	F / Married with children	University in Brazil, Bachelor Degree in Design	Women shoes	Utilises registered green suppliers and manufacturers (Brazil)	Ensures fair wages to workers in Brazil (social development); Personal economic-gains	1 owner-designer, with suppliers in Brazil / under one £100,000
7. Mr. J U.K. 24 YO	22	M / Not married	University of Liverpool, studied Economics	Hand woven handbags	Aims to source most processes and material locally, assembled locally	Fair pay schemes to the Chinese workers; bag for bag scheme to offer education material to children in China (social development); personal economic-gains	2 partners (sister only PT) / undisclosed
8. Mr. P U.K. 25 YO	23 (first business startup at 17)	M / undisclosed	University of Liverpool, PhD in Microengineering	Urban farms, aquaponics, workshops	Grow locally, minimise footprints, sustainable food	Education (social development); personal economic-gains	2 partners (sister only PT) / under one £100,000
9. Mrs. GR U.K. 37 YO	30	F / undisclosed	HND on Spatial design	sustainable modular building	Sustainable design; sustainable product; sustainable sources and material	Efficient design leading to savings on electricity consumption to consumers (economic gains); personal economic-gains	3 employees and 7 self-employed contractors / £800,000
10. Mr GM U.K. 38 YO	28	M / Married with children	Uteesside University, bachelor in Design Marketing	Sustainable gift (trees)	Sell tree related products to consumers and also as corporate gifts; plantation of trees as gift	personal economic-gains	3 employees / £400,000

Table 1 - Characteristics of the interviewees

5 THE FINDINGS

5.1 Sustainable entrepreneurship

Following the definition of sustainable entrepreneurship (Shepherd and Patzelt, 2011), five out of ten entrepreneurs fit with the idea of sustainable businesses since these are based on opportunities to generate economic gain whilst having plans to sustain the environment and to develop non-economic gains (interviewee 1, 3, 6, 7 and 8). The remaining entrepreneurs have their business opportunities designed to generate economic gain whilst sustaining the environment only and can be defined as 'green entrepreneurs, ecopreneurs or environmental entrepreneurs' (Table 1).

Entrepreneurial opportunities can be recognised, discovered or created (Sarasvathy *et al.*, 2010). Opportunities are recognised when entrepreneur bring together supply and demand to exploit an existing market. Opportunities are discovered when either supply or demand exist and the entrepreneur has to provide the missing aspect. An opportunity is created when neither supply nor demand exist and entrepreneurs must generate a product or service for a non-existent market. For example, interviewees 1 and 5 recognised their opportunities. Interviewee 1 obtained the licenced to use a well-established online platform (supply) to serve a local market demanding an online platform to classify old goods for sale or rent. Interviewees 3, 4 and 10 discovered their opportunities; interviewee 10 is repackaging the supply of tree products to create a demand for sustainable gifts. Interviewees 2, 5 to 9, created their opportunities; interviewee 9 developed sustainable modular buildings (supply) to create demand in the UK. Among our sample, opportunities are influenced by a trend, gap, need and/or problem found in the marketplace and/or industry in general (Table 2).

All respondents were trying to target 'market failure or market imperfection' (Cohen and Winn, 2007; Dean and McMullen, 2007) with a better product or service. For example, interviewee 1 promotes a 'shared economy' to combat excessive waste as a result of business activity. Interviewee 8 aims to create a sustainable food production system with the use of aquaponics to minimise food miles and reduce the associated carbon footprint. Most interviewees expressed the view that 'sustainability' within their businesses helped create 'competitive advantage' (Jenkins, 2009; Parrish, 2010; Clercq and Voronov, 2011) and eventually would help to sustain their firms in the longer-term (Table 2).

	2BL or 3BL	Opportunity	Nature of opportunity	Market Failure	Market development	Competitive advantage	Institutional pressure	Institutional entrepreneurship
1. Ms. MH (Macao)	3BL	Recognise	Trend, gap, need	Better system: service economy	Niche service	N/A	N/A	N/A
2. Mr. GC (Macao)	2BL	Create	Trend	Better product	Niche product	green/shared profit	Regulative and incentives	All types
3. Mr. SC (Macao)	3BL	Discovery (supply>demand)	Gap, trend	Better product and service	Niche product	N/A	N/A	Cognitive and normative
4. Mr. KL (Macao)	2BL	Discovery (supply>demand)	Gap, trend	Better product	Niche product	New range	N/A	Cognitive and normative
5. Mr. AC (Macao)	2BL	Recognise	Gap, trend	Better service	Green certification and green building design	Exclusive service	Regulative, Market and Industry	Regulative
6. Ms. GP (U.K.)	3BL	Create	N/A	Better product	Niche product	Sustainable fashion and supplier	N/A	N/A
7. Mr. J (U.K.)	3BL	Create	N/A	Better product	Niche product	Heritage	N/A	N/A
8. Mr. P (U.K.)	3BL	Create	N/A	Better product	Niche product and services	N/A	N/A	N/A
9. Mrs G (U.K.)	2BL	Create	Trend, market opportunity, problem	Better product	Niche product	Lead by example in sustainable design	N/A	Aim to change the industry and is a leading company in the field
10> Mr GM (U.K.)	2BL	Discovery (supply>demand)	Gap, problem	Better product	Niche product	Better alternative product	N/A	N/A

Table 2 - Nature of opportunities

5.2 Market development and institutional entrepreneurship

All respondents aimed to develop a market for niche products/services. Interviewee 2 is developing a market for biodegradable food packaging and bags; interviewee 3 is developing a market for eco-tours; interviewee 6 is developing a market for aquaponics products/services. There are five institutional entrepreneurs (interviewee 2, 3, 4, 5 and 9) with aims to facilitate changes in existing institutions to pave way for their niche businesses. Interviewee 2 engaged in talks with multiple governmental departments, created Facebook community to educate the public, had exposure on media outlets such as television, digital channels, radio, magazine and newspaper to stimulate institutional change (Table 2). Institutional entrepreneurs have a role to play by influencing regulatory change, creating incentives and changing social norms to build a more favourable environment for sustainable businesses to become competitive (Pacheco et al., 2010; York and Venkataramam, 2010). This process has the potential to attract incumbent enterprises to follow the footsteps of the new entrants (sustainable businesses) to work towards sustainability as the opportunity becomes more attractive (Hockerts and Wüstenhagen, 2010). Interviewee 9 reflects this particular point as the entrepreneur emphasised that she wants to revolutionise the industry and to become the driving force behind the sustainability movement.

