

APPENDIX GA36d

<i>LEVEL 7 ASSESSMENT SPECIFICATION</i>			
Student name:	LEE, See Kong Frankie	Student ID number:	2124400
Programme:	DBA		
Module:	Qualitative Research Methods		
Module code:	HKBM7003	Contribution to Overall Module Assessment (%):	100%
Lecturer:	Dr. Tamara Savelyeva	Internal Verifier:	
Assignment Title:	Research Article	Word count (or equivalent):	(7, 500) 6,898 (excl. ref.)
Submission deadline:	31 October 2022	Return date of provisional marks & written feedback:	
Submission method:	All written assessments, where practical and possible, must be submitted via Turnitin unless otherwise instructed by the Lecturer. (Please DO NOT put this assessment specification into Turnitin or it will match many similarities with other students' submissions.) Alternative submission method (if applicable): Late submission of the assessment will result in a late penalty mark. Penalties for late submission: Up to one week late, maximum mark of 50%. Over one week late, 0%. Only the Extenuating Circumstances Panel may approve a change to submission dates.		
Academic honesty / referencing:	Academic honesty is required. In the main body of your submission you must give credit to authors on whose research and ideas your work is based. Append to your submission a reference list that indicates the books, articles, etc. that you have used, cited or quoted in order to complete this assessment.		

Contents

	Page number
1. Abstract.....	3
2. Evaluation of a current research article.....	5
2.1 Choice of the research article	5
2.2 Scope of the research article	5
2.3 Key takeaways of the research article	5
2.4 Why fashion industry is being chosen?	7
2.5 Useful findings and implications.....	7
2.6 Limitations	9
2.7 Evaluation Summary and Conclusion	11
3. Research Proposal.....	12
3.1 Introduction	12
3.2 Theoretical Background.....	13
3.2.1 Research question.....	14
3.2.2 Suitable research method(s) and justification	14
3.3 The Road to Circular Economy for Textile and Clothing Industry.....	15
3.3.1 Why fashion industry?	15
3.3.2 The current state: Linear Economy mode of textile value chain	16
3.3.3 Potential new models of consumption in pursuit of circular fashion/textile	16
3.4 Method of Research, Data Collection and Analysis	17
3.4.1 Qualitative methods adopted	17
3.4.2 Research structure and approach.....	18
3.4.3 Research Timeline	20
3.4.4 Qualitative Data Analysis	21
3.4.5 Ethical considerations and procedures.....	22
4. Conclusion.....	26
5. Limitations.....	26
References	28

List of Figures and Tables

	Page Number
Figure 1: Conceptual Framework developed by Ki et al (2020).....	9
Figure 2: Linear representation of activities along the textile value chain	16
Figure 3: Representation of activities taking place in a circular textile value chain.....	17
Figure 4: Proposed Research Timeline (tentative).....	20
Figure 5: Sample of An Interview Guide (for interview with business management)	23
Figure 6: Sample of Interview Guide (for interviewing consumers)	24

Title: “Circular economy in textile and clothing: A qualitative study of the perspectives, attitude and motivation of Hong Kong stakeholders”

1. Abstract

There have been escalating concerns about the sustainability of the current model of linear economy for the world, as the pace of consuming natural resources seems to be assuming that there were three planet Earths and the creation of waste is at an alarming speed! The call for transition to the circular economy model has gained much attention in recent years from environmentalists, scientists, academia, government authorities as well as responsible business enterprises. Following the promulgation of the Circular Economy Promotion Law in China in 2008, the European Union has been in the forefront in planning and implementing the concept of circular economy pursuant to the publication in 2015 of its first Circular Economy Action Plan (updated in 2020), which will close the loop from the Linear Economy (“LE”) of the “take-make-use-dispose” mode into the “take-make-use-recycle-reuse” mode. The latter mode can be conducted in the form of transferring the existing product from one person to another who reuses it. Alternatively, it can be by way of extracting fibres / materials / ingredients from old textiles and clothing that can be reused for producing another useful product.

As revealed from a recent comprehensive literature review in section 2, many research papers on the sustainability and circular economy have been focussing on European and Americas, with relatively few papers on Asia.

To fill this gap, this research proposal is to provide in Section 3 a framework and work plan for investigating the state of key stakeholders in Hong Kong, with respect to their perspectives, attitude and motivation towards the prospective transformation from a linear economy to a circular economy, as recommended by the United Nations Sustainable Development Goal #12 relating to responsible consumption and production. The research proposal focuses on the textile and clothing sector, simply because this sector is one of the sectors causing much pollution to the environment and producing substantial amount of solid waste upon disposal of the old clothing, which has been aggravated by the promotion of fast fashion.

While in last couple of years since the signing of the Paris Agreement on Climate Change in 2015, there have been growing concerns on the climate actions and urgent calls on the eradication of the greenhouse gas (particularly carbon dioxide gas) emission, the issue of transition from the linear economy to a circular economy would probably be the next key issue for the humankind's sustainable future.

If the fashion industry can be transformed from the current linear economy model (especially the fast fashion practices) to the circular economy mode, the world can solve multiple issues of (a) fast depletion of natural resources, (b) improved energy utilisation, (c) significant reduction of pollution and wastes.

The research project will involve several stakeholders, including governments, producers, retailers, logistical companies, recycling agents and, of course, consumers. To allow for greater flexibility to the extent possible, the research is proposed to apply qualitative mode of investigation.

After conducting the qualitative research project, it is expected to have better understanding of awareness, attitude and motivation of various stakeholders, particularly consumers, in Hong Kong. This information and knowledge would hopefully provide solid foundation for further quantitative research and for the formulation of proper government policies, regulatory framework, strategy and action plan for the local community in Hong Kong for the transition to the circular economy.

Keywords: Circular economy, circular fashion, recycling, closing the loop, textile and clothing, sustainable development goals, responsible production and consumption.

2. Evaluation of a current research article

Ki C-W, Chong SM, Ha-Brookshire JE (2020). How fashion can achieve sustainable development through a circular economy and stakeholder engagement: A systematic literature review. *Corporate Social Responsibility and Environmental Management*. 2020;27:2401–2424. <https://doi.org/10.1002/csr.1970>

2.1 Choice of the research article

The article authored by Ki, Chong and Ha-Brookshire has been chosen as it covers an important global issue of sustainability for the future of the world, with practical considerations and reference to a popular industry – textile and clothing industry. The article was particularly meaningful when some global brand names of the textile and clothing industry have adopted the fast fashion in last few decades producing more waste undesirably at a faster pace! The authors adopted a qualitative research methodology by undertaking a comprehensive literature review and performed two types of content analyses to obtain the current state of the knowledge on the topic and derived a model.

2.2 Scope of the research article

The research conducted by Ki, Chong and Ha-Brookshire (2020) was to search peer-reviewed articles from academic journals published during 2015 to 2019 from the databases of Scopus and Web of Science, using keywords “circular economy” or “circular economy AND clothing” OR “circular economy AND textiles”. After removing duplication, 119 articles were included for review, which were further boiled down into 59 circular fashion articles for in-depth study. The study was sub-divided into two broad types of analyses, namely “descriptive content analysis” and “thematic content analysis”.

