

**Urban Hierarchies and
Forms of
Production in
Central Saskatchewan**

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ABSTRACT

Urban hierarchies and methods of economic exchange have been extensively researched for many years by social scientists. On one hand, Central Place and trade center models have attempted to describe how urban settlements of different size interact and fit into a larger system or hierarchy. At the same time, social scientists were also attempting to understand how economic, social, and geographic situations affect exchange within different regions. Researchers have attempted to analyze these different types of economic situations. Surprisingly, very little research has attempted to integrate urban hierarchy research with informal production research.

This research has attempted to re-conceptualize urban hierarchies by encompassing a variety of forms of economic exchange, including informal exchange, into currently used urban hierarchy models. Specifically, this study will examine the multiple forms of exchange that exist across a set of six communities in Central Saskatchewan representative of the provincial urban hierarchy. This inclusive perspective on urban economic structure, including formal exchange as defined in traditional models as well as bartering, self-production and home work, will force us to re-evaluate the concept of work, exchange, production and the *real* nature of the economy across urban hierarchies. Finding out the accuracy or relevancy of models will help determine whether traditional urban hierarchy structural models designed to categorize urban places across a region properly reflect the *total economy* of these urban places.

The resulting analysis and research in this thesis have demonstrated that the total economy of Saskatchewan's urban hierarchy includes all methods of exchange, as households in every community, regardless of size and functionality, accessed goods and services both informally and formally. While empirical results did not clearly distinguish a strong relationship between community size, functionality and the significance of informal economic activity, there was some evidence to suggest that the those in the smallest, lower-tiered communities were more likely to incorporate informal economic activity in their production and consumption choices than those in the higher-tiered communities. Likewise, empirical data did complement existing central place

research in Saskatchewan by providing evidence that residents in lower-order communities were more likely to travel to other communities to purchase formally derived goods and services than those in higher-order communities. A reanalysis of the data and key socio-demographic characteristics of the respondents suggested unique links between respondent age, income and household size and the choices of modes of goods and services acquisition that complemented theoretical research on the informal economy. Likewise, community profiles provided a longitudinal picture of each community's functionality and suggested a clearer picture of the differences between each study community within the hierarchy and the choices of modes of production.

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CHAPTER ONE

INTRODUCTION

Urban hierarchies and informal economies have been extensively researched for many years by social scientists. On one hand, Central place and trade centre models have attempted to describe how urban settlements of different sizes interact and fit into a larger system or hierarchy (Robinson, 1968; Stabler and Olfert, 1992). At the same time, social scientists were also attempting to understand how economic, social, and geographic situations affect exchange within different regions. Both Gershuny (1978, 1979, 1983) and Sharpe (1988) attempted to analyze the combination of modes of home production. Surprisingly, very little research has attempted to integrate urban hierarchy research with informal production research.

1.1 Research Approach and Objectives of Study

This research re-conceptualizes urban hierarchy by encompassing a variety of forms of economic exchange, including formal exchange, into currently used urban hierarchy models. Specifically, this study will examine the multiple forms of exchange that exist across a set of six communities in Central Saskatchewan representative of the provincial urban hierarchy. It is expected that this inclusive perspective on urban economic structure, including formal exchange as defined in traditional models as well as bartering, self-production and home work, will force us to re-evaluate the concept of work, exchange, production and the *real* nature of the economy across urban hierarchies. Evaluating the accuracy or relevancy of models could then help determine whether traditional urban hierarchy structural models designed to categorize urban places across a region properly reflect the *total economy* of these urban places.

Informal exchange is an important practice in rural and urban Canada. Home childcare, non-contractual work, hunting, bartering, and even theft have long been a part of Canadian culture. Even though many models that look at settlement structure fail to look at such underground activities, it may not mean that these practices are any less important (Reimer, 1995; Bates,

1997). Ultimately, it is expected that this research will find that informal economic activities complement the dominant formal economy, and that existing models attempting to evaluate settlement patterns in our province remain relatively accurate. However, it is also expected that the bundle of mechanisms of exchange varies significantly across the urban hierarchy and that these variations mediate the structure of urban hierarchical systems in terms of where and how goods and services are produced and exchanged.

1.2 Scope of the Study

This thesis will study the impacts and spatial variations of the different forms of economic exchange in Saskatchewan communities and how these activities are integrated within the urban hierarchy.

In recent years academics have attempted to apply principles of Losch's (1954), and Christaller's (1966), separate adaptations of central place theory to various settlement hierarchies. A number of attempts have been made to incorporate these principles into a prairie context (Preston 1983, and 1991; O'Kelly, 1996). These adaptations have provided an in-depth analysis of Saskatchewan's trading system and how economic activity within the region relates to communities of varying sizes. These conclusions can then be further applied to a comprehensive study of Saskatchewan's economy that attempts to incorporate multiple forms of economic activity into urban system models.

Although these previous adaptations have effectively tracked the relationship between settlements within an urban structure, there is an implicit assumption that formal economic production and exchange are the only features which define urban hierarchies. There are many additional forms of economic exchange including home-working, self employment, bartering, and mutual aid, which may be of fundamental importance in shaping the economic and social lives of residents and thus the nature of urban places and urban hierarchies (Ross and Usher, 1986).

Many different forms of economic exchange are present in Saskatchewan communities. It is difficult to categorize these activities as either formal or informal, but one must be aware of the unique social, economic, and geographic situations of the particular region that effect the kinds of exchange that occur in these regions. Much of the research that focuses on informal and formal work is based on similar overlapping classifications. Studies by Sharpe (1988) and Bates (1997) divided work into categories based on whether money is exchanged for goods and services. This categorization is also divided into public versus private consumption of services, or regulated versus. unregulated work.

Using these broad categories, assumptions have been made about the actual classification of types of work. These categories include i) irregular, or inconsistent forms of paid labour, ii) formal paid, or contractual labour, iii) household, or subsistence work, and iv) communal work which manifests itself in the form of *mutual aid*, or the informal kinship approach of aid that is hypothesized to exist in most rural communities. This method of classification will be instrumental in defining differences and similarities between categories of work and will be subsequently incorporated into the study of the provincial urban landscape.

To state the layout of this thesis as simply as possible, this study is organized into the following chapters: Chapter Two investigates and discusses literature on urban systems and forms of economic exchange. Chapter Three uses the information articulated in the literature review to provide a research plan for the study of the Saskatchewan urban system. This research plan will aid in the identification of actual study sites, economic indicators and the methodology to be utilized within the study. Chapter Four provides an analysis of the relationship of various forms of economic activity on the provincial urban system. Chapter Four also offers a comparison between Saskatchewan urban system models and the analysis within this study. The analysis attempts to determine the nature of economic activity of each surveyed community and then identify patterns and relationships between each community utilizing survey data and 1996 Census Canada data based on unpaid forms of work. Chapter Five summarizes the study's

overall findings, limitations and directions for further research.

CHAPTER 2

LITERATURE REVIEW

This chapter provides a review of the literature relevant to the study of economic exchange within urban hierarchies. Contained within this literature review is a brief summary of urban systems research, including models and methods of urban hierarchy and categorization. After a general overview of urban systems research, the review focuses on central place theory. Central place theory is analyzed through a chronological development by its major contributors and then studied in a Canadian, and finally a Saskatchewan, context. While the literature in this review is continuously studied for the absence of informal economic activity, a section is dedicated to the study of various forms of economic activity, highlighting the importance of informal methods of exchange within economic systems. Through a study of the Canadian and Saskatchewan urban hierarchy the relevance of informal economic activity within the Saskatchewan urban economic hierarchy will be established. Conclusions connect all bodies of research in establishing the absence and necessity of relevant models of economic exchange within Saskatchewan that include a study of informal activity.

2.1 Urban Systems

Before a proper definition of an urban system can be established it is important to first conceptualize an economic system. Essentially, an economic system is a form of social organization over geographical boundaries that provides for the material needs of a society's population (Danesh, 1991). The premise of this definition is founded in the fact that only the coordinated efforts of a group of organized individuals can provide all the needs and wants of an individual. Economic systems are organized such that a certain amount of regulation, control and competition is necessary for productive coordination within the system (Dicken and Lloyd, 1990).

An urban system or hierarchy is a series of cities, towns and hinterland regions that interact over space to characterize the region in which they are located (Berry, 1960). These interactions are often based on the exchange of goods, services, information, and social capital (Polanyi, 1944; Pahl, 1970; Berry and Horton, 1970; Berry, 1975). The geographical boundaries of this system are established primarily through the identification of a specific regional unity or cohesiveness. While these boundaries may be related to physiological features or political boundaries, they are also likely to be formed through a unity developed by the influence of a prominent city. Such a city may have gained prominence through a major retail facility, entertainment capability, or even as a source of media (Marshall, 1975, 1989; Parr, 1978; Evendon, 1980).

While a primary centre or a larger service centre will establish itself as a dominant contributing member within the system, all communities are considered an important part of the overall welfare of the system. The cities, towns and regions within this system are not entirely autonomous entities. Rather, they are interdependent as all prospects of growth are dependent on the nature of connections established with other cities and towns within the system. Each community has a specific set of functions or roles within this system regardless of its size or perceived functionality. Communities that contain a larger population and create a greater bundle of goods and services are deemed to be the most functional communities within an urban system. Numerous smaller communities often rely on one or two larger service centres to attain specialized goods and services. As the economy of the larger region experiences change, so does the urban system (Marshall, 1989). The importance a community may have within a hierarchy can increase or decrease, depending on the state of the regional economy in which the hierarchy is located (Berry, 1960).

In order to gain a clearer picture of an urban system, it is important to understand its historical evolution. An urban system is classified as urban because it is considered a nucleation of population based chiefly on non-agricultural pursuits (Marshall, 1989). This is not to say that urban industry cannot involve agriculture. One must differentiate here between a random dispersion of farms and a more linear, organized settlement of agricultural communities that

define urban systems (Marshall, 1989). Urban systems were established through a series of technological advancements in agriculture that led to a surplus in labour and produce and an eventual migration to central towns for the purpose of local and long distance trade (Mingione, 1981a, 1981b; Marshall, 1989). This trade system grew to encompass the roots of modern retailing and wholesaling. While the economic transactions were originally informal in nature (i.e., unregulated trade and barter), certain guidelines and regulations, which could be quite strict, were soon put in place to regulate human behavior during local trade and ensure productive long distance trade for the state (Polanyi, 1944).

Eventually evolving from meeting places for public barter, communities within urban systems began to take a more formal shape, characterized by complex public organizations that regulated production, supply, administration and management of goods and services for collaborative consumption. Castells and Portes (1989) contend that this “politicization of state” as the manager of everyday life includes state regulation of the social and economical welfare of urban systems. This regulation extended from infrastructure to the housing market, health services, personal social services, education system and employment services so that state institutions influenced the distribution of goods and services and likewise opportunities or resources (Pahl, Flynn, Buck, 1983).

The urban systems of the Mercantile Era of 1500 to 1800 were characterized by central cities that gained prominence largely in part for the economic value that they possessed. While major political capitals were dominant in the urban hierarchy, their growth was largely associated with locational factors such as major ports. Major port cities that focused primarily on long distance trade, as well as exploration, gained dominance in the urban hierarchy. As well, manufacturing cities that were part of the early industrial revolution began to gain prominence as centres of employment, trade and distribution (Mingione, 1985; Marshall, 1989).

During the industrial era, employment in manufacturing cities began to grow rapidly. This was accompanied by a shift in the labour sectors of urban systems. Where many were originally

employed in the primary sector of labour, including trapping, fishing, farming and mining, the secondary and tertiary sectors grew. In the secondary sector, labour was harnessed in the *finishing of products*, which included transportation of raw materials, fabrication, and storage, and the tertiary sector, which included the delivery of goods and services to the consumer through retailing and wholesaling. The growth of the quaternary sector, i.e., the growth of professional experts, administrators, and financial experts would have slowly begun in this era, specifically in the upper classes, but due to accessibility of education and class distinctions, this sector would have been less prevalent than in modern urban systems. Once again, the growth of urban system hierarchies was contingent on the exchange of goods and services, but unlike early urban systems, modern hierarchies included highly stratified labour forces and characteristics. (Mingione, 1985; Marshall, 1989).

Many attempts have been made by a scholars to categorize urban systems in terms of functionality. While each scholar approaches this process of classification using diverse methodology, the vast majority agree on the principle of utilizing quantitative data. In fact, most scholars assert that quantitative analysis is the only way to measure or account for clear representations of functionality. Basing their research on the fact that communities differ according to products or services that they offer, many researchers have used means and standard percentages of industrial labour forces as a way of establishing functionality (Harris, 1943; Nelson, 1955; Stanback and Knight, 1970; Evendon, 1980; Marshall, 1989).

Different researchers have chosen to classify cities into different categories. While the choice of technique may lack objectivity, once again, the actual technique itself uses quantifiable data to establish functionality. Two related examples of categorizations are illustrated to provide a clearer picture of the similarities between classifications as well as the criteria for classification. Stanback and Knight (1970) chose to separate the classification of cities within urban hierarchies into three functional categories; manufacturing, mixed and nodal. These terms were used to define the importance of trade and manufacturing within a city. Marshall (1989) extended this classification to specify that categorization of manufacturing was based on a concentration of

34% or more of the work force involved in this set of industrial sectors, while mixed implied a work force concentration of 21% or greater involved in manufacturing. The third category, nodal, meant that employment in manufacturing did not exceed 21%. Marshall followed this classification by referring to cities as normal (i.e., those falling within the manufacturing, mixed, nodal, or exceptional categories). These exceptional cities included those dominated by mining, government activity, resorts and university towns, where employment in a particular industry ranged from 12 to 16 percent of the total labour force.

Further research has been undertaken to identify the relation between city size, diversity and functionality. Essentially, most research has concluded that the larger the community, the more specialized and diverse the labour force, and hence industry and community (Conkling, 1963; Maxwell, 1965; Berry and Horton 1970; Berry 1975; Marshall, 1975, 1981, 1989). Likewise, research concluded that as a community grows in population, gaining a larger market, it becomes more export-oriented. As a result of this growth and diversification, the town or city becomes a focal point for economic and social activity for the surrounding region. This theory of trade centres or *central places* will be discussed in the following section.

Regardless of the terminology used to categorize industry and labour within urban systems, researchers agree that the traditional importance of trade and manufacturing as the basis of urban economic systems delegates the functionality of communities. Researchers also agree that economic exchange is highly monitored, regulated and administered within this system (Harris, 1943; Nelson, 1955; Stanback and Knight, 1970; Evendon, 1980; Marshall, 1989). Just as the method of establishing functionality and hence a hierarchy of interdependence within an urban system is purely quantitative, the system itself is dominated by formalized goods and services exchange. The absence of informal, or unmonitored sectors of exchange within these models will be discussed later.

2.2 Central Place Theory

Although the name Walter Christaller comes to mind when discussing the origin of central place theory, it is very hard to pinpoint where the theory actually originated and which scholars played the biggest role in the development of concepts that hold it together. Christaller, who conducted research in the 1930's, and to some extent Losch in the 1940's, must be given the majority of the credit for presenting central place theory as a viable framework for studying urban settlement, but one must also give credit to scholars such as Johan Von Thunen who brought forward similar ideas on urban development in the 1820's, over one hundred years before Christaller and Losch presented their urban models (Orishmo, 1982; O'Kelly, 1996).

Even though Von Thunen's study (O'Kelly, 1996) on the centrality of agricultural production is clearly not meant to be applied to urban systems, one can see the vivid similarities between his model and that of central place theory. Von Thunen believed that agricultural activity always centered around a town or city within that particular region. The closer cropping was to this town, the more competitive it was, and as you moved farther away from this central point, the cropping became less competitive, until woodland became the dominant feature of the landscape. The factor that Von Thunen attributed to these phenomena was the increasing cost and time associated with living on the periphery, rather than being situated closer to town. This theory introduced the idea of centrality into spatial studies and possibly helped lay the groundwork for similar theories based on the idea of economic activity around a central location (O'Kelly, 1996).