5.3 Knowledge and experience

According to Patzelt and Shepherd (2010), recognising opportunities for sustainable development can be influenced by knowledge of sustainability, perception of environmental threats, altruism or entrepreneurial knowledge. Knowledge related to sustainability can be acquired *via* education, experience or self-interest. Amongst our sample, the level of education, experience, entrepreneurial and sustainability knowledge was, not surprisingly, very high and up-to-date. Moreover, most interviewee had an understanding of current threats to the environment and demonstrated altruist values underpinning their businesses (Table 3).

	Experience	Education	Entrepreneurial knowledge	Knowledge SD	Information asymmetry	Researching and business plan	Perception of environmental threat	Altruism towards others
1. Ms. MH (Macao)	Irrelevant	Irrelevant	No	Common sense	A tested online platform	Visits and internet	N/A	N/A
2. Mr. GC (Macao)	Irrelevant	Irrelevant	Business start-ups	Enthusiast	Biodegradable products	Visits and internet	Yes	Help the world and city
3. Mr. SC (Macao)	Relevant	Relevant	Entrepreneurship courses	Education and experience	Knowledge gained from former employers in Hong Kong	Research	Yes	Help the world and city
4. Mr. KL (Macao)	Relevant	Irrelevant	Business start-ups	No	Product from Japan	Visits	Yes	Help the world and city
5. Mr. AC (Macao)	Relevant	Relevant	Business start-ups	Education and experience	Accredited Training from China	Courses and Certification	Yes	N/A
6. Ms. GP (U.K.)	Relevant	Relevant	Business start-ups	Experience	Sustainable supplier from Brazil	Visits and internet	N/A	Fairness to workers
7. Mr. J (U.K.)	Irrelevant but family runs takeaway business	Relevant (in economics)	Family business	No	Technique	Business plan, visits and internet	N/A	Fairness to workers, help rural people and their children
8. Mr. P (U.K.)	Relevant	Relevant	Business start-ups	Education	PhD, landscaping and aquaponics knowledge	Business plan	Yes	N/A
9. Mrs G (U.K.)	Relevant	Relevant	Courses and previous projects	Education and experience	Sustainable design knowledge	Business plan	Yes	Creating less impact on the environment and society
10> Mr GM (U.K.)	Irrelevant	Relevant (joined many startup programmes)	Business start-ups and courses	Experience	Knowledge of trees	Business plan	Yes	Creating less impact on the environment and society

Table 3 - Prior knowledge, experience, preparation and attitudes

Undertaking research particularly *via* the internet was common amongst all ten respondents. However, only four entrepreneurs developed a conventional business plan (Table 3). ‘Information

asymmetry' (Cohen and Winn, 2007; Patzelt and Shepherd, 2010) plays a role in their identification of entrepreneurial opportunities. Interviewee 1 tested a successful platform from Hong Kong; interviewee 5 established the only company in Macao offering green building certification. In summary, previous knowledge, experience and information asymmetry played an important role along with the attitudes and perception of these young entrepreneurs towards their entrepreneurial opportunities (Table 3).

5.4 Effectuation

While it is evident that effectuation plays an important role in the entrepreneurial process (Sarasvathy, 2009), the exact nature of the process differed among the young entrepreneurs in this study. The cycle where entrepreneurs expand their network of stakeholders is evident amongst all our respondents (except 1 and 7). These entrepreneurs utilised the process to expand their network, knowledge and resources leading to formalisation of their business opportunity (converging cycle). Interviewee 3 joined many voluntary groups, social network and events, and also strategically chose a company with like-minded individuals to build his effectuation network (Table 4 and Appendix 1: Effectuation quotes).

The five effectuation principles were evident in the opportunity development process for all ten respondents. In relationship to 'bird-in-hand', there was a very strong focus "what can I do?" (means at hand) rather than 'what should I do?' (predictive analysis) at the start of their entrepreneurial journeys. These young entrepreneurs looked at who they are (identity) leading to knowing what they want to do. These questions later led them to examine what they can do to make things happen by exploring whom they know (network) and what they know (knowledge). This aspect was the springboard for the expanding cycle where their knowledge and network have been purposively enhanced (Table 4 and Appendix 1: Effectuation quotes).

All respondents applied the 'lemonade' principle, meaning that they were willing to accept uncertainty as a key element of entrepreneurship. Similarly, they believed in their ability to shape the future. To some extent, this is the pilot-in-the-plane principle which is a logic that underpins the idea that each individual is in control of their own destiny. During the period of expanding and converging cycles, the principle of 'crazy quilt' was practised by all respondents (except interviewee 6): interviewees 1, 7 and 10 created partnerships with close friends or family member; interviewees 2, 3, 4, 5, 8 and 9 strategically formed partnership with skilled and relevant practitioners. In summary, there are two types of partnership - one based on relationships with those close to the entrepreneur and

the other is more strategic based on relevance and utility to the business (Table 4 and Appendix 1: Effectuation quotes).

	Bird-in-hand	Lemonade	Affordable loss	Crazy quilt	Pilot-in-plane	Expand cycle	Converge cycle	Capital	Bootstrap	Investors
1. Ms. MH (Macao)	Yes	Yes	Not big investment	With partner	Yes	N/A	Yes	Personal	Office space from partner	No
2. Mr. GC (Macao)	Yes	Yes	Not big investment	Client/partner	Yes	Network and knowledge	Still evolving	Personal	Storage at people's house	No
3. Mr. SC (Macao)	Yes	Yes	Develop while on salary	Former employer	Yes	Network and knowledge	Still evolving	Partner	Developing business while on salary	No
4. Mr. KL (Macao)	Yes	Yes	Not big investment	Former employer and ex-colleague	Yes	Network and knowledge	Yes	Personal with partners	Does not need to buy any stock, just need to order from supplier. Develop green line along side existing business model.	No
5. Mr. AC (Macao)	Yes	Yes	Not big investment	ex-colleague	Yes	Network and knowledge	Yes	Personal with partners	Develop a new line of service alongside the existing business model.	No
6. Ms. GP (U.K.)	Yes	Yes	N/A	Avoid having partners or investors due to past experiences	Yes	Network and knowledge	Yes	Personal	N/A	Yes in the past (led to failure)
7. Mr. J (U.K.)	Yes	Yes	N/A	With sister	Yes	N/A	Still evolving	Personal (failed to get investor)	N/A	Failed
8. Mr. P (U.K.)	Yes	Yes	Not big investment	With Partner (PhD students)	Yes	Network	Still evolving	From winning grants and funds	Grants, funds and obtaining free space to test ideas	No
9. Mrs G (U.K.)	Yes	Yes	N/A	Business partners and former employer and friends	N/A	Network	Yes	Personal, partners and investors	Many people who loved the idea help in the process; got dragon's den investment	Yes
10> Mr GM (U.K.)	Yes	Yes	N/A	Girlfriend later became wife	Yes	Network and knowledge	Yes	Personal, grants, funds	Grants, funds and wife support	No

Table 4 - Effectuation

The principle of 'affordable loss' was expressed by all five respondents from Macao and one from Liverpool (interviewee 8). Among these six entrepreneurs, personal financial investment was minimal and, therefore, limited exposure to risk. As a result, most respondents engaged in bootstrapping activities during the opportunity development process (except interviewee 6 and 7). For example, interviewee 1 managed to get free office space from her partner and interviewee 2 used

his friend's house to store products; most used their personal savings to support the start-up. Respondents 3 and 9 had external investment while 8 and 10 relied on winning grants and start-up funds to support the initial phase of their venture (Table 4 and Appendix 1: Effectuation quotes).

