LEARNING FOR BIOCULTURAL DESIGN: COMMUNITY KITCHENS AS INNOVATION SPACES FOR SMALL-SCALE FOOD PRODUCTION IN MANITOBA

by

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Abstract

Community kitchens have received much attention in the literature, yet their use for commercial purposes by small scale food producers/ processors are under-reported. The purpose of this project was to understand the role played by commercial community kitchens in Manitoba. Commercial community kitchens are a type of innovation space where small-scale food business owners develop product ideas and process raw materials into finished products. Primary data collection methods included the use of semi-structured interviews with eleven small-scale food business owners who produce and process a variety of food products (e.g. kombucha drinks, hummus, almond butter spreads, and gluten-free perogies).

Results indicated that the frequency of commercial community kitchens used for these food products ranges from seasonal to yearly use to periodic year-round use. Some business owners stopped using particular commercial community kitchens, combine the use of commercial community kitchens with other facilities, or use more than one commercial community kitchen. Some have stopped using commercial community kitchens because space, storage, tools, equipment, or resources were not adequate to their needs, or the rental cost was too high. The main reason for using commercial community kitchens was the need for government-certified community kitchens, which meet Manitoba's health standards and regulations, to commercialize food products.

Based on business owner interviews, the research suggests that commercial community kitchens can improve their services by increasing storage space, providing relevant tools and equipment for their users, and implementing programs to build user capacity of the kitchen facilities and equipment.

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Dedication

I dedicate this thesis to my family, supervisor, committee members, friends and research participants for their diverse contributions in making this research a success.

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CHAPTER 1: INTRODUCTION

1.1 Introduction

There is a need for the study of innovations contributing to improving systems for human survival, which is achievable through developing tools that can enhance innovation in these systems (Downey, 2017). One sector receiving global attention and needs to be studied is innovation in food systems. Innovation in food systems, especially the small-scale food system, has contributed to increasing food security among individuals and communities, leading to global food security promotion. It has helped in ensuring nutritious and healthy food is affordable to all people despite their economic status (Dubé et al., 2014) and allowed small-scale food producers or processors to access livelihoods that are satisfactory, acceptable, sustainable and environmentally friendly (Epp, 2009, p. 2).

There is a lack of research and information on community kitchens' potential as an innovation space that can meet the needs, objectives and solve the challenging problems of small-scale food processors in Canada (Engler-Stringer & Berenbaum, 2005). This research will broaden the understanding of how small-scale food processors use community kitchens in Manitoba for food product idea development and processing. A report by Janzen, Davidson-Hunt, & Robson in 2017, identifies community kitchens as innovation spaces that aim to overcome the barriers faced by small-scale food processors, including equipment and scaling-up issues. This research will contribute to the knowledge of community kitchens supporting small-scale food processors to develop products beyond the scale of personal, household kitchens. It will also add to the emerging field of biocultural design by providing information that can help food processors to use an innovation space as part of biocultural design projects supporting small-scale food systems.

1.2 Context of Research

To document and increase knowledge on food systems, Davidson-Hunt and other researchers conducted an exercise on innovation in small-scale food systems in southeastern Manitoba and central Saskatchewan (Hayes, Robson, & Davidson-Hunt, 2017; Janzen, Davidson-Hunt, & Robson, 2017). Case studies were conducted on how biocultural innovations and designs can be used to improve food systems in the Canadian prairies. This study led to the formulation of the biocultural design research guide and recommended further studies on the topic (Davidson-Hunt

et al., 2017). One recommendation was undertaking case studies on the processes and tools that can support innovation in small-scale food systems in the Canadian prairies (Hayes et al., 2017; Janzen et al., 2017). This recommendation was an inspiration to this research entitled "Learning for Biocultural Design: Community Kitchens as Innovation Spaces for Small-scale Food Production in Manitoba."

One barrier food processors encounter came to light after reading about innovation in food systems. This barrier is access to the right equipment for scaling-up production, and a solution to this challenge is the community kitchen. The reason is that community kitchens give small-scale food processing businesses access to food processing equipment, facilitate food product idea development, recipe testing, and increase production. This research will also contribute to the understanding of the role of community kitchens in Manitoba.

1.3 Research Purpose

The purpose of this research is to understand the role community kitchens in Manitoba play in serving as innovation spaces where owners of small-scale food processing businesses can develop food product ideas and process raw materials into finished food products that can be sold in both local and regional markets of the Canadian prairies.

1.4 Research Objectives

1. Document the community kitchens in Manitoba based on their mission, vision and types of users.

2. Identify and undertake a case study of small-scale food processors who have used community kitchens in Manitoba for food product development and commercialization.

3. Develop recommendations for potential food processors and food processing businesses, community kitchen coordinators and the government to reduce food processing costs using community kitchens, improve upon services, and promote innovation in small-scale food processing and community kitchens, respectively.

1.5 Methodology

This research was qualitative and was guided by a social constructivist approach (Creswell, 2007) with a focus on getting contextual comprehension of people's experiences and the meanings they associate with them (Maxwell & Reybold, 2015). Goals were established and

connected with the participants' experiences and associated meanings they had as it relates to the research goals (Neimeyer & Torres, 2015). Case studies were conducted using the information-oriented selection approach. The case study sample was selected to represent the experiences of small-scale food producers and processors who have utilized community kitchens to develop food products for local and regional markets (Gerring & Cojocaru, 2015).

A document review of the small-scale food sector and community kitchens in Manitoba informed this research. Ethics permit with a certificate number J2019:010 (HS22557) was obtained from the University of Manitoba's Joint Faculty Research Ethics Board before commencing this research. Data collection was done through a survey and semi-structured interviews using the multiple perspectives approach (Chen, Ibekwe-SanJuan, & Hou, 2010). Before data collection, rapport was established between the researcher and potential research participants via emails, text messages, phone calls and in-person communications. For community kitchen coordinators who were potential survey participants, communication was via emails. For owners of small-scale food processing businesses who were potential interview participants, communication was in person and via email, text messages, and phone calls. The multiple perspectives approach aims to present the different perspectives of all the research participants on using community kitchens as innovative tools based on their backgrounds and experiences of using the facility for food product idea development and processing.

Closed and open-ended questions were used for the survey and interview. Participants took the survey via email or phone and completed the interview via phone or in-person, depending on their preference and convenience. The survey participants were community kitchen coordinators, and the interview participants were owners of small-scale food processing businesses in Manitoba. The surveys allowed community kitchen coordinators in Manitoba to share information about their mission, vision, services, available tools, equipment and resources of the kitchen as well as their up-to-date status on the Commercial Community Kitchens for Rent Listing on the Province of Manitoba Agriculture website. The semi-structured interviews made inquiries by asking questions that allowed small-scale food processors to share their personal experiences using community kitchens in Manitoba for innovative food idea development, small-scale food processing and the challenges they encountered during the process. The semi-structured interview questions were developed using the "Biocultural Innovation Case Study

Semi-Structured Interview Guide" (Davidson-Hunt et al., 2017, p.23), knowledge from previous surveys by Davidson-Hunt, Robson and other researchers in 2017 as well as existing literature on community kitchens (Hayes et al., 2017; Janzen et al., 2017).

After data collection, the member checking approach was used by sharing the survey and interview transcripts with all participants to verify whether there is a correspondence between the transcripts and what they said during the survey and interview. The reason was to ensure correlation and maximize the research data's credibility (Hadlington, 2017). Multiple data sources were used to ensure data trustworthiness and credibility, including the information obtained from the surveys, semi-structured interviews, and document reviews (P. Baxter & Jack, 2008).

Although social sciences recognize qualitative research, there are a limited number of tools for analyzing qualitative data. The researcher's information disclosure is needful, but the available tools for analyzing it are a few sophisticated ones (Attride-Stirling, 2001). The data was stored, coded and analyzed using NVIVO, which was created by QSR International. It is an example of CAQDAS, thoroughly explained as a Computer-Aided Qualitative Data Analysis Software (Bringer, Johnston, & Brackenridge, 2006). With this software, I was able to efficiently organize the collected data, retrieve and access specific information. Instead of describing the collected data in the data analysis section of the research material, this software served as a tool for producing an explanatory model grounded in the collected data through its programs such as coding, model creation, writing memos and analysis (Bringer et al., 2006).

1.7 Thesis Organization

The thesis is organized into five chapters. The first chapter is the introduction, and it consists of the background of the study, the reason for selecting the research topic, the research purpose and objectives, methodology, and thesis organization. The second chapter focuses on literature review and includes topics pertinent to this research, such as biocultural design, biocultural heritage, and food innovation spaces for local small-scale food production and processing in Manitoba. The topics covered in chapter two are design thinking, the use of the design in social innovation, an overview of the biocultural design, heritage and innovation, small-scale food production in Manitoba, and innovation in food systems, food maker spaces, food innovation hubs and community kitchens. Chapter three presents the research design. It covers the research

methodology, methods, selection criteria for participants of the research, strategy of inquiry, and data collection, analysis and dissemination. Chapter four of this thesis presents the research results. Chapter five summarizes the main research findings, recommendations that emerge out of the findings, and a conclusion.

CHAPTER 2: LITERATURE REVIEW

2.1 Food Innovation Spaces

Social innovation flourishes in spaces that allow a person, group or community to develop innovative ideas either as a unit or as individuals. Some innovation spaces are registered facilities and institutions created to serve as resources for creativity and innovation development through individual efforts or the collaboration between members of a group or community (Franklin, Kovách, & Csurgó, 2017). Most innovation spaces supporting small-scale food processing and production initiatives have distinctive environments aimed at achieving social innovation and benefits such as co-production for community food security (Franklin et al., 2017).

Ideas developed within innovation spaces can be acceptable and beneficial to the space users if the desired product is a combination of new and traditional methods and resources. Therefore, using an innovation space to develop a product idea through biocultural means does not make it less innovative (Curran, 2010). Though numerous facilities can support biocultural innovations, those that promote biocultural innovations in food systems are food maker spaces (Antlej et al., 2017), food innovation hubs (Stroink & Nelson, 2013) and community kitchens (Ripat, 1998). These innovation spaces are significant across the globe and include sustainable communities and business models.

2.2 Examples of Food Innovation Spaces

2.2.1 Food Maker Spaces

A maker space refers to a movement recognized for its ability to stimulate and encourage people's active participation through a mentor's encouragement and leadership in a learning environment or space to develop innovations and improve existing ones (Litts, 2015). Maker spaces empower the innovative development of products when the right tools and technologies are accessible. They also nurture "experimentation, invention, creation, exploration, and STEM (Science, Technology, Engineering and Mathematics) learning" (Litts, 2015, p. 3). The technique used in maker spaces to achieve desired outcomes, products, and entrepreneurship is the "do-it-yourself or do-it-together" culture (Holm, 2015, p. 25).

Some food maker spaces serve as food hubs or gallery centres where the space displays what food producers and vendors have to offer in terms of potential and current innovative products and services (Gallagher, 2017). Food maker spaces reinforce biocultural heritage by exploring traditional foods in the space and using it to inspire younger generations to engage in creative food production and innovation in traditional foods using STEM or current methods. For example, in Australia, innovation in food production has been expanded to using museums as food maker spaces. In these museums, old and young people explore traditional cuisines and develop new food products based on their cultural heritage using 3D food printing (3DFP) technologies (Antlej et al., 2017).

2.2.2 Food Hubs

A food hub has several definitions and meanings to different groups of people (Blay-Palmer, Landman, Knezevic, & Hayhurst, 2013). It describes a space that increases individuals' and communities' access to healthy, locally produced or sourced food. Food hubs improve the benefits food producers, retailers, and distributors realise from locally sourced food (Fischer, Pirog, & Hamm, 2015). The advantages of food hubs are their ability to facilitate innovation in food systems (Blay-Palmer et al., 2013) and increase people's knowledge about food systems through public education (Fischer et al., 2015).

According to the United States Department of Agriculture, a food hub is a medium that develops local food supplies through collaboration with local food producers to increase local food production impact on communities socially, economically and environmentally. Food hub facilities also function by directly connecting food producers to consumers (Stroink & Nelson, 2013). Food hub examples considered as having the capacity to advance communities' benefits such as community food security promotion are community kitchens (Fridman & Lenters, 2013).

2.3 Community Kitchens as Food Innovation Spaces

2.3.1 Definition of Community Kitchen

Every kitchen is considered a food maker space (Antlej et al., 2017). Community kitchens, the research focus, are public facilities within communities that assist in the formation of food hubs and their successful functioning. As public kitchen spaces, they initiate innovations in community food systems, promote food security, increase access to healthy food and foster collaboration between food producers and other stakeholders in the communities in which they

exist (Fridman & Lenters, 2013). Though many families, especially food insecure families, lack knowledge or are less familiar with community kitchens (Loopstra & Tarasuk, 2013), community kitchens have been developing in several countries for over twenty years. They have been the originator of many groups, services and food products (Engler-Stringer & Berenbaum, 2005).

2.3.2 Types of Community Kitchens and Their Benefits

There are different types of community kitchens. Some community kitchens focus on promoting food production and processing by improving the skills people have in cooking, developing food products, and providing the tools, resources and equipment for food production and processing (Engler-Stringer & Berenbaum, 2005). Other community kitchens prioritize developing communities and therefore promote social interactions, experience sharing and collaborations among individuals, groups and communities (Fano, Tyminski, & Flynn, 2004). These community kitchens promote community development through the self-help approach, which involves community members collaborating to improve their community through group decisions and actions (Aulo & Yuko, 2014; Marquis et al., 2001). The community kitchen type and focus determine the kitchen coordinator selection and the kitchen's adaptation to meet its target group's needs (Engler-Stringer & Berenbaum, 2005).

Commercial community kitchen use by small-scale food processors present a win-win experience for food processors and commercial community kitchen coordinators. Food processors gain advantages like easy access to the kitchen space for food product idea development and processing, social benefits, and per-unit cost reduction through shared equipment and tools (Ayoub & Brunet, 1996), while community kitchen coordinators gain financial income from users because of the fees they pay for using the kitchen and its resources. Therefore, the cooperation between the two parties becomes economically beneficial for both parties (Manzini, 2015). People who participate in using community kitchens for cooking and developing food products usually find the outcome to be more culturally acceptable. They also find the food quality to be high-grade and the experience empowering in producing healthy food (Fano et al., 2004) and achieving food security as individuals and communities (Engler-Stringer & Berenbaum, 2005).

Community kitchens help the participants of its programs to increase their knowledge about nutrition by including formal and informal nutrition education in its programs. They mostly achieve this by forming small groups within a community that occasionally plans well-organized cooking programs within the community (Engler-Stringer & Berenbaum, 2006). These groups bring together the materials and human resources needed for the program within the kitchen, and the group members derive the program benefits by learning how to budget and share recipes through cooking large quantities of food which reduces the production cost if they had produced the food individually (Fano et al., 2004). They also educate the group members on essential nutrition lessons, provide social support, and help meet the nutrition, health and food security needs of participating members of the group (Engler-Stringer & Berenbaum, 2006; Fano et al., 2004).

Another community kitchen benefit contributing to its popularity is its capacity building ability. Community kitchens build the capacity of individuals and communities by equipping them with the skills, support and resources needed to solve hunger (Koc et al., 2008). Community kitchens achieve this by developing effective strategies and helping communities (Tarasuk & Reynolds, 1999) by promoting collaboration between different stakeholders (Aulo & Yuko, 2014). Some community kitchens enrol licensed nutritionists, dieticians, counsellors, and other professionals as employees and help community kitchen program participants in their areas of expertise. This opportunity to interact and get help from professionals gives the participants health and social advantages over their counterparts who do not participate in community kitchen programs or use their services (Marquis, Thomson, & Murray, 2001).

Lastly, some community kitchens have provided benefits to the poor, vulnerable and marginalized of different societies (Furber, Quine, Jackson, Laws, & Kirkwood, 2010). The characteristics of such community kitchens include the empowerment of people belonging to these categories that are earning little or no income to form advocacy groups fully equipped to lobby for resources necessary for their daily survival. These community kitchens provide some of these less privileged people with job opportunities, such as becoming leaders or employees in community kitchens and other related careers (Furber et al., 2010). The main goal of empowering these people is to grant them the ability to financially and economically support themselves (Ripat, 1998).

2.3.3 Commercial Community Kitchens and their Use as Food Innovation Spaces

The commercial community kitchen is a type of community kitchen that alleviates the problems and challenges small-scale food producers and processors encounter in reducing production costs and finding enough working space for production. They reduce small-scale food production and processing costs by eliminating the cost their users would have incurred by buying production and processing tools and equipment by making them available for use in the kitchen. They also provide the kitchen users with enough space and resources for trying out food product innovation ideas until they settle on the final product to develop for their target consumers (Tarasuk & Reynolds, 1999). Small-scale food producers and processors sharing commercial community kitchens collaborate in using these facilities; therefore, helping each other develop solutions is natural, and the implementation of the solutions is usually efficient and effective (Ripat, 1998).

Biocultural design is a field that can learn from the experience of community kitchens as innovation spaces. The purposes of community kitchens are widespread, ranging from providing service to marginalized communities to public spaces that enhance the innovation of food products. While previous work on community kitchens in other countries and parts of Canada are available, little research has been undertaken within the Canadian prairie region, especially Manitoba.