2.3 Key takeaways of the research article

This is a very comprehensive and systematic study of the state of the circular economy (“CE”) in the textile and fashion industry (“CF”) through literature review. The circular economy model is defined as an industrial system that is restorative or regenerative by intention and design, uses and reuses natural capital as efficiently as possible, and finds value

throughout the products' life cycles. Recognising the limited supply of natural resources, a circular economy is based upon a restorative production and consumption approach that takes, makes, uses, reuses and/or recycles the materials again and again in a circular manner. This is in sharp contrast to the linear economy ("LE") in which producers take the natural resources for making products that would be thrown away by consumers after a few uses. The literature review on circular fashion for understanding wide range of aspects, including the drivers, strategies, practices, barriers, and enablers, for all internal and external stakeholders. The study has resulted in a conceptual framework offering an integrated understanding about how fashion businesses can institute true circularity by engaging stakeholders in their CF-related endeavours. The adoption of the mode of production and consumption would have implications on the consumption of global resources and the environment (Geissdoerfer, Savaget, Bocken and Hultink, 2017). It has been the usual practices for producers and consumers adopting the system of the linear economy in which producers take large amounts of non-renewable resources to make products that are being thrown away by consumers after being used only a few times. After that, these materials are disposed of in landfills, resulting in waste (Doppelt, 2003). This linear system of production and consumption is apparently based on a mindset, though not justifiable, that resources are available unlimited. By practising such linear economic model, producers have continuously extracted resources from the Earth without any plans for their reuse or regeneration of the natural systems from which the resources have been taken. Hence, about 80% of the raw materials have been disposed of after a single use, which creates serious adverse impacts on the environment, economy and the society. These include depletion of natural resources, reduction of forest cover, global warming, economic damage, human health and wellbeing at risk from disasters due to climate change. There has been growing consensus among governments, academia and businesses about tackling the serious side effects endemic to linear economy with the latest push toward a circular economy. In a circular economy, the finite nature of resources is recognised and a restorative or regenerative economic system is being adopted. This means that the production and consumption behaviours would be modified to "take, make, use, reuse, and reuse again and again" from the current linear pattern of "take, make, use and throwaway". This continual system of making, using and reusing of resources would close the loop of material flows and eliminate waste in circular manner (Doppelt, 2003). Although the theoretical foundation of a CE is not new and can be dated back to 1920s (Leontief, 1928, 1991), governments and academia have only recently treated a CE as the solution for a sustainable future! While in last couple of years since the initial signing of the Paris

Agreement on Climate Change in 2015 there have been growing concerns on the climate actions and urgent calls on the eradication of the greenhouse gas (particularly carbon dioxide gas) emission, the issue of transitioning from the linear economy to a circular economy would probably be the next key issue for the humankind's sustainable future.

2.4 Why fashion industry is being chosen?

Being a global industry of USD1.9 trillion in 2019 and expected to be of USD3.3 trillion in 2030 (Statista, 2020), the fashion industry is undoubtedly a significant sector in the global economy. Unfortunately, the fashion industry is also regarded as one of the major polluting industries in the world (UN News, 2019), with less than 1% of clothing materials being recycled for the LE system. Indeed, fashion industry is the world's second worst polluter after the oil industry (UN News, 2019) and the second largest in terms of consumer spending, just after the food and beverage industry (Ellen MacArthur Foundation, 2013) (Ki, et al (2020), page 2402) Hence, if the fashion industry can be transformed from the current linear economy model (especially the fast fashion practices) to the circular economy mode, the world can solve multiple issues of (a) fast depletion of natural resources, (b) improved energy utilisation, (c) significant reduction of pollution and wastes.

2.5 Useful findings and implications

Ki, et al (2020) has demonstrated a comprehensive and systematic framework for reviewing qualitatively the research literature for deriving a conceptual model for analysis (Figure 1 below).

Ki et al (2020) also rightly pointed out the following useful findings:

- (a) "Governments and academia have only recently shed new light on a CE as the solution for a sustainable future". e.g. China accepted CE as a new development strategy in 2002 and enacted CE Promotion Law in 2008. European Commission established its CE Action Plan in 2015.
- (b) "While it is internal fashion stakeholders, who design, manufacture, distribute and sell fashion products, that can enable the acceleration of CF the most, the infrastructural

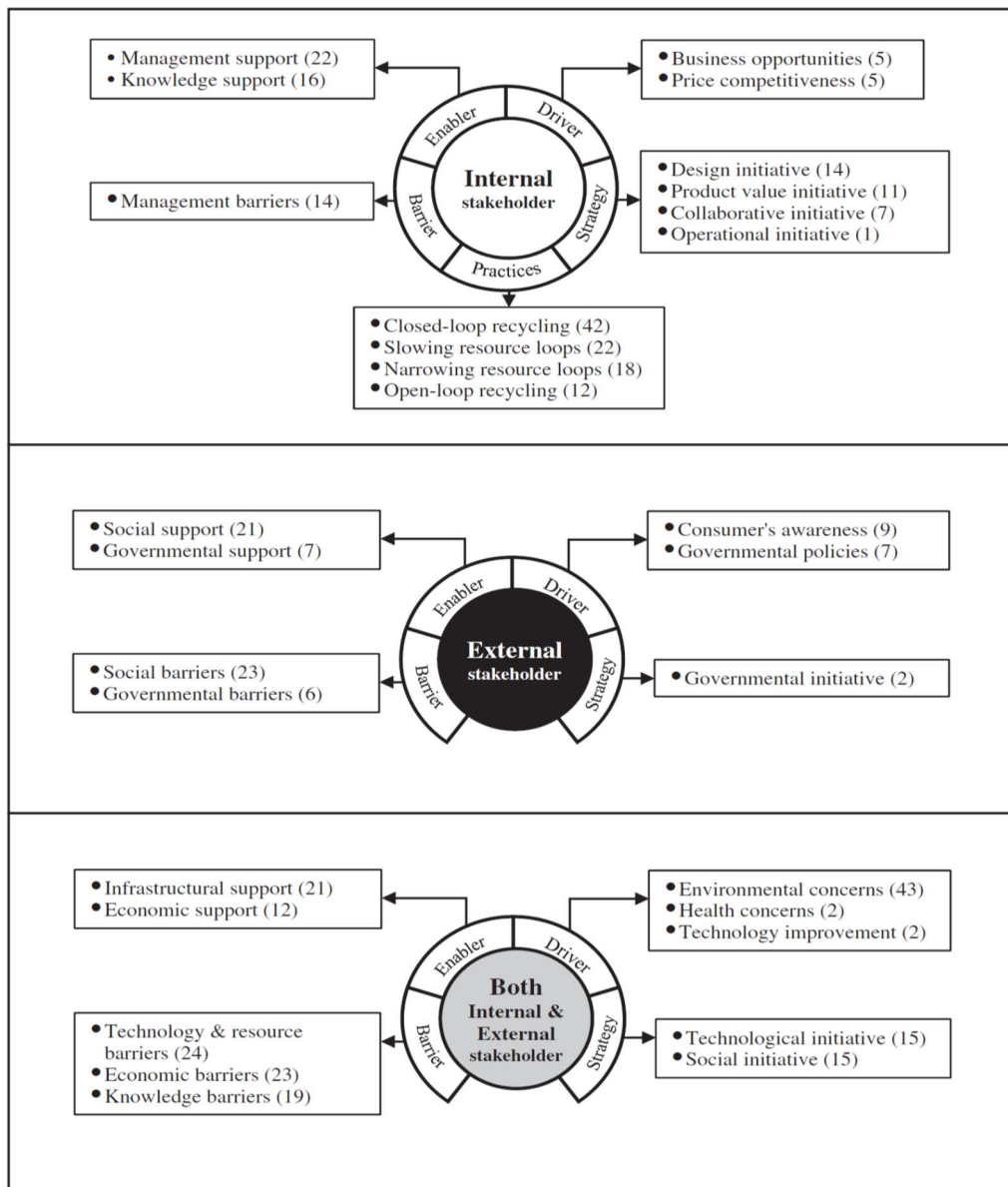
support, provided by both fashion corporations and the government, and the social support to encourage consumers to take active part in fashion firms' CF initiatives are also critical in facilitating the creation of a truly CF."