Clearly Von Thunen's model was a very simple interpretation of agricultural activity in a given region. Along with the inclusion of a navigable river and a well-traveled road, the theory was based on a homogeneous landscape that had only one town or central point. In the early twentieth century Galpin and Kolb, two American rural sociologists, began to consider how the basic characteristics of agricultural settlements related to one another in terms of economic exchange and interdependence (Galpin, 1918; Brunner and Kolb 1933; Robinson, 1968; Parr, 1978).

Galpin studied agricultural communities in Wisconsin and came to the conclusion that centres with the same sort of services were more often than not spaced at patterned intervals. He also observed that each centre controlled a trade area that was circular in shape, revealing a system of agricultural activity that was controlled and centered around evenly spaced service centers (Galpin, 1918). Kolb expanded Galpin's ideas through the categorization of trade areas by how they were related to the specific settlement centre. Such categorization is representative of settlement hierarchies as it clearly identifies varying functionality. The primary area was classified as a region that would offer supplies that were in constant demand by the core of the area and the periphery. The secondary area belonged to the larger urban settlements, where most of the products sold by smaller towns could be purchased. Finally, Kolb presented what he called the specialized area, which was controlled only by the major urban centres and only offered very unique services, such as medical treatment and department stores. This categorization of services into a spatial context can be clearly linked to the ideas behind central place theory, which looked at the distribution of resources and products over space and how that relates to city size and functionality (Brunner and Kolb, 1933).

Twenty years after Galpin and Kolb finished their work in Wisconsin, a British geographer, Dickenson, began research on the relationship between population size and urban functions of a settlement and how these phenomena influenced the surrounding agricultural region. Dickenson's first goal was to define the urban centre in terms of how it functioned within its agricultural regions. Dickenson also attempted to categorize settlements within his subject region by the proportion of population within a given settlement that actually worked in the agricultural industry. His corresponding findings revealed that the smaller rural villages, which did not exceed 300 people, contained the highest percentage of agricultural labourers. Urban villages or settlements between 700 to 1,000 usually had a smaller percentage of agricultural workers, but had a much higher functional status within the region. Dickenson expanded this research to incorporate the factors of marketing and production techniques as well as better physical infrastructure as indicators of functionality within a region. Dickenson used these factors to predict which towns would experience growth and which ones would remain static, allowing for

a more dynamic approach in his model. Dickenson's research is one of the earliest studies on the relationship of community size, industrial diversification and functionality (Dickenson, 1947; Robinson, 1968; Beaven 1977; Parr 1978).

In the early 1930's Christaller attempted to build on existing theories of urban and rural hierarchical patterns and the impact that central place had on regions (Christaller, 1966). Christaller's central place theory attempted to account for the size and distribution of settlements within an urban system. Although the initial inquiry was a fairly general one, Christaller eventually adopted a theory of central place that became the foundation for the study of urban settlements and their impact on market areas and has been a valuable tool for planners and developers regarding decisions about service provision and spatial planning within regions (White, 1977; Parr, 1978). Christaller defined a central place as a supplier of goods and services to an area far larger than itself, referred to as the *complementary region*. The interaction between these two areas formed the basic structure of analysis for central place theory (Christaller, 1966).

Christaller's early research struggled to clearly measure and identify the importance of a central place within a hierarchical framework. Christaller realized that population of a settlement alone could not reflect the functional importance of a central place. A central place's function, asserted Christaller, could essentially be any activity or service provided by an urban centre that was supported by those in the rural areas around the centre; therefore, central place studies could list more than one hundred functions (Christaller, 1966).

In order to establish the level of functionality that a particular centre offered within a region, Christaller tabulated the number of telephone installations in a given centre. Upon further review, Christaller concluded that the use of telephones had become so widespread that such use in the home would negate the significance of the presence of telephones in businesses within a centre. While this assertion was founded, one researcher found that the number of long-distance telephone calls originating in small centres and directed to large centres was an indicator of the extent of those centres' zones of influence or functional importance (King, 1984).

Realizing the flaws in his original method of classification, Christaller began assessing the functional importance of the central places in his study area by examining the services by certain cities of certain sizes. Although this method seemed like a more tangible way to examine central place functionality, Christaller encountered difficulty in deciding how to weigh the importance of different services offered by a given central place. Christaller felt that an understanding of the importance of each service to the region was vital if one wanted to create an accurate model of service exchange place functionality within a region (Beaven, 1977).

Christaller's concluding research on exchange and functionality within a region was based on two concepts that he felt would delineate functional importance of centres. The concept of the range of goods (i.e., how far someone is willing to travel to purchase the good), and the threshold of the good (i.e., the least amount of business necessary to sell the good for financial viability), were used to establish his hierarchy of exchange and distribution. From these two concepts, Christaller established a seven-level hierarchy based on the fact that different goods have different ranges and thresholds, according to variables such as their basic price and the frequency by which they were demanded. The varying ranges and thresholds, asserted Christaller, would determine the type and number of establishments within a region with a given population.

Goods and services were therefore categorized as *low order* (small threshold, small range) to *high order* (large threshold, large range). Threshold requirements of goods were considered to influence the number and location of producers. High-order goods would be available at fewer and larger locations within an economic system, while low-order goods would be available at a large number of locations. The functional importance of a central place, therefore, would be contingent on the number and order of goods and services that it could provide. The location of complementary centres was contingent on an intricate hierarchy of goods and services. Taking the example of high-order goods located in the highest-level center, due largely in part to how far people will travel for a good, other centres were dispersed in relation to this centre for the purpose of attaining these higher order goods and services. Such centres offered lower order

goods and services to smaller populations. When traveling to another centre to obtain a smaller order good is not feasible, other centres developed to serve the needs of the population.

Christaller established a hexagonal pattern of settlement, based on trade routes in relation to this economic interdependence. He also ranked central places based on the highest order of good and service that it supplied, asserting further that this central place would also provide the goods and services of the lower orders underneath it (Christaller, 1966; Parr, 1969, 1978; White, 1977; Dicken and Lloyd, 1990; Stabler and Olfert, 1996).

Christaller's central place theory, although regarded as a useful tool and foundational study of settlement hierarchies, is often criticized and hence underused for being too static, as it does not account for change in trade centres, specifically in response to population increase and decrease within these centres (Parr, 1969,1978; Preston, 1991). This is of importance in a Canadian context in light of recent studies that have identified a decline of trade centres and dispersion of settlement patterns, specifically in the Prairie provinces. Within Saskatchewan over the last thirty years, 15 to 20% of the smaller trade centres have disappeared, having shifted below the threshold of the lowest order of goods. Much of the population and economic activities of these centres have shifted to larger urban places. For example, the number of main urban centres have grown by over 30% (Hodge 1965; Stabler and Olfert, 1996).

In response to a different rigidity that he observed in Christaller's model, namely its strict hexagonal arrangement, another German scholar provided a major contribution to central place theory. Unlike Christaller's model, Losch (1954) based his model on his interpretation of a purely hypothetical area. Also unlike Christaller's model, this study region was a homogeneous one in which the landscape was assumed to be totally flat, with a perfectly equal distribution of raw materials, equal transportation costs, and an equal distribution of population and consumer demand (Herbert and Colin, 1992). As with Christaller's interpretation of central place theory, Losch only offered broad categories of goods and services to characterize the economic links between urban areas over space. Losch used indicators such as the number of people employed per industrial sector and distribution of retail establishments to determine how a settlement fit

into a larger urban system.

Working within the same period as Losch, geographers Berry and Garrison (1958) pioneered work on central place theories. Once again, their research and corresponding studies that this research fostered identified a system of hierarchies of central places. These central places could be identified using the classification of goods and services and through the establishment of functional significance within varying communities. As noted above, the logic that settlements with large populations will be able to support higher level orders of goods and services than settlements with smaller populations was asserted (Berry and Garrison, 1958; Dicken and Lloyd, 1990). In conjunction with these findings, Zipf's (1949) rank-size theory of urban system ranking perhaps best and most simply explains central system hierarchy. Simply put, he stated that the ranking size of a centre is proportional to its population rank. Data through numerous research identifies that this theory is strongest within urban systems in the United States and Canada (Madden, 1956).

In recent years academics have attempted to apply principles revealed in the work of Christaller and Losch to many regions throughout the world. In a Canadian context, Preston (1983, 1991) attempted to apply Christaller's theory to the Canadian urban structure. In order to establish functionality among the different orders of Canadian cities, Preston conceived of a number of categories including total population, combined daily commuting flow, airline passenger flow, corporate control points and daily newspaper circulation. Once Preston accumulated the data on each of the categories on every metropolitan area within Canada, he then ranked them by order of functionality and importance within Canada. Based on the previously mentioned ranking system, Preston found that Toronto was the one and only dominant central place within Canada's urban system. Montreal and Vancouver composed the second order. Quebec City, Halifax, Edmonton, Ottawa-Hull, Winnipeg and London were slotted in the third order. The remainder of the important centres within Canada were put into the fourth and final order. Those included Saint John, Calgary, Trois-Rivieres, Hamilton, Kitchener-Waterloo, Regina, Sherbrooke, Chicoutimi, Victoria, Windsor, Saskatoon, Moncton, and Kingston (Preston, 1983; Preston, 1991). Although

Preston borrowed several variables from Christaller and Losch in constructing an urban hierarchy, the Canadian model was truly a unique interpretation.

2.3 Urban Systems Adaptations in Saskatchewan

Stabler and Olfert (1992) lent a local perspective to Christaller's Central Place Theory. Stabler and Olfert's research and writings focus on the trade-centre system of Saskatchewan. The authors offered an in-depth discussion of central place theory and how the theory could be applied to a comprehensive study of Saskatchewan's agricultural economy. After a brief summary of the rationale, history and contextual application of the theory, Stabler and Olfert established why the theory could be effectively applied to a study of Saskatchewan's trade-centres. Stabler and Olfert asserted that the theory was originally constructed to study the functioning of centres in agricultural, rather than industrialized regions. Therefore the theory would aid their study, since Saskatchewan's economy was originally based on agriculture and this sector still generates a high level of employment and income in the province. (Stabler and Olfert, 1992).

Stabler and Olfert clearly asserted that the application of their theoretical model is modified in their studies of Saskatchewan because the theory, as suggested previously by other authors, is considered static. They contended that the theory describes a system in equilibrium, or a system in which phenomena such as the population distribution, size, income, and technology remain unchanging. As a result of the perceived limitations of this static theory, Stabler and Olfert applied a comparative static analysis that identified two points in time. They established that the economy of the trade-centre system of Saskatchewan would differ at dates separated by several years. These differences were then studied and interpreted to explain the changes occurring from the above mentioned phenomena (Stabler and Olfert, 1992).

The resulting study on trade centres focused mainly on quantitative data associated with formal economic exchange. Data describing the communities involved in their study was accumulated from reference materials listing businesses according to Standard Industrial Classification codes.

Further data on services such as financial institutes including banks and credit unions, grain elevators, health care facilities and services, and educational facilities were gathered from provincial and professional organizations. Statistical data on population size and characteristics were also incorporated into the study. It is important to note that qualitative data in the form of interviews of community leaders and administrators were also part of the data collected (Stabler and Olfert, 1992).

Based on these data, communities were characterized according to population size, a variety of formal business functions, and infrastructure. Resulting statistical analysis and evaluation of the data resulted in the classification of six functional categories in a trade-centre hierarchy, as follows: Minimum Convenience Centres, Full Convenience Centres, Partial-Shopping Centres, Complete Shopping Centres, Secondary Wholesale-Retail and Primary Wholesale-Retail places. The goods and services identified within these functional categories focused singularly on monitored forms of economic exchange such as food services, auto repair, banks and other financial institutions and retail facilities (Stabler and Olfert, 1992).

Extended research on functional economic areas within Saskatchewan further emphasized an absence of informal economic activity within functionality indicators. Stabler and Olfert's functional economic areas, which are essentially an extension of their six-tier hierarchy, are established using labour markets, labour commuting to employment centres and retail trade areas.

Although the central place models reviewed within this summary of the theory effectively tracked the relationship between settlements within an urban structure and established firm functionality indicators and hierarchies, there is an implicit assumption that formal economic production and exchange are the only features which define urban hierarchies. Once again, purely quantitative data that are easily measured, tested and clearly observed constitutes the foundation of these studies of urban systems. Unfortunately, these models do not account for the entire spectrum of economic exchange within an urban system, as such forms of exchange are less measurable and more qualitative in nature. These many additional forms of economic exchange

including home-working, self employment, bartering, and mutual aid, which may be of fundamental importance in shaping the economic and social lives of residents and thus the nature of urban places and urban hierarchies (Boris and Daniels, 1989; Tokman, 1992; Thomas, 1992). The following section will cover the different forms of exchange present within urban hierarchies, involving both formal and informal patterns of exchange.

2.4 Economic Exchange

Although it is obvious that formal labour and structured economic activity are very important components of the economic environment of communities, social scientists have also realized that there are many additional ways of attaining or exchanging goods and services that cannot be easily accounted for within conventional economic models or typologies (Tanzi, 1982; Portes, Castells, and Benton, 1989; Tokman, 1992; Boris, 1994). The informal economic sector is one such component of society. Working for something other than money, exchanging labour for labour, bartering, trading, volunteer work, or providing a service for yourself rather than purchasing it from others, are all examples of activities that exist outside the parameters of the formal economic system, but are still important ways for households and communities to survive and have a serious impact on many people in many regions (Portes, Castells, and Benton, 1989).

Early attempts made to categorize forms of exchange resulted in two dichotomous categories that paralleled urban industrial-style economies and rural agricultural-based economies. Assumptions were made that urban communities tended to be influenced and monitored more closely by government and industry. Rural economic settings were characterized as areas where some commodity exchange fell under government or market control but the majority of exchange often involved non-monetary exchange between poor farmers and tradesmen. This dualist approach had many shortcomings in that it did not account for industry that operated in a rural environment, universally implemented tax programs, and impoverished people in the urban centres who relied on unconventional forms of exchange to survive (Fitchen, 1981, 1991;

Sassen-Koob, 1989; Duncan 1992, Gaber 1994; Lyson, Gillespie, and Hilchey 1995; Jensen, Lief, Cornwell, and Findies 1995; Tickamyer and Wood, 1998).

Social scientists attempted to compensate for these discrepancies by including sub-categories that included bartering, marketplace exchange and even acquisition of goods and services through illegal means. These sub-categories did offer some amendment to the original attempts at categorization but failed to capture the multitude of ways that goods and service are acquired (Tokman 1992; Stelynyi, 1981; Dennis, 1996, Halperin, 1996; Sharpe 1988).

It was obvious that researchers had to further synthesize this crude attempt at categorizing exchange and labour. One shortcoming concerning these dichotomous categories was that interactions between the different means of exchange were rarely monitored or understood. This interaction between different levels of economic interaction not only implied that the capitalist style economy and informal activity could coexist but the strong relation, and at times interdependence of various forms of exchange, made it much more difficult than it originally appeared to construct strict categories of economic activity. It was understood that capitalist economic endeavours were often performed by individuals who were being paid without a contract or were being given goods as payment in order to survive. Formal places of commerce within urban settings were being used as areas where markets or trading bazaars took place and where the reciprocal trade of goods was the norm, rather than the use of money as a standard medium of exchange. Although the oversimplification of economic activity may have been modified, it was still the general consensus by researchers that the type of reciprocal-based economy operating out of the parameters of industrial and money-based exchange within urban centres would eventually be assimilated into the regular economy. Conversely, rural, non-industrialized areas would stand a greater chance of having an environment that could support both money-based and reciprocal or informal activity (Pahl, 1984, 1988; Rauch, 1991).