5.5 Perception of stakeholders

The stakeholder concept generally refers to businesses with wider responsibilities than economic performance (Gonzalez-Padron et al., 2016). The findings in this research show that the sustainable entrepreneurs believe they have strong responsibilities towards environmental, social and economic aspects of sustainability, although the extent of this belief varies. When asked about the impact on stakeholders, their responses largely highlighted the positive outcomes from their business activities. Customers were perceived as the major stakeholders and their needs were usually the priority (Appendix 2: Stakeholder perception quotes).

Some respondents were keen to promote the environmental beliefs and focus on educating others to protect the environment: interviewee 1 advocates care for the environment by providing rental services *via* an online platform; interviewee 2 also shares similar views through his biodegradable food packaging and cutlery business by highlighting the need to protect the environment; interviewee 9 runs a sustainable conservatory manufacturing business to promote environmental awareness; interviewee 3 encourage people through various workshops to consider environment protection by recycling existing resources which will in turn benefit the existing and future generation.

Sustainable entrepreneurs have specific social and environmental purposes that have been integrated into their core business models (Porter and Kramer, 2006). Some sustainable entrepreneurs are more aware of their wider social contribution to society. Others respondents stressed the importance of creating an empowering working environment as employee wellbeing contributes to business success. A minority took a more instrumental view; interviewee 5 believed that his business brings benefits to staff by provides stable employment (see Appendix 2: Stakeholder perception quotes). Those entrepreneurs who do not have staff tend to emphasis relationships with their suppliers: interviewee 6 makes sure all the manufacturing process of her products are sustainable, the supply chain she uses is sustainable and she cares about the workers. Interviewee 7 also discusses care for suppliers (artisans), focuses on the social elements of sustainability, i.e. to supply job opportunities and provide fair pay for its workers as the job provides the only income to the artisans' families (Appendix 2: Stakeholder perception quotes).

Maximising well-being is one of the core belief of sustainability. Businesses do not simply find ways to minimise impacts on the environment but also advocate ways to extend people's quality of

life. Interviewee 9's eco-building business is sustainable and encourages people to appreciate the natural environment by blending with nature. For some sustainable entrepreneurs, educating the next generation has been the key focus of their businesses. Interviewee 3 aims to increase the next generation's awareness of the environment and planet through workshops and other activities. This will also strengthen relationships between parents and the children, which in turns benefit the family and society. In another business, Interviewee 7 highlights how business helps to reduce poverty and improve literacy by donating educational materials to children (Appendix 2: Stakeholder perception quotes).

Some respondents also mentioned negative impacts on stakeholders. Respondents 6 and 7 utilize leather and both recognize the environmental and animal welfare issues associated with the production of leather but believe it is the most suitable material for their products (see Appendix 2: Stakeholder perception quotes). Interviewee 9 pointed out the negative impact of stopping importing foreign timber on her timber importer. However, her decision was based on discovery of the devastation caused by overseas loggers and clear-cutting of ancient forests in Canada and Siberia as well as the corruption associated with the certification of timber by regulatory bodies. These undermine the sustainable timber industry and she has implemented a '*zero-foreign timber policy*' ensure her company is making a positive contribution to society (Appendix 2: Stakeholder perception quotes).

6 DISCUSSION

6.1 Effectuation

As the field of sustainable entrepreneurship is still emerging, this study explores the process of opportunity identification leading to the creation of sustainable businesses by drawing on existing theories. We interviewed young entrepreneurs in two distinct locations to examine how their narratives fit with various theories associated with sustainable entrepreneurship, entrepreneurial opportunity and effectuation. Our findings confirm that effectuation (Sarasvathy, 2001) plays an important role in the discovery process as well as development process of sustainable business opportunities (Figure 1). At the early stage of the process, entrepreneurs go through a series of self-reflections (bird-in-hand principle). As reflected in the findings, entrepreneurs explore their own identity, values, concerns and goals. At the same time, they ask themselves 'what do they know?', which leads to the examination of their previous experience and knowledge. Moreover, they also explore "whom do they know?" in order to assess their networks and social capital. Their existing knowledge of sustainability, perceptions of threats to the environment, altruism and entrepreneurial

knowledge (including their enterprising behaviours, attributes and skills) come into play in this process to stimulate the identification of opportunities for sustainable business (Patzelt and Shepherd, 2010). An important element in this process is the use of a logic that assumes that human beings can shape their own futures (pilot-in-the-plane principle). This element reflects the concept of ‘internal locus of control’ which is a belief that our fate is not determined by external factors (Rotter, 1966). We suggest that this logic can be supported by their existing attitudes, knowledge and experience of sustainability and entrepreneurship as these build their self-efficacy and self-beliefs. As reflected in the study, during this process of self-reflection, entrepreneurs embrace uncertainty (Kirzner, 1973) and create value by assembling together unique combinations of resources to stimulate innovation (Schumpeter, 1934). According to effectuation theory, this is known as the ‘lemonade’ principle and it is an important enterprising skill to help entrepreneurs deal with uncertainty in a constructive manner (Figure 1).