2.4 Overview of Biocultural Design, Heritage and Innovation

2.4.1 Design Thinking

Design refers to devising and formulating courses of action to change existing situations into better circumstances preferred by the designer and a target user group (Simon, 1985). Design is "the process by which an idea is conceived and then given form, structure and function. Design is also a practice of inquiry and action that includes both creativity in the conception of new ideas and innovation in making such ideas visible in everyday life" (Davidson-Hunt et al., 2012, p. 39). Design thinking is an essential tool in developing various global innovations. With the end-user in mind, design thinking helps an individual or group develop desirable and economically viable solutions, products and services for an enterprise or group of people (Plattner, Meinel, & Leifer, 2011). Generally, one cannot formulate innovative ideas without engaging in some form of design thinking. The realization of product innovation is achievable by meeting the end-users' needs by modifying old or introducing new features that address those

needs. Human needs continually change, and therefore, developing product innovations must be a continuous process aimed at meeting the ever-changing human needs (Erto, 2009).

Because of the cycle of designers trying to meet people's needs through design thinking, it is paramount that designers desiring to address human needs develop the ability to gain insight through observation, which is a significant source of design thinking. By observing people's unmet needs, a person engaging in design thinking can draw insight from how people improvise to meet those needs and develop innovative products and services to provide a solution to those needs (Brown, 2009). After observing and drawing insight, a designer must ensure that the formulated ideas are viable and strategize on how to implement the ideas using a productive, economically feasible and capable approach of producing the desired outcome. As part of design thinking, a person engaging in the technique must analyze the limitations that can affect the achievement of the desired outcome and develop a plan to mitigate the limitations (Brown, 2009). The design process helps designers develop innovative tools that can serve as solutions to some challenges faced by a target group through design thinking. To summarise the design process, it encompasses testing the desirability, viability and feasibility of a designer's ideas and helps in achieving the designer's goals. The reason is that innovative ideas must be desirable to the target group, economically viable to the designer and end-user and feasible to ensure the idea implementation without difficulties (Brown, 2009).

2.4.2 The Use of Design in Social Innovation

Social innovation is a field of enquiry gaining global attention. Though social innovation does not have a specific definition, one can say it is "the development and application of new or improved activities, initiatives, services, processes, or products designed to address social and economic challenges faced by individuals and communities" (Goldenberg, 2004; Goldenberg, Kamoji, Orton, & Williamson, 2009, p. 3). A critical aspect of social innovation is its ability to address and meet persistent societal needs by articulating contemporary ideas to meet the needs (Mulgan, Tucker, Ali, & Sanders, 2008). Social innovations can be limited to a distinct community making it local, or it can be a global social innovation that addresses international needs and is not limited to specific parts of the world (Manzini, 2015).

Social innovation has influenced changes in designs through technological advancement and innovation. One factor influencing and fueling advancement locally and globally, despite the

constant changes in designs, is the quest to develop social innovations that can serve as viable solutions to the unending human needs in the world (Manzini, 2015). Design uses conventional means to develop current innovations that serve as solutions to many problems resulting from weakened traditions. It also enables designers to create modern designs using traditional knowledge and skills. Using the conventional mode of design in social innovation mostly results in positive feedback from end-users because most conventional methods are reliable (Manzini, 2015). Apart from the conventional method, the design mode is equally helpful in developing social innovations to address social needs. The design mode refers to creating original inventions and ideas. It involves identifying human life aspects requiring improvement or changes in social innovation, finding potential solutions to them, and making the best solution. The design mode enables designers to actualize original ideas that result from their creative abilities (Manzini, 2015).

2.4.3 Biocultural Design

Biocultural design is a technique that provides enhanced traditional methods of effectively dealing with contemporary global needs and challenges through product and service innovations originating from applying design thinking to preserving biocultural heritage and improving how local communities adjust to global changes (Davidson-Hunt et al., 2012). Biocultural design helps local communities to develop sustainable innovations and livelihoods through creative abilities and resources culturally valuable to them.

One theory of biocultural design is the empowerment of people to influence their own lives based on their knowledge, creativity, skills and values. Through collaboration and collective decision-making, communities can use biocultural design to initiate developmental and economic projects that are highly beneficial, peculiar to their communities, and promote their biocultural heritage (Davidson-Hunt et al., 2012). The biocultural design process starts with an inspiration initiated by a need or problem, the formulation of ideas on how to meet the need or solve the problem and lastly, implementation of the resulting best idea. The outcome of the biocultural design process is a product or service resulting from the design team’s knowledge and skills that can be integrated into people’s lives to meet specific needs and solve problems (Davidson-Hunt et al., 2012).

The western world has attached significance and attention to cultural diversity in the twentieth century because the western world encompasses a variety of cultures. Therefore, cultural diversity has resulted in the use of the multiculturalist approach to address issues pertinent to today's globalized world. Most widely accepted global designs focus on promoting cultural diversity (Soroka, Johnston, & Banting, 2008). The use of biocultural design is an emerging concept that enhances the maintenance, support and encouragement of cultural expression and diversity (Kuzivanova & Davidson-Hunt, 2017). Though biocultural design is a new design practice, people have always been using their local biological materials and creativity in creating solutions since time immemorial (Davidson-Hunt et al., 2017).

2.4.4 Biocultural Heritage

Biocultural heritage refers to

> "knowledge, innovations and practices of indigenous and local communities which are [often] collectively held and inextricably linked to traditional resources and territories, local economies, the diversity of genes, varieties, species and ecosystems, cultural and spiritual values, and customary laws shaped within the socio-ecological context of communities."

(Davidson-Hunt et al., 2017, p. 10). One aspect of biocultural heritage is the use of Traditional Ecological Knowledge (TEK) and passing it down (Begossi, 2001; Bonny & Berkes, 2008) from one generation to another in a cultural setting or community (Kuzivanova & Davidson-Hunt, 2017). Biocultural heritage establishes a traditional way of dealing with uncertainties and threats caused by complex systems (Rangel-Landa, Casas, Rivera-Lozoya, Torres-García, & Vallejo-Ramos, 2016).

In some indigenous biocultural heritage areas, traditional knowledge is protected with tools and systems positive and defensive of the cultural values of the area (Amend, Brown, Kothari, Phillips, & Stolton, 2008) which helps in ensuring the sustainability of those traditional communities (Turner et al., 2016). The biocultural heritage of a group gives them an identity and serves as a common link that binds them together as a people (Antlej, Leen, & Russo, 2017). For example, the Potato Park in Peru is

> "an Indigenous Biocultural Heritage Area (IBHA) that celebrates the tremendous diversity of native potato species and varieties characteristic of Andean food systems and aims to protect traditional knowledge systems

> within their cultural, temporal and spatial dimensions using a combination of positive and defensive protection tools."

(Amend et al., 2008, p. 45).

2.4.5 Biocultural Innovation

Biocultural innovation refers to the

> "new or traditional knowledge (Oguamanam, 2010, p. 145), resources, skills, and practices, which utilize biodiversity to support wellbeing in response to globalized change (B. G. Dutfield, 2014; G. Dutfield, 2006, 2007). They can emerge within individual or collective domains and distinguished from individual creativity by the process of socialization an innovation undergoes through which it moves from the domain of any individual, household or organization to become part of a society's package of responses to globalized change"

(Davidson-Hunt et al., 2017, p. 10).

Culture is an indispensable part of the world, and biocultural innovation helps connect new ideas and technologies with old traditional and cultural practices (Brandt, 2014). Biocultural innovations help in the preservation and advancement of biocultural heritage. Biocultural innovations and heritage have resulted in the production of specialty food products, have been a component of the development strategies of communities and have contributed to the sustainability of communities (Turner, Davidson-Hunt, Desmarais, & Hudson, 2016).

The use of biocultural innovations, design and heritage can help small-scale food producers and processors develop food products unique to specific communities and groups. Thus, the producers can distinguish what they have developed from similar products in the marketplace and make the food products valuable and desirable to target consumers. It enables small-scale food producers and processors to have a comparative and competitive advantage for their products. They can increase productivity and reduce the cost per unit production, making this essential in rooting biocultural design in biocultural innovations and heritage.

2.5 The Role of Small-scale Food Processing and Production in Food System Innovation

2.5.1 Small-scale Food Processing and Production

Small-scale food production cannot be easily defined but has features of food production occurring within a local area whereby the public sale of the food product is within the same local

area. Small-scale food producers and processors refer to the entrepreneurs within this sector. They sometimes employ a few people and have productions that revolve around a limited number of products. Small-scale food producers include producers whose land base is limited, producers of crops and livestock that usually combine different agricultural methods and producers or processors who are engaged in a small-scale operation that is local or specialized. All these people directly market their products, use a farmer's market or rely on local food outlets to get their products to consumers (Lees, 2015).

The FAO Statistics Division of the Food and Agriculture Organization of the United Nations wrote a working paper series on Defining Small-scale Food Producers to Monitor Target 2.3. of the 2030 Agenda for Sustainable Development. According to their Proposed International Definition of Small-scale Food Producers for Monitoring SDGs 2.3.1 and 2.3.2 by the Office of the Chief Statistician and Statistics Division of FAO, the term small-scale food producers do not have a general definition but can be defined and explained based on the context for which one uses it. From these two papers, a definition has been adopted based on physical space and economic status. Small-scale food producers are individuals involved in producing, processing or transforming raw agricultural food products and materials into finished products ready for consumption. These people are at a high risk of "poor economic results or poverty due to structural constraints in their operations, limited access to land or space, resources, input and technology" (Aida Khalil, Conforti, Ergin, & Gennari, 2017, p. 28; Office of the Chief Statistician and Statistics Division, FAO, 2017, p. 3).

According to Agriculture and Agri-Food Canada, small-scale food production forms a minority of the world's total food production and often produces products and services neglected by the large-scale food production sector. Small-scale food production helps food producers and processors control producing certain goods and services because they can identify production problems before they escalate. The success of the small-scale food production enterprise depends on the resources at the producer's disposal and how knowledgeable and experienced the producer is in producing specific goods and services (Agriculture and Agri-Food Canada, 2015).

Small-scale food production enhances food security and sovereignty in local communities and helps preserve and sustain food production in those local communities (Miewald, Ostry, & Hodgson, 2013). According to the World food summit in 1996, "food security is assured when

all people at all times have economic, social and physical access to sufficient, safe, nutritious food that meets their dietary needs as well as their food preferences and allows them to maintain a healthy and active life" (Aliaga & Chaves-Dos-Santos, 2014, p. 74; FAO, 2006, p. 1; Thompson, Kamal, & Wiebe, 2012, p. 46). Food security also gives rise to an agricultural sector that can sustain the environment and ensure that food processors and producers have adequate livelihoods (Epp, 2009).

New knowledge and research advancements have made a change in the way the world views food security. People no longer view food security as enough supply of food in large regions or countries but a supply of food in various households and local communities (Patel, Gartaula, Johnson, & Karthikeyan, 2015). This change in the way people view food security has resulted in the food sovereignty movement. According to the international planning committee for food sovereignty in 2017, food sovereignty is "the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems" (FAO, 2015, p. 1; Thompson et al., 2012, p. 47). Food sovereignty encourages small-scale local food producers to produce healthy and enough food to feed their local communities sustainably (Patel et al., 2015; Thompson et al., 2012).

2.5.2 Innovation in Food Systems

One can consider innovation as steps to help in the adoption or formation of new ideas and its general implementation and execution towards achieving a specific goal (Wan, Ong, & Lee, 2005). The twenty-first century started the era of innovation in many industries, especially the food and beverage industry (Varese & Cane, 2017).

A food system constitutes the activities involved in food production and processing, packaging of the processed food, retail and distribution of the food product, and consumption (Tendall et al., 2015). The purpose of a food system is to ensure that all people, including those in remote, rural and local communities, get enough nutritional food. It also ensures that food is appropriate for the consumer's culture and nutrition, and people can access enough nutritious food based on their physical proximity and economic status (Tendall et al., 2015).

Countries and individuals always seek to improve global and local food systems (Feagan, 2007). Paramount among these countries is Canada who has been advocating for the sustainability of food systems since 1970 and exposed and found solutions to problems in global and local food

systems (Koc, Macrae, Desjardins, & Rd, 2008). Despite attempts to improve food systems, there is a need for change and sustainability in local and international food systems. The reason is that, while millions of people are overweight, millions of other people are malnourished and underweight (Blay-Palmer, 2010). The primary way to address these global and local food systems' challenges is to develop innovations that will ensure food system sustainability (Blay-Palmer, 2010; Sustainable Development Commission, 2017).

Though innovation has no specific definition, it can be defined as the creation of ideas and knowledge for products and services development that can make improvements in a system either as a response to external occurrences, to bring about change within the system or bring about the desired outcome for a target group (Baregheh, Rowley, & Sambrook, 2009). Innovation in food systems influences existing food system models or creates new sustainable models that can help improve food systems from the food production stage to the desired food product distribution stage (Coudel, Devautour, Soulard, Faure, & Hubert, 2012). Some benefits of innovation in food systems are the discovery of new food products, maximization of opportunities related to food production and the empowerment of people to learn new ways of food processing, distribution, consumption and the proper disposal of generated food waste (Baregheh et al., 2009).

CHAPTER 3: RESEARCH DESIGN (METHODOLOGY AND METHODS)

3.1 Constructivist Paradigm

Despite the various paradigms and worldviews for qualitative research (Griffin, 1999), this research was pragmatic with a primary focus on the selection of participants, methods, instruments and tools relevant to the purpose of the research (Ponterotto, 2005). The best-suited paradigm for this research was the constructivist paradigm. Its focus is on deducing useful, practical meanings from people's experiences and how it affects their decision making while enabling the researcher to create knowledge materials useful for guiding practice (Rodwell, 1998). This research's objectivity gears towards understanding the experience or reality the participants shared (P. Baxter & Jack, 2008).

3.2 Qualitative Research

This research is qualitative because qualitative research focuses on gaining in-depth information about a small group of people that forms part of a larger population to accumulate comprehensive knowledge about their behaviour, the way they think and the meanings they attach to different things and occurrences (Ambert, Adler, Adler, & Detzner, 1995). In this research, detailed information was collected about eleven small-scale food processors who have used community kitchens in Manitoba. The research interview participants form part of a larger group of small-scale food processors in Manitoba. Interviews were used to obtain extensive knowledge about the food processors' concepts and meanings to the use of commercial community kitchens for innovative food product idea development and processing in Manitoba.

In qualitative research, one can collect detailed information about a specific phenomenon of interest with no strict rules guiding the qualitative research sample selection. The sample is mostly small due to the depth of information and understanding a researcher obtains from the purposefully selected sample (Tuckett, 2004). This research sample consisted of six survey participants and eleven interview participants that were carefully and purposefully selected. The basis for participants' selection was their experience and knowledge in running commercial community kitchens for the survey and using community kitchens in Manitoba for food product idea development and processing for the interview.

3.3 Case Study

Case studies are enquiry strategies used for research in several disciplines across the globe (J. Baxter, 2010), especially in the social sciences (Thomas, 2011). A case study analyzes a topic using in-depth qualitative research and data collection methods (Feagin, Joe R. and Orum, 1991). Despite the use of case studies for mixed, quantitative and qualitative research, it is mostly used for qualitative research to gain insight into examples of an occurrence aimed at exploring factors that contributed to the occurrence, the circumstances that triggered it, how they differ and possible explanations available for the occurrence.

A case study is a research methodology or approach rather than a research method (J. Baxter, 2010) because it allows the researcher to use several methods such as participant observation, field studies and interviews to study a topic (Hamel, Dufour, & Fortin, 1993). As an inquiry strategy, case studies do not follow a procedure (Creswell, 2007), but as part of the enquiry, the researcher selects a case, formulate research questions and engages in data collection and analysis. The approach flexibility allows the researcher to use discretion to design a research methodology that fits a desired preference or case under study (Van Der Blonk, 2003).

Despite case studies' flexibility, every case study aims at influencing the formulation of research goals and objectives, which revolves around testing a theory, investigating a phenomenon, understanding the theory behind a concept or studying the structure of a series of events (Van Der Blonk, 2003). There are different types of case studies, but three types stand out. The first type is used as a methodology to study the culture of a community or social group and includes studying their way of life and daily activities. The second type records the socio-biography and life histories of people who have positively and negatively impacted societies and their social roles. The last type uses an in-depth study of the historical background of a group to utilize the research outcome as an information resource for similar groups (Feagin, Joe R. and Orum, 1991).

This research methodology uses the third type of case study mentioned above. The purpose is to document the experiences of eleven small-scale food processors on their use of commercial community kitchens in Manitoba as innovation spaces for local food product idea development and processing. Also, the documentation includes their reasons for using community kitchens and encountered problems in finding the right kitchen, getting access to the kitchen, food product idea development, food processing and commercialization of the finished product.

In social research, case studies use community-based and community-based participatory research to ensure the active participation of the research sample through the researcher's cooperation, which increases the research participant's probability of accepting the research outcome. It also makes it easier for the researcher to use the research outcome as a resource to help the participants (Minkler & Wallerstein, 2003). Case studies can provide practical solutions to community problems and develop theories that can contribute positively to communities (J. Baxter, 2010).