However, the following insufficiencies of the current research literature are also highlighted:

(c) Two main issues are still underexplored:

- (i) "Relatively less is understood about the CE drivers and barriers that cater to a specific industry."
- (ii) The policy maker of the government lacks the ability to collect sufficient data that helps them design and execute more feasible CF-driving policies. (Ki et al (2020), p.2421)

Figure 1: Conceptual Framework developed by Ki et al (2020)



Source: Ki et al (2020), Figure 7

2.6 Limitations

As revealed from the study by Ki, et al (2020), there are a number of observed limitations, as follows:

- (a) The current research literature discusses on the circular fashion mostly from the angle of internal stakeholders, rather than from the perspective of external stakeholders.

- (b) According to recent literature of research, the CE drivers and barriers for a specific industry and the CE approaches and practices adopted by a specific industry are less understood.
- (c) Fashion-related companies consist of a number of small units for design, sourcing, merchandising, and marketing that are highly interdependent and require mutual support to tackle a specific state of affairs such as sustainability. The long, fragmented and complex supply chain is also problematic for the industry's creation of CF.
- (d) The coverage of underlying literature review was mostly on Europe (50%, Table 1 Description analysis result of the CF literature, page 2406), the North America (10%) and South America (8.6%), with little coverage in Asia (5.7%). Hence, it was suggested that "more research about CF needs to be conducted beyond the European context, and cross-culturally". (Ki, et al (2020), page 2407). With its substantial population and contribution to the world's GDP, Asia deserves more research study and in-depth analysis. In particular, it would be within our reach to have deeper understanding of the situation in Hong Kong, in an attempt to fill the gap of research.
- (e) With the use of user-generated online reviews, Camacho-Otero, Boks, and Pettersen (2019) identified key factors affecting consumers' acceptance and adoption of fashion firms' circular offerings during the consumption stage.
- (f) "CF research is relatively underexplored in the post-consumption stage, compared with the other two stages." "Given that circularity should be monitored throughout all phases of the material flow to achieve the ultimate goal of the CE (i.e. closing the loop) (EMF, 2017), CF research that involves the entire product lifecycle is needed". In particular, the research that can tackle how to encourage recycling agents, consumers and government to make a circular post-consumption behaviour, so that internal fashion stakeholders can reuse the returned materials again seems important and much needed".
- (g) The method of thematic content analysis adopted by Ki et al, however, imposes certain limitations. As the "circular fashion literature adopted qualitative case studies, interviews or literature reviews, or quantitative experiment or survey research,

developing a new theory in this emerging CF area by adopting a grounded theory approach may allow future researchers to make further contributions in the literature”.

- (h) “Investigating fashion companies’ CE efforts from organizational change management perspectives would also be fruitful for designing fashion businesses’ CF strategies and providing more nuanced guidance as to how businesses can promote the implementation of CF”.

2.7 Evaluation Summary and Conclusion

The research paper authored by Ki, et al (2020) is very comprehensive in its scope of coverage and is also very relevant to the understanding of the state of the implementation of circular economy in the world. However, as revealed from the paper, the underlying research articles indicate certain research gaps that may be filled:

- (1) While focussed more on the Americas and Europe, there is room for research on Asia.
- (2) The motivation and acceptance by the consumers of circular fashion services offered from the producers, retailers or recycling agents.

3. Research Proposal

Proposed research title: “Circular economy in textile and clothing: A qualitative study of the perspectives, attitude and motivation of stakeholders in Hong Kong”.

3.1 Introduction

According to the Sustainable Development Goals Report 2022 published by the United Nations (“UN”), “the unsustainable patterns of consumption and production are the root causes of the triple planetary crises, namely climate change, biodiversity loss and pollution”. (SDG Report 2022, page 50).

The reliance on natural resources by humankind is increasing significantly, surging by over 65% globally during the ten-year period from 2000 to 2019! (SDG 2022, page 19) If such prevailing patterns of production and consumption continue, the finite resources of the Earth would not be able to sustain the livelihoods of current and future generations. Hence, transforming our production and consumption patterns to embrace with the finite natural resources of the Earth is of paramount importance to the sustainability of our future. Governments, business enterprises, consumers and other stakeholders should take this opportune time to work out strategies and action plans for improving efficient use of resources, reducing waste and pollution, and shaping a new circular economy.

Recognising that the world is now consuming natural resources from the earth, including minerals, fossil fuels, metals and biomass at a rate that will be expected to double by 2060 (UN SDG Report 2019, page 15), and the annual generation of waste expected to escalate by 70% by 2050, governments, including China and the European Union (“EU”), have announced plans to contain the rapid wastage. Through its Circular Economy Action Plan (“CEAP”) published in 2015 and updated in 2020, the EU strives to fulfil the ambition embodied in the European Green Deal which launched a coordinated strategy for achieving a resource-efficient, climate-neutral and competitive economy. This aims to speed up the transition towards a regenerative growth model that returns back to the earth more than it takes. This means to ensure consumption of natural resources within the limits of the earth,

by reducing the speed of consumption and doubling its circular material use rate in the next 10 years.

Against the above backdrop, it is timely for a study of the local situation in Hong Kong, particularly with respect to the understanding of the perspectives, attitudes and motivation of different stakeholders so as to shed light for formulating appropriate policy, strategy and action plan for the forthcoming implementation of the circular economy system in Hong Kong. This would have immense implications for the industrial evolution and transformation of systems and processes for sourcing the raw materials, arranging the logistical services and devising the appropriate production technology for producing and delivering products / services to the consumers. Due to the additional processes for collecting the used products for reuse or for re-manufacturing the recycled materials for production of new products so as to achieve circularity of the system, these additional processes should be appropriately instituted, with the support from consumers, business enterprises and the government.

3.2 Theoretical Background

From the literature review in the Section 2 above, a number of findings are identified, namely:

- (a) To refine the research ideas for future investigation and study, it would be good to collect data from the subject experts and stakeholders (Wintersberger and Saunders, 2020). Hence, it is devised to conduct interviews with the management of firms that produce textile and clothing for the fashion industry.
- (b) In the very preliminary study of a new topic in a geographical area, as Whetten suggests, “it is preferably to conduct qualitative investigation over the possible boundaries of a theory, rather than using quantitative methods for expanding it”. (Whetten, 1989, p.493). “The theoretical contribution then becomes the understanding derived, rather than simply testing the range and scope of its applicability.” (Wintersberger and Saunders, 2020, p.3).

- (c) The transition from the present linear economy model (take-make-use-dispose) to a circular economy requires significant changes both in production and consumption models, particularly for the textile and clothing industry. Koszewska (2018) adopted a literature review and industry examples to identify and evaluate challenges faced by the clothing and textile industry in adapting to the circular economy model.