During initial self-reflection process, entrepreneurs will derive a direction or initial concept for their business opportunity. Nevertheless, this also comes with a range of new questions that need to be answered and problems that need to be tackled. Our study suggests that entrepreneurs will move to a series of expanding and converging cycles (step 2) to accumulate and explore resources, information, knowledge and more importantly increase stakeholder membership. Interested stakeholders with their specific social capital will help to shape the goals leading to a self-selecting team committed to the venture. This particular activity is known as the ‘crazy quilt’ principle according to the effectuation concept (Saravathy, 2001). The findings suggest that entrepreneurs either purposively select strategic partner(s) to join the venture or select partners who are closely connected to them as a way to gather resources as well as diversifying their risks. To some extent, this is a bootstrapping strategy used by entrepreneurs to minimise risk and to create a sense of ‘affordable loss’. As reflected in the findings, this process subsequently leads to the emergence of ideas, insight and answers to help entrepreneurs to identify their means and goals for the venture (step 4). With committed stakeholders, entrepreneur can take action towards meeting their goals (step 5). The entire process grows organically and any outcomes derived from the process provides further fruits for thought for the process of self-reflection to help further refine the business and future actions via various feedback loops. In summary, enterprising skills and behaviour have important role to play (dealing with uncertainty, self-efficacy, internal-locus-of-control, creativity, networking, communication, researching, reflection) as well as social capital and bootstrapping.

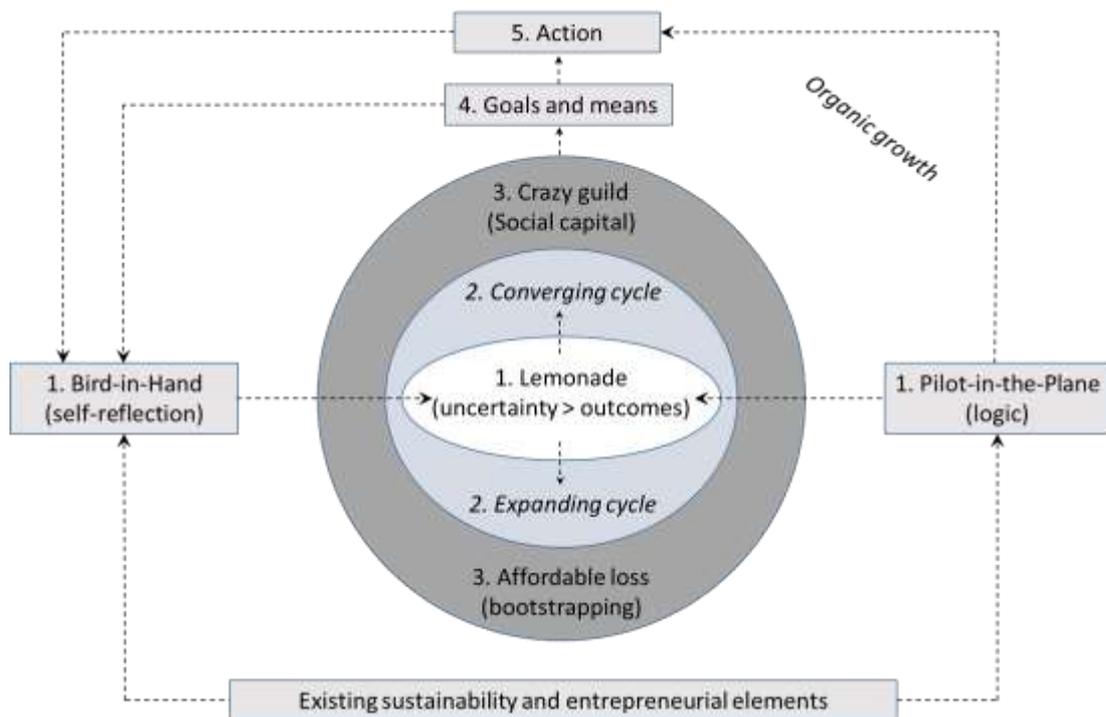


Figure 1 - Sustainable entrepreneurship and effectuation

6.2 Attitudes towards stakeholder

It is worth noting that the entrepreneurs were committed to sustainability when setting up their businesses. This has no doubt impacted on their views about their stakeholder groups. They were able to identify the environmental impacts and contributions through their products / services offering. Some also highlighted the social and economic impacts to the environment in which they live including creating jobs and providing financial income to their employees as well as trying to make the world a better place. The pillar of sustainability has been integrated into their businesses although the extent of this varies from business to business. A possible explanation for this could be their prior understanding of sustainability, which helps to build altruism towards others and perception of environmental threat. With experience and knowledge in entrepreneurship, opportunities for sustainable business becomes more evident and viable Patzelt and Shepherd (2010).

6.3 Differences

There were more similarities than difference among the entrepreneurs in the two locations. Nevertheless, the study suggests that most of the entrepreneurs from the U.K. wrote business plans to help the development process as well as to obtain start-up capital from various sources (investment, grants and fund). In contrary, entrepreneurs from Macao did not produce business plans. One

explanation that a business plan is required to obtain external investment of any kind. Alternatively, we suggest that the level of entrepreneurship education is more established in the U.K. and therefore the need to produce business plan to support the early phase of the development process is seen as common practice. Whereas in Macao, support for entrepreneurship and entrepreneurship education have only started in recent years and for this reason important tools such as business planning are largely ignored.

The findings also suggest that entrepreneurs from Macao are more actively engaged in institutional change (Hockerts and Wüstenhagen, 2010; Pacheco et al., 2010; York and Venkataramam, 2010). Perhaps, as regulations for environmental protection and sustainability are still premature in Macao whereas in the U.K. it is well established. Entrepreneurs in Macao acknowledge their role in pushing for more policies and regulations to create a better business environment for sustainable business to flourish. Moreover, as knowledge of sustainability among the population in Macao is not as established as the U.K., there is a need to educate the market in order to build positive attitudes and norms towards their sustainable business offering.

Finally, entrepreneurs from the U.K. tend to create demand and supply for their business propositions. Entrepreneurs from Macao establish their ideas by having an existing demand or supply which makes the process easier compared to the U.K. This can be explained by the industry lifecycle as the concept of sustainable businesses is relatively new in Macao and entrepreneurs tend to exploit ideas that have been developed elsewhere. Whereas in the U.K., the sustainability agenda is reasonably well-established and there are a number of substantial businesses¹. In order for new businesses to break into the market and industry, entrepreneurs need to innovate and to create newer and better alternatives to compete.

7 CONCLUSIONS

This study aimed to improve our understanding of entrepreneurial opportunity development for sustainable business start-ups amongst young entrepreneurs based in Liverpool and Macao. Moreover, the study also aimed to explore how these entrepreneurs perceive their stakeholders. The results show that there are more similarities than differences between the young entrepreneurs from two locations. Overall, these entrepreneurs have used the effectual process to support the opportunity identification and development process. Given difficulties associated with access to resources for young entrepreneurs (Hickie, 2011), the effectual approach seems to be an effective

¹ See for example, Ecotricity (<http://www.ecotricity.co.uk>) 'created' in 1995 by Dale Vince, well-known as the owner of Forest Green Rovers

way to the creation of sustainable businesses (Jones and Li, 2017). This study shows that the effectual process incorporates many enterprising behaviours, skills and attributes, bootstrapping strategies and effective utilisation of social capital. This study extends the theory of sustainable entrepreneurship by explaining the process of opportunity identification with the effectuation concept (see Figure 1). The findings demonstrate that young entrepreneurs are aware of the key stakeholder groups and how their businesses have contributed to their needs and to society as a whole. The study also highlights the importance of prior knowledge of entrepreneurship and sustainability has on opportunity identification and development.