A case study sample can range from one person who is mostly considered by some researchers as trivial or negligible to a considerable number of people, which is mostly accepted. Despite this assertion, some globally successful case studies were conducted with either a single participant or a small sample size (Longhofer, Floersch, & Hartmann, 2017; Siggelkow, 2007). For example, Newton's case study, which led to the formulation of "Newton's theorization of gravity" (Longhofer et al., 2017, p. 190), had just a single case, but it was very successful (Longhofer et al., 2017). Another example that proves a large sample size does not necessarily mean a successful case study is a case study that was conducted on activism at home. This case study documented Wakefield's experiences during her active participation in food activism in Toronto and had only one participant (J. Baxter, 2010).

When a researcher selects one participant or tiny sample size for a case study, the researcher must be persuasive in the case study documentation. Nonetheless, the researcher is not supposed to feel compelled to use the writing to convince reviewers of the document that might think the sample size is not enough to represent a population or community (Siggelkow, 2007).

3.3.1 Selection Criteria for Case Study

The researcher's preparation before commencing a case study is vital to its success, and a sure way of adequately preparing for a case study research project is obtaining information before starting it. One method of obtaining the information is conducting a preliminary survey before beginning research. The reason is that the survey's outcome helps the researcher design a suitable research method for the case study (Van Der Blonk, 2003).

The preparation method I used was the surveying of community kitchen coordinators in Manitoba. The survey's selection criterion was community kitchen coordinators listed on the Commercial Community Kitchens for Rent Listing on the Province of Manitoba Agriculture

website. For the interviews I conducted, the selection criterion was small-scale food processors that have used community kitchens in Manitoba for food processing and would like to be interviewed by the researcher.

3.4 Survey

Surveys use primary data collection after the research question formulation by administering the same set of questions to the people selected as the survey sample (Kolb, 2008). Per the survey method selected by the researcher, participants can either complete a researcher-administered or self-administered survey. With the researcher-administered survey, the researcher assists the participant by explaining difficult survey questions to the participant. For the self-administered survey, participants complete the survey based on their understanding of the survey questions (Kolb, 2008). For this research, a researcher-administered survey was conducted to help achieve the first research objective of documenting community kitchens in Manitoba based on their mission, vision and types of users.

3.5 Interviews

The primary data collection was using interviews. The interview is a research method used a lot in qualitative research (Griffin, 1999).

> "Qualitative research interviews (QRIs) involve gathering information and facts, eliciting stories, and learning about meanings, emotions, experiences, and relationships that one cannot easily observe. Interviewers engage in active, supportive listening involving paraphrasing and probing to develop rapport and encourage in-depth discussion."

(Rossetto, 2014, p. 483).

Qualitative research interview questions are supposed to be straight to the point, understandable and consider the feelings of the interview participants (Donalek, 2005). A researcher is supposed to be cautious about the interview questions because though the researcher seeks to get detailed information about the research topic, the researcher is not supposed to exploit the participants by asking overly intrusive questions (Råheim et al., 2016). The interview questions can be unstructured or semi-structured based on what the researcher seeks to achieve at the end of data collection.

Researchers present participants with semi-structured interviews when they seek to understand their experiences in life because the questions are open-ended and encompass all aspects of the research topic. With unstructured interviews, the researcher can begin the interview with one opening question and aim the rest of the process at helping the participant explore personal experiences related to the research topic in detail (Donalek, 2005). For this research, semi-structured interview questions were used, and the questions were developed using the "Biocultural Innovation Case Study Semi-Structured Interview Guide" (Davidson-Hunt et al., 2017, p.23). The interview was used to solicit small-scale food processors' experiences using community kitchens as innovation spaces for small-scale food production to inspire future biocultural design projects in Manitoba.

3.6 Research Methods, Instruments and Participants

A survey (Appendix 1) was conducted with six coordinators of community kitchens listed on the Commercial Community Kitchens for Rent Listing on the Province of Manitoba Agriculture website and an interview (Appendix 2) with eleven small-scale food processors that have used community kitchens in Manitoba for food product idea development and processing for my research.

3.6.1 Participant Identification and Recruitment

The survey participants were identified and recruited by sending an email with the research poster to the coordinators of the fifty-two community kitchens listed on the Manitoba Agriculture website asking if they were willing to participate. In the email, they were told they could take the survey via email or phone based on their preference and convenience. Those who wanted a phone survey were asked to clarify this in their response and add their best method of contact (phone number) and preferred day and time so that the researcher could call them for the survey.

Coordinators who wanted an email survey received the survey questions attached to an email. The survey duration was estimated to be approximately 15 to 30 minutes. Coordinators, who took the phone survey, were asked for permission to record the phone conversation. The recorded phone survey was then transcribed and encrypted. All the survey participants received consent forms via email and were required to read the consent form, ask the researcher for any

clarifications or questions, sign the consent form and submit it to the researcher before they received the survey via email, or the survey was conducted for them via phone.

The interview participants were given an option to take a face-to-face or phone interview. Those who preferred the phone interview were asked to clarify this in their response to an email they received and include their best method of contact (phone number), preferred day and time so that the researcher can call them for the interview. The interview duration was estimated to be approximately 2 hours, and participants could opt to take the whole interview in one session or two one-hour sessions. Each participant chose the interview venue and time according to their convenience, so the interview venue and time differed from participant to participant. The interview participants were informed that, based on the research findings, the researcher might contact them again to ask questions about important topics that may emerge and may be necessary to achieve the research purpose and objectives. The interview participants were told the interview would be recorded on the researcher's phone, which was in Winnipeg if they permitted the researcher to record. All recorded interviews were transcribed and encrypted on the researcher's laptop, which was also in Winnipeg.

All the interview participants received consent forms via email and were required to read the consent form, ask the researcher for any clarifications or questions, sign the consent form and submit it to the researcher before they were interviewed. Some of the interview participants chose to sign the consent form in-person before they started the interview. The researcher went through the consent form with all the interview participants, asked whether they had read, completely understood, or had any questions about the consent form before proceeding with the phone and in-person interviews. Though the estimated interview duration was approximately 2 hours, all the participants completed the interview in less than 2 hours ranging from 15 minutes to almost 2 hours. The duration was dependent on the kind of answers the interview participants provided to the open-ended questions.

3.6.2 Privacy and Confidentiality

The collected research data was encrypted, coded and confidential. Other people did not have access to the collected data, and it was destroyed after the research. The survey participants were not given a choice to waive their anonymity, but the interview participants were given a choice to waive their anonymity. The interview participants were given the option to choose between

making the information they provided during the research confidential or have their names associated with the information. Only the researcher and her advisor (Dr. Iain Davidson-Hunt) had access to identifying information during the research.

3.6.3 Data Management

The collected survey data were anonymized, and the information encrypted on the researcher's laptop, which was kept in the researcher's office at the University of Manitoba and home in Winnipeg. None of the information collected was attributed to a specific person. All identifying information was confidential and coded using the NVIVO software on the researcher's laptop before it was anonymized.

Only one community kitchen coordinator opted to take the phone survey, so it was audio recorded because the participant permitted the researcher to record, the transcript was created, reviewed by the participant and then encrypted on the researcher's laptop. Participants who completed the email survey answered the survey questions and attached them to an email they sent to the researcher. After data analysis, all the collected information was utterly wiped off the researcher's phone and laptop and identifying information destroyed. The phone survey audio recording was destroyed after transcribing the data and getting approval for the transcript. The coded files for the survey were destroyed after data collection, and the raw data was never made available to the public and other researchers.

During the interviews, the researcher collected, directly and indirectly, identifying information from participants. All interviews were recorded after obtaining the participants' permission to record. Transcripts for all written and recorded data were created, and the information encrypted on the researcher's laptop, which was kept in the researcher's office at the University of Manitoba and home in Winnipeg. The collected data was coded, confidential, and the laptop and phone used for recording were password protected. The collected data were coded using the NVIVO software on the researcher's laptop, and the link between the information and the participant who provided the information was broken.

Therefore, none of the information collected from the interview participants was attributed to the specific person that provided it except for the participants that informed the researcher they do not mind their names and businesses being associated with this research or published. All collected information was encrypted, and all identifying information destroyed later. The

collected data was coded and confidential during storage. Transcripts from written and recorded data were emailed to the interview participants to review before the identifying information was destroyed. All audio recordings for the interviews were destroyed after data collection. The data was transcribed, approval was gotten for the transcripts, and the coded files were destroyed before all identifying interview participant information was destroyed. The raw data collected from the interview participants were not made available to the public and other researchers.

Consent was obtained from all the interview participants before they were interviewed. They were informed that if the collected data were to get to the wrong person, the risk and consequences would be shallow. The reason is that most community kitchen coordinators and owners of small-scale food processing businesses that participated in this research have a public presence, and a lot of the information they provided is on their websites. The collected information was non-invasive, not very revealing and did not exceed many of the things available on the business' website. The information collected from participants was anonymous, anonymized, coded, confidential, and not directly linked to the specific participants who provided the information. Therefore, risks were not more than in everyday life.

3.6.4 Informed Consent Process

Consent was obtained from participants only after they agreed to be participants of the survey or interview. All participants received a consent form via email, which they read, asked for clarifications and questions, if any, signed and submitted to the researcher via email. It was only after receiving the signed consent form that the participant data collection commenced.

3.6.5 Withdrawing

Participants were informed of their right to withdraw in the signed consent form before taking the survey or interview. The only procedure to withdraw as a research participant was to inform the researcher about the intention to withdraw via email or phone. After this, the participant's collected data was to be completely wiped off the researcher's devices the same week the participant made their intention known to the researcher. Though none of the survey or interview participants decided to withdraw after data collection and generalization of data, they were informed in the consent form that there were no consequences for withdrawing.

3.6.6 Risk and Benefits

The research participants were told in the consent form that one of the expected benefits of this research is its ability to contribute to an emerging practice for the biocultural design that will support small-scale food processors and their products. Secondly, this research allows the participants to share their opinions on community kitchens and small-scale food processing in Manitoba. They were also made aware of some of the indirect benefits of this research. These were; the recommendations provided in this thesis, and publications of this research can help community kitchen coordinators improve the services they provide and help small-scale food processors improve their businesses as well as deal with some of the problems and challenges they are facing in using community kitchens for food processing. Lastly, all the research participants were informed in the consent form they signed that participants would not receive any direct benefits, and the risks for participants or any third party are not more than in everyday life.

3.6.7 Data Analysis

The data analysis for this research was based on the guidelines provided by Creswell in 2014, where the collected data is "winnowed" by the researcher to retain only vital information that contributes to the research purpose and objectives (Creswell, 2014). Even though the coordinators of community kitchens and small-scale food processors in Manitoba provided much data during the surveys and interviews, the researcher carefully analyzed the data and retained only essential points they made concerning the research purpose and objectives.

The first step of data analysis was transcribing all recorded and written information the respondents provided during data collection into written transcripts. The researcher sent the transcripts to the respondents to ensure that all the transcribed data is correct and portrays what the research participants said during the surveys and interviews. After feeding the collected data into the Nvivo software, it was used to create nodes and themes from the data. The software segregated the data under six vital topics and themes that the researcher could analytically develop as the research findings alongside carefully analyzing subtopics, sub-nodes and subthemes that emerged during the research under these broad topics.

The following table shows the broad topics, nodes and themes, and subtopics, sub-nodes and subthemes that were considered for data analysis.

Table 1: Broad Topics/ Nodes/ Themes and Subtopics/ Sub-nodes/ Subthemes Used in Data Analysis.

Information Source	Broad Topic/ Node/ Theme	Subtopic/ Sub-node/ subtheme
Survey	Survey Data	✓ Mission of community kitchens. ✓ Vision of community kitchens. ✓ Types of users of community kitchens. ✓ Services offered by community kitchens. ✓ Use of community kitchens for the scaling up of businesses. ✓ Use of community kitchens for the development of new products. ✓ Equipment and tools available for use in community kitchens. ✓ Up-to-date status of the list of community kitchens' equipment on the government of Manitoba website.
Interview	Background of the Food Processor and Business	✓ Name of food business and location. ✓ Special meaning of the business name. ✓ Whether the food processor is originally from Manitoba or moved to Manitoba for business. ✓ Food processor specialty in business. ✓ Other occupations and sources of income of the food processor. ✓ Start of the small-scale food business in Manitoba. ✓ The occupation of the food processor before starting the business. ✓ All the food products made by the food processor. ✓ Reasons why the food processor makes some specific food products. ✓ Uniqueness or how special the food products are to the food processor.
Interview	A General Overview of the Small-scale Food Processing Business	✓ The running of the small-scale business. ✓ Frequency of making food products. ✓ The location for making the products. ✓ Agricultural or raw materials used. ✓ Main ingredients or inputs. ✓ Number of employees. ✓ Roles the employees play in the running of the business. ✓ Food product commercialization. ✓ Main consumers ✓ Food product advertisement. ✓ Scaling up of business. ✓ Personal contribution of the food processor in the scaling up of business. ✓ The role of sponsorship in the scaling up of business.

		✓ Plans of the food processor for the business.
Interview	The Use of Community Kitchens for Food Processing	✓ Community kitchens used in the past by food processors. ✓ Shared tools, equipment and resources available in past kitchens used. ✓ How used kitchens differ from each other. ✓ Reasons for using the kitchen(s). ✓ Current community kitchen used for business. ✓ Name of the current kitchen used by the food processor. ✓ Shared tools, equipment and resources available in the current kitchen. ✓ Use of the kitchen for food product idea development. ✓ Use of the kitchen for food processing. ✓ Advantages or benefits obtained from using the kitchen. ✓ Disadvantages or challenges encountered in using the kitchen. ✓ Reduction in the cost of food processing in the business using community kitchens. ✓ List of all other facilities used for the business. ✓ How the other facilities differ from community kitchens.
Interview	Suggestions	✓ Suggestions for similar small-scale food processing businesses. ✓ Suggestions for community kitchen service providers. ✓ Suggestions for people who would like to start a small-scale food processing business in Manitoba.
Interview	The Use of the Canadian Prairies' Agricultural or Food Heritage	✓ The food processor's use of the Canadian prairies' agricultural or food heritage. ✓ The food processor's motivations for using the Canadian prairies' agricultural or food heritage and how they are using them. ✓ The food processor's plans for using the Canadian prairies' agricultural or food heritage if they are not currently using it.
Interview	Conclusion	✓ Policies and programs the food processors think the government can implement to promote innovation in small-scale food processing. ✓ Policies and programs the food processors think the government can implement to promote community kitchens as innovation spaces in Manitoba. ✓ Anything else the food processors wanted to add to what they have said already.

Note. This table shows the broad topics, nodes and themes, and subtopics, sub-nodes and subthemes used for data analysis.

The researcher also generated codes from the collected data, which consisted of predetermined and emerging themes of interest during data analysis and elaborated upon them as the significant findings of this research. The researcher classified all the information collected from each of the research participants concerning the various codes under sections and considered the relationship among the codes by analyzing them side by side. The researcher further described the codes to give detailed information about the themes that came up during this research, to unveil the multiple perspectives of the research participants concerning the use of community kitchens in Manitoba as innovation spaces for small-scale food production and provide supporting quotes from the respondents to serve as evidence of what the research participants said during data collection.

After careful consideration of what each participant said concerning the predetermined and emerging themes of this research and the interconnections and relationships between the themes and subthemes, the researcher developed a narrative to talk about the research findings using a storyline, tables, quotes from respondents and illustrations. Lastly, the researcher interpreted and discussed the collected data, research findings and results during data analysis to portray the importance of the data and lessons from the research findings. The credibility and validity of the research findings were achieved using the member checking approach and triangulation of multiple data sources after ensuring that the written transcripts of the collected data were reviewed by the respondents to ensure data accuracy before data analysis.

3.6.8 Limitations to Methodology

The research methodology did not go as initially planned by the researcher due to circumstances beyond the researcher's control during data collection. The researcher planned on conducting two surveys and an interview but ended up conducting one survey and one interview. A government official was supposed to help with the recruitment of research participants by sending the research poster and contact information of the researcher through an email to the Manitoba government's database of community kitchen coordinators and small-scale food processors but unfortunately, getting human ethics permit for this research took longer than usual, and the government official retired before the research could commence. Hence, the official could no longer play this role and withdrew from participation in the project, which became a barrier to the researcher and negatively impacted the recruitment of participants.

The human ethics' approved method for data collection by the Human Ethics Board of the University of Manitoba prevented the researcher from getting information about potential research participants from any third party, serving as a significant limitation since the researcher could not get any help from any third party to get to know potential participants of this research and recruit them. Lastly, the participant recruitment procedure approved was very laborious, which affected the number of participants who were able to persist through the process to take the surveys and interviews for this research. The laborious and lengthy process reduced the number of research participants that could have participated in this research because many of the potential participants gave up along the way and did not proceed to the point of completing the surveys and interviews. Even though the researcher had planned to conduct a second survey to recruit participants for the interview, the researcher could not conduct the second survey and had to change the participant recruitment strategy for the interview. The first survey took two months, with six participants. The interview took five months with eleven participants, and getting the ethics permit took approximately five months. Details of the challenges and limitations to the methodology of this research are available in Appendix 4.

3.9 Chapter Summary

The research data collection was successful. The researcher started recruiting participants for the survey on 6th April 2019 and completed the last interview on 5th November 2019. The last feedback on interview transcripts was received from the research participants on 31st January 2020.