3.2.1 Research question

Against the backdrop as shown in section 2 above, this research proposal is to understand, through qualitative investigations, how the stakeholders in Hong Kong are prepared psychosocially for the forthcoming transition from the linear economy to circular economy in textile and clothing sector.

3.2.2 Suitable research method(s) and justification

On the road of transition from one way of life into another, there would be socio-cultural changes to the people in the community, which may cause immense issues of adjustment by the people being affected. After summarising a handful of research results from other scholars, Pal (2022) concluded that “CE is not a mere economic-technological system without human implications, but has social and cultural dimensions as well” (Fitch-Roy et al, 2020). Along this line of argument, scholars have in many instances attributed the relatively slow adoption of CE to specific social and cultural reactions. Based upon his observation, Walter R. Stahel, one of the founders of European circularity, inferred in 2016 that the lack of familiarity and the fear of the unknown might be the underlying reasons behind the societal passivity and even hostility against CE. Kirchherr et al (2017) also found that the lack of consumer interest in CE and the lack of support networks for a wide range of actors would be the impediments for implementing a CE strategy and innovation. Pal (2021) summed it up that “while the CE concept struggles to gain wide social and cultural acceptance in many societies and sectors around the world, ... the bulk of research is still focussing on the economic-technological layers of CE leaving large gaps in the core of the CE, namely the social and cultural layers, unexplored”.

Given that the linear economic systems are deeply rooted in people's daily life, which in turn are closely related to the values, ethics and attitudes of human societies and culture, the human factors in CE, together with the social and cultural elements, would be instrumental to the transition to CE as it would generate substantial changes toward sustainable human systems (Korhonen et al, 2018).

After evaluating the limitation of user-generated online review method adopted, Camacho-Otero et al (2019) suggested, among other investigative methods, to integrate user-generated online reviews with more traditional tools and methods for gaining insights into cultural and psychological factors, in the future research on user and consumer acceptance of circular offerings.

Hence, this proposed research study would adopt on the qualitative investigative methods with the focus on the socio-cultural and psychological aspects of the stakeholders in the local community of Hong Kong.

3.3 The Road to Circular Economy for Textile and Clothing Industry

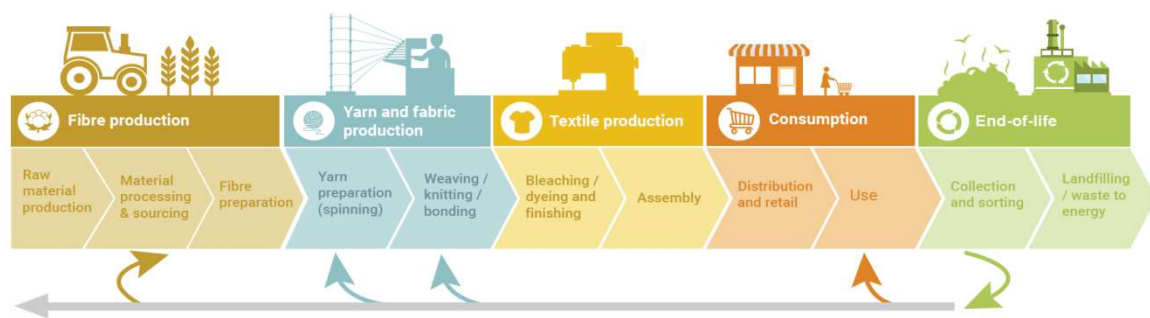
3.3.1 Why fashion industry?

Being a global industry of USD1.9 trillion in 2019 and expected to be of USD3.3 trillion in 2030 (Statista, 2020), the textile and clothing industry is undoubtedly a significant sector in the global economy. Unfortunately, the textile and clothing industry is also regarded as one of the major polluting industries in the world (UN News, 2019), with less than 1% of clothing materials being recycled for the LE system. Indeed, fashion industry is the world's second worst polluter after the oil industry (UN News, 2019) and the second largest in terms of consumer spending, just after the food and beverage industry (EMF (2013); Ki, et al (2020): p. 2402)

3.3.2 The current state: Linear Economy mode of textile value chain

The current state of the linear economy has been evolving since the end of the World War II and becomes part of the daily life and culture. Figure 2 shows the linear economy for the activities along the textile value chain, from the fibre production, through the yarn and fabric production, textile production, to consumption and finally to the end-of-life, mostly going either to the landfill or to the incinerator for obtaining energy from the waste.

Figure 2: Linear representation of activities along the textile value chain



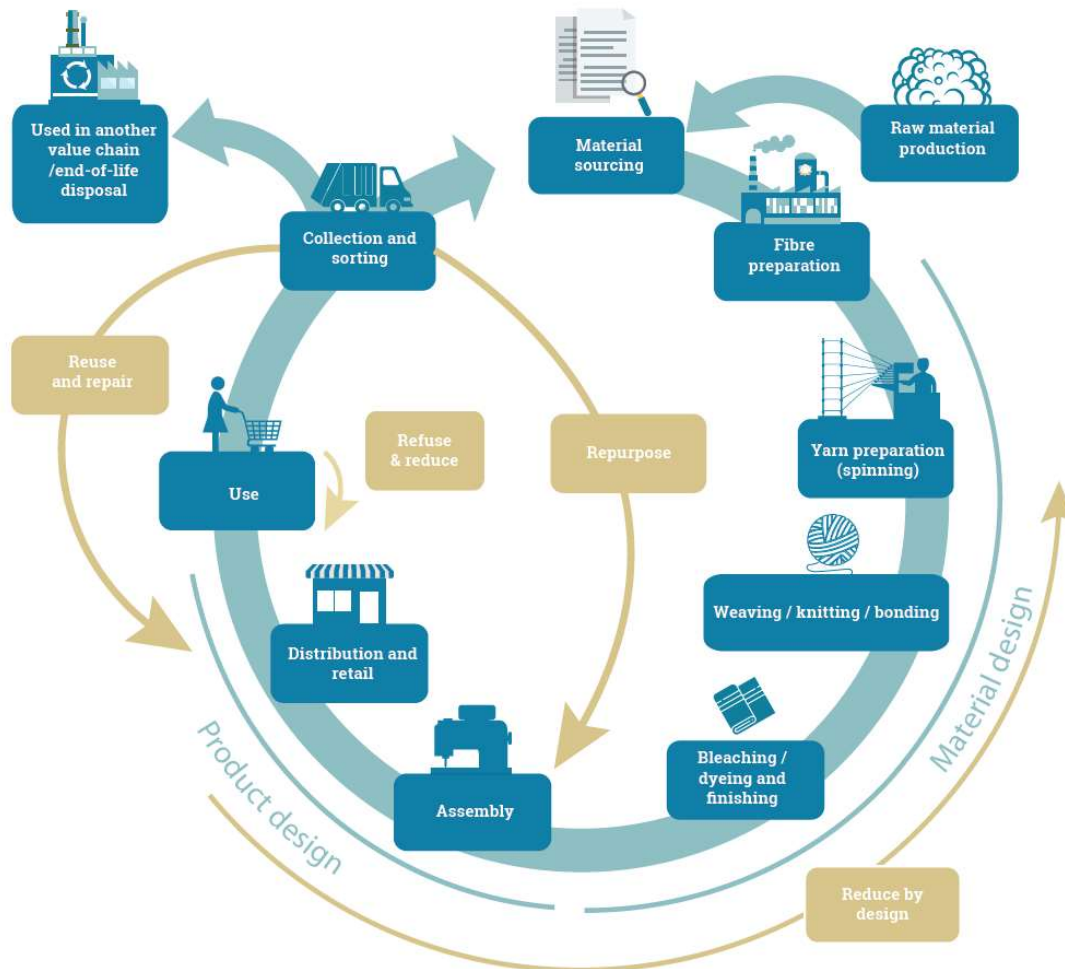
Source: United Nations Environment Programme (2020) *Sustainability and Circularity in the Textile Value Chain: Global Stocktaking*, page 13.