It was clear that early attempts to analyze multiple forms of exchange were doomed to failure from the outset due to the separation of different forms of exchange into different sectors that

contained preset categorization criteria. The creation of sectors and mutually exclusive forms of activity, as mentioned previously, hindered the potential to understand the relationships established between multiple forms of exchange coexisting in the same geographic area.

Recently, research has progressed to the point where there is recognition that the informal and formal types of exchange may operate under different guidelines or codes but are employed by the same people in the same region or community in a symbiotic relationship (Bagnasco, 1990; Arsenault, Ellison and Reimer, 1997). An understanding of this concept has brought social scientists to the realization that informal or alternative forms of exchange are in many cases just as important to industrial societies as they are to agricultural-based economies. Subsequently, it was understood that alternative forms of exchange were no longer viewed as poor substitutes that are eventually replaced by more conventional forms of trade; rather, these exchange mechanisms were seen as valuable parts of the total economic structure (Felt, Murphy and Sinclair, 1995; Findeis, Jensen and Cornwall, 1993).

The increased attention being given to alternative or informal forms of exchange may imply that these forms of exchange are increasing in the developed world. Although it is difficult to definitely assess this claim, this may be due to the shifting monitoring mechanisms that define exchange as formal or informal or it may be due to the increasingly competitive economic environment in the developed world. The increased visibility and importance put on homework and childcare over the last three decades have lent to this increase in activity and study. Nevertheless, there has been an apparent increase in informal or unmonitored forms of exchange, and with this increase has emerged a new and ever-changing environment in which essential goods and services are attained (Portes and Sassen-Koob, 1987; Morris and Irwin, 1993).

Recent attempts have been made to reinterpret exchange and to break these activities into more realistic categories within one economic context. Within this context, the broader categories of informal and formal exchange are still included in modern research as they are still present and vital components of an economy. Social scientists have taken a further step by attempting to encompass activities that appear to straddle the boundaries of either group. This endeavour by

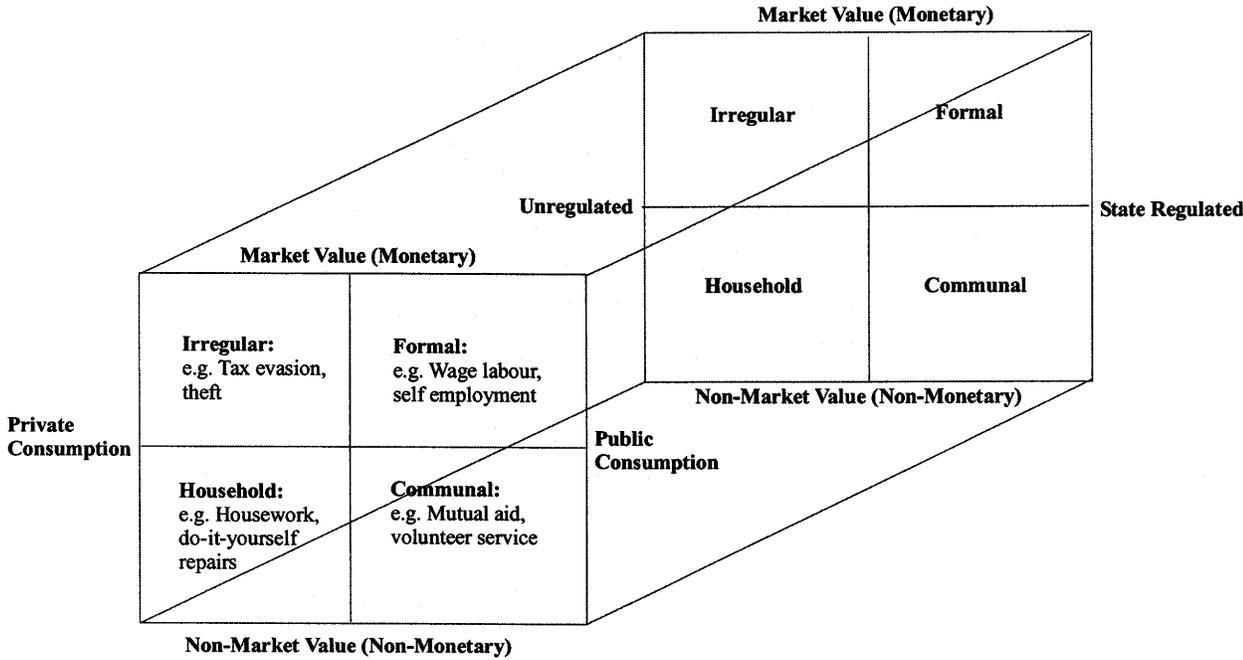
many researchers has involved several multidimensional typologies to be developed and employed in an attempt to incorporate broader forms of exchange and activity that is not easily categorized (Portes, Castells and Benton, 1989; Tickamyer and Wood, 1998).

Many different forms of economic exchange are present in Saskatchewan communities. It is difficult to categorize these activities as either formal or informal, but one must be aware of the unique social, economic, and geographic situations of the particular region that affect the kinds of exchange that occur in these regions. Much of the research that focuses on informal and formal work is based on similar overlapping classifications. Sharpe (1988) and Bates (1997) divide work into categories based on whether money is exchanged for work. This categorization is also divided into public versus private consumption of services, or regulated versus unregulated work (Sharpe, 1988; Bates, 1997). While Bates' research deals specifically with home-based work and Sharpe's deals with a more encompassing interpretation of the whole economy, both are able to find similar patterns in the classification of informal and formal labour. Both authors subdivide work into four main categories, i) irregular, or inconsistent forms of paid labour, ii) formal paid, or contractual labour, iii) household, or subsistence work, and, iv) communal work which manifests itself in the form of *mutual aid*, or the informal kinship approach of aid that is hypothesized to exist in most rural communities.

This method of categorization and the research performed by these two authors will be instrumental in defining differences and similarities between categories of work (Sharpe, 1988; Bates, 1997). Figure 2.1 has combined the principles of Sharpe's and Bates' two dimensional frameworks into a new three dimensional framework that illustrates each method of categorization. The *front box* of the figure represents the work of Bates, which focused on consumption, and the *back box* represents the work of Sharpe, who categorized work by the degree of regulation. By observing all the above-mentioned variables in Figure 2.1, one can see that the categorization of a particular method of exchange can involve the interpretation of several variables. This figure also identifies the reality that informal and formal methods of exchange include both similar and distinctly diverse characteristics. Irregular and household

work are both unregulated forms of work for private consumption. While household work in both frameworks does not have specific monetary value, irregular forms of private work can have value attached. Just as diverse is the classification of these categories. Irregular work may include illegal activities such as theft and tax evasion or work associated with fluctuations in market trends and seasonal unemployment highs and lows, while household work consists primarily of activities performed within a household that produce goods and services, including forms of do-it-yourself work, stay-at-home parenting, or subsistence food production. Formal wage labour is state regulated, and involves monetary value and goods and services exchange for public consumption. On the other hand, communal work such as volunteer services (e.g., coaching a hockey team, working for local schools, health facilities or professional organizations), can be state regulated and available for

Figure 2.1 Categories of Exchange



Adapted From Sharpe (1998) and Bates (1997)

public consumption, but do not necessarily involve monetary benefits or exchange and are

therefore informal in nature. It is obvious that the boundary between formal and informal activity is not always clear, creating further difficulties when one attempts to clearly define informal activity, already an elusive form of exchange.

This model not only demonstrates the relevance and importance of informal methods of exchange, but also provides an understanding of the diversity and breadth of informal economic exchange. Informal exchange does not always involve non-monetary exchange, it is not always unmonitored and it involves both the private and public sectors of goods and services exchange; in other words it pervades almost every area of goods and services exchange. The amalgamation of these two models will ultimately form the basis of the evaluation of the type of exchange undertaken within each community within this study.

There is an extensive body of research that discusses informal work in rural areas, rural fringes and metropolitan areas. Common generalizations can be made about the different forms of informal work in these areas and the different economic, social, and geographical realities that affect informal and formal work in urban and rural areas. Felt, Murphy and Sinclair (1995) introduced their research with a narrative about informal labour and unpaid work in Newfoundland that can be generally applied to other rural and urban/rural peripheral regions. *Making do*, or subsistence labour, combines various sources of formal income and what Pahl (1984) referred to as *self-provisioning*. For those rural regions that depend on seasonal work, such as farming and fishing, this pattern of seasonal unemployment often results in one's livelihood depending on unemployment benefits and the odd non-contractual labour agreement that does not necessarily have any direct monetary value (Felt, Murphy and Sinclair, 1995).

Research has revealed that it is the relative isolation of these peripheral rural and rural regions that creates the conditions for informal exchange. Arsenault, Ellison and Reimer (1997) concluded their research with some pointed discoveries. They found that it was the access to viable resources such as land, carpenter tools, and the skills of how to make use of such resources that empowered rural peoples to explore the option of informal economic activity. Clearly these

activities are important to certain areas in Saskatchewan (Arsenault, Ellison, Reimer, 1997). In 1991, census data showed that rural individuals on average took fewer trips to areas that provided services that they required to survive (i.e. daily groceries), clearly indicating that some form of self-provisioning was taking place in procuring these services (Reimer, 1995).

Comparatively, informal economic activity may be present but less visible in metropolitan areas (Castle, 1990; Hay and Basran, 1992; Felt and Sinclair, 1995). Halperin (1996) studied the existence of the informal economy in Northeastern Kentucky and Southern Ohio. The study region consisted of agrarian communities with small, privately owned farms thrown into a pattern of subsistence labour similar to that found in the Newfoundland case, but it also contained the cities of Columbus and Cincinnati in Ohio, and Louisville and Lexington in Kentucky (Halperin, 1996). The urban focus of Halperin's research and resulting analysis dealt specifically with the *shallow urban* categorization, which are those urban areas found within the boundaries of a city, characterized by small populations with low densities, and a typically marginalized working-class. While these urban places lack the important connection to resources such as land ownership and the agrarian skills associated with this resource, the economic structure and population distribution give them distinctively rural qualities. It is within these *shallow urban* areas that Halperin found combinations of informal and formal work arrangements similar to that found in rural areas (Halperin, 1996). Her research also revealed similarly patterned kinship networks of exchange and generational work, or the passing of work knowledge or jobs from generation to generation as would happen on the *family farm* in rural settings (Halperin, 1996). Once again, the relationship between forms of exchange and context has parallels within the Saskatchewan urban/rural system.

Further research to support the connection between kinship relationships and informal activity was completed by Enzo Mingione. The bulk of Mingione's work has been on the effect that kinship ties have on the economic functionality of a region (Mingione, 1981 a, 1981b, 1985, 1991). These types of relationships are not based on contractual agreements, but rather on agreements based on trust. Rarely are these trust or handshake agreements ever broken because

of the close-knit nature of the community. If an individual breaks an agreement, the entire community may shun the person and socially isolate that person from their networks of suppliers and distributors. Therefore, Mingione felt there was a type of community-based regulation that existed within regions of Italy. The communal atmosphere acted as a regulatory system that assured everyone within the community honoured their verbal contracts and worked towards a common goal, which meant prosperity for the entire community (Mingione, 1981a, 1981b, 1985, 1991).

One can see many of the same types of informal agreements and regulatory devices based on kinship and ethnicity present in Saskatchewan. If we look at settlement patterns in Saskatchewan, we see ethnic strongholds such as the Ukrainian block settlement in the eastern part of the province near Yorkton and the French block settlements in the southern part of the province near Gavelbourg have been in place for up to four generations (Richards and Fung, 1969). Young individuals are less likely to move away from these areas because their families have farmed the land for decades and in order for the land to stay in the family, the offspring of the previous generation must stay in the community. Inheritance could also be considered an informal method of exchange. This lack of demographic movement usually results in long lasting relationships among landowners based on networks of trust that are rarely tampered with (Goudy, 1990).

A study of kinship ties naturally brings an individual into contact with literature on family work, or the significance of informal economy and economically sustainable family strategies that are applicable to families all over the world. Investigating the contemporary rise of homework and production, researchers have identified a number of criteria to explain this phenomena (Mackenzie, 1987; Boris and Daniels, 1989; Nozick, 1992; Anderson et al, 1994; Arseneault, Ellison, Riemer, 1995). Obviously, when defining homework, one cannot discount the traditional domestic labour debate that focuses on the unpaid labour of women fulfilling what can be referred to as societal norms as a major element which contributes to the presence of the informal economy (Timberg, 1995).

Greater incidence of alternative economic activity is evident in impoverished households. An increasing pressure on the poor to subsidize their welfare for survival, rising unemployment, job loss, or even discrimination lead these individuals to acquire goods and services informally. This pressure has sparked homework, which includes activities such as selling and making goods without claiming profit as income (Roberts, 1994; Arsenault, Ellison and Riemer, 1997). Self-help or self-employment are also alternative methods of supplementing impoverished income (Timberg, 1995). Understandably, one does not have to be poor to pursue informal work within the household. Some families find the accessibility of the informal economy more flexible than the formal when fulfilling kinship type contracts and agreements (Roberts, 1994; Boris, 1994).

Finally, technological advancements over the years have allowed productive “do it yourself” activity to be available for common households. Instead of buying services or goods, members of households can purchase relatively inexpensive material and equipment and provide their own labour to produce services ranging from washing their own cars rather than using a facility to using electrical equipment to clean their homes rather than hiring a maid service. Indeed, access to technology, awareness of how to utilize the technology, expertise or interest in a certain area will influence an individual’s ability and willingness to choose self-provisioning over the formal purchasing of goods and services (Gershuny and Pahl, 1979; Nelson, 1999).

Another physiological contribution to the presence of the informal economy in Saskatchewan communities are climatic conditions. The continental climate that is present within Saskatchewan makes it difficult to establish any sort of regularity in terms of economic activity. The province has long, cold winters and short hot summers. Precipitation is erratic and there can be long periods of little or no rainfall. Drastic and sudden temperature changes occur throughout the year on a regular basis (Bennett, 1969). These climate conditions make travel in the province difficult, which produces a need to fend for oneself or rely on personal subsistence to provide necessary goods and services. Also agricultural endeavours can easily fall victim to these harsh climate elements. Therefore, the realities of the agricultural economy brought on by a harsh climate have forced households to adopt a more flexible and comprehensive attitude to

household economic viability.

Individuals within rural communities establish informal agreements in the event of needed assistance, perpetuating a communal connection. Individuals know that it is in their best interests to extend a helping hand to other people within the community. Firstly, by helping others through the physical hardships that are experienced in the western grain belt they assure their membership in a larger community safety net. For example, in the case of a blizzard, measures have been taken to assure safety among community members. These arrangements probably are not bound by a contract or even a handshake, but exist just the same. Secondly, by offering social support one is conveying the attitude that they want to keep this community together and that every member in some way contributes to the survival of the community through hard times (Reimer, 1995). This “pioneer” mentality has in many cases been passed down through the generations from the beginnings of European settlement when the only form of social support were the agreements established with other settlers. Coping with the elements and dealing with the extreme isolation was the key to survival one hundred years ago, and to some extent is still very important in Saskatchewan today (Reimer, 1995).

The predominantly agricultural basis of Saskatchewan (Stabler and Olfert 1992; Gertler, 1999) is another factor that contributes to the presence of the informal economy within this province. Agricultural labour is often unregulated, as many of the farms and ranches are still family owned. Even though extra labour may be required on these farms, it is often paid for “under the table”, in order to eliminate unwanted paper work for the employer and to avoid any extra tax burden for the employee. Neighbours, relatives and family friends often make up the extra labour force during peak times of the growing or calving season. These individuals are often willing to work long hours for no benefits and little or no pay with the informal understanding that this help will be reciprocated at a later date. When formal labour is employed, the regulations that govern this work are often vague and not enforced. Many labourers are required to work high numbers of hours in unsafe working conditions with little or no breaks. Even though there are regulations, these may be ignored for fear that the work will not get completed in time (Hedley, 1984;

Danysk, 1995).