CHAPTER 4: RESULTS

4.1 Background Information for Survey Data Collection

Fifty-two community kitchen coordinators whose contact information is on the Commercial Community Kitchens for Rent Listing on the Province of Manitoba Agriculture website were emailed. The duration of data collection for the survey was two months, and the survey participants will be referred to as Coordinator 1 to 6 in this document. The table below shows the details of data collection for the survey.

Table 2: Details of Data Collection for Survey

Data Collection Details	Number of Kitchen Coordinators
Coordinators contacted	52
Never responded to emails and follow-ups	33
Accepted to participate in the survey	16
Received consent form	16
Responded after follow-ups	10
Signed consent form	10
Responded within two weeks	9
Did not sign consent form but received it	6
Completed the survey	6
Received second survey poster and email template	6
Completed the survey by email	4
Refused to participate in the survey	3
Completed the survey by phone	1
Completed the survey in person	1

Note. This table shows how the community kitchen coordinators in Manitoba responded after receiving emails about participating in the survey.

4.2 Background Information for Interview Data Collection

Eleven small-scale food processors in Manitoba were interviewed. The duration of data collection for the interview was five months, and the interview participants will be referred to as Respondent 1 to 11 throughout this document. The table below shows the details of the data collection for the interview.

Table 3: Details of Data Collection for Interview

Data Collection Details	Number of Food Processors
Food processors interviewed	11
Those with registered food processing businesses	10
Canadians	9
Businesses located in Winnipeg	6
Women	6
Men	5
Do food processing as a full-time job	5
Have other occupations in addition to food processing	5
Businesses located in other parts of Manitoba	3
Permanent Residents	2
Business mobile and moves from place to place	1
Do food processing as part of volunteer activities	1

Note. This table shows the details of the food processors that participated in this research.

4.3 Background Information for Small-scale Food Processors

The food processors that participated in this research had a great diversity of backgrounds. In naming their small-scale businesses, they considered different factors before deciding on a specific name. The following table reflects the factors the food processors deemed relevant in naming their businesses,

Table 4: Small-scale Food Processing Business Names

Factor(s) Considered	Number of Food Processors
Name or family name	3
Reflection of food product(s)	3
Catchy or Nice word	2
Raw material and its benefits	1
Spirituality and science	1
Occurrence or happening	1

Note. This table shows factors the food processors deemed as crucial in choosing their business names.

Most of the food processors that participated in this research run all aspects of their businesses themselves, including food idea development, food processing, marketing of the finished products, and management of the business.

Table 5: Small-scale Food Processor Speciality in Business

Specialty in Business	Number of Food Processors
Food idea development, food processing, marketing of the finished products and management of the business	6
Food Processing	2
Management of the business	1
Marketing of the finished products	1

Note. This table shows the specialty of the interview participants in their small-scale food processing businesses.

The food processors source their primary raw materials from numerous available options, including their farms, suppliers and distributors, farmers' markets, grocery stores, and importing them from other countries. The raw materials and agricultural products used by the participants of this research depend on the food products they make.

Table 6: Source of Agricultural Product or Raw Material

Source	Number of Food Processors
Suppliers/ Distributors	7
Grocery Stores	4
More than one source	3
Farms	2
Imported	1

Note. This table shows where the food processors get their agricultural products or raw materials.

4.4 Community Kitchens in Manitoba

When collecting data for this research, Manitoba had 52 community kitchens listed on the Commercial Community Kitchens for Rent Listing on the Province of Manitoba Agriculture website. While owners of small-scale food processing businesses may think they can just rent

any of these kitchens for food processing, the categories of community kitchens differ and not all community kitchens can support small-scale food processors depending on their resources. Other factors influencing the ability of a commercial community kitchen to support small-scale business owners in their food processing activities include the type of tools, equipment, machinery and resources available in the kitchen, the proximity of the kitchen to the food processor, the scheduling of the kitchen as well as available space for storage, food preparation, and packaging of the finished food product.

4.4.1 Users and Uses of Community Kitchens

Users of community kitchens differ depending on the programs and services the kitchen offer. This research categorized people that use commercial kitchens in Manitoba into food processor businesses or organizations, food services or caterers and community users such as groups and individuals. The following table shows the categories of users the community kitchen coordinators that participated in this research mentioned for their facilities.

Table 7: Types of Users of Community Kitchens

Coordinator	1	2	3	4	5	6
Food processor businesses/ organizations	✓	✓	✓	✓	✓	✓
Food services/ caterers	✓	✓		✓		✓
Community users (Groups and individuals)	✓	✓	✓	✓		✓
Others						✓

Note. This table shows the groups of people that use community kitchens in Manitoba.

Many small-scale food processing businesses use commercial community kitchens to scale-up their businesses, develop new products, improve, and process their food products depending on the resources and equipment available in the kitchen. The following table depicts the responses community kitchen coordinators provided when asked about the use of their kitchens by food processors and if their equipment on the government website was up to date.

Table 8: Use of Community Kitchens and Current Status of Equipment on Government Website

Coordinator	1	2	3	4	5	6
Use of community kitchen for the scaling-up of businesses	Yes	Yes	Yes	Not sure	Yes	Yes
Use of community kitchen for the development of new products	Yes	No	Yes	Not sure	Yes	Yes
List of equipment on the government of Manitoba website up to date for kitchen	Yes	Yes	No	Not sure	No	N/A

Note. This table shows the use of community kitchens and if the listed equipment on the government website for the kitchens is up to date.

According to the community kitchen coordinators' responses in the survey, most of them acknowledged either the information on the government website was not up to date or they were unsure about the status of the information on the website. Therefore, food processors who depend solely on the website to decide whether to use these community kitchens may not be making well-informed decisions.

4.4.2 Shared Tools and Equipment in Community Kitchens

The equipment, tools, and machinery in community kitchens influence the types of users that patronize the kitchen. Some commercial kitchens cannot provide all the machinery and tools needed by their users because they lack the funds to purchase them. There is diversity in the tools, equipment, and resources commercial community kitchens provide. It depends on the programs and kind of services they render to the kitchen users and their financial capacity.

When asked about the tools and equipment available for commercial community kitchens, the table below shows what the community kitchen coordinators and small-scale food processors said during the survey and interview.

Table 9: Tools, Equipment and Machinery Available in Community Kitchens

Coordinator	List of Equipment
Coordinator 1	"Stainless Steel Counter-tops with commercial stoves and grill, two deep fryers, 30qt mixer, double door freezer, 12x20 walk-in cooler, Commercial hand mixer, Commercial blixer, Commercial dishwasher."
Coordinator 2	"N/A (What is on the government website is up to date)"
Coordinator 3	"Large industrial hand mixer/burr mixer, three trays Alto-Shaam blast chiller, countertop dough sheeter."
Coordinator 4	"N/A."
Coordinator 5	"Website in revision."
Coordinator 6	"2 standard ovens/stoves; commercial refrigeration; commercial dishwasher; limited mixing bowls and utensils; lockable storage; triple sink; stainless steel counters."
Respondent	**List of Equipment**
Respondent 1	"Table, freezer, stovetop, trays."
Respondent 2	"Oven, stove, fridge, table, sink, dishwasher."
Respondent 3	"--- Tractors, harvester, ---combined pool of equipment and infrastructure."
Respondent 4	"Fridges, processor, sinks, countertop space, freezer space --- and all the utensils."
Respondent 5	"The oven, a convection oven and the stovetop that we use with the double boiler and also the refrigerator."
Respondent 6	"---Shared kettle ---that is just the only primary tool that I share within the facility.
Respondent 7	"Fridges, freezers, sinks, counter space or work surfaces and then for us, a steam kettle is beneficial or a stove, --- and blenders."
Respondent 8	"--- A 3-stage sink and stainless-steel countertops, and a steam dishwasher and a boiling kettle --- 75 or 80 litter steam kettle."
Respondent 9	"-- Pans and pots, blenders and knives and things you could use, --."
Respondent 10	"Utensils and towels and clothes and all that kind of stuff ---."
Respondent 11	"--- It did not have any equipment that can handle our bulk drum, so we had no way to get our honey from our farm to the facility."

Note. This table shows what the research participants said concerning the tools, equipment and machinery available in commercial kitchens.

4.5 Types of Community Kitchens; Mission and Vision

Several community kitchens have a mission statement outlining the kitchen's primary purpose, and a vision statement entailing their future aspirations. Usually, community kitchens' mission and vision serve as inspiration for kitchen management and staff in designing programs and services.

The table below shows the mission and vision community kitchen coordinators mentioned for their kitchens during the survey,

Table 10: Mission and Vision of Community Kitchens

Coordinator	Mission	Vision
Coordinator 1	"To provide a facility for the community and social services."	"To provide the best facility, -----."
Coordinator 2	"Inclusion of all God's peoples in the life and worship of our church family."	"To serve our community and meet identified needs."
Coordinator 3	"----- dedicated to providing programming, natural settings and facilities for environmental education, outdoor recreation and social enterprise. In so doing, ----- promotes awareness and understanding of the natural world and actions leading to sustainable living."	"Since 2003, the award-winning ----- program has been working with marginalized youth, using sustainable urban agriculture to build confidence and leadership skills, providing employment training, and instilling individual and community self-reliance values. ----- is a social enterprise – a business whose purpose goes beyond a purely financial 'bottom line' to see profit in the far-reaching social and economic benefits that extend into the lives of individuals, families and communities."
Coordinator 4	"N/A."	"N/A."
Coordinator 5	"To provide a facility for small and start-up food entrepreneurs."	"A comfortable, relatable environment for small-scale food production."
Coordinator 6	"No stated mission related to the Commercial kitchen."	"No stated vision related to the commercial kitchen."

Note. This table shows the answers community kitchen coordinators provided during the survey when asked for their commercial kitchens' mission and vision.

According to the research participants' responses, one can categorize community kitchens in Manitoba into three groups.

One group of kitchens have a mission and vision of serving as facilities that owners of small-scale food processing businesses can rent for food product idea development and processing. These kitchens have the tools, and machinery food processors need to prepare their recipes, package and store their products. Coordinators in charge of such kitchens, dedicate them to helping food processors promote and scale-up their businesses. The kitchen achieves this through the organization of programs that facilitate developing new food products and improving existing ones. They also increase their kitchen users' opportunity to meet and share ideas through the organization of networking events.

After interacting with six community kitchen coordinators and eleven small-scale food processing business owners in Manitoba, three of such community kitchens came up. Though there may be more of them, a few of the research participants pointed to three community kitchens fully dedicated to processing food products and nothing else. The owners of the three kitchens are also food processors that participated in this research. Two of them started their small-scale food processing businesses by using commercial community kitchens in Manitoba. However, they realized they could no longer use only commercial kitchens due to several factors. Some of these factors are the scaling-up of their businesses, expansion of their product lines, not having to deal with some challenges community kitchen users face, such as scheduling, storage space and equipment issues, and fulfilling their dream of owning a dedicated kitchen for food processing. For example, Respondent 1 mentioned, "We purchased the building last year so that I could have my dedicated free kitchen, and I have increased the amount of staff that I have, I have gotten help with my bookkeeping and stuff like that, so I pay a bookkeeper, we are in more markets, and we are in more stores."

These kitchen owners use commercial community kitchens when necessary if their kitchens cannot support what they want to do. Their kitchens are mostly used for their food products alone and not open to the public or other food processors to rent. Some people may think of these kitchens as community kitchens and even label them as such, but they are private kitchens owned by small-scale food processing businesses for the fulfillment of their mission and vision exclusively. Respondent 7 explained this by saying,

> "So we have our facility now, it is not a community kitchen, it is a private kitchen, we own it. So we now own a shop on ----- called -----, we manufacture all kinds of food products including our popsicles. We have our kitchen with all of the equipment that is specific to what we require."

On the other hand, noticeable among the community kitchens was a community kitchen owned by a food processor like the ones mentioned above but open to the public for other food processors to rent and use. The owner of the commercial kitchen, Respondent 3, put it this way "It is open to people who want to start making food, commercially processed food and so open to starting entrepreneurs or small entrepreneurs." The owner of this kitchen helps other food processors through food idea development projects and networking events. Respondent 6, a user of this kitchen, explained that "we are delighted with that community kitchen because it helped develop our business, our products well, and it is quite helpful."

The owner also involves the community in the kitchen affairs by liaising with other community members in promoting the kitchen, getting kitchen machinery and equipment, building the capacity of community members and food processors, and providing employment for some community members, especially the youth in the kitchen. This kitchen owner and coordinator sees this "retirement occupation" as giving back to society after retiring from his career as a "federal public servant." Apart from seeking sponsorship for this kitchen from the government and other organizations, the kitchen owner has facilitated a community group that collaborates in providing what the kitchen needs. For example, the community kitchen coordinator owns the community kitchen building facility and farm for producing the raw materials for one primary product of the kitchen. The kitchen uses a tractor on the farm, which is owned by one community group member. Also, the whole group has purchased a harvester, and other machines needed for the kitchen. Respondent 3 explained it this way,

> "I could say all the equipment ----- is shared and owned by the ----- group, so we use certain tractors like the ones you saw ----- that belongs to one member of the group, the harvester belongs to all of us, the building, of course, belongs to me, so that is for the processing, so you see it is a combined pool of equipment and infrastructure."

The second category of community kitchens has a mission and vision that promote social events such as weddings, parties, and funerals. These community kitchens are open to the public and do not have any rules on what people can use the kitchens for as opposed to the community kitchens

strictly used for food processing and production. Because the mission and vision of these commercial kitchens do not include usage policies, people can rent the kitchen for whatever use they desire. For example, people rent these kitchens for social events, cooking classes, volunteer activities, and food processing. Mostly, the owners, coordinators or people who run these community kitchens are not food processors but a community group such as a church, community club, town or municipality. Respondent 3 explained that a steering board's decision-making determines the affairs of such commercial kitchens by saying,

> "-----Most of the other kitchens, almost all of them are owned and run by a community group, it could be a church, it could be a community club or town or municipality, but ours is private, and in that, it is different. ----- The private ownership you see is significant because we can orient without obtaining consent or communal consent. Private owners can determine the direction of their kitchen, the machinery it contains and the purchases necessary to address the clients whereas, in the community kitchen, they are almost all board run or group determined, ours is not."

These kitchens usually provide the necessities of a commercial kitchen such as equipment for food preparation and processing, storage spaces, and working surfaces. Many owners of small-scale food processing businesses encounter challenges in using such kitchens because the coordinators do not make any efforts to help them with their businesses. Food processors may have privacy and space sharing issues in such kitchens because of their scheduling, and those who require specialized machinery, tools and equipment for food processing may need to bring in their own if those tools are not among the basic tools provided by the kitchen. Respondent 9 mentioned this challenge by saying,

> "----- Other kitchens I have worked at have the basics; you should bring your knife if you want to use a good knife. Sometimes you could share space with people depending on how many people are in the kitchen at the same time. -----I used one in a church for a while, ----- it felt like you were in a musty church place, it smelled like old coffee, and it did not feel very coronary -----."

Respondent 10 added to this point by saying the problem she encounters in using the commercial kitchen she uses for her food products is that, "----- I bring all the food processors that I use ----- the cost and time that it takes to get there and then set up and like I said it is located on the 2nd floor of the building, so that is a bit of a challenge getting all my equipment and everything up there."

Also, food processors producing many food products for the market, scaling-up their businesses or expanding their product lines may need to rent an external storage facility, co-packing company or rely on another facility or commercial kitchen for services the kitchens they are using may not be providing. A significant percentage of community kitchens in Manitoba falls under commercial kitchens that facilitate social events. This fact is disconcerting to small-scale food processing businesses and exposes them to many challenges. While other users find using these kitchens convenient and comfortable, small-scale food processing business owners find using these kitchens difficult because they require more than basic kitchen necessities.

Users other than owners of food processing businesses rent the kitchen space, prepare their social event food, package it, clean up and leave the kitchen or use the kitchen facility for their social event if it has a hall. They also use the kitchen for programs like cooking classes, capacity building, and volunteer activities. These people usually make use of just essential kitchen equipment and resources. Some of these commercial kitchens add to the difficulties, problems and challenges small-scale food processing businesses encounter daily using them by restricting food processors on the type of machinery they can bring inside the kitchen or use at the facility. Respondent 5 mentioned this as the challenge he has encountered in using commercial kitchens by saying, “The big problem is that we cannot use our machines and tools inside the kitchen, so we have to keep moving it, so that requires much energy and cost money.”

The last category of community kitchens does not have a documented mission and vision. For example, Coordinator 6, when asked about the mission and vision of the kitchen, he coordinates mentioned “No stated mission related to the commercial kitchen” for the mission and “No stated vision related to the commercial kitchen for the vision.” These community kitchens are usually in their early development stages and have not figured out their mission and vision. Though the coordinators of two of such kitchens mentioned that food processor businesses and organizations use their kitchens, they do not provide any special services with food product idea development and processing.

The mission and vision of community kitchens are vital in setting up a commercial community kitchen because they influence all aspects of the kitchen, such as programs, services, and available equipment. These consequently determine the type of users the kitchen attracts and their use of the kitchen. It can also influence the funding commercial kitchens can access since

sponsors usually consider the mission and vision of a kitchen before investing capital in the kitchen.