3.3.3 Potential new models of consumption in pursuit of circular fashion/textile

Since the resolution of Sustainable Development Goals was passed by the United Nations General Assembly in 2015, a new concept of responsible production and consumption has been postulated. This institutes the principle of promoting circularity of the production and consumption activities. Figure 3 depicts the activities taking place in a circular manner for the textile value chain. By adopting new materials or by reduction of the use of materials, the textile and clothing products either lasting longer (more durable), or can be recycled or reused easily such that these materials can be fed back to the production cycle or to another production system for producing another type of new products. This in essence closes the loop.

Much innovative ideas for the pursuit of circular fashion have been evolving in recent years. Ellen MacArthur Foundation (“EMF”) (2017) has postulated certain new models, including rental subscription, short-term rental, sales of highly durable clothes and resale. (EMF, 2017, page 76, citing the non-exhaustive illustration based on Circular Fibres Initiative research)

Figure 3: Representation of activities taking place in a circular textile value chain



Source: United Nations Environment Programme (2020) *Sustainability and Circularity in the Textile Value Chain: Global Stocktaking*. page 14.

3.4 Method of Research, Data Collection and Analysis

3.4.1 Qualitative methods adopted

To supplement the under-researched situation for Asia (5.7% only from the literature review), this research proposal intends to fill the gap by instituting a qualitative investigation of key attributes / parameters that were identified by Ki, et al. (2020) with the different types of stakeholders. By adopting qualitative approach of investigation, the data usually offer significant insights into the selected stakeholders' demographic, psycho-social and cultural factors, as well as deep level of user experience, motivation and attitude. These would lay down the foundation with identified parameters or factors for further quantitative analysis. In particular, the study should be focussed on the economy of Hong Kong to understand specifically the state of the CF technology potentially available for adoption in Hong Kong or in neighbouring areas and the characteristics and behaviours of the consumers in Hong Kong towards the products manufactured on the concept of CE in place for the production and distribution processes. Why interviews shall be conducted? With more local contents and opinions from local people, this study would provide much needed information for the government of Hong Kong to formulate any policies appropriately for promoting the circular economy with the aim of reducing wastes.

3.4.2 Research structure and approach

Taking into account of the long and complex supply chain, the research is structured to explore the underlying considerations and culture of each of the stakeholder types, including such internal stakeholders as owners, managers, and employees, and external stakeholders such as governments, subcontractors, agents, consumers and financiers (bankers and/or investors who provide equity/debt finance to the businesses involved in the production, marketing and distribution, or recycling process). The qualitative research study will adopt the Phenomenological approach, by which bracketing (Giorgi, 2009) and phenomenological reflection (van Manen, 1990:2014) would be integrated such that researcher focuses solely on the experiences of the participants.

For business stakeholders, such as producers, retailers, logistics companies and recycling agents, detailed one-on-one interviews with each of the three to five representative entities in each of the four sectors will be arranged. This arrangement is to safeguard business confidentiality and to facilitate deep-dive exploratory discussions. (Savelyeva, T. (2022), Lecture 3, pp. 75-84). Semi-structured in-depth interview guides would be prepared for

facilitating smooth running of the interviews. (Savelyeva, T. (2022), Lecture 4, pp. 75-84). The proposed conduct of in-depth interviews is to explore complex and detailed issues on the sustainability and circular versus linear economy in respect of the textile and clothing. This would also enhance rapport and provide opportunity for probing and clarifying questions with the interviewees. (Savelyeva (2022), Lecture 4, pp. 88-89). Figure 5 shows a sample of interview guide with a list of probing questions used for one-on-one interview with the management of business stakeholders.

For consumer stakeholders, three focus groups of five individual consumers each would be arranged for manageable discussions within a focus group. One focus group will be conducted in Hong Kong Island, the second group being in Kowloon peninsula and the third group in the New Territories. With such collection of data spreading sufficiently throughout Hong Kong, it is designed to promote sufficient spread of interviewees from all walks of life and to minimise the potential bias of views from individual consumers due to geographical concentration. In a nutshell, the concept of circular economy and sustainable textile and clothing will be introduced and discussed. Similar to that for business stakeholders, semi-structured questions would be adopted for understanding the perspectives, motivation and attitude of consumers with respect to their consumption behaviours towards textile and clothing with reused or recycled fabric or components/parts. Figure 6 shows a sample of interview guides and open-end questions for interviewing with consumers in focus groups.

It should be noted that at this stage, these sample interview guides for in-depth interviews with the various stakeholders should be regarded as provisional and they may be subject to modifications with (a) feedback from other researchers and peers during the mock interviews and pilot research, and (b) more inputs/ideas/feedback from the interviewees from time to time received as the study progresses. The proposed use of mock interviews and pilot research is to obtain images and ideas of the experience of the simulated interviews, rather than surmise. In case of any initial expectation which is found to be incorrect, or any points of the interview guide and questions being regarded as unproductive, boring, illogical, missing some important and critical point(s), or even misleading or likely to be causing confusion or emotional reaction, the observed irregularities would be adjusted accordingly.

According to Bocken et al. (2016), examples of circular business models include collaborative consumption, Product Service Systems (“PSSs”) or Product-as-a Service (“PaaS”), and sharing economy.

The sharing economy ‘activities’ falls into four categories: recirculation of goods, increased utilisation of durable assets, exchange of services and sharing of productive assets. (Camacho-Otero et al, 2019/p. 929)

3.4.3 Research Timeline

In light of the research project activities outlined in Section 3.4, the tentative research timeline is proposed in Figure 4 below. Please note that the timeline is subject to adjustments from time to time, in view of the latest circumstances.

Figure 4: Proposed Research Timeline (tentative)

(adapted from Savelyeva (2018), Research Grants Council of the Hong Kong Special Administrative Council of the Hong Kong Special Administrative Region, China, Project No. 28608115)

Research phase	Time Period	Activities
Preparatory	January- March 2023	Shortlist the representative business stakeholders. Contact the participating organisations. Obtain research permissions.
Empiric	April – May 2023	Start the research project promotion. Gain access to the qualitative data collection sites. Contact the management of the business stakeholders. Prepare preliminary interview guides and questions. Conduct mock interviews and pilot research with peers and fellow researchers with the use of the provisional interview guides. Review arrangements.

	June – July 2023	Revise the interview questionnaires based on the received feedback. Analyse documents and artefacts for the re-accruing themes. Revised the interview questionnaires for the consumer stakeholders.
	August – October 2023	Conduct interviews. Transcribe interviews. Create a coding schema.
	November – December 2023	Analyse the qualitative data using the coding schema. Perform re-coding to ensure trustworthiness of the data. Triangulate the data collected from interviews and document analysis. Draw preliminary conclusions. Perform interpretation of the research results.
Disseminative And Examiners' review	January – September 2024	Review of the preliminary draft report by supervisors Review by Examining Board Report and disseminate the research findings

3.4.4 Qualitative Data Analysis

The proposed qualitative research delineated above would result in a rather volume of qualitative data which requires discourse analysis and interpretive phenomenological analysis (“IPA”), in addition to the technical knowledge and data from manufacturers/recycling agents. Different types of stakeholders have their own unique body of knowledge and technical jargons, including but not limited to bio-chemistry, biotechnology, financial jargon, legal concepts and jurisprudence (for drafting of laws and regulations), logistical knowledge and practices. For the purpose of this proposed research, the focus will be on the consumers’ perspective, experience, attitude and motivation towards the forthcoming transition from the current linear economy to a circular economy in respect of textile and clothing.