When extra labour is not required, the landowners often work long hours for no pay. The work might actually be getting done, but the farm or ranch still might be losing money. This tendency to work for nothing is a form of unregulated work because nothing is actually exchanged for labour completed. This sweat equity idea has long been a part of rural life, but has rarely been recognized as a fundamental part of farming. This idea of working for nothing has extended to off-farm income, where individuals are employed in non-primary jobs to subsidize thin agricultural activities. Examples of these off-farm activities can range from transporting the grain of other farmers with the farm truck, to working at the local town diner. Under circumstances of financial hardship for the farmer and rancher many different pools of money are drawn upon to support the land (Hedley, 1984, 1985; Fuller et al., 1989; Fuller and Bollman, 1992; Findeis, Jensen and Cornwell 1993; Danysk, 1995).

2.5 Conclusion

The resulting analysis of literature involving the study of urban systems research, central place theory and forms of economic exchange within Canada and Saskatchewan has provided some striking connections and similarities. First and foremost, the absence of the informal economy as a measure of functionality within urban systems research and likewise central place theory, is clearly evident. While quantitative forms of data analysis relating to formal economic exchange is available and viable, the informal economy as a diverse and unmonitored method of exchange is difficult to track and is associated with qualitative methods of research (Tickamyer, 1996). Likewise, the seeming pervasiveness of formal exchange within urban hierarchies seems to override the consideration of the necessity to include informal exchange in functionality models and studies. Despite numerous research studies supporting the prevalence of informal economic activity as a viable and important method of exchange, there is still a large gap in urban systems research that does not account for this important economic force. In some cases, the gap in this research is due to an oversimplification of informal exchange, as the research does not always

account for the complexity and interconnectedness of both formal and informal methods of exchange. While various criteria such as kinship patterns, societal norms, communal relations, economic necessity, physiological realities and the structure of agricultural labour predicated informal economic undertakings as prominent and contributing factors in Saskatchewan's economic framework, models such as Stabler and Olfert's functional economic areas do not account for this form of exchange. There is a plethora of research that supports not only the presence of the informal activity, but also its undeniable importance, yet it would seem that urban systems theorists have not accounted for this reality.

The absence of data and recognition of informal or unregulated economy in urban systems models forms the basis of this research and the ultimate objective will be to determine the degree to which the mixture of forms of exchange shapes the structure of urban hierarchical models. The empirical part of this thesis will examine the networks of economic exchange that exist within Saskatchewan's urban system, including informal and formal methods of exchange. The resulting analysis of communities within Saskatchewan's urban hierarchy will reiterate the prevalence of informal economic activity as a viable method of exchange, reestablishing the necessity for researchers to consider this component when constructing urban systems models.

Given the paucity of research involving the study of alternative forms of economic exchange within urban hierarchies in a Saskatchewan context, the next chapter will outline how this thesis attempts to establish the necessity to include all forms of exchange (except for the illegal elements of exchange, also referred to as the black market, and including criminal exchange and tax evasion). This chapter on methodology will not only justify the methods of data collection, it will also specifically outline the application of Stabler and Olfert's Saskatchewan central place theory model (1992, 1996) to the selection of study areas and categorization of survey questioning. In addition, a brief overview of statistical analysis of survey results and Census data for communities will be discussed.

CHAPTER THREE

RESEARCH FRAMEWORK

This chapter outlines the ways in which urban systems models, specifically central place theory and the categories of exchange models, were incorporated into the data collection and analysis of this study. The specific communities and survey design are also introduced within this chapter.

3.1 Application of Central Place Theory

This study included six urban places in Saskatchewan that are each at different economic functional levels according to some preset criteria. The study analysed the economic environment of each community by classifying the types of exchange that are considered formal economic activity, and then identified the types of exchange that are not formal, which usually includes economic activity that cannot be reported by Statistics Canada or corporate directories. Taking this step provided a clearer picture of how the informal sector economy applies to each community.

Unfortunately, models that attempt to track the exchange of goods and services within an urban system usually do not account for alternative or unmonitored forms of economic exchange. The objective of this thesis is to examine the networks of economic exchange that exist within Saskatchewan's urban system and then determine whether these activities are represented. By using Stabler and Olfert's (1992) method of selecting communities we can find a comparison between their conclusions and the results found in this research. This examination helped determine whether alternative forms of economic exchange have an affect on urban central place theory models such as Stabler and Olfert's (1992). Stabler and Olfert constructed a list of goods and services that are provided on a regular basis in the province. They then categorized these in orders or levels ranging from a high order good or service that would be considered specialized and would not be offered in all settlement types, to low order goods or services which were important but much more common and more likely to be provided in any community. By using

these categories, Stabler and Olfert were then able to categorize the settlements themselves by identifying the goods they provided which would then reveal their economic importance within the province's hierarchy. Studying over 598 communities, Stabler and Olfert described each community using the quantifiable characteristics of population size, business functions and infrastructure. Using these criteria, they were able to create a six-tier group of urban functional categories. This categorization has allowed researchers to recognize the relationships between settlements of different economic standing and understand how individuals seek goods and services within this settlement structure (Preston, 1991).

The urban hierarchy defined by Stabler and Olfert (1992) is a convenient base for this analysis. It classifies urban places using the following labels, listed in order from highest to lowest service level within the model's hierarchy: Primary Wholesale-Retail, Secondary Wholesale-Retail, Complete Shopping Centres, Partial Shopping Centres, Full Convenience Centres, and Minimum Convenience Centres. Stabler and Olfert (1996) outline the criteria established by the researchers for the analysis and hence classification of communities within the Saskatchewan urban hierarchy. It also provides a clear picture of the rationale for ranking communities within the Saskatchewan urban hierarchy.

As Table 3.1 indicates, Stabler and Olfert classified the Primary Wholesale Retail communities as those that offered the widest range in goods and services and multiple service outlets. Likewise, the variety and multiple presence of goods and service outlets continue to decline within the trade centres from Secondary Wholesale Retail to Minimum Convenience. Stabler and Olfert's work is generally accepted as an accurate depiction of Saskatchewan's urban hierarchy, not only for its statistical validity, but also for its continued modification according to economic change. Therefore, this ranked hierarchy formed the basis of community selection for this study. Representative communities were chosen from each tier as a cross-section of the urban hierarchy within Saskatchewan. The primary purpose of this study was to determine whether alternative forms of economic exchange and production of labour coincided with this ranked hierarchy. The survey portion of this thesis focused on goods and services as outlined in Table 3.1. By

broadening the analysis to include multiple ways of attaining these goods and services within the survey to include trade, self-production and bartering, this thesis provides a more comprehensive understanding of exchange in the Saskatchewan urban hierarchy (Stabler, 1986, 1987a, 1987b; Stabler, Olfert and Fulton, 1992; Stabler and Olfert, 1996, 2000).

TABLE 3.1 - AVERAGE NUMBER OF BUSINESSES OF VARIOUS TYPES IN SASKATCHEWAN TRADE CENTRES, 1995

Type of Business Average # per centre	Minimum Convenience (N=500)	Full Convenience (N=59)	Partial Shopping (N=22)	Complete Shopping (N=7)	Secondary Wholesale- Retail (N=8)	Primary Wholesale- Retail (N=2)
Population	179.61	860.68	2 049.73	4 808.86	17 609.88	184 235.50
All Consumer Services	3.72	18.73	43.09	90.14	227.00	1 640.00
General Store	0.29	0.90	1.05	1.86	3.13	12.00
Grocery Store	0.39	1.59	3.23	3.71	11.00	49.50
Special Food	0.09	0.80	1.41	3.29	5.38	42.50
Auto Sales	0.14	1.12	3.41	5.71	15.88	63.50
Gas Station	0.37	1.34	2.64	4.86	13.00	62.50
Clothing Store	0.06	1.08	3.32	7.57	12.38	82.00
Furniture Store	0.02	0.25	0.64	2.43	4.25	25.00
Home Furnishing	0.06	0.53	1.64	5.29	13.50	82.00
Restaurant	0.32	1.64	4.27	8.86	23.88	185.50
Drug Store	0.04	0.81	1.59	2.43	4.88	31.50
Special Retail	0.12	0.98	3.82	9.57	21.50	182.00
Credit Agency	0.47	2.02	4.05	11.14	39.63	426.00
Hotel	0.39	1.05	2.64	4.29	7.50	22.00
Laundries/ Dry Cleaners	-	0.10	0.23	0.43	2.25	18.00
Personal Services	0.02	0.12	1.05	2.00	6.38	36.50
Auto Repair	0.25	1.24	2.23	4.71	14.63	105.00
Car Wash	0.16	0.98	1.86	5.57	16.63	113.50
Recreation	0.03	0.41	1.18	2.00	3.75	39.00
Bank or Credit Union	0.50	1.73	2.86	4.43	7.50	62.00
All Producer Services	0.98	5.31	11.09	21.57	64.75	750.00
Warehousing	-	0.08	0.09	0.43	0.63	8.50
Farm Equipment	0.22	1.10	2.55	2.86	6.25	24.50
Bulk Fuel	0.30	1.29	1.86	2.43	4.25	10.00
Wholesale	0.25	1.14	3.32	8.00	31.63	435.50
Building Materials	0.18	1.39	2.23	4.57	8.38	39.00
Business Services	0.04	0.31	1.05	3.29	13.63	232.50
All Producer Services	1.22	6.29	14.32	32.71	101.38	970.50
Construction	0.65	3.53	7.82	16.14	52.38	522.00
Manufacturing	0.29	1.47	3.95	9.29	23.75	283.00
Transportation	0.28	1.29	2.55	7.29	25.25	165.50
Doctor *	7.00	73.00	95.00	100.00	100.00	100.00
Hospital*	2.00	41.00	91.00	100.00	100.00	100.00
Special Health Care *	2.00	88.00	100.00	86.00	100.00	100.00
High School *	29.00	98.00	95.00	100.00	100.00	100.00
Grain Elevator *	64.00	93.00	91.00	100.00	100.00	100.00

*For these variables the percentage of communities offering selected facilities is shown.

Source: Stabler & Olfert (1996)

3.2 Social and Economic Profiles of Study Communities

For this thesis, one urban centre has been chosen from each hierarchical level to help determine the existence and variability of informal economic activity in all settlement sites and sizes in

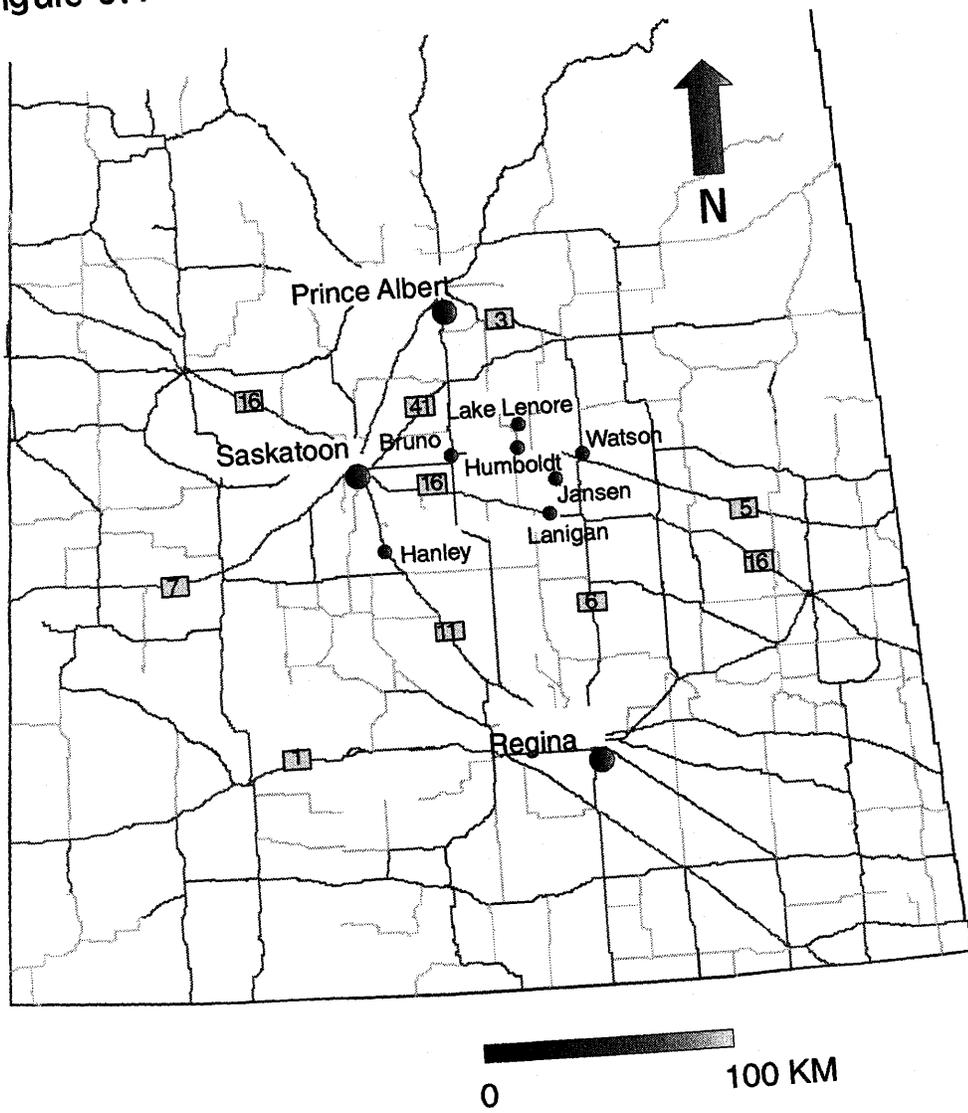
Saskatchewan. Understanding both the existence and degree of informal economic activity in different communities is one key to understanding the effect of such activities on the structure of settlement hierarchies.

The communities chosen for this study all fall within the service area of Saskatoon. Including case studies in the same service region allowed a truly comparative study since each community within a service sector acquires their goods and services within a nested market area. The communities for this study include: Saskatoon, Prince Albert, Humboldt, Lanigan, Watson, and the four lowest -tier communities of Bruno, Lake Lenore, Hanley and Jansen (see Figure 3.1). Due to the very low populations of these low-tier communities four were chosen in order to ensure a sufficient sample size was available for the study. It is also worth noting that although Lanigan is representing the Partial Shopping Center Category, it was dropped down to Partial Shopping Center- Full Convenience Center in 1995. Since there were no communities in the partial shopping center' category in the Saskatoon, Prince Albert regions in 1995, Lanigan was retained in its previous category. The evolving nature of the Saskatchewan urban hierarchy and its implications for further research will be discussed in the concluding chapter. Table 3.4 provides a brief profile of the social, economic, and demographic characteristics of these communities, based on the 1996 Statistics Canada Population Census. A more comprehensive community profile will be utilized in Chapter Four to assess, at least circumstantially, whether there are relationships between socio-economic and demographic characteristics within a community and the ways in which goods and services are acquired by the populations of those communities.

Tables 3.2 and 3.3, describing the goods and services availability in each study community, will be used in conjunction with survey results and the final analysis of data to determine whether the vital personal services chosen within the survey and previous research are viable indicators of community functionality. Although this categorization of community functionality, as established through extensive research undertaken by Stabler and Olfert, is viewed as a comprehensive and valid method of tracking community functionality according to economic exchange, it is

important to note that this categorization tracks only those goods and services that are deemed formal in nature and does not account for informal measures of exchange. Therefore, it is not fully representative of all economic exchange within each community and cannot be used as a comprehensive comparative guide to establish survey and research viability.