4.6 Advantages of Using Community Kitchens

Community kitchens have been of help to numerous small-scale food processing businesses. Most of these businesses cannot meet the provincial health regulations and sell their products if they do not prepare their food products in community kitchens. During the interview, the respondents mentioned the benefits they have obtained from using community kitchens. Paramount among these were;

- The ability to sell their food products to consumers and the retail market. For example, Respondent 1 explained, “Where my stuff is, I got a permit, that way I can sell it because it is slightly hazardous, some of it and it allows me to sell my products to retail partners freely and yeah some of the kid’s places,” Respondent 5 mentioned, “The biggest benefit is that ----- we can go to the market to sell the chocolate” while Respondent 9 reiterated,

  > “I would say the main benefit is that it is what I have to do to serve food legally. To be legally handling food, you must do it in a licensed kitchen. The benefit is that there are many fairly acceptable cost kitchens that you can use. Community kitchens are very valuable to people like me because, otherwise, we would have to rent a commissary space in a restaurant, and that is very expensive.”

  Reducing cost and increasing effectiveness. Some of the respondents mentioned they could reduce the cost of food processing by renting community kitchens hourly instead of buying or leasing a facility and the tools necessary for food processing. Respondent 8 reflected this by saying,

  > “----- I do not take up a huge footprint in the ability to not pay for a bigger space than I need and only really pay for when I am there using the space is great for cutting cost ----- yeah the fact that different people can use it at different times of the day is awesome and efficient.”

  Respondent 3 added to this point by saying, “Control over our primary product processing is one, and the cost-effectiveness” while Respondent 4 mentioned,

  > “Well for sure we do not have the overhead of having to use our facility, so that is a huge saving, that is a big deal ----- so this one has a food bank ----- so we have been able to lease a bit of space in that food bank space

for our freezers which we need for freezing our hummus, so that has been a big part as well."

- Helpful community kitchen programs and initiatives for food processors. When asked about the advantages the respondents have obtained from using community kitchens; Respondent 6 explained how he has been able to engage in knowledge sharing and networking events with other food processors due to community kitchen programs,

> "We have shared knowledge, we have a networking event where the owner will bring other producers together, and we rub minds, and then we share each other's challenges and ultimately, it is cost-effective, that is just the truth. Yeah, it will take a little while even by the time I have a facility to leave because it is a lot easier to produce and then take care of the place."

- Community kitchens enable food processors to deal with health inspectors and certification issues. Health officials regularly inspect community kitchens and their shared tools, so they strive to meet the provincial standards of food processing, making it easier for their users to deal with issues that occasionally crop up in that regard. Respondent 2 said the benefit she obtained from using community kitchens is that "I got Manitoba food establishment permit" while Respondent 7 wanted to be clear:

> "----- The advantage of using a commercial kitchen, whether it is ours or one of the community kitchens is that they already have their health certifications. So it is easier when dealing with health inspectors, there is a level of comfort because you know everything is designed commercially, so the equipment is steady, and food safety is already a priority, so that is the biggest benefit."

- Food processors have a prominent working, storage, and equipment space. Most community kitchens have large working surfaces and storage spaces where their users can keep their food products and equipment they bring to the kitchen for food processing. For example, Respondent 10 stated,

> "----- It gives me a lot more space than if I was making it at home or wherever. It also gives me the ability to sell my products because they are required to be made in a commercial kitchen since they are potentially hazardous. Foods that are potentially hazardous need to be made in a safe space so that they can be sold safely to consumers, so that is an advantage and a benefit, and then it gives me more space to work and get more done."

Community kitchens are advantageous to small-scale food processing businesses because they make available most of the resources the businesses need to thrive until they can make enough money to establish themselves and purchase a certified food processing facility.

4.7 Disadvantages of Using Community Kitchens

Even though commercial kitchens have advantages, numerous small-scale food processors encounter daily challenges in their attempt to use community kitchens. These challenges sometimes serve as a barrier to the growth of their businesses and force them to combine the use of several community kitchens or resort to using other facilities in addition to community kitchens as a means of alleviating some of the challenges.

Table 11: Disadvantages or Challenges in Using Community Kitchens

Disadvantage or Challenge	Number of Food Processors
Limited storage space	7
The food processor having to carry items, tools and equipment in and out of community kitchen	5
High rental costs	4
Scheduling issues and unavailability of kitchen	2
Issues with other food processors using the same kitchen	2
Long-distance of community kitchen from the food processor	1
Improper cleaning of the kitchen, tools and equipment	1
Small kitchen size	1
Kitchen not ideal for specific food product processing	1
Inadequate maintenance of kitchen appliances and equipment	1

Note. This table shows the disadvantages or challenges the small-scale food processors encounter in using community kitchens.

When asked about the disadvantages or challenges they have encountered in using community kitchens, the food processors mentioned the following;

- Some community kitchens have limited storage spaces. Users of community kitchens share storage spaces in the kitchen, making the specific space allotted to each user smaller than the actual space in the kitchen. The main challenge for some food processors is that they must store some of their food products in different facilities because there is

limited or no storage space in the kitchen they are using. For example, Respondent 1 mentioned, "Well, my kitchen is the overhead and storage in the other one because you cannot leave anything there," Respondent 2 said, "It is costly, not ideal for baking, not enough storage space (already occupied)," while Respondent 4 explained,

> "----- Our biggest one is storage space. We must haul everything in and haul everything out, so that is our number one. We can keep a few things there in storage, but because it is a shared space, we cannot take up all the space, so that would be one. Also, I think because it is a shared space, it is sometimes the concern that others who might use some of the utensils may not sterilize it to our liking, and so we have to mitigate that by making sure we sanitize everything before we use it; in a way that we feel is safe."

- Cost prohibitive nature of commercial kitchens. Some food processors believe that community kitchen rates per hour are expensive. Respondent 7 put it this way,

> "Sure, the cost is prohibitive for many people, so our product is only a $4 product, so we have to sell a whole lot of them to be able to cover the cost of a community kitchen, the size of the kitchen is also a problem, and you have to do much carrying of things in and out of the kitchen -----."

- Some community kitchens have an unfavourable distance, scheduling and accessibility. While some food processors think the commercial kitchens they are using are far, others think the scheduling of community kitchens are not favourable to them. Community kitchens are shared spaces, and therefore, they create a schedule to accommodate all their users, which can be a challenge to some users because they can only access the kitchen at their assigned times. For example, Respondent 6 pointed out, "Distance will be the only thing, that is all. Yes, which is not too bad but at least distance, yes that is the only thing," and Respondent 8 said it this way,

> "For scheduling, it can be difficult because ----- has programming during the day so I and whoever is working with me always have to start work at 5 pm and go till whenever, so sometimes you work some pretty late hours, that is probably the biggest challenge. At this point, the challenge is we have filled up space with fermenters, so we are challenged in being more efficient without taking up more space. Yeah, so increasing production over stuff like that."

Respondent 10 made it clear she has been having difficulties carrying her equipment to the second floor of a building where she uses a community kitchen. She added to the point by

saying, “Just the cost I would say and then the time that it takes to get there and set up. As I said, it is located on the second floor of the building, so that is a bit of a challenge getting all my equipment and everything up there, yeah I would say that is it.”

- Community kitchen regulations sometimes restrict food processors. Respondent 5 highlighted that he could not use some of his tools and machines inside the community kitchen he is renting and must haul them all the time for food processing, which is tiring and can eventually cause wear and tear on the equipment which will require money to replace or repair. He emphasized that “The big problem is that we cannot use our machines and tools inside the kitchen, so we have to keep moving it, which requires much energy and cost more money.”
- Community kitchens are not getting enough funding help, which consequently affects its users by not meeting all their needs. Respondent 3 pointed this out by saying, “The main disadvantage is that all cost is borne by ourselves and the group members, so it is the need for financial support. Yeah, that is the main disadvantage for the kitchen” while Respondent 9 added to the point by going into detail,

> “----- The challenges are sometimes the better ones are booked up, and then a lot of them are run by the community or non-profit organizations. They do not have much money in their budgets for equipment maintenance, so you do not use the best tools. You sometimes feel you must bring your own, which is somewhat not convenient. Fridge space and storage space are always an issue, especially for the more popular ones because people tend to be regular to use spaces, and they take up much space. So if you are coming in and are there for like 3, 4 days, there is not usually much space to put your stuff. That is the challenge, and just keeping things separate, keeping your things making sure nobody is going to use it or throw it away accidentally.”

Other disadvantages the food processors mentioned were lack of proper equipment maintenance, the consistent full booking of functional community kitchens and issues with other users of shared kitchens. Some of the respondents indicated that some of the barriers they encounter in food processing are not necessarily related to the community kitchen but with other kitchen users. Community kitchens expect their users to clean up after themselves, but some do not adequately clean and sterilize the kitchen after use, which poses a challenge to the next user.

Some of them tamper with the belongings and food products other kitchen users store at the commercial kitchen.

4.8 Community Kitchens as Makerspaces for Food Processing

Community kitchens in Manitoba serve as one of the approved makerspaces small-scale food processing businesses can use for food product idea development and processing. The Manitoba provincial government has put in place measures to ensure that small-scale businesses process food products sold to the general public under conditions that meet the provincial health and food safety regulations. Therefore, small-scale businesses in Manitoba can only sell their products to the public if they process the food in a facility with a provincially approved food service establishment permit, such as a commercial community kitchen. In providing reasons for using community kitchens, Respondent 5 pointed this out by saying, "----- In order to make chocolate and sell it at a farmer's market, we need to produce the chocolate in a community kitchen. That was part of the requirements from the Manitoba government before we could sell the chocolate."

Another reason why the Manitoba government enforced this regulation was to ensure all food products made with potentially hazardous food substances sold to the public are processed in a facility periodically inspected by provincial health officials to ensure the food products are safe for public consumption. In mentioning some of the advantages of using community kitchens, Respondent 10 mentioned,

> "----- It gives me the ability to sell my products because they are required to be made in a commercial kitchen since they are potentially hazardous. Foods that are potentially hazardous need to be made in a safe space so that they can be sold safely to consumers -----."

As makerspaces and innovation hubs for food product idea development and processing, community kitchens play a vital role in small-scale food processing in Manitoba. A higher percentage of food processors depend on commercial community kitchens for their businesses by using one kitchen exclusively or combining two or more community kitchens if just one community kitchen cannot meet their needs. For example, Respondent 8 speaking about the community kitchen he has been using said,

> "I started my business at -----, so it has only been -----. I had not toured many other ones but got in there right when they started. It allowed me to

> find the space to store my fermenters. They had a room off to the underutilized side, and they allowed me to start there and keep my things off to the side, yeah, that would be the big thing."

Respondent 4 said, "We have used two, both of them were ----- kitchens" while Respondent 5 said, "I have used two different community kitchens, one is called ----- that is the kitchen that I have used the most. The other kitchen is -----. It is an affordable housing apartment, and they have a community kitchen in the basement."

Some food processors also resort to the use of community kitchens with facilities such as external storage facilities, freezer warehouses, restaurants, breweries, food development centres, home kitchens, truck companies, breweries and bakeries due to some community kitchens not providing adequate resources for small-scale food processing businesses to use in the kitchen facility. Respondent 7 pointed out "The only other place we use is a warehouse, like a freezer warehouse that we rent space in for our product" and Respondent 9 added to the point by saying, "Well, a friend of mine has a bakery, and so I have used and prepared food in the kitchen area of her bakery -----."

4.8.1 Cost Reduction in Food Processing Using Community Kitchens as Makerspaces

Before deciding on a commercial kitchen to use, food processors ensure the kitchen they select has affordable hourly rental costs and specialized equipment and can help scale-up their businesses when the need arises. The reason is that food processing costs are incurred by renting, leasing or purchasing a food processing facility and tools, equipment or machinery. Other costs related to purchasing raw materials or agricultural products, packaging, and transportation are mostly not as capital-intensive as those mentioned above.

Most of the owners of small-scale businesses attested to the fact that using community kitchens as makerspaces for their food products had helped reduce the cost involved in food processing as can be seen in the responses they provided in answering whether they have been able to reduce their food processing costs using community kitchens in Manitoba,

- Respondent 3- "Yes, yeah, very much."
- Respondent 4- "Yeah, I would say yes we have for sure it would have cost us a lot more if we were to lease our own space."
- Respondent 5- "Yeah, -----, we use the kitchen at the lowest price, and that is how we reduce our cost."

- Respondent 6- "----- Yes, ----- that is the whole essence of going to a commercial kitchen. It is to make sure you are cost-effective, yeah."
- Respondent 8- "Yes, I do not think I would have been able even to start if I had to start off paying like I do not know a thousand bucks a month rent or something like that. For example, I do not know ----- how much a small rental space with my needs would have gone for."

On the other hand, some food processors emphasized that commercial kitchens have not helped them reduce food processing costs because they are expensive to rent. For example, in answering whether they have been able to reduce their food processing costs using community kitchens, Respondent 7 said "no," Respondent 2 mentioned they instead increase production costs, and she only rents them because she is required to use them; "Renting a commercial kitchen increases the cost of production. We are required to have a commercial kitchen," and Respondent 10 stated, "Not drastically, so no, I will say no."

Lastly, some food processors were indifferent about community kitchens helping them reduce food-processing costs in their businesses, as reflected by Respondent 1, "Well, I guess so. ----- For my products, I must use a commercial kitchen, so it does not matter if it reduces the cost or not -----."

Table 12: Cost Reduction in Food Processing Using Community Kitchens as Makerspaces

Food Processing Costs	Number of Food Processors
Have reduced food processing costs	5
No change in food processing costs	2
Have increased food processing costs	1
Indifferent about food processing costs	1

Note. This table shows how small-scale businesses have been able to regulate their food processing costs using community kitchens.

Many food processors use community kitchens as makerspaces because they can reduce food-processing costs in their businesses using these commercial facilities. Notwithstanding, others struggle to achieve the same results depending on several factors, including expensive community kitchen renting rates.

4.8.2 Community Kitchens as Makerspaces for Food Idea Development

Food product idea development usually involves food processors trying out different recipes and ideas related to coming up with, improving upon or making variations of food products. Small-scale food processing businesses not owning a provincially certified facility with enough working space and equipment, tools, and machinery for experimenting on innovative food product ideas usually find community kitchens appropriate for this purpose. However, some food processors rely on other facilities such as their home kitchen for food product idea development because some community kitchens have high hourly rental rates, and they will not sell the food products they make through the food idea development experiments the public.

Table 13: Food Product Idea Development

Location/ Facility	Number of Food Processors
Community kitchen	4
Home kitchen	3
Private kitchen	1
Home and community kitchen	1

Note. This table shows the locations and facilities the respondents use for food product idea development.

Several food processors mentioned that they use community kitchens for food product idea development. Respondent 3 said "The kitchen is used for experimentation with new products ----" while Respondent 7 explained, "We use it to test products so we will test different flavours of popsicles and other food products, we will use the kitchen when the shop is not open, and we will just test a bunch of different things, taste them and decide which ones we want to go with." Respondent 5 made it clear they use commercial kitchens for food product idea development by trying out different recipes and testing the product at a farmer's market before making bulk productions,

> "In making chocolate, we need to try different recipes and a mix of roasting to temper the chocolate, -----, that represent product development, trying to treat different flavours inside the kitchen. Then we must test it at the market and see what the customers think, but we cannot go to the market unless we use those kitchens, so that is why those kitchens are helpful for us."

Respondent 6 answered the question by explaining his collaboration with the owner of the community kitchen he is using for food product idea development by trying out different blends of agricultural products,

> "Yes, I do use; that is why I was talking about the owner. The owner is knowledgeable and interested in what you are doing, so, for instance, we did a trial with the monk fruit, because we were talking about monk fruit with the hibiscus or with saskatoon berries. After all, he grows saskatoon berries. We were going to do some blending, so we did some research together, we did some demo there to check it out to see how it works and then, yeah, it did not work out well so that part of the business has been outsourced and it is being done somewhere else now."

Contrarily, some food processors prefer to do food product idea development at home and use commercial kitchens to produce the resulting food product for their target market. The reason is that community kitchens charge per hour use and these food processors think it is cost-effective to do idea and recipe testing at home since they will not be selling the product they developed through the recipe testing at home to the public until they develop the same thing in a certified community kitchen. When asked about the use of community kitchens for food product idea development, Respondent 9 said, "No, I do most of my development at home, but I use the kitchen for production so when I am ready to make something that I am going to be selling to the public that is when I use a licensed kitchen." Respondent 10 mentioned, "----- No, I have not used it because I do that stuff at home. Since I am not selling that product, I do not need to make it in a commercial space, so I do recipe testing at home," while Respondent 2 plainly stated, "I do not develop my ideas there."

Despite some food processors using either their home or community kitchens for food product idea development, a few others combine their home kitchens with community kitchens for testing recipes. For example, Respondent 8, when asked about the use of community kitchens for food product idea development, explained: "----- I will sometimes test batches with a small fermenter that I have to try out different teas, but a lot of the developments are just in my head and at home." Lastly, most food processors who own certified kitchens engage in food product idea development in their private kitchens. For example, Respondent 1, an owner of a private kitchen, said, "I use it for food product idea development by trying different ideas."