Once the data from the qualitative research is obtained, the sheer volume of the data will be coded, which is mostly language-based, to reflect deeply the meaning, to find and construct patterns in the data and to develop categories, concepts, themes, assertions and other analytic findings. (Charmaz, 2006). For the analysis of qualitative data, the software tool NVivo would be used. With its interface quite like Microsoft and easy to use, NVivo will be used for importing of various formats of data, including word documents, PDFs, audio, images and video. Its automated transcription and auto-coding functions will also be used for facilitating further analysis.

3.4.5 Ethical considerations and procedures

For the research project, the roles of the researchers could be regarded as “deemed insiders” of the participants, including governmental and business organisations, and individuals being interviewed. Hence, the relevant laws relating to the personal data privacy and business data confidentiality should be strictly adhered to.

In accordance with the code of ethics and standards of professional conduct applicable to researchers, the following considerations or practices will be adopted in all stages of the research project: (Savelyeva, 2022, Lecture 4)

- (a) Ensuring confidentiality of the data collected and stored;
- (b) Establishing respectful, trusting relationships with all participants/interviewees without stereotyping and labelling;
- (c) Acknowledging whose voices will be represented in the final study
- (d) Writing the researchers into the study by reflecting on who we are and people we study;
- (e) Respecting the sensitivity to vulnerable populations;
- (f) Being sensitive to imbalanced power relations and exercising care to ensure impartiality;
- (g) Avoiding the possibilities of placing participants at risk;
- (h) Ensuring authenticity of data and fairness in data analysis and the presentation.

It is of paramount importance that prior to the conduct of research project, written approval from the Research Ethics Committee of the University should be obtained.

Figure 5: Sample of An Interview Guide (for interview with business management)

Figure 5: Sample of An Interview Guide (for interview with business management)

(Note: This interview guide is adapted from the interview guide at Appendix 1 of Suter (2019) Beyond PET: an extended Deposit-Return System for plastic packaging in Sweden. Master Thesis KTH, ABS, SEED, (Stockholm).)

Date:

Interviewee:

1. Background of Interviewee
 - 1.1 What is your position at _____?
 - 1.2 What are your responsibilities at _____?
 - 1.3 How long have you been working for _____?
2. Deposit-Return System
 - 2.1 What is your opinion on the existing Deposit-Return System (Pantsystem)?
 - 2.2 When it comes to clothing and textile recycling (apart from reuse of clothing) do you think there is sufficient recycling happening right now?
 - 2.3 If not, what could/should be changed to increase it and why?
 - 2.4 What do you think about an extension of the deposit-return system to clothing and textile?
 - 2.5 If positive: Which type of plastic packaging should be added to the deposit-return system and why?
 - 2.6 If negative: Why not?
 - 2.7 When it comes to an extension of the deposit-return system, what do you think are possible challenges and difficulties that could be experienced?
 - (a) Economic challenges?
 - (b) Behavioural challenges?
 - (c) Technologic challenges?
 - (d) Organizational challenges?
 - (e) Material challenges?
 - 2.8 How would the industry react?
 - 2.9 What has to be done to overcome these named challenges in these five dimensions?
 - 2.10 Do you see any lessons that could be learned from the existing DRS (for clothing and textile recycling)?
 - (a) Economic lessons?
 - (b) Behavioural lessons?
 - (c) Technologic lessons?
 - (d) Organizational lessons?
 - (e) Material lessons?
 - 2.11 Compared to the introduction of other deposit-return systems, such as the aluminium and PET DRS, do you think the consumer attitude has changed significantly?
 - 2.12 If so, how could that affect a DRS extension for fashion or clothing?
 - 2.13 Other comments, issues, or information?

*Figure 6: Sample of Interview Guide (for interviewing consumers)***Figure 6: Sample of Interview Guide (for interviewing consumers)**

(Note: Adapted from the Survey of EU consumer attitudes to sustainability and supply chain transparency in the fashion industry, conducted by Fashion Revolution in August 2020 and published in December 2020).

1. Consumption of clothing
 - 1.1 Purchase of new clothing: quantity each year (pieces) and consumption budget
 - 1.2 Choice of materials: Durability of fabric? Fashionable? Functional?
 - 1.3 Other comments?
2. Choice of brands and retailers of clothing
3. Post consumption treatment
 - 3.1 Use of recycled fibres in the choice of products:
 - (a) Happy to use recycled fibres?
 - (b) If (a) above is yes, what factors the respondent would consider?
 - (c) If (a) above is yes, the expected percentage?
 - (d) If no, why? What are the key considerations?
 - (e) Can you name any brand(s) and the product(s) you are aware of using recycled fibres?
 - (f) What are your experiences and feelings about buying and clothing using recycled fabric or components?
 - Quality
 - Comfortability
 - Pricing
 - 3.2 Use of second-hand clothing
 - (a) Have you ever tried to purchase and use second-hand clothing, rather than new clothing?
 - (b) What are your experiences and feelings about using second-hand clothing or clothing using recycled fabric or components?
 - Quality
 - Comfortability
 - Pricing
 - (c) Why use second-hand clothing?
4. Environmental concerns
 - 4.1 Do you concern about the environment?
 - (a) If yes, in what ways?
 - (b) If no, why not?
 - 4.2 Do you share the view that through responsible consumption, people can save the environment?
 - (a) If yes, in what ways?
 - (b) If no, the reason(s) why?

Figure 6: Sample of Interview Guide (for interviewing consumers) (cont'd)

- 4.3 Can you share your views as to how consumers can help protect the environment through their consumption behaviours ? In what ways?
- (a) Wear their clothes for at least ____ years?
 - (b) When was your last time buying clothes?
 - (c) Pass on unwanted clothes to other to use?
 - (d) Avoid buying new clothes? Buying less?
 - (e) Have you ever tried to purchase clothes that are designed for durability?
 - (f) Buy/wear clothes that are in fashion only? Or the style lasts longer than one season?
 - (g) Willing to buy second-hand clothes?
 - (h) Repair their damaged clothes?
 - (i) Washing clothes at 30 degrees Celsius or lower?
 - (j) Consumer requires fashion brands having ethical and sustainability certifications?
 - (k) Requires detailed information on product care and repairs?
 - (l) Concerns about wages and working conditions for people in the supply chain?
 - (m) Are you willing to pay more for purchase clothes made in an environmentally or socially responsible way? If not, why?
 - (n) Any other way(s), please specify?
 - (o) What other thing(s) do you think important when considering to buy the clothing (including shoes and accessories)?
- 4.4 Any roles to be played by fashion producers?
How willing you are to initiate eco-design measures to ensure
- (a) that textile products are fit for circularity?
 - (b) the uptake of secondary raw materials?
 - (c) Tackling the presence of hazardous chemicals
- 4.5 Any roles to be played by clothing retailers?
- (a) Any services provided by retailers for
 - repair of damaged clothing?
 - a market for second-hand clothing?
 - (b) If yes for the above, how, where and at what expenses are the provision of such services?
- 4.6 Any roles to be played by Governments?
- (a) Has a role to play in ensuring clothing is produced sustainably?
 - (b) Empowering business and consumers to choose sustainable textiles and clothing?
 - (c) Makes it easier to purchase clothing made in a sustainable way?
 - (d) Policies to allow consumers to have easy access to re-use and repair services?
 - (e) Policies to improve business and regulatory environment for sustainable and circular textiles and clothing; such as providing incentives and support to “Product-as-a-Service” (“PaaS”) models (Annarelli, Battistella and Nonino (2016) (e.g. clothing rental), circular materials and production processes?
 - (f) Providing policy, incentives and guidance to achieve high levels of separate collection of textile waste, and to boost the sorting, re-use and recycling of textiles?
 - (g) Adopting innovation and technology for encouraging industrial applications and regulatory measures for facilitating collection, re-use and recycling of textiles and clothing?
 - (h) Any other areas?