While we believe this study makes a strong contribution to understanding the importance of sustainable entrepreneurship there are a number of limitations. First, the study is based on a very small sample of just 10 'sustainable' entrepreneurs from Liverpool and Macao. Furthermore, we had considerable difficulty in identifying five appropriate businesses in Liverpool, which suggests that there is no local network of entrepreneurs committed to the sustainability agenda. Ideally, we were intending to compare the 10 sustainable businesses with 10 conventional start-ups founded by young entrepreneurs – but this proved impossible due to problems concerned with identifying the Liverpool sample.

8 RESEARCH OPPORTUNITIES

Over the last fifteen years in the UK (and Macao/China) one of the most significant changes to the in Management/Business Schools has been the growth in the teaching of entrepreneurship and small business management (Gibb, 1993; Winkel et al., 2013; Byrne et al., 2014; Blenker et al., 2015; Klapper and Farber, 2016; Birch et al., 2017). A recent paper by Pittaway et al. (2015) outlines the various organizations involved with the enterprise education agenda. There are numerous papers exploring entrepreneurial intentions and entrepreneurial orientation (Martens et al., 2016; McNally et al., 2016). It is well-established, however, that there is a considerable gap between entrepreneurial intentions and behaviours (Lourenço et al., 2013a). There is surprising little research which examines the experience of student entrepreneurs once they have left higher-education. One of the few studies specifically focusing on young people examined 21 high-growth businesses established by entrepreneurs who were under 30 years of age (Hickie, 2011). As we discuss below, Hickie (2011) found that most of his sample had family members who managed their own firms and all had early work experience while at school. Equally, there is very little research that focuses on green businesses in the UK or China. We believe that this pilot study has provided evidence that starting a sustainable business does create a unique set of problems for those who have limited amounts of business

experience. Therefore, we suggest that there is certainly a research gap related to the topic of sustainable businesses established by young entrepreneurs. However, there is one significant caveat; we had considerable difficulty in identifying five appropriate businesses for the project within Liverpool City Region. This would certainly be something to consider in any future extension of this project. Nevertheless, we believe that sustainable businesses have an important role to play in the development of all major economies and we intend to seek further funding to make a more extensive comparison between sustainable business start-ups in the UK and China.

9 POLICY AND PRACTICAL IMPLICATIONS

There are certainly policy implications which emerge from this project. First, it demonstrates the importance of providing supportive mentoring for young, inexperienced entrepreneurs (see Hulsink and Koek, 2014). As with the majority of young entrepreneurs studied by Hickie (2011) most of the entrepreneurs in this study came from 'business families' where they had been exposed the problems and rewards of managing small firms. The case demonstrates the significance of embedding good habits such as hard-work and persistence during childhood (Jones and Li, 2017). However, support and guidance need not be parental but advice should be available from those who possess a good understanding of the challenges facing young, novice entrepreneurs. Our study also demonstrates the benefits of early work experience in gaining a good understanding of the way in which the world of business works. As Hickie (2011) points out, such experience can be relatively mundane including working in McDonalds (for example) but exposure to customers is crucial in building an understanding of creating appropriate products/services that satisfy the market. The importance of childhood and adolescent human capital in shaping future entrepreneurial careers is confirmed by Jayawarna et al. (2014). We believe that our study also confirms that early exposure to issues associated with sustainability will encourage the development of more focus on 'sustainable' businesses. We are certainly aware of the need for Management/Business Schools to play a role in raising students' awareness of the need to combine sustainability with entrepreneurship as well as the broader business agenda.

Moreover, opportunities to allow entrepreneurs to expand their range of stakeholders should be considered by creating more networking events. Also, various awards, competitions, grants and funding schemes should be considered to encourage entrepreneurs to research and write business plans, to meet and expand their stakeholder network, to accumulate financial capital and resources to mobilize their ideas while bearing minimal financial burden to create a sense of 'affordable loss'.

10 KNOWLEDGE EXCHANGE/TRANSFER

Primarily because of difficulties in identifying an appropriate sample of sustainable businesses (in the UK) we have not so far given a great deal of consideration to the knowledge exchange issues concerned with this topic. However, we certainly are committed to raising the sustainability agenda amongst the academic and policy communities. Initially, we intend to do presentations to academic members of staff within each of our three institutions: Liverpool University, Sheffield University and the Institute for Tourism Studies in Macao. We are also currently exploring the potential for reaching-out to the policy and practitioners communities in a variety of ways. For example, at Liverpool, we are in discussions with the Heseltine Policy Institute, which provides a forum to connect citizens, practitioners, policy-makers and researchers. The Institute brings together academic expertise from across the University of Liverpool to debate critical societal questions. This would be an ideal forum for promoting the outcomes of our research within the Liverpool City Region.

The findings derived from this research will also be shared with key stakeholders such as the Industry and Commerce Association of Macao and other associations supporting entrepreneurial activities in Macao. We hope to build bridges between the U.K. and Macao/China *via* this project as a pathway to more research funding related to younger entrepreneurs establishing sustainable businesses.

11 SPECIFIC OUTCOMES

The first outcome from the project is a paper (Sustainable Entrepreneurship: Opportunity Identification and the Effectuation of Young Entrepreneurs) which will be presented at the 2017 ISBE conference to be held in Belfast (8th and 9th November). We plan to develop this conference paper into a submission to the *International Journal of Entrepreneurial Behaviour and Research* early in 2018. We are also presenting a paper to the Organizational Learning and Knowledge (OLKC) conference, to be held in Liverpool, April 2018 (Young entrepreneurs: learning about sustainable business opportunities). In the longer-term, we plan to develop a paper focusing on the differences between Liverpool and Macao and this paper will be aimed at either *Entrepreneurship & Regional Development* or *Regional Studies*. In addition, we believe that the paper raises number of important issues which will be of interest to various policy communities and we intend to develop a paper for *Environment & Planning C: Government & Policy*.