Every small-scale food processing business owner starts with food product idea development before deciding on a product to make and sell. They also tend to engage in this practice throughout their food processing career. Most food processors make progress by adding to their product lines and improving their food brand by testing recipes, which makes this practice important. When food processors use a community kitchen for food product idea development and like the resulting product, they can package it and sell it to the public. On the contrary, if they used their home kitchen or a non-certified facility for food product idea development and they liked the resulting product, they cannot package it and sell to the public until they use a community kitchen to replicate the product.

4.9 Commercialization and Advertisement of Small-scale Food Products

4.9.1 Food Product Commercialization

Gaining profit after selling food products is vital in the management and scaling-up of small-scale food processing businesses. Mostly, food processors have their target market, and their preferred method of commercializing food products to their target consumers takes into consideration their specific food product(s).

The following table shows the methods the small-scale food processors use to commercialize their food product(s).

Table 14: Commercialization of Small-scale Food Products

Method of Commercialization	Number of Food Processors
Two or more methods	9
Farmer's Markets	6
Direct Marketing	6
Supermarkets	4
Retail Stores/ Locations	3
Local Food Outlets	2
Health Food Stores	1
Craft Shows or Craft Markets	1
Online or Website Markets	1
Pop up Markets	1

Note. This table shows the methods the small-scale food processors use to commercialize their food product(s).

A notable number of the food processors interviewed sell their food products on local markets except for two who export some of their products. One interview participant, Respondent 5, mentioned farmer's markets alone. A higher percentage of the respondents emphasized that they do not use one commercialization method but combine two or more methods to expand their prospects. The reflection of this is in some of the research participants' responses when asked how they commercialize their products. Respondent 1 said, "----- I have access to the farmer's markets, and I am in retail locations -----," while Respondent 2 stated, "direct marketing and farmer's markets." Respondent 3, who exports some of his food products said locally, he uses "Local food outlets and direct marketing." According to Respondent 4, "----- Supermarkets, farmer's markets, pop up markets, and retail stores that are not supermarkets or smaller." Respondent 7 mentioned, "We sell them directly and at farmer's markets. "Respondent 10 pointed out, "----- Farmer's markets and craft shows or craft markets, as well as a small number of local retail stores." Lastly, Respondent 8 emphasized, "I am mostly a wholesaler, so I sell business to business through direct marketing and then through that sell at supermarkets and lots of local food outlets. I go to all these different local businesses and convince them to carry the product."

When asked the same question, Respondent 6 explained that "It is a mix of all -----. We do direct, and our target market is the health food stores. We have recently listed with ----- to sell just in Manitoba. So, we have one ----- selling for us. Yeah, so it is a mix of all." While Respondent 11, whose business has been around the longest and engages in the most extensive commercialization among the respondents gave a detailed explanation by saying,

> "We do some supermarkets on an individual basis, we do direct sales or marketing from our website, and we sell in about 65 to 70 individual stores across Canada but no major change. We export to Japan, Taiwan, China, the United States and have exported to Singapore and South Korea, but those markets are in the infant stage, so we have not developed it yet -----. So that is our biggest sales channel now, it is that direct sales to -----, we do not do that, but our buyers have connections that do that."

Sometimes, small-scale food processors face limitations in commercializing their food products, especially when they involve third parties. For example, a food processor using grocery or retail stores and supermarkets must meet demands set by third-party companies, like producing a specific quantity of products weekly or monthly. Since some of the food processors are

producing on a small-scale, not all of them can meet such demands if the customer base of the third-party company is high or they struggle to meet them.

4.9.2 Food Product Advertisement

The advertisement for food products can influence how the products appeal to potential customers. Therefore, the food processors' method of advertising products contributes to increasing their sales and profit consequently.

Table 15: Advertisement for Food Products

Method of Advertisement	Number of Food Processors
Social Media	9
Two or more methods	7
Online or Websites	3
Word of Mouth	3
Trade Shows or Public Events	2
Local advertisement (posters, local media, newspaper articles)	1
Cold Calls	1

Note. This table shows the various advertisement methods the small-scale food processors use for their food product(s).

The 21st century with its surge in the use of technology has made social media use very convenient for food product advertisements. While it increases the market size and scope of a food processor, it also enables them to improve revenue growth. Despite using word of mouth, trade shows/ public events, and online/ websites for food product advertisement being popular among small-scale food processors, social media seems to be the most popular method used by the interview respondents.

4.10 Scaling-up of Business

Growth and productivity are significant in every business, especially a small-scale business. Food processors who own businesses usually scale-up by increasing the food products they make per time, their customers and sales. To achieve this, food processors strategically adopt plans of action to help them reach their scale-up goals.

Table 16: Scaling-up of Business

Method of Scale-up	Number of Food Processors
Purchasing equipment or Machinery	4
Two or more methods	3
Increasing staff/ employees	2
Increasing advertisement/ commercialization	2
Introducing/ Testing new products	2
Expanding Research	1
Purchasing a building	1
Increasing working hours	1
Increasing customers	1
Renting a community kitchen	1

Note. This table shows the various methods the small-scale food processors use for the scaling-up of their businesses.

During this research, it became apparent that all the food processors would like to scale-up their businesses and have taken steps to help them achieve this purpose. While some food processors have accessed and are aware of sponsorships available for small-scale food processing businesses and community kitchens in Manitoba, some do not have sponsorships and are self-funding their businesses. All the food processors explained they wish to continue to scale-up through the plans they have for their businesses. The plans included making their businesses more profitable, incorporating infrastructure growth, advancing technology, getting better machinery and equipment, business growth, improving food product quality and packaging, market growth, getting a private kitchen for the business, and a continuous scaling-up of business.

4.11 The Use of the Canadian Prairies' Agricultural or Food Heritage in Food Processing

Many small-scale businesses use the Canadian prairies' agricultural or food heritage in food processing. These businesses innovatively develop food product ideas and process them through the modernization of traditional local methods of preparing food.

In answering whether they draw upon the Canadian prairies' agricultural or food heritage for their products, eight of the small-scale food processors mentioned they fully or partially do this, as can be seen in the responses they provided;

- Respondent 1- "Oh yeah, big time."
- Respondent 2- "Yes"
- Respondent 3- "Very much, I do not mind saying totally, because our product is a heritage fruit; it is not an imported fruit in any way."
- Respondent 4- "Yes"
- Respondent 5- "In some way -----."
- Respondent 8- "Yes, because all of our teas are almost 50% wild herbs, so a good portion of those is Manitoba herbs, some are from the shield north of the prairies, but I am not going to split hairs."
- Respondent 9- "Yes, I would say so, I like working with locally grown produce and local farmers, yeah."
- Respondent 11- "Our honey is produced in the Canadian prairies, yes our product is a 100% from the Canadian prairies ----- our product comes from the area around ----- Saskatchewan, ----- Manitoba, the only thing is our packaging, we have to import our packaging because we do not have suitable Canadian producers of jars for us."

On the contrary, Respondent 6, 7 and 10 said "No"; they do not draw upon the Canadian prairies' agricultural or food heritage for their food products.

4.11.1 Motivations for Using the Agricultural or Food Heritage of the Canadian Prairies

Life situations and occurrences motivate food processors in various ways to use the Canadian prairies' agricultural or food heritage in food processing. The small-scale food processors using the Canadian prairies' agricultural or food heritage mentioned they were motivated to do so in one way or another. In answering a follow-up, "If yes, in what ways and what was your motivation?", the research participants provided a variety of responses.

Some of the essential motivations were,

- Making food products people with specific backgrounds and dietary restrictions can enjoy. Respondent 1 made this point saying, "Perogies are very European, Ukrainian and Polish in terms of background. There are numerous of us staying around here. Hence, Manitoba is well known for its perogies, and there are lots of people with dietary restrictions, so it fits well."

- Supporting local producers by choosing to use only local raw materials for food products. Respondent 2 put it this way, “I use local products such as flour, butter and eggs. I am a small producer, and I want to support other local producers. Their products are a bit pricey, but the quality is great. Moreover, I believe it is helpful for sustainable and environmentally friendly business practice.”
- Heritage, climate change consciousness and a changing environment. Respondent 3 clearly stated, “Motivations are heritage and stature; those are drivers for a small market. A second motivator is awareness of climate change and the selection of a crop that has a higher likelihood of survival in a changing environment.”
- Producing healthy artisanal food products that are eco-friendly. Respondent 8 highlighted this by saying,

> “I wanted to make a locally inspired beverage that was artisanal but could really be enjoyed by anybody and was also healthy and inspired by, yeah sort of the eco, like the plants around us rather than flavouring over artificial or with other flavours from fruits that are miles and miles away across the world.”

- Building local resilience in food systems. Respondent 9 explained this in detail by mentioning,

> “We must build more local resilience in our food systems, so it is important to think about investing in a resilient local food system; that is why I like to support locally grown food. Also, I have many friends who are farmers, so it is easy for me. For the last ten or eight years, one of my best friends is an indigenous lady, and she does a lot of food education. So I have just done a lot of support work with her, just assisting her with various projects around traditional gardening, indigenous methods and traditional food preservation. I think that is also a fundamental knowledge and practice to keep up.”

- The ability to market food products oversees as having a Canadian heritage. Respondent 11 made this point with the statement, “----- It is to market it oversees. Canada has a good reputation for quality food and high standards of food safety and a clean environment, which is important for honey.”

Interestingly, even though Respondent 5 uses the Canadian prairies' agricultural or food heritage for his food product, he mentioned he did not necessarily have a motivation for doing so.

However, he discovered it by accident and is enjoying the learning process of using it. He said, “Well, it was a little bit by accident, and it seems I am having much fun by doing it. So the most important thing is to keep on learning and enjoy life.”

Some food processors make food products that are not native to Canada but are the native dishes of other places, so these food processors use the agricultural or food heritage of other places but not that of the Canadian prairies. Respondent 4 brought this to light when she pointed out even though she uses some Canadian ingredients for her food product, she was not motivated to draw upon the agricultural or food heritage of the Canadian prairies for her product. Respondent 4 said, “Canadian heritage, well, I use Canadian chickpeas. Hummus is not native to Canada, it is native to the Middle East, so that is not going to happen, but definitely, the chickpeas are Canadian.”

4.11.2 The Use of the Canadian Prairies’ Agricultural or Food Heritage in the Future.

Small-scale food processing business owners who mentioned they do not use the Canadian prairies' agricultural or food heritage for their food products explained whether they had plans of doing so in the future. Respondent 6 mentioned he tried using it, but his first attempt failed, “I am trying; we did a trial with the monk fruit and saskatoon berries, but it failed. ----- I really wanted that infusion, but we are still researching and working on that, yes, I would love to do that, it is on my mind so much.” Respondent 7 said no without any explanation, and Respondent 10 made it clear she would like to develop a product with Manitoban ingredients as a way of supporting local farmers and agriculture in Manitoba, but this is her long-term goal. She explained,

> “Yeah, I would like to create a product with ingredients that are grown in Manitoba and allows me to support Manitoba agriculture and local farmers so yeah I would like to create such a product, but I do not see that happening any time soon but maybe a little bit further down the road.”

Most small-scale food processing businesses in Manitoba draw upon the Canadian prairies’ agricultural or food heritage for their food products, which help build local food systems. Also, a few food processing businesses currently not using the Canadian prairies’ agricultural or food heritage wish to support local food producers in Manitoba by using them in their business plans. In contrast, some food processors are not interested and do not wish to incorporate the Canadian prairies' agricultural or food heritage into their businesses.

4.12 Chapter Summary

4.12.1 Survey Results Summary

After sending out emails to the 52 community kitchen coordinators whose contact information is provided on the Commercial Community Kitchens for Rent Listing on the Province of Manitoba Agriculture website, six coordinators completed the survey. These community kitchen coordinators signed a consent form before commencing the survey and completed the survey via phone or email. The survey took two months, one participant completed a phone survey, and five participants completed an email survey.

The mission of community kitchens in Manitoba includes providing social services, providing a complete kitchen, aiding entrepreneurs and their start-ups, and making available sustainable, environmentally friendly programs. The visions that emerged for community kitchens in Manitoba during the survey were making the kitchen the best facility for the community, providing community service through meeting the needs of the kitchen users, enhancing small-scale food production and making available great programs aimed at building the capacity of the marginalized.

All the community kitchen coordinators who completed the survey except one said they provide services to food processing organizations or businesses, caterers, people who provide food services and group or individual community users. Apart from one community kitchen coordinator who was unsure, all the others said owners of small-scale food processing businesses use their facility for the scaling-up of their businesses. Except for one coordinator who said food processors do not use their community kitchen to develop new products, all the community kitchen coordinators who completed the survey mentioned that food processors use their kitchen to develop new products. Some of the tools and equipment community kitchen coordinators mentioned their kitchens had during the survey were counter-tops, stoves, grills, deep fryers, freezers, coolers, hand mixers, dishwashers, refrigerators, mixing bowls, utensils, lockable storage, and sinks.

4.12.2 Interview Results Summary

The interview participants were eleven small-scale food processors in Manitoba. Demographically, four participants process food in Winnipeg, four process food outside Winnipeg, and one food processor is not stationary and moves from place to place because of the

nature of her small-scale food processing business. The interview participants who own small-scale food processing businesses considered several factors in naming their businesses. Among these were; their names or family names, food product(s), raw materials and their benefits, something catchy that reflects their food product, scientific and spiritual associations, a nice word in a local language, combining their names with reflecting their food product and an occurrence. Nine of the interview participants were Canadians, and two were permanent residents of Canada.

Six interview participants mentioned they specialize in food idea development, food processing, marketing products and business management. Two participants specialize in food processing only, one participant specializes in product marketing, one in business management, and one has no established business yet. All the interview participants with small-scale food processing businesses have registered their businesses and believe their food products are unique as compared to other similar products on the local and regional markets of the Canadian prairies.

Some food processors make products as frequent as once a day and others as rare as once a year if their product raw material is seasonal. They get raw materials from grocery stores, suppliers or distributors, farms, and others import their raw materials. Some small-scale food processors run all aspects of their businesses alone, and the business with the highest number of employees during their peak production period is about fifty-five employees. The interview participants commercialize their food products through direct marketing, farmer's markets, local food outlets, supermarkets, retail stores/ locations, pop up markets, health food stores, craft shows or markets, and online/ website markets. They also advertise their food products using social media, websites, local media, trade shows, public events, cold calls and word of mouth.

The food processors mentioned some advantages associated with using community kitchens. Paramount among them was obtaining a Manitoba food establishment permit to sell potentially hazardous food products. They also mentioned maximizing the cost-effectiveness and efficiency of food processing, having enough food preparation and product storage spaces, and networking and sharing experiences with other small-scale food processors. They pointed out food processors can deal with health inspectors due to community kitchens having health certifications, availability of food processing tools and equipment, and the ability to ensure food safety and legally handle food in Manitoba. Lastly, they said the ability to produce food products

they can sell on local and regional markets because the product was made in a community kitchen.

Some disadvantages the food processors said they have encountered in using community kitchens in Manitoba were limited storage or kitchen space, high rental costs, and inadequate maintenance of tools and equipment. Other challenges were the kitchen not being ideal for some specific food product processing, food processors having to carry their items, tools, equipment and machinery in and out of community kitchens due to the kitchen lacking them, and improper cleaning of the kitchen, its tools and equipment. They added scheduling issues and unavailability of some community kitchens and having issues with other food processors using the same community kitchen.

When asked about the use of the Canadian prairies' agricultural or food heritage for their products, eight of the food processors interviewed said they were using these concepts in making their food products, and three said they were not using these concepts in their food processing businesses. Eight food processors mentioned they were motivated by helping and supporting other local food producers, promoting the Canadian heritage, using natural locally produced environmentally friendly raw materials for their food products and helping build resilient local food systems. One food processor who is not currently using the Canadian prairies' agricultural or food heritage for his food products attempted in doing so but failed in his first attempt and is researching more about how to use it. One food processor said she would like to support other local food producers by using the Canadian prairies' agricultural or food heritage in the future, and one food processor mentioned she was not interested in doing this at all.

The interview participants suggested that small-scale food processing businesses can reduce food processing costs by using community kitchens and partnering with companies that can share costs with them. They also mentioned not leasing out space but renting community kitchens until established, making the right connections, willingness to work at odd hours since renting at odd hours is cheaper, as well as testing recipes at home and making adequate preparation before renting a community kitchen due to hourly rent charges by community kitchens.

The interview participants suggested that community kitchen service providers can improve their services by making renting charges affordable and providing adequate storage, freezer and kitchen spaces. They added making food safety and cleanliness a priority, keeping the kitchen

and its shared equipment in good condition, advertising more and making available information about the community kitchen, encouraging knowledge sharing among kitchen users, and investing in advanced tools and equipment.

The participants suggested that people interested in starting a small-scale food processing business using community kitchens can check out many community kitchens before settling on one and establish good working relationships with kitchen coordinators and area health inspectors. They mentioned talking to the right people about business plans, choosing cost-effective kitchens with enough storage spaces, trying out food products on farmer's markets before making bulk productions, and doing more research on food products and community kitchens.

The food processors suggested that the government improve innovation in small-scale food processing by making grants and sponsorships available and increasing supportive programs and workshops to help small-business start-ups. They added assisting business developers financially, combating climate change, reducing the cost of renting incubator type places, simplifying and updating the safe food for Canadians act, health and food safety regulations, and protecting small-scale food businesses by testing and regulating imported food products.