(Source: European Commission: A New Circular Economy Action Plan (2020), Section 3.5 Textile, page 10)

4. Conclusion

Circular economy is one of the Sustainable Development Goals supported by the United Nations. Pursuant to the SDG #12 for ensuring responsible production and consumption, circular economy deserves more attention at higher level of adoption in the global supply chain systems and consumption pattern in order to achieve efficiency in the utilization of finite supply of natural resources on the Planet Earth, ensure sustainability of humankind future. This research proposal is an attempt, by way of qualitative investigative methods, to fill the gap in the body of knowledge about the preparedness of Hong Kong people in respect of such socio-cultural aspects as the awareness, perspectives, attitude and motivation towards the global trend of transitioning the linear economy to the circular economy focussing on the textile and clothing sector. With the research results may shed light for the policy makers at the government to the key issues relating to the implementation of the transition to the circular economy in Hong Kong. This would provide foundation for further study applying quantitative methods to confirm the key challenges and impediments arising from the socio-cultural considerations. This in turn facilitates other public policy formulation process, including public consultation on the public policy and regulatory updates.

5. Limitations

5.1 Use of semi-structured in-depth interviews would be very time-consuming and labour-intensive. The interviews can result in large volume of data to be handled (for coding and analysis) and stored. The interviewer(s) must have good listening and probing skills. In order to facilitate success, proper training to on-site interviewer(s) needs to be conducted before the interviews. Moreover, it cannot be precluded the possibility that some respondents may want to please the interviewer(s) (Savelyeva, T. (2022), Lecture 4, p.89) and the fairness of the findings may be compromised. The use of a reputable qualitative data analysis software would help the coding and analysis to a large extent.

5.2 As explained in subsections 3.4.1 and 3.4.2 above, at this stage of the forthcoming transition to the circular economy for Hong Kong, qualitative research methods have certain advantages. These include allowance of flexibility in defining the scope and identifying the relevant factors for consideration and further study. However, quite often there is no

hypothesis for testing. Control groups for comparison or contrast are usually absent. The sample size is often small and the sample may not be randomly selected, which may result in potential bias in sampling. Moreover, there may not be any standardized protocol and instruments for data collection, analytical procedures and measurements for determining the results.

5.3 To supplement the limitation arising from the use of the qualitative research methods of investigation for gaining insights into socio-cultural and psychological factors in this proposed research project, it may be advisable to integrate it with the user-generated online review method adopted by Camacho-Otero et al (2019) in the future research for obtaining more quantitative data for hypothesis testing and other analyses.

References

- Annarelli A., Battistella C., Nonino F. (2016) "Product service system: A conceptual framework from a systematic review", *Journal of Cleaner Production*, Volume 139, Pages 1011-1032. <https://doi.org/10.1016/j.jclepro.2016.08.061>
- Bocken, N., DePauw, I., Bakker, C & van der Grinten, B. (2016). Product design and business model strategies for a circular economy. *Journal of industrial and Production Engineering*, 33(5), 308-320. <https://doi.org/10.1080/21681015.2016.1172124>
- Camacho-Otero, J., Boks, C., & Pettersen, I. N. (2019). User acceptance and adoption of circular offerings in the fashion sector: Insights from user-generated online reviews. *Journal of Cleaner Production*, 231, 928–939. <https://doi.org/10.1016/j.jclepro.2019.05.162> or <https://www.sciencedirect.com/science/article/pii/S0959652619316889>
- Charmaz, K. (2006). *Constructing Grounded Theory – A Practical Guide through Qualitative Analysis*. London, U.K.: Sage.
- Circular Economy Promotion Law of the People's Republic of China (in Chinese) passed by the National People's Congress on 29 August 2008
http://www.gov.cn/flfg/2008-08/29/content_1084355.htm
- Ditty, S and Somers, S. (2020). Survey of EU consumer attitudes to sustainability and supply chain transparency in the fashion industry. Fashion Revolution Community Interest Corporation. December 2020. <https://www.fashionrevolution.org/resources/consumer-survey/>
- Doppelt, B. (2003). Overcoming the seven sustainability blunders. *The Systems Thinker*, 14(5), 2–7.
- Ellen MacArthur Foundation. (2013). Towards the circular economy. Opportunities for the consumer goods sector. Retrieved from https://www.ellenmacarthurfoundation.org/assets/downloads/publications/TCE_Report-2013.pdf
- Ellen MacArthur Foundation. (2017). A new textiles economy: Redesigning fashion's future. Retrieved from https://www.ellenmacarthurfoundation.org/assets/downloads/A-New-Textiles-Economy_Full-Report_Updated_1-12-17.pdf
- European Commission: new Circular Economy Action Plan ("CEAP"). 11 March 2020.
https://environment.ec.europa.eu/strategy/circular-economy-action-plan_en
- Fitch-Roy, Oscar, David Benson, and David Monciardini (2020). "Going around in circles? Conceptual recycling, patching and policy layering in the EU circular economy package." *Environmental Politics* 29, no. 6 (2020): 983-1003.

- Geissdoerfer, M., Savaget, P., Bocken, N., & Hultink, E. J. (2017). The circular economy—A new sustainability paradigm? *Journal of Cleaner Production*, 143, 757–768. <https://doi.org/10.1016/j.jclepro.2016.12.048>
- Giorgi, A. (2009). *The descriptive phenomenological method in psychology: A modified Husserlian approach*. Duquesne University Press. <https://psycnet.apa.org/record/2009-17646-000>
- Karas, S. (2022), How regenerative Agriculture could help clean up the fashion industry. California State University Chico, Center for Regenerative Agriculture and Resilient Systems. Retrieved on 8 October 2022.
- <https://www.csuchico.edu/regenerativeagriculture/blog/regenerative-fiber-production.shtml>
- Ki C-W, Chong SM, Ha-Brookshire JE (2020). How fashion can achieve sustainable development through a circular economy and stakeholder engagement: A systematic literature review. *Corp Soc Responsib Environ Manag.* 2020;27:2401–2424. <https://doi.org/10.1002/csr.1970>
- Kirchherr, J., Reike, D., and Hekkert, M. (2017). "Conceptualizing the circular economy: An analysis of 114 definitions." *Resources, conservation and recycling* 127 (2017): 221-232.
- Korhonen, J., Nuur, C., Feldmann, A., and Birkie, S.E. (2018). "Circular economy as an essentially contested concept." *Journal of cleaner production* 175 (2018): 544-552. <https://www.sciencedirect.com/science/article/pii/S0959652617330706>
- Koszevska M. (2018). Circular Economy — Challenges for the Textile and Clothing Industry. *Autex Research Journal*, Vol.18 (Issue 4), pp. 337-347. <https://doi.org/10.1515/aut-2018-0023>
- Leontief, W. (1928). *Die wirtschaft als kreislauf*. Berlin, Germany: Laupp.
- Leontief, W. (1991). The economy as a circular flow: Structural Change and Economic Dynamics. 2(1). 181-212. [https://doi.org/10.1016/0954-349X\(91\)90012-H](https://doi.org/10.1016/0954-349X(91)90012-H)
- Moorhouse, D. & Moorhouse, D. (2017). Sustainable Design: Circular Economy in Fashion and Textiles, *The Design Journal*, 20:sup1, S1948-S1959. <https://doi.org/10.1080/14606925.2017.1352713>

NVIVO – Qualitative Data Analysis Software: Home page.