Figure 3.1 - Saskatchewan - Saskatoon Service Region



**TABLE 3.2- COMMUNITY SERVICE AVAILABILITY –
COMMUNITY TIER 1 – 5**

Community	Saskatoon	Prince Albert	Humboldt	Lanigan	Watson
All Producers	1020	178	35	9	12
Construction	545	96	20	6	3
Manufacturing	316	41	12	1	7
Transportation	159	41	3	2	2
All Producer Services	812	100	23	5	10
Warehousing	9	1	-	-	-
Farm Equipment	27	7	3	1	2
Bulk Fuel	9	3	-	1	2
Wholesale	480	44	7	2	3
Building Materials	39	14	5	1	3
Business Services	248	31	8	-	-
All Consumer Services	1751	378	101	27	19
General Store	13	6	1	1	-
Grocery Store	33	20	5	1	1
Special Food	45	16	5	1	2
Auto Sales	59	28	6	3	1
Gas Station	56	16	2	1	1
Clothing Store	99	14	12	2	2
Furniture Store	31	6	3	2	1
Home Furnishing	88	22	2	1	-
Restaurant	189	32	8	3	1
Drug Store	40	8	4	2	1
Special Retail	197	37	14	2	2
Credit Agency	486	78	15	2	2
Hotel	26	9	1	1	2
Laundries	18	5	-	-	-
Personal Services	44	15	4	-	-
Auto Repair	107	21	4	-	-
Car Wash	127	29	7	2	1
Recreation	36	5	3	-	-
Bank or Credit Union	57	11	5	3	2
Doctor	1	1	1	-	1
Hospital	1	1	1	1	-
Special Health Care	1	1	1	1	1
High School	1	1	1	1	1
Grain Elevator	1	1	1	1	1
Source: Stabler & Olfert (1996)					

TABLE 3.3 - COMMUNITY SERVICE AVAILABILITY – TIER 6

Community	Jansen	Bruno	Lake Lenore	Hanley
All Producers	-	5	3	2
Construction	-	1	1	1
Manufacturing	-	2	1	1
Transportation	-	2	1	-
All Producer Services	1	6	1	2
Warehousing	-	-	-	-
Farm Equipment	-	1	-	-
Bulk Fuel	1	2	1	1
Wholesale	-	-	-	-
Building Materials	-	3	-	1
Business Services	-	-	-	-
All Consumer Services	4	15	6	8
General Store	-	-	2	-
Grocery Store	1	2	-	-
Special Food	-	-	-	-
Auto Sales	-	1	-	-
Gas Station	1	1	1	2
Clothing Store	-	1	-	1
Furniture Store	-	-	-	-
Home Furnishing	-	1	-	-
Restaurant	-	1	-	-
Drug Store	-	1	-	-
Special Retail	-	-	-	-
Credit Agency	-	2	1	2
Hotel	1	1	1	-
Laundries	-	-	-	-
Personal Services	-	-	-	-
Auto Repair	-	-	-	2
Car Wash	-	2	-	-
Recreation	-	-	-	-
Bank or Credit Union	1	2	1	1
Doctor	-	-	-	-
Hospital	-	-	-	-
Special Health Care1-	-	-	-	-
High School	-	1	1	1
Grain Elevator	1	1	1	1

Source: Stabler & Olfert (1996)

TABLE 3.4 - SOCIAL AND ECONOMIC PROFILE OF STUDY COMMUNITIES

	Saskatoon	Prince Albert	Humboldt	Lanigan	Watson	Lake Lenore (one of four surveyed communities)
Population in 1996	193,647	34,777	5,074	1,370	837	290
1991 to 1996 population change (%)	4.1	1.7	1.7	-2.1	-5.3	-13.7
Land area (square km)	136.79	64.98	11.92	7.69	2.67	0.98
English First Language (%)	84.2	83.2	82	85.4	82.4	86.2
Persons who have completed university over 15 years (%)	14.8	8.7	8.5	11.7	8.9	10.3
Average total income of persons reporting income (\$)	24,284	22,722	20,837	23,898	18,239	18,550
Persons reporting unpaid work (%)	70.9	66.7	70.7	72.7	73.4	62
1996 unemployment rate (%)	7.8	10.9	6.2	9.4	3.8	0
1996 participation rate (%)	68.9	65.6	59.2	65	59.1	71.1
Persons in agriculture and other resource-based industries (%)	4.1	4.2	7.8	25.8	11.8	25.9
Persons in manufacturing and construction industries (%)	14.5	23.5	18.3	7.1	30.2	18.5
Persons in service industries (%)	81.3	83.6	73.5	66.1	59.2	51.8
Married or common-law families (%)	82.3	77.7	89.6	93.3	90.2	100
Lone parent families (%)	17.1	22.3	10.3	7.7	9.7	0
Owned private occupied dwellings (%)	58.5	56.8	74.7	78.3	70.8	90.4
Source: Statistics Canada - Community Profile (1996)						

One of the most distinctive points of reference that can be derived from these cross community comparative tables is the steady decline in population from the highest-tiered community of Saskatoon, to the lowest-tiered villages. In conjunction with these declining populations, is a steady decline in the array of services provided in each functional category from the highest-

tiered community of Saskatoon, to the lowest-tiered villages. It is evident that the higher-order All Consumer Services such as hotels, laundry services, personal services, auto repair and recreation services decrease substantially from the top to the bottom of the hierarchy to the point of nonexistence in the lowest-tiered communities. Likewise, infrastructure such as hospitals and special health care are nonexistent in the village communities.

A study of the social and economic profile of each community reveals noteworthy hierarchical patterns. While the top three communities underwent population growth from 1991-1996, populations in the three lower-tiered communities declined. Likewise, with the exception of Lanigan, average total incomes have declined from the top of the hierarchy to the bottom.

The percentages of individuals employed in service industries and agriculture/resource-based industries within each community reveal patterns across the study communities as well. With the exception of Watson, there is a substantial increase from the highest-tiered community to the lowest-tiered community in the percentage of people employed in agriculture/resource-based industries. Equally, there is a steady decline from the highest-tiered communities to the lowest-tiered communities in the percentages of individuals employed in service industries.

3.3 Primary Data Sources

Once the six study sites were established, an extensive study of economic activity in each community was undertaken. Although there may appear to be a dichotomy present between formal and informal means of exchange, it is clear that the issue is far more complicated. As mentioned in the previous chapter, Sharpe (1988) created a model that established categories in which different forms of goods exchange could be grouped. Although there are several models that have attempted to categorize forms of exchange, this model is as potentially effective as any for the objectives of this study.

As identified in the Categories of Exchange model in the previous chapter (refer to figure 2.1),

four types of economic exchange; formal, irregular, household, and communal, were used to capture the complete range of production and exchange in this study. Each category contains a certain kind of exchange that enables an individual to attain a certain good or service. Formal types of work are clearly state-regulated labour and contain monetary value. Communal help is also state-regulated but does not always involve monetary exchange. Household labour is not regulated by the state and rarely involves monetary transfer. Finally, irregular work is not monitored by the state but sometimes involves monetary exchange (Sharpe, 1988). Although it may seem that these categories may complicate the study of labour and goods exchange, it is vital to have a clear understanding of how exchange occurs in a given situation. It is not enough just to identify the economic activity that is being exercised in a given urban system. A clear understanding of how each type of exchange fits into the greater economic picture and whether each form of exchange is properly represented in urban models is also important (Sharpe, 1988).

It is important as well to note that although irregular methods of economic exchange are important components of any regional economy, this particular mode was not included in the framework of this study. Many forms of irregular exchange include illegal or unregulated activity e.g., theft, tax evasion, unclaimed paid income (Bates 1997, Sharpe 1988). When constructing the survey questions, it was important to create questions in which individuals would be willing and comfortable to answer in order to allow for favourable response rates. Despite the fact respondents remained confidential, it was not realistic to expect individuals to be comfortable commenting on their involvement in methods of exchange that are illegal, especially considering the research will be part of a published document. The omission of irregular methods of exchange will be further discussed in the concluding chapter.

As mentioned previously, it is rare that alternate forms of economic exchange are represented accurately and comprehensively in statistical databases and government publications. For this reason, a telephone survey was used in this study to fill these statistical gaps and offer a more comprehensive picture of economic exchange and the production of labour across an agrarian-based urban hierarchy.

3.3.1 Survey Method

A telephone survey was chosen over a mail survey based on research conclusions that prove the efficiency and effectiveness of telephone versus mail surveys (Frey, 1989). According to research, it is generally found that telephone surveys produce higher response rates and results, as is true in the case of this survey, with a 42% response rate (Groves and Kahn 1979; Dillman, 1978; Lavrakas, 1987; Frey, 1989; Bickman and Rog, 1998). Table 3.5 provides further detail related to success rate and number of households contacted.

TABLE 3.5 - FOCAL GOODS AND SERVICES SURVEY - RESPONSE RATE

Community	# of Households	# of phone calls placed	# of Completed Surveys	Response Rate
Saskatoon	76,300	131	60	45.80%
Prince Albert	12,875	78	30	38.50%
Humboldt	2,095	79	30	38.00%
Lanigan	530	69	30	43.50%
Watson	360	60	30	50.00%
Jansen/Bruno/Lake Lenore/Hanley*	193.75	80	30	37.50%
Total Response Rate				42.20%

* - average of four communities

Research comparing mail and telephone surveys cites many more reasons to select a telephone survey format. During a telephone interview, complex questions can be re-explained by the interviewer, and verbal responses are often easier for most respondents than written responses. The survey used in this research contained numerous questions that would often result in following questions being skipped depending on the response; therefore, a telephone survey allowed the interviewer to skip over questions unrelated to the survey subject. (Example: Do you have a car? If *yes* then go to question #12, if *no* go to question #15). In some circumstances this complicated skip/pattern logic is missed by a respondent when the survey is in written form. This telephone format also allowed respondents to seek clarification on questions, unlike mail surveys where respondents are likely to skip these questions. Likewise, when questions are in written form, individuals within society with low levels of literacy would be underrepresented in the sample. For the purposes of this research, it was imperative to interview a cross section of

society; therefore, it is safe to conclude that a written survey would not fully permit this. Finally, although not least importantly, for the sake of immediacy and time constraints, a telephone survey allows for a more prompt collection of data (Dillman, 1978; Groves and Kahn 1979; Frey, 1989; Lavrakas 1987; Bickman and Rog, 1998).

While the telephone interview was the most logical method of delivering the survey, it does have a few shortcomings. The most obvious shortcoming was the utilization of a telephone directory to select respondents. The telephone directory is not a complete depiction of the population, as it does not account for the homeless, roommates in dwellings and individuals without a phone. As a result of this shortcoming, a completely thorough cross-section of society may not have been included in the research. It also does not include those residents who have moved in to the communities since the publication of the last telephone directory (Dillman, 1978; Groves and Kahn 1979; Frey, 1989; Lavrakas 1987; Bickman and Rog, 1998).

The telephone survey was conducted from January to April of 2000. The time period was chosen to maximize the potential response rate of individuals, primarily in the lower-tiered communities, who were involved in agriculture-based industries. Appendix A outlines the survey format.

As previously mentioned, sample units for the telephone survey focused on communities in each of the six-tier hierarchy. Due to limited funding in hiring surveyors and the long duration of each call (an average of 22 minutes), thirty surveys were conducted for all hierarchies with the exception of the Primary Wholesale Retail Saskatoon, where sixty surveys were carried out. Although this small sample size makes it difficult to make any disaggregate or intracommunity distinctions or generalizations, aggregate results across types of goods and services does allow an intercommunity comparison.

Surveys were conducted community by community. Individuals were chosen from the 1999 Sasktel phone directories using random numbers tables. Individuals who had no prior contact with the researcher were contacted By randomly selecting respondents, there was a higher

likelihood that the results would include a more varied cross-section of economic activity within each community.

Once the numbers were chosen, the interviewer attempted to initiate contact. Successful contact occurred when the respondent was willing to complete the survey. Unsuccessful contact occurred either when the interviewer was unable to reach the survey subject or when the survey subject refused to complete the survey. In the case of a subject refusing to complete the survey, this was recorded as “subject unwilling to participate”. In a case where a potential respondent wanted to be contacted at a later time or date, a time was arranged and contact was reinitiated once again. If secondary initiation was unsuccessful, this was recorded as “subject unwilling to participate”. For cases in which answering machines or message services were contacted, one message was left. If no call back was forthcoming, this was again recorded as “no contact initiated”. Busy signals and non pick-ups were subject to one call back and if contact was not initiated after the second call, this was recorded as “no contact initiated”.

The survey used in this study consisted of 55 questions broken into a number of categories (e.g. health, household goods and services), of which approximately 45 questions were directly related to the identification of the type of economic exchange being undertaken to acquire a particular good or service (see Appendix A). The broad list of goods and services identified in the survey reflect vital economic components of each study community and was derived from Stabler and Olfert’s research on Saskatchewan central places.

The actual choices (i.e., how the good or service was attained) for these questions were based on the categorizations of exchange outlined in the *Categories of Exchange* model. Using this model survey questions were developed to fill in potential gaps that may have occurred in previous work that attempted to incorporate economic exchange and trading patterns into urban hierarchy research.

The survey asked residents in each community how and where they obtained their basket of

goods and services. It is suspected that this type of questioning will identify alternative methods of exchange that would not be revealed in the secondary data but complement and broaden formal activities.

In addition to revealing these exchange patterns a subset of questions were incorporated into the survey asking information on household size, respondent age, and household income (see Appendix A). An examination of the aggregate relationship between these three socio-demographic factors will be compared to the mode of production choices within the survey results. It is anticipated that exchange tendencies will arise from a household unit depending on these demographic variables.

3.4 Secondary Data Sources- Census Data

In order to supplement the primary data and to provide a richer interpretation of some aspects of the alternative methods of exchange across an urban system, this thesis also studied secondary population Census Canada data from 1986, 1991, and 1996. Census Canada data provided detailed information on municipalities in Saskatchewan. This information was used to profile each of the surveyed communities in order to find patterns or trends that occurred over the three censuses that may provide some corresponding patterns to the economic choices established in the survey results. The three census periods were used to provide a better foundation and in order to measure demographic trends more effectively. The limitations that arose from a lack of consistency in data from census year to census year are discussed in the concluding chapter of this thesis.

3.5 Canadian Urban Hierarchy Analysis

In addition to the more conventional types of data listed above, an analysis of Statistics Canada (1996) data relating to metropolitan areas in Canada will be included in this study. Specific data relating to hours of unpaid work, unpaid health care, and unpaid elderly care were included in this analysis because of their strong correlation to informal methods of economic exchange included in the survey data. This analysis will attempt to discover economic patterns of

exchange for these three areas across twenty-five census metropolitan areas within the Canadian urban hierarchy. Although the populations of these twenty-five metropolitan areas are in most cases greater than the Saskatchewan study communities, many of the same relationships can occur between communities in the Canadian urban hierarchy. Therefore, this study will provide an independent series of information to compare to the data collected for Saskatchewan. This new analysis should provide a greater understanding of how goods and services are exchanged and attained informally from community to community. A correlation analysis will be conducted to determine the relationship between population size within the 25 Canadian Census Metropolitan Areas and the three home-based activities tracked by census Canada for 1996. These categories include housework, unpaid senior care and unpaid childcare.

The next chapter will incorporate this research framework into an in-depth analysis of the production and exchange of goods and services in each study community followed by the identification of distinctions and patterns of production between each community.

CHAPTER 4

ECONOMIC EXCHANGE ACROSS AN URBAN HIERARCHY: AN ANALYSIS OF SASKATCHEWAN COMMUNITIES

4.1 Analysis Introduction

This chapter presents the steps involved in the description and analysis of the forms and levels of exchange across the study communities. The analysis began by organizing the results by question, response and community. This system allowed for a simple analysis of how the method of attaining a specific good or service may vary from community to community across the hierarchy. In addition to a basic comparison by percentage, an additional analysis was undertaken utilizing the Categories of Exchange matrix developed in Chapter 2. This matrix categorized all of the response options in the survey into three broad categories (formal, household and communal). By recoding all of the response options around these four categories, a similar but perhaps more conclusive picture of the urban hierarchy is created.