12 REFERENCES

- Arend, RJ, Sarooghi, H and Burkemper, A (2015) Effectuation as ineffectual? Applying the 3E theory-assessment framework to a proposed new theory of entrepreneurship. *Academy of Management Review* 40(4): 630-651.
- Birch, C, Birch, C, Lichy, J, Lichy, J, Mulholland, G, Mulholland, G, Kachour, M and Kachour, M (2017) An enquiry into potential graduate entrepreneurship: is higher education turning off the pipeline of graduate entrepreneurs? *Journal of Management Development* 36(6): 743-760.
- Blenker, P, Robinson, S and Thrane, C (2015), 'Progression and coherence in enterprise education: an overall framework supporting diversity', in *Entrepreneurial learning: New perspectives in research, education and practice*, eds D Rae and CL Wang, Routledge, Abingdon, p. 134.
- Byrne, J, Fayolle, A and Toutain, O (2014), 'Entrepreneurship Education: What we know and what we need to know', in *Handbook of Research on Small Business and Entrepreneurship*, eds E Chell and M Karataş-Özkan, Edward Elgar, Cheltenham, p. 261.
- Clercq, Dd and Voronov, M (2011) Sustainability in entrepreneurship: A tale of two logic. *International Small Business Journal* 29(4): 322-344.
- Cohen, B and Winn, MI (2007) Market imperfections, opportunity and sustainable entrepreneurship. *Journal of Business Venturing* 22(1): 29-49.
- Conway, C (2014) Supporting Young Entrepreneurs. *The International Journal of Entrepreneurship and Innovation* 5(2): 135-136.
- Costanza, R, d'Arge, R, Groot, RD, Farber, S, Grasso, M, Hannon, B, Limburg, K, Naeem, S, O'Neill, RV, Paruelo, J, Raskin, RG, Sutton, P and Belt, Mvd (1997) The value of the world's ecosystem services and natural capital. *Nature* 387(253-260).
- Costanza, R, Groot, Rd, Sutton, P, Ploeg, Svd, Anderson, SJ, Kubiszewski, I, Farber, S and Turner, RK (2014) Changes in the global value of ecosystem services. *Global environmental change* 26(May): 152-158.
- Dean, TJ and McMullen, JS (2007) Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action. *Journal of Business Venturing* 22(1): 50-76.
- Edelman, LF, Manolova, T, Shirokova, G and Tsukanova, T (2016) The impact of family support on young entrepreneurs' start-up activities. *Journal of Business Venturing* 31(4): 428-448.
- Elkington, J (1999) *Cannibals with forks: The triple bottom line of 21st Century business*. UK: Capstone Publishing Ltd.
- Freeman, RE (1984) *Strategic management: A stakeholder approach*. Boston: Pitman Publishing.

- Gast, J, Gundolf, K and Cesinger, B (2017) Doing business in a green way: A systematic review of the ecological sustainability entrepreneurship literature and future research directions. *Journal of Cleaner Production* 147(March): 44-56.
- Gibb, AA (1993) The enterprise culture and education. *International Small Business Journal* 11(3): 11-34.
- Gonzalez-Padron, TL, Hult, GTM and Ferrell, OC (2016), 'A Stakeholder Marketing Approach to Sustainable Business', in *Marketing in and for a Sustainable Society*, ed. NK Malhotra, Emerald Group Publishing Limited, pp. pp.61 - 101.
- Hall, JK, Daneke, GA and Lenox, MJ (2010) Sustainable development and entrepreneurship: Past contributions and future direction. *Journal of Business Venturing* 25(5): 439-448.
- Haugh, HM and Talwar, A (2010) How do corporations embed sustainability across the organisation? *Academy of Management Learning & Education* 9(3): 384-396.
- Hickie, J (2011) The development of human capital in young entrepreneurs. *Industry and Higher Education* 25(6): 469-481.
- Hockerts, K and Wüstenhagen, R (2010) Greening Goliaths versus emerging Davids - Theorizing about the role of incumbents and new entrants in sustainable entrepreneurship. *Journal of Business Venturing* 25(5): 481-492.
- Hulsink, W and Koek, D (2014) The young, the fast and the furious: a study about the triggers and impediments of youth entrepreneurship. *International Journal of Entrepreneurship and Innovation Management* 18(2-3): 182-209.
- Jayawarna, D, Jones, O and Macpherson, A (2014) Entrepreneurial potential: The role of human and cultural capitals. *International Small Business Journal* 32(8): 918-943.
- Jenkins, H (2009) A 'business opportunity' model of corporate social responsibility for small-and medium-sized enterprises. *Business Ethics: A European Review* 18(1): 21-36.
- Jones, O and Jayawarna, D (2010) Resourcing new businesses: social networks, bootstrapping and firm performance. *Venture Capital* 12(2): 127-152.
- Jones, O and Li, H (2017) Effectual entrepreneuring: sensemaking in a family-based start-up. *Entrepreneurship & Regional Development* 29(5-6): 467-499.
- Jones, O, Macpherson, A and Jayawarna, D (2014) *Resourcing the start-up business: Creating dynamic entrepreneurial learning capabilities*. London: Routledge.
- Kirzner, IM (1973) *Competition and Entrepreneurship*. Chicago, IL: University of Chicago Press.
- Klapper, RG and Farber, VA (2016) In Alain Gibb's footsteps: Evaluating alternative approaches to sustainable enterprise education (SEE). *The International Journal of Management Education* 14(3): 422-439.

- Leiserowitz, AA, Kates, RW and Parris, TM (2006) Sustainability values, attitudes, and behaviors: A review of multinational and global trends. *Annual Review of Environment and Resources* 31(Nov): 413-444.
- Lorrain, J and Raymond, L (1991) Young and older entrepreneurs: an empirical study of difference. *Journal of Small Business & Entrepreneurship* 8(4): 51-61.
- Lourenço, F (2013) To challenge the world view or to flow with it? Teaching sustainable development in business schools. *Business Ethics: A European Review* 22(3): 292-307.
- Lourenço, F, Jones, O and Jayawarna, D (2013a) Promoting sustainable development : The role of entrepreneurship education. *International Small Business Journal* 31(8): 841-865.
- Lourenço, F, Taylor, AG and Taylor, DW (2013b) Integrating 'education for entrepreneurship' in multiple faculties in 'half-the-time' to enhance graduate entrepreneurship. *Journal of Small Business and Enterprise Development* 20(3): 503-525.
- Martens, CDP, Lacerda, FM, Belfort, AC and Freitas, HMRd (2016) Research on entrepreneurial orientation: current status and future agenda. *International Journal of Entrepreneurial Behavior & Research* 22(4): 556-583.
- McNally, JJ, Martin, BC, Honig, B, Bergmann, H and Piperopoulos, P (2016) Toward rigor and parsimony: a primary validation of Kolvereid's (1996) entrepreneurial attitudes scales. *Entrepreneurship & Regional Development* 28(5-6): 358-379.
- Pacheco, DF, Dean, TJ and Payne, D (2010) Escaping the green prison: Entrepreneurship and the creation of opportunities for sustainable development. *Journal of Business Venturing* 25(5): 464-480.
- Parris, TM and Kates, RW (2003) Characterizing and measuring sustainable development. *Annual Review of environment and resources* 28(1): 559-586.
- Parrish, BD (2010) Sustainability-driven entrepreneurship: Principles of organization design. *Journal of Business Venturing* 25(5): 510-523.
- Patzelt, H and Shepherd, DA (2010) Recognizing opportunities for sustainable development. *Entrepreneurship Theory and Practice* First online May 2010, DOI: 10.1111/j.1540-6520.2010.00386.x
- Perry, JT, Chandler, GN and Markova, G (2012) Entrepreneurial effectuation: a review and suggestions for future research. *Entrepreneurship Theory and Practice* 36(4): 837-861.
- Pittaway, LA, Gazzard, J, Shore, A and Williamson, T (2015) Student clubs: experiences in entrepreneurial learning. *Entrepreneurship & Regional Development* 27(3-4): 127-153.