<https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home>

OECD (2019), *Global Material Resources Outlook to 2060: Economic Drivers and Environmental Consequences*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264307452-en>.

OECD Global Material Resources Outlook to 2060: Highlights, October 2018.

<https://www.oecd.org/environment/waste/highlights-global-material-resources-outlook-to-2060.pdf>

Pal, V. (2022), Social and Cultural Aspects of the Circular Economy: Toward Solidarity and Inclusivity (January 6, 2022). Available at SSRN: <https://ssrn.com/abstract=4002766> or <http://dx.doi.org/10.2139/ssrn.4002766>

Pure Waste. The Problem: We want to help the fashion industry to be more sustainable.

<https://www.impactreport.app/purewaste/index.html?view=TheProblem>

Savelyeva, T. (2022). Lecture 3: Qualitative research processes and human agency, lecture notes, Qualitative Research Methods, HKBM7003, University of Wales Trinity Saint David-Hong Kong Management Association, delivered 24 September 2022, pp.75-84.

Savelyeva, T. (2022). Lecture 4: Qualitative Data Collection, Analysis and Quality Procedures, lecture notes, Qualitative Research Methods, HKBM7003, University of Wales Trinity Saint David-Hong Kong Management Association, delivered 25 September 2022, pp.85-131.

Stahel, W.R. (2016). “The Circular Economy” *Nature* 531 (2016): 435.

Statista. (2020). Global apparel market – Statistics & facts. Retrieved from <https://www.statista.com/topics/5091/apparel-market-worldwide/>

Suter, M. (2019). Beyond PET: an extended Deposit-Return System for plastic packaging in Sweden. Master Thesis KTH, ABS, SEED, (Stockholm)

Synzenbe.com. (2019). How regenerative farming is cleaning up the fashion industry. Fibre2Fashion.com

<https://www.fibre2fashion.com/industry-article/8273/how-regenerative-farming-is-cleaning-up-the-fashion-industry>

United Nations. [Act Now for Zero-Waste Fashion - United Nations Sustainable Development](https://www.un.org/sustainabledevelopment/blog/2019/08/actnow-for-zero-waste-fashion/)
<https://www.un.org/sustainabledevelopment/blog/2019/08/actnow-for-zero-waste-fashion/>

UN News. (2019, 25 March). UN launches drive to highlight environmental cost of staying fashionable. Retrieved from <https://news.un.org/en/story/2019/03/1035161>.

United Nations: The Sustainable Development Goals Report 2019.

<https://unstats.un.org/sdgs/report/2019/The-Sustainable-Development-Goals-Report-2019.pdf>

United Nations: The Sustainable Development Goals Report 2022.

<https://unstats.un.org/sdgs/report/2022/The-Sustainable-Development-Goals-Report-2022.pdf>

United Nations Sustainable Development Goal #12: Responsible consumption and production

<https://www.un.org/sustainabledevelopment/sustainable-consumption-production/>

United Nations Sustainable Development Goal #12: Responsible consumption and production – sustainable and circular textiles

<https://www.unep.org/explore-topics/resource-efficiency/what-we-do/sustainable-and-circular-textiles>

United Nations Environment Programme (2020) *Sustainability and Circularity in the Textile Value Chain: Global Stocktaking*. Available at: <https://wedocs.unep.org/20.500.11822/34184> (Accessed: 24 October 2022)

United Nations Alliance for Sustainable Fashion

https://unfashionalliance.org/wp-content/uploads/2021/10/UN-Fashion-Alliance-Mapping-Report_Final.pdf

United States Environmental Protection Agency National Recycling Strategy

<https://www.epa.gov/recyclingstrategy/what-circular-economy>

Wetherbee, G., Baldwin, A., Ranville, J., 2019, It is raining plastic.: U.S. Geological Survey Open-File Report 2019–1048, 1 sheet, available at <https://doi.org/10.3133/ofr20191048>. Or <https://pubs.er.usgs.gov/publication/ofr20191048>

Whetten, D. (1989). What constitutes a theoretical contribution? Academy of Management Review, 14(4), 490-495. <http://dx.doi.org/10.5465/amr.1989.4308371>.

Wintersberger, D., and Saunders, M. (2020). Formulating and clarifying the research topic: insights and a guide for the production management research community. Production, 30, e20200059. <https://doi.org/10.1590/0103-6513.20200059>.

Appendices

Nil

STUDENT FEEDBACK FORM

This section details the *extent* to which the assessment criteria are demonstrated by you, which in turn determines your mark. The marks available for each category of skill are shown. Lecturers will use the space provided to comment on the achievement of the task(s), including those areas in which you have performed well and areas that would benefit from development/improvement

Student's name:

Title:

Generic Assessment Criteria	Marks available	Marks awarded
1. Engagement with Literature Skills		
Engagement with an extensive range of relevant and credible literature, informed by the latest research. Professional consistency in application of referencing skills	20	
2. Knowledge and Understanding Skills		
Systematic, conceptual understanding of knowledge Critical awareness of current problems and/or new insights Comprehensive understanding of techniques applicable to own research	25	
3. Cognitive and Intellectual Skills		
Critical evaluation/ critique of current research and methodologies Innovative hypothesising Systematic and creative synthesis of complex issues. Investigation of contradictory or incomplete information Strong, persuasive, arguments & sophisticated nuanced, judgements. Potential for journal publication or doctoral research	25	
4. Practical Application Skills		
Application skills in complex, unpredictable, contexts, drawing skilfully on the latest research within the discipline. Identification of complex problems & proposal of sophisticated, original solutions. Application of techniques applicable to own research or advanced scholarship. Originality in application of knowledge and techniques	15	
5. Transferable Skills for Life and Professional Practice		
Communication with an exceptionally high level of professionalism Coherency, fluency, professional presentation Teamwork, leadership skills Aspiration for further development	15	
Assessment Mark (Assessment marks are subject to ratification at the Exam Board. These comments and marks are to give feedback on module work and are for guidance only until they are confirmed.)	Late Submission Penalties (tick if appropriate)	
	Up to 1 week late (50% Max)	%
	Over 1 week late (0%)	

Comments:

Level 7	Fail	Fail	Marginal fail	Satisfactory (pass)	Good to very good (merit)	Excellent (distinction)	Exceptional (distinction)
Category	0-29%	30-44%	45-49%	50-59%	60-69%	70-84%	85-100%