This chapter also incorporates a profile of each community utilizing Canadian census data from 1986, 1991 and 1996 and an analysis of corresponding similarities and differences that exist between these data and the results of the research based on similar data. As previously stated, the purpose of this analysis is to identify if there are any connections between socio-demographic factors and the survey results.

The last component of this chapter examines three categories of informal exchange across a Canadian urban hierarchy, specifically across all Census Metropolitan Areas in 1996 through which Statistics Canada tracks unpaid work (i.e., childcare, seniors care and health care). This brief analysis was conducted to determine whether patterns of broad informal exchange identified in the Central Saskatchewan hierarchy bore any comparison to the much larger Canadian urban system.

The actual survey utilized in this study was designed using categories of bundles of goods and services that were similar in nature and method of acquisition (see survey, Appendix A). A consumer, regardless of the community in which he or she may reside, will require items within these bundles because of their universal nature of need or want. This cross section of goods and services was also chosen independently of whether they were currently provided formally within a particular community. The importance or desirability of a service enables research to be conducted across an urban hierarchy with some assurance that the good or service being examined is required in a given area regardless of community size, demographic composition, or general wealth.

Key goods and services were also selected based on the diversity of ways in which they could be acquired. For example, general automobile maintenance can be undertaken in several different manners, including from a garage, dealership, friend or from the actual owner of the vehicle. These differing methods of acquisition reflect degrees of formality and informality in exchange. By examining overall patterns of acquisition across broad bundles of goods and services, a more comprehensive pattern can be discerned for particular communities and urban hierarchies. This is useful for indicating whether patterns of similar ways of acquiring good and service may be clustered in a particular community or at a particular level of the urban hierarchy.

As described earlier, this study examined six tiers of communities. For this stage of the analysis, a sample of survey questions was chosen using three specific criteria. As mentioned earlier, the first criterion was that the product had to be more or less universally required (i.e., a low order good or service). The second criterion was that the product could be acquired in a variety of different ways. In other words, the consumers had a high degree of choice in determining how the product was obtained (i.e., irregular, household, formal and communal). The third criterion was that the product had been previously identified in other studies as an important service.

This third criterion has been documented in the research of Stabler and Olfert (1992, 1996) through an inventory of goods and services available at communities within Saskatchewan. As

articulated in the previous chapter, a list of the goods and services that could be acquired formally in each community was tabulated. At this stage of the data analysis, it will be determined whether the presence of a formal business that offers a particular good or service affects the method in which that good or service is acquired by a consumer in that community. Determining whether the presence or absence of a formal business is related to the likelihood of attaining the product or service by some alternative means can then potentially reveal patterns related to the ways in which a good or service is attained and how that may affect exchange in an agrarian-based urban hierarchy.

This element of the analysis includes a comparison of six categories of businesses as outlined in Stabler and Olfert's (1992, 1996) community inventory. These categories included Restaurants, Special Retail, Auto Repair, Construction, and "Presence of a Doctor or Hospital". Questions in the survey were analyzed for each community and were subsequently referenced with the above categories to reveal relationships or patterns across the hierarchy. The communities were analyzed using a simple cross tabulation. The cross tabulations produced a table, which can provide a foundation for a variety of tests, and investigates the relationships or associations between different variables. Cross tabulation statistics and measures of association are then computed for two-way tables. In order to permit a comparative analysis the questions were then grouped and regrouped into similarly ordered goods and services using Stabler and Olfert's *hierarchy of exchange* from both 1992 and 1996. As a result of the use of hierarchical classifications from two dates, a number of the questions and goods/services identified in the survey can fit into more than one of the categories established by Stabler and Olfert.

Table 4.1 examines the methods by which individuals in each community maintain their automobiles using two very specific functions (i.e., oil changes and brake replacement). Automotive maintenance falls under the second lowest order of exchange, Special Retail, in Stabler and Olfert's (1992, 1996) *hierarchy of exchange*.

TABLE 4.1 - TRANSPORTATION - AUTOMOTIVE MAINTENANCE

Question #6 – Who Changes The Oil on Your Car?							
	Saskatoon	Prince Albert	Humboldt	Lanigan	Watson	Villages (four)	Total
Yourselves (#)	10	9	9	10	9	15	62
(%)	33.30%	30.00%	30.00%	33.30%	30.00%	50.00%	34.40%
Friend or relative	1			1			2
	3.30%	0.00%	0.00%	3.30%	0.00%	0.00%	1.10%
Local garage/dealership	15	15	17	13	13	8	81
	50.00%	50.00%	56.70%	43.30%	43.30%	26.70%	45.00%
Non local garage/ dealership		1		5	5	3	14
	0.00%	3.30%	0.00%	16.70%	16.70%	10.00%	7.80%
Two or more of the above options	1	1	1		1	2	6
	3.30%	3.30%	3.30%	0.00%	3.30%	6.70%	3.30%
N/A	3	4	3	1	2	2	15
	10.00%	13.30%	10.00%	3.30%	6.70%	6.70%	8.30%
Question #6 Total	30	30	30	30	30	30	180
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	
Question #7 – If New Brakes Were Required on Your Vehicle, Who Would Replace Them?							
Yourselves	9	6	4	7	5	6	37
	30.00%	20.00%	13.30%	23.30%	16.70%	20.00%	20.60%
Friend or relative	2	1	2			2	7
	6.70%	3.30%	6.70%	0.00%	0.00%	6.70%	3.90%
Local repair shop	14	17	18	18	19	12	98
	46.70%	56.70%	60.00%	60.00%	63.30%	40.00%	54.40%
Non local repair shop	1	1	1	4	3	6	16
	3.30%	3.30%	3.30%	13.30%	10.00%	20.00%	8.90%
Two or more of the above options	1	1	2		1	2	7
	3.30%	3.30%	6.70%	0.00%	3.30%	6.70%	3.90%
N/A	3	4	3	1	2	2	15
	10.00%	13.30%	10.00%	3.30%	6.70%	6.70%	8.30%
Question #7 Total	30	30	30	30	30	30	180
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	

Source: Focal Goods and Services Survey (2000)

This table shows that the smaller the population of the community the wider the variety of ways of acquiring these maintenance services. The table also reveals that the likelihood of acquiring both an oil change and a brake repair from a non-local garage or dealership increases in the low order communities. Table 4.2 ranks the communities that used alternatives other than local garages or dealerships. These percentages were then compared to the number of formal garages located in each community. Except for the villages, the use of local auto repair facilities is consistent across the urban hierarchy. As the existence of these functions is only found sporadically in villages, it is assumed that other means are required to attain this service. In fact,

Table 4.2 shows that the three lowest-tiered communities in the hierarchy utilized non-local garages at a higher rate than the three highest order communities in this system. Put simply, there is an inverse relationship between the presence of formal garage services in a community and the use of non-local garages. There is no conclusive evidence to demonstrate a significant relationship between community hierarchy and informal/formal service acquisition.

TABLE 4.2 - AUTO MAINTENANCE ACQUISITION

	Number of Auto Repair Services	Use of local Garage or Dealership (Percent)	Rank	Use of non local garage or dealership (Rank)	Rank
Saskatoon	44	48.3	4	1.6	4*
Prince Albert	17	53.3	2*	3.3	6
Humboldt	6	58.3	1	1.6	4*
Lanigan	2	51.6	5	15	1*
Watson	1	53.3	2*	13.3	3
Villages (four)	1.75 (average)	33.3	6	15	1*
*Indicates a tie in rank					
Source: Stabler and Olfert 1996					

Further analysis was conducted on questions related to specialty retail/services within a community. A number of questions within the survey identified goods or services that may not be classified as low order. Utilizing Stabler and Olfert's inventory (1992, 1996), questions in the survey dealing with specialty items were again tabulated and evaluated. All of these services are considered Special Retail, being the second lowest order of services in Stabler and Olfert's *hierarchy of exchange* (1992, 1996). Table 4.3 shows how some of these specialty goods and services were acquired within the surveyed communities.

TABLE 4.3 - SPECIALTY SERVICES AND GOODS

Question #19 - How are your rugs cleaned?							
	Saskatoon	Prince Albert	Humboldt	Lanigan	Watson	Villages (four)	Total
Rent a steamer/ do it yourself (#)	10	7	12	8	6	9	52
(%)	33.30%	23.30%	40.00%	26.70%	20.00%	0.00%	28.90%
Borrow a steamer from family/ friends	3	4		2	4	1	14
	10.00%	13.30%	0.00%	6.70%	13.30%	3.30%	7.80%
A rug cleaning company	13	11	9	2	7	2	44
	43.30%	36.70%	30.00%	6.70%	23.30%	6.70%	24.4
Out of town rug cleaning company			3	5	2	7	17
	0.00%	0.00%	10.00%	16.70%	6.70%	23.30%	9.40%
You own a rug steamer	2	2	2	6	5	6	23
	6.70%	6.70%	6.70%	20.00%	16.70%	20.00%	12.70%
Superintendant / landlord/staff cleans them	1	3	1	2	3	1	11
	3.30%	10.00%	3.30%	6.70%	10.00%	3.30%	6.10%
No rugs	1	2	1	1	2	1	8
	3.30%	6.70%	3.30%	3.30%	6.70%	3.30%	4.40%
Two or more of the following options		1	2	4	1	3	11
	0.00%	3.30%	6.70%	13.30%	3.30%	10.00%	6.10%
Question #17 - Total	30	30	30	30	30	30	180
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	
Question #23 - If your T.V broke, how would it get fixed?							
Yourself	2	1	1			2	6
	6.70%	3.30%	3.30%	0.00%	0.00%	6.70%	3.30%
Family member/ friend	1	3		1	1	3	9
	3.30%	10.00%	0.00%	3.30%	3.30%	10.00%	5.00%
Repair shop in town	25	24	22	6	4	4	85
	83.30%	80.00%	73.30%	20.00%	13.30%	13.30%	47.20%
Repair shop out of town		1	5	22	21	19	68
	0.00%	3.30%	16.70%	73.30%	70.00%	63.30%	37.80%
Buy a new one	2	1	2	1	4	2	12
	6.70%	3.30%	6.70%	3.30%	13.30%	6.70%	6.20%
Question #23 - Total	30	30	30	30	30	30	180
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100
Question #24 - How would your toaster get fixed?							
Household member	5		5	2	5	5	27
	16.70%	16.70%	16.70%	6.70%	16.70%	16.70%	15.00%
Kitchen appliance repair shop	3	4	1		5	1	14
	10.00%	13.30%	3.30%	0.00%	16.70%	3.30%	7.80%
Get a new toaster	21	19	23	26	13	18	120
	70.00%	63.30%	76.70%	86.70%	43.30%	60.00%	66.70%
Do not know/ has yet to happen	1	1	1		7	1	11
	3.30%	3.30%	3.30%	0.00%	23.30%	3.30%	6.10%
Two or more of the following options		1		2		5	8
	0.00%	3.30%	0.00%	6.70%	0.00%	16.70%	4.40%
Question #24 - Total	30	30	30	30	30	30	180
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	
Question #40 - Where do you get most of your books?							
Buy them new	7	10	7	8	6	9	47
	23.30%	33.30%	23.30%	26.70%	20.00%	30.00%	26.10%
Borrow from library	4	8	7	4	9	8	40
	13.30%	26.70%	23.30%	13.30%	30.00%	26.70%	22.20%
Borrow from family/friends		1	2		1	3	7
	0.00%	3.30%	6.70%	0.00%	3.30%	10.00%	3.90%
Trade/buy at the used book store	1	2		2			5
	3.30%	6.70%	0.00%	6.70%	0.00%	0.00%	2.80%
Two or more of the above options	18	6	13	13	11	10	71
	60.00%	20.00%	43.30%	43.30%	36.70%	33.30%	39.40%
Does not buy books/does not know (other)		3	1	3	3		10
	0.00%	10.00%	3.30%	10.00%	10.00%	0.00%	5.60%

Table 4.3 Continued							
Question #51 - How are your tax returns calculated?							
Tax accounting service	8	10	8	7	8	12	53
	26.70%	33.30%	26.70%	23.30%	26.70%	40.00%	29.40%
You calculate them yourself	10	11	7	13	11	2	54
	33.30%	36.70%	23.30%	43.30%	36.70%	6.70%	30.00%
Family/friend calculates them without cost to you	5	5	3	2	3	4	22
	16.70%	16.70%	10.00%	6.70%	10.00%	13.30%	12.20%
A self-employed accountant	4	2	10	7	7	8	38
	13.30%	6.70%	33.30%	23.30%	23.30%	26.70%	21.10%
Do not know/ retired/ unemployed/student		1					3
	0.00%	3.30%	0.00%	0.00%	0.00%	6.70%	1.70%
Two or more of the following options	3	1	2	1	1	2	10
	10.00%	3.30%	6.70%	3.30%	3.30%	6.70%	5.60%
Question 51 - Total	30	30	30	30	30	30	180
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	
Q# 31 - Does anyone in the household develop photo film?							
Yes		2	3	1	1	2	9
	0.00%	6.70%	10.00%	3.30%	3.30%	6.70%	5.00%
No	30	28	27	29	29	28	171
	100.00%	93.30%	90.00%	96.70%	96.70%	93.30%	95.50%
Question 31 - Total	30	30	30	30	30	30	180
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	
Q# 35 - Does anyone restore/refinish furniture in the household?							
Yes	8	5	3	3	11	9	39
	26.70%	16.70%	10.00%	10.00%	36.70%	30.00%	21.70%
No	22	25	27	27	19	21	141
	73.30%	83.30%	90.00%	90.00%	63.30%	70.00%	78.30%
Question 35 - Total	30	30	30	30	30	30	180
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Focal Goods and Services Survey (2000)

Analysis of the data according to the type of service being offered provides some insights into the various ways in which goods and services are acquired at each tier of the urban hierarchy. These findings continue to reinforce the dichotomy between higher and lower-tiered communities. For example, there is a decline in the acquisition of formal services from a rug cleaning company from the highest-tiered communities to the lowest. For example, residents in the lowest-tiered village community indicate the use of a rug cleaning company 6.70% of the time, while residents in the highest-tiered community of Saskatoon indicate this as an option 43.30% of the time. Conversely, the acquisition of non-local services gradually increases as you go from highest to lowest-tiered communities. Take for instance, the example of option of 'Rent a steamer/ do it yourself'; residents within Saskatoon indicate this as an option 33.30% of the time, while residents in the villages indicate this as an option 0.00% of the time. These findings can be directly related to an absence of appropriate, formal rental facilities in lower-tiered communities. Likewise, it is also the villages that demonstrate the highest likelihood of accessing an out of town service (23.30% of the time as opposed to 0.00%-16.70% of the time for the other

communities). In fact, all of the respondents surveyed within the study in Saskatoon and Prince Albert, the two highest-tiered communities, acquired the service locally. The service of televisions reflects similar results in that the service is more likely to be acquired non-locally within lower-tiered communities than in the higher-tiered communities.

Analysis of survey responses for other specialty goods and services reflects a slight pattern of informal and formal dichotomies across the urban systems. For example, there was a lower percentage (0%) of individuals within the highest order community who borrowed books from a library or family and friends than in the two lowest-tiered communities (3.3 % and 10 % respectively). It should be noted, however, that those in the highest order community of Saskatoon are also less likely to buy new books than elsewhere in the urban hierarchy. In general, however, it is the respondents in these lowest order communities that demonstrate a greater affinity for the do-it-yourself work that is indicative of informal economic activity, (see, for example, furniture refurbishing). As lower-tiered communities have limited facilities for acquiring goods and services, individuals within these communities are more prone to visit alternative options. One of the exceptions to this pattern is toaster repairs, where the results seem to indicate that this good is expendable, and home film developing, which seems to be *too special* of a specialty service to have any direct relevance. The other exception is in calculating taxes. In this case, the complexities of farm-based tax situations relative to the average urban tax situation may explain the unexpected result.