The participants also suggested that the government promote community kitchens as innovation spaces by subsidizing the running of commercial kitchens to make them more affordable and develop more kitchen infrastructure. They pointed out making available advanced equipment and properly training kitchen management teams, increasing available kitchens in the province by building more, providing more funding for kitchens, and engaging the youth and entrepreneurs in start-up businesses and food product development using community kitchen workshops, programs and food industry conferences.

CHAPTER 5: DISCUSSION, RECOMMENDATIONS AND CONCLUSION

5.1 Community Kitchens Listed on the Government Website

Manitoba has equipped small-scale food processing businesses with reasonably detailed information about the community kitchens in Manitoba on the Commercial Community Kitchens for Rent Listing on the Province of Manitoba Agriculture website (https://www.gov.mb.ca/agriculture/online-resources/community-kitchens-listing.html). Some of the website's information is the name of the community kitchen, its coordinator, and the coordinator's contact information. Also, the website has the community kitchen address, available tools, equipment, and machinery in the kitchen, as well as whether the shared appliances are new or old. At the time of data collection for this research, the number of commercial community kitchens in Manitoba listed on this website were fifty-two. The website is updated regularly to reflect new community kitchens for rent, a change in the contact information of the kitchen coordinator or owner and whether the facility has added new tools, equipment, machinery, appliances and resources to what is already available users. Though Manitoba has many community kitchens for rent, most of the kitchens have not intentionally developed the facility for food processing.

Churches and community centres own many community kitchens listed on the government website, which were established for social events and meal cooking programs. These kitchens are ideally convenient for social events like weddings, parties, and funerals that require cooking batches of food. On the contrary, a few community kitchens listed on the government website have been intentionally established for food processing only. Most likely, owners or coordinators of such kitchens are food processors, very conversant with small-scale food processing and provide essential services to help other food processors. The dilemma of most start-up small-scale food processing businesses are finding the right community kitchen suitable and well-equipped for the food product the business owner wants to produce for local markets.

5.2 Mission and Vision of Community Kitchens

The theme that runs through commercial community kitchens' mission is providing social and environmental services (Iacovou, Pattieson, Truby, & Palermo, 2013). Community kitchens

achieve this by helping the various communities in which they are located and managing the environment sustainably. When it comes to the vision of commercial community kitchens in Manitoba and their future projections, almost all community kitchens want to give back to the society through capacity building, identifying and meeting the needs of small-scale food processors and promoting the positive image of community kitchens (Koc, Macrae, Desjardins, & Rd, 2008; Ripat, 1998). A few community kitchens also prioritize the running of food-related educational and health programs (Crawford & Kalina, 1997).

The mission and vision of community kitchens differ depending on their services and influence the kitchen programs or events, resources and appliances. Community kitchens prioritizing food product idea development and processing over social food services and catering events are ideal for scaling-up small-scale food processing businesses. Such kitchens emphasize food processing equipment and its maintenance, food preparation areas, storage spaces, kitchen size, and other essential factors, depending on what they want to achieve with the commercial community kitchen in Manitoba. Therefore, food processors use these community kitchens because of their adequate kitchen, freezer and storage spaces, and the right commercial tools, equipment, machinery and resources necessary for food processing and the scaling-up of businesses.

5.3 Health and Food Safety Regulations in the Province of Manitoba

According to the Province of Manitoba Agriculture website (https://www.gov.mb.ca/agriculture/food-and-ag-processing/starting-a-food-business/community-kitchens.html), small-scale businesses in Manitoba selling their food products to the public are supposed to make the products using a facility issued with a valid "Food Service Establishment permit" by the "Manitoba Health, Seniors and Active Living." The reason is that certified health officials regularly inspect approved food handling commercial facilities such as community kitchens, and the province believes that food prepared, produced or processed in such an environment is of high quality.

Many small-scale food processing businesses do not have the financial means and resources (Aida Khalil, Conforti, Ergin, & Gennari, 2017; Office of the Chief Statistician and Statistics Division, 2017) to purchase or lease a facility with a Food Service Establishment permit for their businesses. Therefore, they believe it is cost-effective and efficient to use community kitchens because community kitchens have the permit and are inspected annually for food product

processing. The province also inspects Community kitchens whenever they add new products to what the kitchen is already processing, eliminating the responsibility of food processing businesses having to obtain the Food Service Establishment permit themselves.

The "Farmers' Market Guidelines" of Manitoba conforms to the "Food and Food Handling Establishments Regulation," which is also known as "The Public Health Act." This regulation prohibits the sale of potentially hazardous food products that contain potentially hazardous substances or can potentially pose risks to people's health in the province. It is mandatory to process such food in a facility with a Food Service Establishment permit like a community kitchen. The province classifies potentially hazardous food as "any food that, given the right conditions of time, pH, temperature and water activity, can support the growth of pathogens. Pathogens are microorganisms that cause disease and include bacteria, viruses, parasites, protozoa and fungi" (Manitoba Health, Seniors and Active Living, 2014, p. 2).

According to the "Guidelines for the Operation of a Farmers' Market," foods that cannot be sold in any Manitoba farmer's market unless processed or produced in a food handling establishment with a permit such as a commercial community kitchen are

> "antipasto, cabbage rolls, chocolate (unless used as an ingredient that has undergone a cooking process above 71°c (160° f), e.g. fudge, chocolate chip cookies, etc.), coleslaw, cream-filled or custard-filled pastries, dairy products, fish garlic, spreads, homemade soups, hummus, kimchi, kombucha, meat or meat products, perogies, pickled eggs, pies with meringue (egg product), pumpkin pie, salsa, sauerkraut, sundried tomatoes in oil, unpasteurized apple cider, whipped butter, wild mushrooms (not allowed to be sold under any circumstances) and any other "potentially hazardous food" item"

(Manitoba Health, Seniors and Active Living, 2014, p. 7) because they can cause food poisoning.

These Manitoba rules and regulations small-scale food processing businesses must follow to sell their food products to the public compel many food processors to use community kitchens. Numerous small businesses believe they have no option other than using community kitchens for food processing. It is against Manitoba's laws to do otherwise unless one can obtain a Food Service Establishment permit, which is almost impossible because most of them are start-up businesses and cannot afford it.

Though small-scale food processing businesses must know the health and food safety regulations of Manitoba, some research participants mentioned this information is scarce and laborious. They expressed it is challenging to get this knowledge or find resources concerning these regulations, and even if they do find helpful information, the process is long and strenuous. Despite some food processors trying to follow the right legal procedures that can help them process their food products, scale-up, or get personal food processing facilities with a permit, it is perturbing because of the difficulty in getting their products certified and sellable to the public and markets.

5.4 Food Processing Costs

Commencing a small-scale food processing business requires start-up capital and financial capacity for running the business (Van Gelderen et al., 2006). The reason is that food processors need to invest in a provincially certified facility for food processing, purchase the raw materials and agricultural products needed, invest in the tools, equipment or machinery necessary for the product, finance the packaging of the product, market or commercialize the product and sometimes hire employees to help with the processing of the food product.

Small-scale food processing requires a substantial amount of money, and many start-up businesses have low capital (Baluku, Kikooma, & Kibanja, 2016; Van Gelderen, Thurik, & Bosma, 2006), so they use community kitchens which reduces their financial burden. Apart from the hourly renting fees paid by food processors to community kitchens, these kitchens cater to some vital things that would have required financial investments from the food processor such as provincial health and food safety permit costs, freezer and storage space, product packaging and the right tools, equipment and machinery (Comei et al., 2016; Ignaczak, 2013). Therefore, using community kitchens becomes cost-effective and efficient until the food processors generate enough money to purchase or build their own fully equipped facility with a Food Service Establishment permit (Comei, Danko, Nistler, & Vaitkunas, 2016).

Despite many community kitchens trying to make hourly rental rates affordable to users by basing them on conservative financial projections (Center for Integrated Agricultural Systems, 2001), some small-scale food processing businesses use community kitchens out of necessity and not because they help reduce food processing costs. Some food processors think the hourly

renting fees charged by community kitchens are very high, and they are no longer cost-effective or profitable to use.

5.5 Kitchen and Storage Spaces

Community kitchens make available and accessible shared resources like kitchen, packaging, storage and freezer spaces that would have been capital intensive if the small-scale food processing business was to invest in each of these resources (Topaloff, 2014). The use of community kitchens for commercial purposes has been a factor in these kitchens having larger kitchen sizes and working surfaces than the kitchens in houses and other food processing facilities. The bigger spaces allow food businesses to have a spacious kitchen where there is enough room for food product idea development, recipe testing, food processing and packaging. Also, community kitchens have spaces for room temperature, dry and cold storage where food processors can keep their products until they are ready to transport them to the market or wherever the product will be sold (Li et al., 2011).

On the contrary, one factor identified in Canadian research as a barrier to people patronizing community kitchens is the kitchen size. Some community kitchens have preparation and storage spaces smaller than what is ideal for small-scale food processing which limit the ability of food processors to make a certain amount of food products at a time (Hwa Lee et al., 2010; Li et al., 2011) and hinders the ability of food processors to multitask.

5.6 Shared Tools and Equipment

Small-scale food processors benefit from the tools, appliances, equipment and machinery needed for their food businesses in commercial community kitchens (Hwa Lee et al., 2010). Some food processors cannot afford the appliances they need for food processing activities because they are expensive and will require funding for maintenance. These food processors mostly own start-up businesses and are not making enough profit to purchase the necessary tools, equipment and resources in addition to essential expenses they need to cover to keep their small-scale food processing businesses running. Since community kitchens have some of these appliances they regularly maintain and clean (Salgado, Cox, Hodgson, & Kwok, 2000), some food processors believe it is efficient and cost-effective to rent community kitchens.

Though community kitchens have tools, equipment and resources small-scale food processors need for their food products, some community kitchens either lack specialized equipment (Topaloff, 2014) or are understocked and do not have all the appliances their users need. Also, community kitchens are used by people processing different food products (Salgado, Cox, Hodgson, & Kwok, 2000), so it is almost impossible for one kitchen to have all the necessary appliances needed by each of the food processors using the facility. The challenge is that this has resulted in food processors sometimes having to carry in and out of community kitchens some of the tools, equipment, appliances or machinery not available in the community kitchens they are using if these are important for their food processing activities. Commercial community kitchens provide the basic equipment needed for food processing (Tang et al., 2011) and sometimes, these appliances are not as advanced or properly maintained as some food processors may want, so they haul their own to the kitchen whenever possible. It is a disadvantage to the food processor because hauling equipment is stressful, and some of these machines are heavy or delicate and may require special transportation services.

5.7 Proximity of Kitchen and Cleanliness

The proximity, closeness or access of a commercial community kitchen to a small-scale food processor is crucial because it influences the food processor's decision to use a community kitchen. One problem some food processors face is getting access to community kitchens around their areas of residence or work (Fridman & Lenters, 2013). Proximity is vital because sometimes, food processors need to carry equipment in and out of community kitchens and transport their food products to the market for sale or another facility for packaging and storage. Sometimes, difficulty in getting transportation to commercial community kitchens becomes a barrier to small-scale food processing businesses because of the kitchen location (Hwa Lee, McCartan, Palermo, & Bryce, 2010). Some food processors work at odd hours, including late evenings or early mornings, due to community kitchens' scheduling. They feel this is convenient because a few people use the kitchen at odd hours, and some food processors choose to do other jobs during regular working hours and process food part-time at odd hours. Therefore, the closeness or access of a community kitchen to the food processor is essential, and a determining factor in the food processor choosing to use a community kitchen.

Another challenge food processing businesses encounter is that some food processors using commercial community kitchens do not keep the food preparation area and kitchen equipment as neat and clean as expected (Schroeder, 2006). Most community kitchens require their users to clean up after themselves, but some food processors do not adequately clean and sanitize community kitchens after use (Tang et al., 2011). The improper cleaning of the shared food preparation space causes some food processors to encounter a setback in using the kitchen since they have to use part of their scheduled food processing time to clean and sanitize the food preparation area, tools, and equipment before processing food. As a result, the time they could have used for food processing reduces, and the amount they pay for renting the kitchen space increases since they pay rent on an hourly basis.

5.8 Combination of Facilities in Food Processing

Due to some small-scale food processing businesses not getting all the resources they need for food processing in one community kitchen, they sometimes use more than one community kitchen and facilities like private kitchens, home kitchens, storage facilities, food packaging companies, farms, bakeries, and truck or transportation companies. These facilities substitute for whatever the food processor lacks in the community kitchen they use, and some of the commercial kitchens complement each other. The use of private kitchens such as restaurants, bakeries and brewery companies allows food processors to have enough time for food processing but forces some of them to work late hours or overnight. For example, private kitchens such as restaurants are used during the day by their owners and are available to food processors only when the restaurant is not in operation and closed. Moreover, some of these private kitchens are expensive to rent than community kitchens, but some food processors use them when having scheduling or accessibility issues with community kitchens.

Some food processors use facilities such as external storage spaces with community kitchens because some community kitchens have limited storage spaces and small kitchen sizes. Food processors using such facilities must carry back some of the food products they make because the kitchen lack enough storage to keep all their finished food products. The full booking of storage spaces in some community kitchens are usually all year round, so some food processors are forced to limit the number of food products they make per time in the kitchen or rent an external storage facility to keep some or all of their food products. Resources in community

kitchens are shared, including storage spaces. Though the entire storage space in a community kitchen may be huge, it is shared amongst the numerous food processors using the kitchen. Sometimes, this makes the specific space allotted to each of the food processors using a community kitchen smaller than ideal, mainly if they produce large quantities of food products per time or are scaling-up.

Some community kitchens do not have a food packaging space or the equipment and resources needed for food product packaging, which compels food businesses using them to employ the services of co-packing companies. When small-scale businesses need to transport their food products from a community kitchen to a different storage or packaging facility, they sometimes use the services of transportation or truck companies in addition to using community kitchens. Some food processors believe it is convenient to use other food processing facilities because they belong to family and friends. Depending on the food processor's relationship with the facility owner, the food processor can have access and use it for free or pay cheaper rent than using community kitchens. Because of this, some food processors use other facilities for food product idea development and recipe testing and use community kitchens only for food processing and production to maximize time use in community kitchens because of their hourly fees.

5.9 The Contributions Community Kitchens Can Make to Promote the Future Use of Biocultural Design, Innovation and Heritage in Food Processing.

Community kitchens are potential innovation makerspaces that can promote the future use of biocultural design, innovation and heritage in small-scale food processing in Manitoba. Many of the food processors interviewed for this research made it clear they use the Canadian prairies' agricultural or food heritage for their products but were unfamiliar or partially conversant with the concepts of biocultural design, innovation, and heritage. Some food processors believe the totality of using these biocultural concepts encompasses buying locally produced agricultural or raw materials for their food products and supporting local food producers. This belief is misconstrued since the biocultural design, innovation and heritage concepts are profound than this. As stated in chapter 2 of this thesis, the use of biocultural concepts in food processing is the bridge to locally adjusting to contemporary food product needs and preserving heritage through innovative design techniques that consider improving the heritage of the product or target

consumers. This fusion of biocultural concepts and modern creativity in local food processing has empowered diversity in the small-scale food processing sector.

Supporting local food producers by purchasing locally produced raw materials and agricultural products may be considered promoting biocultural heritage. However, food processors must step into a phase of using their traditional knowledge, resources and skills, in addition to recent advanced technology and ideas, to innovatively develop biocultural food products that are unique to some groups of people and communities. Community kitchens are the perfect makerspaces where small-scale food processors can try out their biocultural design, innovation and heritage skills. Community kitchens can give their users a competitive advantage by increasing the productivity of their food processing businesses while reducing their per-unit cost, which can facilitate the rooting of biocultural design in biocultural innovations and heritage.

Community kitchens can promote biocultural concepts by incorporating into community kitchen programs for food processors, the innovative development of products based on their diverse cultural backgrounds, the use of traditional knowledge in food product idea development and processing as well as making use of local raw materials and ingredients native to Manitoba and other traditional places in the Canadian prairies. Community kitchens can make the effort of integrating into their missions and visions the desire to serve as makerspaces where food processors can put to maximum use their creativity in fusing and combining traditional methods of food preparation with contemporary technological advancement like 3D food printing to develop food products for the local and regional markets of the Canadian prairies.

Community kitchens can also embark on educational programs like workshops and seminars where they explain into detail biocultural design, innovation and heritage, the practicality and benefits of using these concepts in developing food products and how food processors can make the best use of these concepts in Manitoba. Lastly, some community kitchens hire experts like nutritionists and dieticians as employees of the kitchen who provide professional help to their users. Therefore, community kitchens can go the extra mile of promoting the future use of biocultural design, innovation and heritage by hiring experts in these concepts as employees to assist food processors using these commercial kitchens in their areas of expertise.

In the western world, Canada is enriched with a culturally diverse population. Therefore, the future of the small-scale food industry is very bright if commercial community kitchens and

small-scale food processors can collaborate to promote the use of biocultural design, innovation and heritage in food product idea development and processing. The reason is that the resulting food products will be more acceptable and unique to numerous groups of people and communities.