- Porter, ME and Kramer, MR (2006) Strategy & society: The link between competitive advantage and corporate social responsibility. *Harvard Business Review* 84(12): 78-92.
- Ramoglou, S and Tsang, EW (2015) A realist perspective of entrepreneurship: Opportunities as propensities. *Academy of Management Review* 41(3): 410-434.
- Read, S, Sarasvathy, SD, Dew, N and Wiltbank, R (2016) Response to Arend, Sarooghi, and Burkemper (2015): Cocreating effectual entrepreneurship research. *Academy of management Review* 41(3): 528-536.
- Rondi, E (2015), 'Process thinking and the family business', in *Theoretical perspectives on family businesses*, eds M Nordqvist, L Melin, M Waldkirch and G Kumeto, Edward Elgar Publishing, Cheltenham, p. 119.
- Rotter, JB (1966) Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs* 80(1): 600-609.
- Santillo, D (2017) Reclaiming the Definition of Sustainability. *Environmental Science and Pollution Research* 14(1): 60-66.
- Sarasvathy, SD (2001) Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of management Review* 26(2): 243-263.
- Sarasvathy, SD (2009) *Effectuation: Elements of entrepreneurial expertise*. Cheltenham, U.K.: Edward Elgar Publishing.
- Sarasvathy, SD and Dew, N (2005) New market creation through transformation. *Journal of Evolutionary Economics* 15(5): 533-565.
- Sarasvathy, SD, Nicholas Dew, S, Velamuri, R and Venkataraman, S (2010), 'Three views of entrepreneurial opportunity', in *Handbook of entrepreneurship research*, eds ZJ Acs and DB Audretsch, Springer New York, pp. 77-96.
- Schumpeter, JA (1934) *The Theory of Economic Development*. Cambridge, MA.: Harvard University Press.
- Shane, S (2003) *A General Theory of Entrepreneurship: The Individual - Opportunity Nexus*. Cheltenham: Edward Elgar Publishing.
- Shepherd, DA and Patzelt, H (2011) The new field of sustainable entrepreneurship: Studying entrepreneurial action linking "what is to be sustained" with "what is to be developed". *Entrepreneurship Theory and Practice* 35(1): 137-163.
- Starik, M, Rands, G, Marcus, AA and Clark, TS (2010) From the guest editors: In search of sustainability in management education. *Academy of Management Learning & Education* 9(3): 377-383.
- Steyaert, C (2004), 'The Prosaics of Entrepreneurship', in *Narrative and discursive approaches in entrepreneurship: a second movements in entrepreneurship book*, eds D Hjorth and C Steyaert, Edward Elgar, Cheltenham.

- Venkataraman, S (1997), 'The distinctive domain of entrepreneurship research: an editor's perspective', in *Advances in Entrepreneurship, Firm Emergence, and Growth*, eds J Katz and J Brockhaus, JAI Press, Greenwich, CT, pp. 119-138.
- WCED (1987) *Our common future: the world commission on environment and development* UK: Oxford University Press.
- Wiltbank, R, Dew, N, Read, S and Sarasvathy, SD (2006) What to do next? The case for non-predictive strategy. *Strategic Management Journal* 27(10): 981-998.
- Winkel, D, Vanevenhoven, J, Drago, WA and Clements, C (2013), 'The structure and scope of entrepreneurship programs in higher education around the world', in *Entrepreneurial learning: New perspectives in research, education and practice.*, eds D Rae and CL Wang, Routledge, Abingdon, p. 117.
- York, JG and Venkataramam, S (2010) The entrepreneur-environment nexus: uncertainty, innovation, and allocation. *Journal of Business Venturing* 25(5): 449-463.