TABLE 4.4 - HOUSEHOLD MAINTENANCE AND PRODUCTION

Q#25 How is your lawn mowed?							
	Saskatoon	Prince Albert	Humboldt	Lanigan	Watson	Villages	Total
No lawn (#)	3	2	1		1	2	9
(%)	10%	6.70%	3.30%	0.00%	3.30%	6.70%	5%
Yourself/ household member	20	17	21	23	25	25	131
	66.70%	56.70%	70%	76.70%	83.30%	83.30%	72.80%
Neighbour/ friend	1	2	4			3	10
	3.30%	6.70%	13.30%	0.00%	0.00%	0.00%	5.60%
Lawn care service	3	2	1	2			8
	10%	6.70%	3.30%	6.70%	0%	0%	4.40%
Superintendent / landlord/staff	2	7	2	4	4		19
	6.70%	23.30%	6.70%	13.30%	13.30%	0.00%	10.60%
Other	1		1	1			3
	3.30%	0.00%	3.30%	3.30%	0.00%	0.00%	1.70%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%
Q#28 How would your lawn mower be fixed?							
Yourself/ household member	11	11	8	13	14	19	76
	36.70%	36.70%	26.70%	43.30%	46.70%	63.30%	42.20%
Friend/ neighbour	3	2	3	2	6		16
	10%	6.70%	10%	6.70%	20%	0.00%	8.90%
Garage/ dealership	4	10	8	8	4	6	40
	13.30%	33.30%	26.70%	26.70%	13.30%	20%	22.20%
Rental/ borrowed	5	2	3	3	1	2	16
	16.70%	6.70%	10%	10%	3.30%	6.70%	8.90%
Don't own a mower	3	5	6	4	4	2	24
	10%	16.70%	20%	13.30%	13.30%	6.70%	13.30%
Two or more of the following options	4		2		1	1	8
	13.30%	0.00%	6.70%	0.00%	3.30%	3.30%	4.40%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%
Q#27 How are plumbing repairs done?							
Yourself/ family member	12	14	9	10	13	17	75
	40%	46.70%	30%	33.30%	43.30%	56.70%	41.70%
Professional plumber	10	6	12	12	11	10	61
	33.30%	20%	40%	40%	36.70%	33.30%	33.90%
Friend/ neighbour		1	2	2		1	6
	0.00%	3.30%	6.70%	6.70%	0.00%	3.30%	3.30%
Landlord/ superintendent	4	9	4	4	4	1	26
	13.30%	30%	13.30%	13.30%	13.30%	3.30%	14.40%
Do not know	2				2		4
	6.70%	0.00%	0.00%	0.00%	6.70%	0.00%	2.20%
Two or more of the following options	2		3	2		1	8
	6.70%	0.00%	10%	6.70%	0.00%	3.30%	4.40%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%
Q#33 Does anyone in your house produce beer or wine?							
Yes	5	7	1	5	3	6	27
	16.70%	23.30%	3.30%	16.70%	10%	20%	15%
No	25	23	29	25	27	24	153
	83.30%	76.70%	96.70%	83.30%	90%	80%	85%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%

Table 4.4 Continued							
Q# 34 Does anyone in the household sew or knit?							
Yes	10	11	13	10	12	16	72
	33.30%	36.70%	43.30%	33.30%	40%	53.30%	40%
No	20	19	17	20	18	14	108
	66.70%	63.30%	56.70%	66.70%	60%	46.70%	60%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%
Q#35 If alterations/ repairs are needed on your cloths how are they done?							
Fix it yourself	10	20	15	9	14	11	79
	33.30%	66.70%	50%	30%	46.70%	36.70%	43.90%
Household member/ friend fixes it	11	6	6	12	6	15	56
	36.70%	20%	20%	40%	20%	50%	31.10%
Tailor/ seamstress	5	2	6	6	7	1	27
	16.70%	6.70%	20%	20%	23.30%	3.30%	15%
Do not know/ throw it away		1	3	2	2	1	9
	0.00%	3.30%	10%	6.70%	6.70%	3.30%	5%
Two or more of the following options	4	1		1	1	2	9
	13.30%	3.30%	0.00%	3.30%	3.30%	6.70%	5%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%
Q# 45 How is this child care usually provided?							
Stay at home parent	2	7	5	2	4	1	21
	6.70%	23.30%	16.70%	6.70%	13.30%	3.30%	11.70%
From relatives or friends	1	1		1		1	4
	3.30%	3.30%	0.00%	3.30%	0.00%	3.30%	2.20%
Paid nanny/ babysitter		1		3	2		6
	0.00%	3.30%	0.00%	10%	6.70%	0.00%	3.30%
Daycare facility			1	1			2
	0.00%	0.00%	3.30%	3.30%	0.00%	0.00%	1.10%
Provided at their workplace or school	1		1		5		7
	3.30%	0.00%	3.30%	0.00%	16.70%	0.00%	3.90%
Two or more of the following options	3	1	1	2	2	1	10
	10%	3.30%	3.30%	6.70%	6.70%	3.30%	5.60%
Combination of one of the above options	23	20	22	21	17	27	130
	73.30%	66.70%	73.30%	70%	56.70%	90%	72.20%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%
Q #32 Who performs the housekeeping duties?							
Member of the household	29	28	23	29	28	28	165
	96.70%	93.30%	76.70%	96.70%	93.30%	93.30%	91.70%
Paid maid/ housekeeper	1	2	3	1	1		8
	3.30%	6.70%	10%	3.30%	3.30%	0.00%	4.40%
Cleaning service			3				3
	0.00%	0.00%	10%	0.00%	0.00%	0.00%	1.70%
Other			1		1	2	4
	0.00%	0.00%	3.30%	0.00%	3.30%	6.70%	2.20%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%

Table 4.4 Continued							
Q #37 Who cuts/ styles your household member's hair?							
Barber/ hairstylist	20	22	16	21	18	15	112
	66.70%	73.30%	53.30%	70%	60%	50%	62.20%
Family member and friend	5	7	4	4	7	9	36
	16.70%	23.30%	13.30%	13.30%	23.30%	30%	20%
Yourself	2		9	2	2	5	20
	6.70%	0.00%	30%	6.70%	6.70%	16.70%	11.10%
Two or more of the following options	3	1	1	3	3	1	12
	10%	3.30%	3.30%	10%	10%	3.30%	6.70%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%
Q #40 Does anyone bake bread in the household?							
Yes	13	17	16	14	19	20	99
	43.30%	56.70%	53.30%	47.70%	63.30%	66.70%	55%
No	17	13	14	16	11	10	80
	56.70%	43.30%	47.70%	53.30%	36.70%	33.30%	45%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%
Q # 41 Does anyone preserve fruits, pickles, veggies, jams?							
Yes	19	12	20	20	17	25	113
	63.30%	40%	66.70%	66.70%	56.70%	83.30%	62.80%
No	11	18	10	10	13	5	67
	36.70%	60%	33.00%	33.30%	43.30%	16.70%	37.20%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%
Do you have a vegetable garden?							
Yes	15	13	17	15	17	23	100
	50%	43.30%	56.70%	50%	56.70%	76.70%	55.60%
No	15	17	13	15	13	7	80
	50%	56.70%	43.30%	50%	43.30%	23.30%	44.40%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%

Source: Focal Goods and Services Survey (2000)

The questions and results from the preceding Table 4.4 were grouped together to compare methods of exchange that have institutionally been considered “do-it-yourself” work. As well, all of these services fall within the two lowest order services, All Consumer Services and Special Retail. Hair cutting services, house keeping services, childcare, plumbing, lawn care and lawn mower repair would be considered personal services that fall under the second lowest order service, identified as Special Retail, while the remainder of the services identified fall under the lowest order service, All Consumer Services.

An examination of the survey findings reinforces an inclination towards subsistence or do-it-yourself work in lower-tiered communities rather than higher-tiered communities. This is

particularly and consistently evident for the lowest-tiered communities (i.e. villages) surveyed. Beginning our analysis with those services that are of the lowest order, a pattern of self-production is evident. While there is no striking pattern for the home production of beer and wine, the remainder of the questions indicates a higher incidence of self-production and informal exchange within lower-tiered, rural communities. In response to sewing and fixing clothing, there is no concrete pattern or difference between communities until the lowest-tiered community. Those individuals responding to the survey in the lowest-tiered places demonstrated a greater dependency on household members to provide the service, with only one response indicating the use of a tailor or seamstress (50% in the villages compared to 36.70% in Saskatoon). This pattern is repeated in survey responses to the use of a maid service and childcare. Once again, while respondents within the other communities consistently used a formal service at least once, those surveyed in the villages did not indicate the use of any of the formal options provided (0% for formal services in both questions for the villages).

A pattern of self-work in lower-tiered communities is only moderately apparent in the remainder of the All Consumer Services identified. For example, with respect to hair cutting services, respondents were less likely to use a formal hair cutting service in the two lower-tiered places (60% and 50% respectively) and more likely to have household members, relatives or provide the service (23.3% and 30% respectively). The home production of bread is higher only within the two lowest-tiered communities (63.3% and 66.7% respectively). Likewise, the home preservation of vegetables and home growth of produce, is once again, comparatively the highest only within the villages; residents within Saskatoon indicated a 63.3% likelihood of acquiring home-grown vegetables while residents in the villages indicated a 83.3% likelihood.

This consistent pattern of self-production within the lowest-tiered communities is continued with responses to services considered Special Retail. Comparatively, plumbing repairs, lawn mowing and repairing lawn mowers hold different degrees of difficulty and require different degrees of expertise, knowledge and skill. Lawn mowing would be a service that most individuals could attempt if they wanted to, while the repair of the mower would be more complex and plumbing

repairs, depending on the severity of the problem, could be very complex. These realities should be considered when analyzing the response to survey questions. Respondents in all communities indicated a high presence of self-work for lawn care. Indeed, within the two lowest-tiered communities, no one used formal lawn care services and these had the highest presence of lawn care self-work. In response to lawn mower repair, respondents within lower-tiered communities more consistently indicated a willingness to utilize formal repair services, yet there was still a trend towards providing the service individually, particularly for those in the villages.

Finally, individuals within communities across the hierarchy indicated a tendency to utilize professional assistance when requiring plumbing repairs. Once again, it is the group from the villages that demonstrated the greatest tendency for self-work within this situation. These findings can be best explained by referring to the literature and research on do-it-yourself work, which highlights technical skills as necessary prerequisites for the more complex do-it-yourself tasks (Gershuny and Pahl, 1979; Nelson, 1999). While lawn maintenance and lawn mower repair are services that would require less specialized skill sets and equipment, plumbing repairs are often more complex and require a higher skill set and access to special equipment. As a result, these would be services that every respondent, regardless of community size and accessibility to professional services, would require specialized assistance. It is important to note that the survey question that dealt with plumbing did not differentiate between major and minor plumbing repairs, such as the questions on automotive maintenance did (i.e., oil changes vs. brake repair). Perhaps a more specific explanation of plumbing repairs (fixing a leaking pipe vs. renovating or adding to existing plumbing) would have resulted in more conclusive results in this question.

The questions outlined in Table 4.5 were grouped together as they all fell under Stabler and Olfert's (1992, 1996) *Hierarchy of Exchange* category of Special Retail services and are rarely classified as home or household-based work. While each service analyzed within Table 4.5 is unique and has less in common with one another than services within the preceding sections, a pattern of exchange can be tracked. According to the individuals surveyed, the service of a neighbourhood watch program exists at a higher rate within the two urban communities

surveyed, in comparison to the next communities in the hierarchy.

TABLE 4.5 - SPECIALTY SERVICES

Q #1 Do you have a Community Watch?							
	Saskatoon	Prince Albert	Humboldt	Lanigan	Watson	Villages	Total
Yes (#)	13	11	6	6	10	12	58
(%)	43.30%	36.70%	20%	20%	33.30%	40%	32.20%
No	9	6	11	11	17	10	64
	30%	20%	36.70%	36.70%	56.70%	33.30%	35.60%
Do not know	8	13	13	13	3	8	58
	26.70%	43.30%	43.30%	43.30%	10%	26.70%	32.20%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%
Q #3 Where do you swim?							
Your property	1	1	1				3
	3.30%	3.30%	3.30%	0.00%	0.00%	0.00%	1.70%
Neighbour or friends	3		1				4
	10%	0.00%	3.30%	0.00%	0.00%	0.00%	2.20%
Community pool	12	14	16	19	14	2	77
	40%	46.70%	53.30%	63.30%	46.70%	6.70%	42.80%
Pool in another community	1		1	5	5	10	22
	3.30%	0.00%	3.30%	16.70%	16.70%	33.30%	12.20%
Don't swim	8	10	6	4	7	12	47
	26.70%	33.30%	20%	13.30%	23.30%	40%	26.10%
Lake	5	5	4		4	6	24
	16.70%	16.70%	13.30%	0.00%	13.30%	20%	13.30%
A combination of two or more of the above options			1	2			3
	0.00%	0.00%	3.30%	6.70%	0.00%	0.00%	1.70%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%
Q #10 How did you get vehicles?							
Private sale	9	7	3	6	4	4	33
	30%	23.30%	10%	20%	13.30%	13.30%	18.30%
Trade		1			2	1	4
	0.00%	3.30%	0.00%	0.00%	6.70%	3.30%	2.20%
Local dealership	12	10	13	7	10	6	58
	40%	33.30%	43.30%	23.30%	33.30%	20%	32.20%
Non local dealership	2	2	3	7	6	10	30
	6.70%	6.70%	10%	23.30%	20%	33.30%	16.70%
Friend					1		1
	0.00%	0.00%	0.00%	0.00%	3.30%	0.00%	0.60%
Gift		1					1
	0.00%	3.30%	0.00%	0.00%	0.00%	0.00%	0.60%
A combination of two or more of the above options	4	5	8	9	5	7	38
	13.30%	16.70%	26.70%	30%	16.70%	23.30%	21.10%
Total	3	4	3	1	2	2	15
	10%	13.30%	10%	3.30%	6.70%	6.70%	8.30%
	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%

Source: Focal Goods and Services Survey (2000)

While the respondent group within the villages demonstrated greater affirmative responses to the presence of a neighbourhood watch program (40%), the difference between affirmative and

negative responses is not as great as the two urban centres. Even though these findings neither contradict nor reinforce the presence or absence of informal or alternative activity, they do suggest that a lack of facilities or access to such facilities is present in lower-tiered communities. The same could be said of these communities' choice of and access to recreational facilities such as swimming pools, as those interviewed within the lower-tiered communities demonstrated a greater likelihood of acquiring this service within another community. These responses are consistent with Stabler and Olfert's trade-centre hierarchy; those communities, such as the villages, which are classed Minimum Convenience Centres, offer only a small set of services and often lack necessary infrastructure (Stabler and Olfert, 1996). As a result, inaccessibility to a recreational facility within the community would lead residents to seek this service in other communities within close proximity.

This pattern of dependency on non-local facilities in lower-tiered, rural centres repeats itself when we examine how respondents in different communities acquire a new vehicle. The incidence of utilizing a local dealership within the lowest-tiered community was significantly lower than the highest tiered community (20% response rate for the villages and 40% response rate for Saskatoon), while the utilization of a non-local dealership demonstrated the inverse for four of the lowest-tiered communities, as these lower-tiered communities demonstrated a greater tendency to obtain the service in a non-local garage (6.7%, 6.7%, 10%, 23.3%, 20%. and 33.3% respectively). It is important to note that alternative methods of exchange via trade and purchasing through a friend were minimally evident in these lower-tiered communities as well.