5.10 Chapter Summary

Small-scale food processing businesses derive many advantages from using commercial community kitchens. Among the benefits are; meeting the health and food safety regulations of Manitoba due to community kitchens having the Food Service Establishment permit which allows legal food processing, access to substantial food preparation, kitchen, packaging and storage spaces, community kitchens being cost-effective and efficient due to their users having access to all resources in the kitchen by paying renting fees, and access to commercial food processing appliances, equipment, tools, and machinery.

Despite the benefits, the food processors indicate some disadvantages. Some of the challenges are accessibility issues, including access to the community kitchen site, enough cold, dry and room temperature storage spaces, access to transportation to the kitchen and adequate food processing equipment, tools and resources. These barriers prevent food processors from using some commercial community kitchens. Other problems include the kitchen having small food preparation and product packaging spaces and the inadequate cleaning of the kitchen and its shared tools. Also, the lack of advanced and adequately maintained kitchen equipment, causes food processors to bring appliances and machinery to the kitchen, and the hourly kitchen fees being too expensive are problematic for food processors.

For small-scale food processing businesses to alleviate the challenges in using community kitchens, they resort to using other facilities, combining two or more community kitchens or using other facilities with one or more community kitchens, which is not ideal for some of them. These other facilities include bakeries, external storage facilities, food packaging companies, farms, breweries, private kitchens, restaurants, home kitchens, and truck companies to transport food products.

5.11 Recommendations

The research participants provided recommendations to similar small-scale food processing businesses on cost reduction, community kitchen service providers and people who want to start a small-scale food processing business in Manitoba. They also made suggestions to the government on implementing policies that can promote innovation in small-scale food processing and community kitchens as innovation spaces.

5.11.1 Recommendations for Similar small-scale food processing businesses on cost reduction

1. Using only cost-effective and efficient community kitchens with all the necessary resources needed for their food products until they scale-up and make enough profit to purchase a facility with a province of Manitoba Food Establishment Permit.
2. Using community kitchens exclusively for food processing and scaling-up of business to maximize hourly rent rates and using home kitchens or cheaper facilities for recipe testing and food product idea development if possible.

5.11.2 Recommendations for community kitchen service providers

1. Making health and food safety a priority by ensuring their kitchens are cleaned and sanitized after every use, properly maintaining their commercial community kitchens and all shared equipment or resources, and occasionally investing in advanced equipment.
2. Ensuring their kitchens are easily accessible by providing their users with reasonable schedules and adequate information, making available enough food preparation, storage, freezer and packaging spaces, and encouraging idea-sharing among their users.

5.11.3 Recommendations for people who want to start a small-scale food processing business

1. Making in-depth research on commercial community kitchen options taking into consideration their food product(s), location of the community kitchen and the shared food processing appliances and resources available in community kitchens.
2. Making thorough preparation including food product idea development, recipe testing, packaging and trying out the food product on a small market to find out if potential customers will love the product before making the food product in bulk for sale.

5.11.4 Recommendations for the government on innovation in small-scale food processing

1. Making available financial assistance, grants, sponsorships, training and workshop programs for small-scale food processing business start-ups and scale-ups, and improving existing similar programs and resources.
2. Updating and making available health and food safety regulations favouring small-scale food processing in Manitoba and simplifying the guidelines and applications necessary for food processors to obtain the permits needed for running their businesses.

5.11.5 Recommendations for the government on community kitchens as innovation spaces

1. Making commercial community kitchens more affordable by subsidizing the amount needed in running them, providing funding opportunities for the purchase of advanced specialized equipment and appliances, providing educational training programs for community kitchen management or staff and investing in community kitchen infrastructure development.
2. Promoting the use of community kitchens by small-scale food processing businesses through youth engagement in business start-up opportunities, building more fully furnished community kitchens, providing funding and grant opportunities for community kitchens as well as making available workshop and network conference programs for community kitchens and small-scale food processing businesses.
3. Taking community kitchens very seriously by funding them differently based on their missions and visions because not all community kitchens are the same. During this research, it became apparent what food processors expect and want from community kitchens as makerspaces where they can develop food products themselves instead of hiring professionals to help them figure things out. Most community kitchens are useful for providing social services, however, only a few kitchens in Manitoba support small-scale food processing exclusively, making it a necessity for food processors to search for community kitchens devoted to promoting food idea development and processing before renting them. To simplify things for food processors, the government can classify the community kitchens listed on the Commercial Community Kitchens for Rent Listing on the Province of Manitoba Agriculture website into groups. One group of kitchens will consist of all the community kitchens in Manitoba fully dedicated to small-scale food product idea development and processing and the second group will consist of kitchens

that focus more on providing services such as catering to cooking bulk food for weddings, funerals, birthdays, parties and other social events. Clumping all these kitchens together into one big list on the government website sometimes makes it very difficult for food processors to distinguish between them and decide which of them can better serve their need for food product development. The government has a significant role in providing the right sponsorship packages for dedicated community kitchens fully engaged in food product idea development and processing to make community kitchens more useful as makerspaces in Manitoba.

5.12 Conclusion

Community kitchens are innovation makerspaces that can help small businesses with food product idea development and processing. They are built for commercial purposes and have sizeable food preparation and packaging areas, dry, freezer and room temperature storage spaces, and the right equipment, tools, machinery, and appliances. Community kitchens are cost-effective and efficient for food processors because leasing or purchasing their own kitchen space with a province of Manitoba Food Service Establishment permit and food processing appliances will require substantial financial investments. Despite the challenges in using some community kitchens in Manitoba and the availability of alternative food processing facilities, community kitchens are ideal for making food products and can promote the use of biocultural concepts due to their benefits. However, this will require the Government of Manitoba to seriously consider the role of community kitchens as makerspaces to stimulate innovation in Manitoba's small-scale food sector.

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APPENDICES

Appendix 1: Survey Guide

UNIVERSITY OF MANITOBA

Natural Resources Institute

70 Dysart Rd, Winnipeg, Manitoba Canada, R3T 2N2
Tel: (204) 474-7170 Fax: (204) 261-0038
http://www.umanitoba.ca/academic/institutes/natural_resources

SURVEY

1. Name of Kitchen: _____
2. Mission: _____
3. Vision: _____
4. Please tick all the types of users of your community kitchen.
   - ✓ Food processor businesses/ organizations
   - ✓ Food services/ caterers
   - ✓ Community users (Groups and Individuals)
   - ✓ Others
5. If you ticked "Others" in (4), please list the other types of users not mentioned above.

   _____
6. What services do you offer? _____
7. Do owners of small-scale food processing businesses use your facility to:
   - Scale-up their products? Yes/ No
   - Develop new products? Yes/ No
8. Is the list of equipment on the government of Manitoba website for your kitchen up to date? Yes/ No
9. If no, please list the equipment you have at your kitchen. _____

Appendix 2: Interview Guide

UNIVERSITY OF MANITOBA

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INTERVIEW

Interview Questions [Note: If the information is available digitally, those questions which can be answered using background documents or websites will be collected before the interview. In those cases, the information collected will be verified with participant]

A. Background of Food Processor and Business

I would like to start by getting information about your business and background as a food processor.

1. According to your website, the name of your business is _____ and it is in _____.
   a. Does the name have a special meaning to you?
   b. Are you originally from Manitoba, or did you move here for business purposes?
2. What is your specialty in the business?
   - Food idea development
   - Food processing
   - Marketing of finished products
   - Management of the business
3. Apart from this business, can you tell me about other occupations and sources of income you have?
4. When was this business started in Manitoba, and is it registered?
5. Before starting this business, what was your occupation?
6. Can you mention all the products you make?
7. What are your reasons for making these specific products?

8. How special or unique are your products from other local and regional products?

B. A General Overview of the Small-Scale Business

9. What goes into the running of your business?
    a. How often do you make the products?
    b. Where do you make the food products?
    c. Where do you get your raw materials/agricultural products from?
    d. What are your main ingredients/ inputs?
    e. How many people have you employed?
    f. What role do the employees play in running the business?
10. How do you commercialize your products?
        - Direct marketing
        - Farmer's market
        - Local food outlets
        - Supermarkets
    a. Who are your main consumers?
    b. How do you advertise your products?
11. How have you scaled-up your business in the past?
    a. What have you done personally to scale-up your business?
    b. What role has sponsorship played in scaling-up your business?
12. What are your future plans for your business?

C. The Use of Community Kitchens for Processing

13. Can you give me an overview of the community kitchens you have used in the past?
    a. What community kitchens in Manitoba have you used in the past?
    b. What are some of the shared tools, equipment and resources available for use in these kitchens?
    c. How do these kitchens differ from each other?
    d. What were your reasons for using these kitchens?
14. Can you tell me about the current community kitchen you are using for your business?
    a. What is the name of the kitchen?

b. What are the shared tools, equipment and resources available for use in the kitchen?
c. How do you use the kitchen for food product idea development?
d. How do you use the kitchen for food processing?
e. What are some of the advantages/ benefits you have obtained from using the kitchen?
f. What are some of the disadvantages/ challenges you have encountered in using the kitchen?
g. How have you been able to reduce the cost of production in your business using the kitchen?

15. Can you give me an overview of other facilities you have used for your business apart from community kitchens?
    a. Can you mention all the other facilities?
    b. How do they differ from community kitchens? In terms of
        - Food idea development
        - Food processing
        - Cost reduction in food processing
        - Available tools, equipment and resources

D. Suggestions

16. What suggestions do you have for;
    a. similar businesses on how to reduce the cost of food processing using community kitchens?
    b. community kitchen service providers in Manitoba on how to improve upon the services they provide?
    c. people who would like to start a small-scale food processing business using community kitchens in Manitoba?

E. Biocultural design, innovation and heritage

17. Do you draw upon the agricultural/ food heritage of the Canadian prairies for your food products? Yes / No
    a. If yes, in what ways and what was your motivation?
    b. If no, do you have any plans for doing so in the future?

F. Conclusion

18. Are there any policies or programs you think the government can implement to promote;
    a. innovation in small-scale food processing?
    b. community kitchens as innovation spaces?
19. Is there anything else you want to add to what you have said already concerning any of the topics discussed above?

I would like to express my sincere appreciation to you for being a participant of this research. Thank you for your time.

Appendix 3: Ethics Certificate

UNIVERSITY OF MANITOBA | Research Ethics and Compliance

Human Ethics
208-194 Dafoe Road
Winnipeg, MB
Canada R3T 2N2
Phone +204-474-7122
Email: humanethics@umanitoba.ca

PROTOCOL APPROVAL

TO: **Emmanuella Addae-Wireko** **(Advisor: Iain Davidson-Hunt)**
Principal Investigator

FROM: **Julia Witt, Chair**
Joint-Faculty Research Ethics Board (JFREB)

Re: **Protocol J2019:010 (HS22557)**
"Learning for Biocultural Design: Community Kitchens as Innovation Spaces for Small-Scale Food Production in Manitoba"

Effective: May 27, 2019 **Expiry:** May 27, 2020

Joint-Faculty Research Ethics Board (JFREB) has reviewed and approved the above research. JFREB is constituted and operates in accordance with the current *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans.*

This approval is subject to the following conditions:

1. Approval is granted for the research and purposes described in the application only.
2. Any modification to the research or research materials must be submitted to JFREB for approval before implementation.
3. Any deviations to the research or adverse events must be submitted to JFREB as soon as possible.
4. This approval is valid for one year only and a Renewal Request must be submitted and approved by the above expiry date.
5. A Study Closure form must be submitted to JFREB when the research is complete or terminated.
6. The University of Manitoba may request to review research documentation from this project to demonstrate compliance with this approved protocol and the University of Manitoba *Ethics of Research Involving Humans.*

Funded Protocols:
- **Please mail/e-mail a copy of this Approval, identifying the related UM Project Number, to the Research Grants Officer in ORS.**

Appendix 4: Challenges to Methodology

A government official was interested in this research and offered to help recruit research participants by sending the research poster and researcher's contact information to Manitoba's database of community kitchens and small-scale food processors. After getting an ethics permit, this government official had retired and clarified she could no longer perform this role or be a part of this research. She suggested contacting the new government official that took over her position about this research, but the new government official said she would not help. There had to be a different strategy for the research participant recruitment because no government official was involved in the process as planned initially.

During this research, one major problem encountered was that it took a long time to get an ethics permit and recruit research participants. The reason is that the process approved to be used by the Human Ethics Board of the University of Manitoba in recruiting participants was laborious and had many restrictions. Some of the participants just gave up during the process, and it took two months to get six participants out of the fifty-two community kitchen coordinators who received emails to complete the survey. Some participants said they were interested in completing the survey and went as far as signing the consent form and returning it via email, but when they received another email with the survey, they never completed it and did not respond to the follow-up emails.

The conduction of a second survey was planned to help recruit participants for the interview, but because of the ethically approved process for recruiting participants, it was not conducted. The researcher was not supposed to get the information or contact information of potential participants from anyone except the potential participants themselves. The community kitchen coordinators listed on the government website were to receive an initial email with the research poster and researcher's contact information and contact the researcher if interested in being a survey participant. They were to receive the consent form, read it, ask for any questions and clarifications, and sign the consent form. They were to return the signed consent form to the researcher before getting the survey via email. After completing the survey and sending it to the researcher via email, they were supposed to receive another email with an email template for potential interview participants, the research poster and the researcher's contact information. They were supposed to send these to their kitchen users. The users of their community kitchens

interested in participating in this research were supposed to contact the researcher and complete the second survey. The second survey was supposed to follow a process similar to the process mentioned above for the first survey. Since it is prohibited to get the information of potential participants from anyone, the second survey aimed to identify users of community kitchens who own small-scale food processing businesses and are interested in participating in this research. After completing the second survey, food processors interested in the interview were supposed to go through another process similar to the previous ones to complete the interview.

All the community kitchen coordinators who completed the first survey received an email from the researcher with the email template, research poster and the researcher's contact information they were supposed to send to their kitchen users so that they could contact the researcher if interested in taking the second survey. Though the community kitchen coordinators said they either sent these to their kitchen users or told them about the research, no small-scale food processor contacted the researcher to take the second survey.

Since getting the contact information of potential research participants from any third party, including the community kitchen coordinators that completed the first survey, was out of bounds because it violates human research ethics, getting it online was the only alternative. A search for small-scale food processing businesses in Manitoba websites was conducted online. An email with the research poster and researcher's contact information was sent to the emails listed on the businesses' websites. In case there was no email listed, a text message was sent to the phone numbers provided on the websites. A call was made to the phone numbers provided on the small-scale food processing businesses' websites after some days if there was no response to the text message, email or follow-up efforts in reaching them. None of those who received the text messages responded. Some small-scale food processors responded to the emails. Email communication was a significant issue because some food processors took over a month to respond, and others never responded to the emails and follow-up emails.

Time was running out, and since the primary data collection was supposed to be the first survey and interview, but the second survey was just a means of recruiting participants for the interviews, another strategy was devised for recruiting participants for the interviews after conducting the first survey for two months. The second survey could not be conducted due to the circumstances mentioned above, which were beyond the researcher's control.

The devised strategy for meeting some small-scale food processors without taking their information or contact information from any third party was attending farmers' market events where most small-scale food processors in Manitoba sell their food products. The researcher attended various farmer's market events in Manitoba and spoke with some small-scale food processors at the farmer's market in person. They were asked if they had ever used a community kitchen in Manitoba to make their food products. If the answer was yes, they were informed about this research on community kitchens as innovation spaces for small-scale food production in Manitoba, they were shown the research poster and asked if interested in being interviewed for this research. Most of the food processors the researcher spoke to in person at the farmer's market events were more open and willing to be interviewed. The researcher met them in person again or contacted them via phone to conduct the interview, depending on their preference.

It took about five months to complete the interviews because each participant provided the time they were available for the interview, and some of them rescheduled a few times before the researcher was able to interview them finally. It took approximately five months to get the ethics permit and seven months to complete data collection for the survey and interview.

Appendix 4.1: Unused Second Survey Guide

UNIVERSITY OF MANITOBA

Natural Resources Institute

70 Dysart Rd, Winnipeg, Manitoba Canada, R3T 2N2
Tel: (204) 474-7170 Fax: (204) 261-0038
http://www.umanitoba.ca/academic/institutes/natural_resources

SURVEY

1. a. Name of business/ organization: _____
   b. Name of entrepreneur (small-scale food processor): _____
2. Type of food processing: _____
3. a. Do you use community kitchens for food idea development? Yes / No
   b. Do you use community kitchens for the processing of the food product? Yes / No
   c. Name(s) of community kitchen(s) used for food product idea development and processing _____
   d. List of specific products developed or processed using community kitchen _____
4. Have you used other facilities apart from community kitchens for food idea development and processing? _____
5. a. List of other facilities you have used for food idea development _____
   b. List of other facilities you have used for food processing _____
6. Product(s) being sold in a local market in Manitoba _____
7. Product(s) being sold in a regional market of the Canadian prairies_____
8. Are you willing to share your food processing experience with the researcher through an interview which will take approximately 2 hours? Yes / No
9. If yes, are you willing to be available for further information sharing in case it is deemed necessary by the researcher after the interview? _____
10. If yes, are you okay with your shared experience being published in a thesis, plain-language publication, chapter for a book of case studies for biocultural design and a peer-reviewed publication? _____