APPENDIX 1: EFFECTUATION QUOTES

Effectuation	Example of quotes
Expanding cycle	Interviewee 3: "I started to participate in various conservation activities toward environment. On the other hand, I think that Hong Kong is better than Macau on many things about environmental protection; it may not be the best region in the world with the environmental protection, but it is relatively good while comparing to Macau which is nearby, since Hong Kong has a group of volunteers are keen on this project"
Expanding cycle	Interviewee 3: "Also, Hong Kong is nearby that is benefit me to get the resources. Because I just enter this field when finished my bachelor degree, no one will believe that a young fresh graduate can do this job well, so I take the initiative to approach this company [his employer who is later his business partner] and said that I would like to explore the Macao market in order to promote the idea of environmental protection"
Bird-in-hand	Interviewee 7: "We saw the opportunity, we understood the, I mean, we were told the stories and processes behind it, and we just thought wow, what an amazing way to shine a light on our grandmothers past, and bring it into the future, and that is when we started designing, and sourcing manufacturers and everything and it has just grown from there then"
Bird-in-hand	Interviewee 1: "I want to have a try, not for money but I want to see my ability"
Bird-in-hand	Interviewee 7: "Just being creative, and me personally, I enjoy fashion, I keep up with the trends, what is in and out, I keep up with that culture anyway, and it is just exciting as you have the whole product creation, the whole social media, the imagery, contacting bloggers. I am 24 years old, I feel like it is very relevant to me because I have been brought up in that social media sphere."
Bird-in-hand	Interviewee 6: "An opportunity I saw in me as a designer doing something I'd done for so many years, and bringing those things together. The opportunity started when I decided to believe in myself as a designer. I started xxxxxx about a year and a half ago."
Lemonade	Interviewee 8: "The various grants that we have applied for and competitions that we have won, we have had to write business plans for them so we have written a number of business plans which have changed and evolved. So I think it is a strange paradox of having enough drive and motivation to kind of really push forward your drive and having this kind of space, to be adaptive and pivot and change directions and to take advantage of new opportunities."
Lemonade	Interviewee 6: "I did a lot of research on the branding, not as much on the product as that was something that was going to come naturally,"
Pilot-in-the-plane	Interviewee 8: "I haven't really asked for permission for what we have been doing. People have said have you spoken to the Council about this and about that, and I haven't, which hasn't been a conscious decision, I just haven't really felt the need to do that and I suppose at the back of my mind I am thinking, well I would rather do what we want to do and if people like it they will and if they don't we can just apologise rather than ask for permission and be told no."
Pilot-in-the-plane	Interviewee 2: "About the vision, I think it's because it is possible. When you see the vision, you know how to do it. When you truly believe your vision, you can do it. "
Crazy guilt	Interviewee 5: "Liverpool Green Partnership attended the first event and there were a number of delegates there who were talking about their projects, there was just an appetite and an interest in it, so then Yens and I said maybe we should actually make something real, and we co-operated the company and got business cards printed. So that was a decision to do, that but it did feel really like it was by accident, we had got so far down the path so we thought just do it." [strategic relationship]
Crazy guilt	Interviewee 6: "we have this blogger involved, and she designed her own bag, and is getting onto her blogger friends and things like that, it could really open up doors." [strategic relationship]
Crazy guilt	Interviewee 6: "My sister previously had her own start up, she had it for a year and stopped for a year after having her first child. It was hard being a mum and having no business partner, but I think the combination of myself and my sister has really helped me." [close relationship]
Affordable lost	Interviewee 5: "So the cost for me that I could see was the cost of getting the business cards printed, and getting the company incorporated, which was about £100. So actually something worth highlighting there is, we have kept our cost base incredibly low. So my business partner and I were both PhD students which started us off, and then I worked 2 days a week as a researcher on a project, which just allowed us to survive. So we didn't have to really make money, the first two years we just delivered projects for free."
Affordable lost	Interviewee 5: "The xxxxxx were our first, so there was a competition to win £2000 to do something around sustainability on campus. So we put a proposal together to do a roof top urban farm which we won that money. So we won that and did that and that gave us something real that we could talk to people about. We got £4000 off the xxxxxx, we won £15000 from the xxxxxx Programmes, I am on that programme and the business got the money – then we got £15000 from xxxxxx award, then we got £20000 loan from xxxxxxxx, so that is £20000 to do work in North Liverpool with a 3 year break and 10 years to pay back and 1% over the base rate if you are in profit which was the best rate."
Affordable lost	Interviewee 1: "Not expensive to start. Not much investment. Just using office space from my partner's existing business."

Table 5 – Effectuation quotes

APPENDIX 2: STAKEHOLDER PERCEPTION QUOTES

Stakeholder perception	Example of quotes
Customers	Interviewee 7: "Our customers and what they want and what they desire"
Customers	Interviewee 10: "but it is actually customers as without them we wouldn't exist but without us there are no customers!"
Employees	Interviewee 10: "illustrates, 'I would have to say staff number one"
Employees	Interviewee 5: "...help our employee to maintain the life and support the family as we paid them salary'."
Environment	Interviewee 3: "We hope to deliver the positive message of nature about how to protect the environment by using the existing resources from generation to generation."
Environment	Interviewee 7: "There is a lot of debate over leather, because we use a cow hide but this is a by-product of the meat industry"
Environment	Interviewee 6: "When we think of leather, obviously leather, I'm not a vegan or vegetarian I eat meat, leather is the best product for your feet, there is nothing that will be better for your feet than calf leather".
Industry	Interviewee 9: "We are definitely disrupting the status-quo of the existing industry and I think that the old-fashioned brands such as Portakabin and modular prefabricated structures which are neither attractive nor are the environmentally sympathetic are to be affected by our activities."
Social	Interviewee 9: "(I) dreamt of living in eco buildings which are natural and support human well-being. This re-design could shape our whole environment so we could literally be living out of a scene in 'the Shire' of Lord of the Rings'."
Social	Interviewee 7: "So when we sell a bag we donate a bag of educational materials to a child in China. That represents, well, we have been brought up, buying things from China, and knowing what they think success is, and that is the gateway given through an education, and that has been instilled into us from our parents, so our bag for bag can empower these children, so the wicker represents our product side and the wings represent our social side as well."
Suppliers	Interviewee 6: "Our accessories, the heels, the plastics, everything that goes into the shoes they are all suppliers that have the stamp that says we are sustainable, we are caring for our workers..... the company I am working with is in a sustainable supply chain."
Suppliers	Interviewee 7: "They (artisans) lived in a really small village and the main source of income for that village was this weaving process, and the weaving of baskets, so that is what, we were thinking this is really incredible as this is the main source of income, wicker weaving..."

Table 6 – Stakeholder perception quotes

APPENDIX 3: INTERVIEW SCHEDULE

1. At what age did you first think you would like to set up your own business? (Probe: at what age did you (a) become interested in entrepreneurship (b) decide to become an entrepreneur?)
2. What were the main factors/influences that encouraged you to think about starting a business? (Probe: family, friends, school, media etc)
3. What age were you when you first set-up your business? How long has it been operating?
4. What were the main factors/influences on your decision about the type of business you started? (Probe: market opportunity, chance to make money etc...)
5. Where there any other factors that influenced your decision? (Probe: family, friends, school, media etc)
6. How did you identify the idea for your business? (Probes: What first led you to think that there might be a commercial opportunity in the business idea? Did your earlier experience assisted you in identifying this business opportunity? Did you investigate any other business ideas before starting this business?)
7. What were your main goals and motivations in starting your business? (Probe: Did you have a previous interest/hobby/part time job related to the business idea?)
8. How long did it take from having the original idea to actually starting the business (ie, making first sale)?
9. Could you explain exactly how you started the business (Probe, write business plan or start slowly – an effectual approach)
10. Did you have any help/support in setting-up the business (Probe: government agencies, universities, social network etc)
11. Could you explain what were the main factors which helped start the business (Probes: finance, premises, culture, government, banks, regulations etc.)
12. Could you explain the main barriers/restrictions to starting your business (finance, premises, culture, government, banks, regulations etc.
13. What are the most important aspects of entrepreneurship you have learned in building your business?
14. What are the main (a) advantages (b) disadvantages of starting a business when you are young? (Probe: Credibility/investors/management/networks/technical know-how/risk)
15. What are your plans for the future of the business? (Probe: do you intend to take on more staff, grow the business?)