The two questions from Table 4.6 relating to tax returns and purchase of building materials fall under the category of All Producer Services as identified in Stabler and Olfert's (1992, 1996) *Hierarchy of Exchange*. Despite the obvious differences between the types of services being offered, a pattern of exchange can be tracked. For both of these services, it is more likely that the service will be acquired formally for all communities across the hierarchy. This is particularly evident in the case of purchasing building materials, as all respondents in all communities indicate this as their most usual way of acquiring building materials. In the case of acquiring tax

accounting services, respondents in the communities indicate a split between acquiring the service individually or formally through an accounting service. In order to properly offer both of these services, specialized equipment, or access to materials (e.g., lumber, mill-working) and specialized skills or experience, (e.g., certified accountant) would be needed. Once again, in the case of these specialized services, a minority of individuals could actually self-provision (Gershuny and Pahl, 1979; Nelson, 1999). Therefore, the incidence of informal acquisition of these services would be low across all communities.

TABLE 4.6- ALL PRODUCER SERVICES

Q #23 How do you attain building materials?							
	Saskatoon	Prince Albert	Humboldt	Lanigan	Watson	Villages	Total
Lumber yard (#)	16	18	21	21	17	23	116
(%)	53.30%	60%	70%	70%	56.70%	76.70%	64.40%
Cut and mill it yourself	1						1
	3.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.60%
Buy it privately	1	1			1		3
	3.30%	3.30%	0.00%	0.00%	3.30%	0.00%	1.70%
Obtain it through trade			1		1		2
	0.00%	0.00%	3.30%	0.00%	3.30%	0.00%	1.10%
Do not know	1	1	4		3	2	11
	3.30%	3.30%	13.30%	0.00%	10%	6.70%	6.10%
Other	11	10	4	9	8	5	47
	36.70%	33.30%	13.30%	30%	26.70%	16.70%	26.10%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%
Q #53 How are your tax returns calculated?							
	Saskatoon	Prince Albert	Humboldt	Lanigan	Watson	Villages	Total
Tax accounting service	8	10	8	7	8	12	53
	26.70%	33.30%	26.70%	23.30%	26.70%	40%	29.40%
You calculate them yourself	10	11	7	13	11	2	54
	33.30%	36.70%	23.30%	43.30%	36.70%	6.70%	30%
Family/friend calculates them without cost to you	5	5	3	2	3	4	22
	16.70%	16.70%	10%	6.70%	10%	13.30%	12.20%
A self-employed accountant	4	2	10	7	7	8	38
	13.30%	6.70%	33.30%	23.30%	23.30%	26.70%	21.10%
Do not know/ retired/ unemployed/student		1				2	3
	0.00%	3.30%	0.00%	0.00%	0.00%	6.70%	1.7
Two or more of the following options	3	1	2	1	1	2	10
	10%	3.30%	6.70%	3.30%	3.30%	6.70%	5.60%
Total	30	30	30	30	30	30	180
	100%	100%	100%	100%	100%	100%	100%

Source: Focal Goods and Services Survey (2000)

Further analysis of the data indicates a minimal presence of alternative methods of exchange for the goods or services. For example, there is no significant difference across urban and rural centres in the proportion of the rest of respondents who acquired lumber informally. In addition,

there are no great differences in how people undertake their income tax filing across the urban hierarchy except that the use of a self-employed accountant is substantially greater in the lowest four tiers than the highest-tiered, urban centres. These lower-tiered communities have higher percentages of persons participating in agriculture and resource-based industries than the urban centers (Refer to Table 3.4). These industries are often in the form of family farms and related businesses that may require professional and formal tax accountants to properly complete and track complex income and taxation records.

4.2 Levels of Exchange

The following section is based exclusively on analyzing the levels of exchange that are occurring within each community. As articulated in Table 3.5, exchange levels have been assigned according to the type of exchange occurring, including alternative forms of exchange such as trade, barter, self-work, unpaid or untaxed labour and volunteer assistance; and formalized methods of exchange such as purchasing or commissioning the service, or the acquisition of the service through public institutions. Questions were selected from each ordered category of exchange to continue a comparative analysis for similarly ordered goods across the urban hierarchy (Table 4.7).

TABLE 4.7 - ALL CONSUMER SERVICES

Q #38 Do you have a vegetable garden?						
	Saskatoon	Prince Albert	Humboldt	Lanigan	Watson	Villages
Yes (#)	15	17	13	15	13	7
(%)	50.00%	56.70%	43.30%	50.00%	43.30%	23.30%
No	15	13	17	15	17	23
	50.00%	43.30%	56.70%	50.00%	56.70%	76.70%
Total	30	30	30	30	30	30
Q #11 Where do you get your oil changed?						
A local garage or dealership. A non-local garage or dealership.	15	16	17	18	18	11
	55.60%	61.50%	63.00%	62.10%	64.30%	39.30%
Yourself or another household member.	10	9	9	10	9	15
	37.00%	34.60%	33.30%	34.50%	32.10%	53.60%
A friend or relative.	1			1		
	3.70%			3.40%		
Other.	1	1	1		1	2
	3.70%	3.80%	3.70%		3.60%	7.10%
Total	27	26	27	29	28	28
Question # 35 If you have minor alterations or repairs that need to be made to your clothing do you:						
Take it to a tailor or seamstress.	5	2	6	6	7	1
	16.70%	6.70%	20.00%	20.00%	23.30%	3.30%
Fix it yourself.	10	20	15	9	14	11
	33.30%	66.70%	50.00%	30.00%	46.70%	36.70%
Have another household member or friend fix it for you.	11	6	6	12	6	15
	36.70%	20.00%	20.00%	40.00%	20.00%	50.00%
Good/service not acquired/not needed.		1	3	2	2	1
		3.30%	10.00%	6.70%	6.70%	3.30%
Other	4	1		1	1	2
	13.30%	3.30%		3.30%	3.30%	6.70%
Total	30	30	30	30	30	30
Source: Focal Goods and Services Survey (2000)						

Analysis of the survey responses in Table 4.7 for each community indicates a high level of formalized activity either by commissioning or by directly purchasing the goods or services. This holds true across all communities, once again with the exception of the villages. In these low order places, the formal option for acquiring services is up to sixteen percentage points lower than the average for other urban hierarchies. For example, when asked how an automobile oil change was provided, respondents within the villages indicated that this service would be provided by a household member 53.6% of the time, while respondents in Saskatoon indicated the same only 37% of the time. Respondents in Watson also indicated a preference for purchasing services informally two-thirds of the time, e.g., fixing it themselves or having another household member fix it for alternations and repairs on clothing. Respondents in the other lower-tiered communities such as Lanigan, Watson and Humboldt indicated a similarly higher incidence in the use of these alternative methods of exchange.

The pattern of exchange established in the set of survey responses in Table 4.8 is somewhat similar to the previous pattern in that the set of respondents in each community indicated a high incidence of formal services identified but also indicated some use of alternative methods of exchange. The exception to this would be how these communities accessed childcare as the options seem to be more varied. Those in the lower-tiered communities such as Humboldt, Lanigan, Watson and the villages consistently ranked higher than the more urbanized places in the use of alternative methods of exchange. This was true for every alternative option from borrowing to self-production or mutual aid. Therefore, although there may be inconsistencies and fluctuations in modes of production chosen across an array of all six tiers of the hierarchy, the patterns are clearer and more dichotomous when comparing the highest and lowest places in the urban hierarchy.

TABLE 4.8 - SPECIAL SERVICES

Q #42 Where do you get most of your books from?						
	Saskatoon	Prince Albert	Humboldt	Lanigan	Watson	Villages
Buy them new (#)	7	10	7	8	6	9
(%)	23.30%	33.30%	23.30%	26.70%	20.00%	30.00%
Borrow them from a library.	4	8	7	4	9	8
	13.30%	26.70%	23.30%	13.30%	30.00%	26.70%
Borrow from family or friends		1	2		1	3
		3.30%	6.70%		3.30%	10.00%
Trade or buy at a used bookstore.		1	2		2	
	3.30%	6.70%		6.70%		
A combination of the above items	18	9	14	16	14	10
	60.00%	30.00%	46.70%	53.30%	46.70%	33.30%
Total	30	30	30	30	30	30
Q #45 How is this child care usually provided?						
A daycare facility	1		2	1	5	
	14.30%		25.00%	11.10%	38.50%	
A stay at home parent.	2	7	5	2	4	1
	28.60%	70.00%	62.50%	22.20%	30.80%	33.30%
Unpaid care from family or friends	1	1		1		1
	14.30%	10.00%		11.10%		33.30%
A paid nanny or baby-sitter		1		3	2	
		10.00%		33.30%	15.40%	
Other	3	1	1	2	2	1
	42.90%	10.00%	12.50%	22.20%	15.40%	33.30%
Total	7	10	8	9	13	3
Q #14 How is your vehicle usually washed or waxed?						
At a manually operated coin-op car wash or at a full service car wash/detail facility	13	19	13	10	17	10
	48.10%	73.10%	48.10%	34.50%	60.70%	35.70%
By yourself	10	6	13	17	8	13
	37.00%	23.10%	48.10%	58.60%	28.60%	46.40%
A family member or friend	1					1
	3.70%					3.60%
Good/service not acquired.					1	1
					3.60%	3.60%
Other	3	1	1	2	2	3
	11.10%	3.80%	3.70%	6.90%	7.10%	10.70%
Total	27	26	27	29	28	28
Q #37 Who cuts/styles your household member's hair?						
A barber.	20	22	16	21	18	15
	66.70%	73.30%	53.30%	70.00%	60.00%	50.00%
Yourself.	2		9	2	2	5
	6.70%		30.00%	6.70%	6.70%	16.70%
A family member or friend.	5	7	4	4	7	9
	16.70%	23.30%	13.30%	13.30%	23.30%	30.00%
Other.	3	1	1	3	3	1
	10.00%	3.30%	3.30%	10.00%	10.00%	3.30%
Total	30	30	30	30	30	30

Source: Focal Goods and Services Survey (2000)

The responses for the set of questions defined as “All Producer Services,” (Table 4.9) is consistent with results from the other categories thus far, as it indicates a high incidence of formalized acquisition of goods for all communities across the hierarchy. It is important to note that the incidence of alternative acquisition of services is higher than the other categories thus far.

TABLE 4.9 - ALL PRODUCER SERVICES

Q #18 How would you sell your home?						
	Saskatoon	Prince Albert	Humboldt	Lanigan	Watson	Villages
A local or non-local real estate agency (#)	9	14	14	9	3	6
(%)	47.40%	66.70%	53.80%	42.90%	13.60%	24.00%
Sell it privately	8	5	8	9	15	15
	42.10%	23.80%	30.80%	42.90%	68.20%	60.00%
Good/service not acquired/ not needed.		1	2		4	2
		4.80%	7.70%		18.20%	8.00%
Other	2	1	2	3		2
	10.50%	4.80%	7.70%	14.30%		8.00%
Total	19	21	26	21	22	25
Q #53 How are your tax returns calculated?						
A tax accounting service.	8	10	8	7	8	12
	26.70%	33.30%	26.70%	23.30%	26.70%	40.00%
You do them yourself	10	11	7	13	11	2
	33.30%	36.70%	23.30%	43.30%	36.70%	6.70%
Family/friends do them for you.	5	5	3	2	3	4
	16.70%	16.70%	10.00%	6.70%	10.00%	13.30%
A self-employed accountant.	4	2	10	7	7	8
	13.30%	6.70%	33.30%	23.30%	23.30%	26.70%
Good/service not acquired/not needed.		1				2
		3.30%				6.70%
Other.	3	1	2	1	1	2
	10.00%	3.30%	6.70%	3.30%	3.30%	6.70%
Total	30	30	30	30	30	30

Source: Focal Goods and Services Survey (2000)

Table 4.9 shows that people across the set of urban places are more likely to acquire tax accounting and real estate services informally. This is clearly a function of the specific services chosen to represent this category. The incidence of alternative acquisition of tax accounting services e.g., do it yourself, is higher within rural centres, with the exception of the respondents in the villages, who demonstrated the highest incidence of formal acquisition for tax accounting services (40%). Despite the inconsistency in the relationship between use of alternative forms of production and level of the urban hierarchy, those lower-tiered communities of Lanigan and Watson still demonstrated the highest percentage of do-it-yourself labour for this service (43.3% and 36.7% respectively). Respondents in the villages also exhibited the third highest incidence of acquiring this service through volunteer/mutual aid. Likewise, those in Watson, Lanigan and the villages all experienced both the lowest level of commissioned services and the highest level of do-it-yourself work in selling of their homes. (Table 4.10)

TABLE 4.10 - HIGH ORDER CONSUMER GOODS

Q #20 If you are the original owner of the house, did you?						
	Saskatoon	Prince Albert	Humboldt	Lanigan	Watson	Villages
Buy an off-sight prefabricated house locally or non-locally (#)			1	1	1	2
(%)			11.10%	20.00%	11.10%	13.30%
Employ a local or non-local construction company or contractor.	3	1	4	1	2	5
	100.00%	11.10%	44.40%	20.00%	22.20%	33.30%
Build the house yourself.		7	1	3	3	4
		77.80%	11.10%	60.00%	33.30%	26.70%
Get most of the help from your family and friends.			2		2	3
			22.20%		22.20%	20.00%
Other.		1	1		1.00%	1
		11.10%	11.10%		11.10%	6.70%
Total	3	9	9	5	9	15
Q#21 How are interior renovations completed?						
Employ contractors or renovators	2	6	5	2	5	3
	10.50%	30.00%	19.20%	9.50%	22.70%	12.00%
Yourself or another household member	10	10	18	14	14	14
	52.60%	50.00%	69.20%	66.70%	63.60%	56.00%
Utilize the help of friends or neighbours	1	2	1	1	1	2
	5.30%	10.00%	3.80%	4.80%	4.50%	8.00%
Other/A combination of these options	6	2	2	4	2	6
	31.60%	10.00%	7.70%	19.00%	9.10%	24.00%
Total	19	20	26	21	22	25
Q# 22 How are external renovations completed?						
Employ contractors/renovators.	4	7	14	5	11	6
	33.30%	36.80%	63.60%	29.40%	57.90%	30.00%
Yourself/household members or neighbours and friends.	8	12	7	12	8	12
	66.70%	63.20%	31.80%	70.60%	42.10%	60.00%
Other.			1			2
			4.50%			10.00%
Total	12	19	22	17	19	20

Source: Focal Goods and Services Survey (2000)

Analysis of the highest order of specialized goods and services indicates a higher incidence of alternative economic exchange across the urban hierarchy than was found in other categories, particularly in the case of home renovations (Table 4.10). For example, when asked how they obtained external housing renovations, the majority of the respondents across the entire hierarchy stated that they were provided informally.

However, this pattern varied slightly by position in the urban hierarchy. Those in the lower-tier communities demonstrated a higher incidence of alternative methods of exchange for High Order Consumer Goods. In response to the question that asked how they acquired interior renovations, those interviewed within the four lower-tiered communities indicated a higher incidence of do-it-yourself renovations, when compared to the more highly urbanized Prince Albert and Saskatoon. For example, for this activity respondents within Saskatoon and Prince Albert chose do-it-

yourself work 52.6% and 50.0% of the time respectively, while those in next four lower-tiered communities indicated that this option was used between 56.0-69.2% of the time. It is important to note, however, that the formal use of a contractor or renovator was consistently present in all communities in the hierarchy and no definitive pattern of an absence of this formal choice was evident across the hierarchy. Finally, the question relating to home construction shows the greatest difference between urban and rural places in terms of exchange within this category. While 100% of those surveyed within Saskatoon indicated that they employed a contractor or construction company, only between 11% and 44% of those surveyed across the remainder of the lower-tiered communities selected this option. It is clear, at least for this activity, that do-it-yourself work, mutual aid and volunteer labor are significant within the lower-tiered communities than in the largest metropolis of the hierarchy.

4.3 A Matrix Evaluation of Categories of Exchange

In addition to a basic category by category comparison of methods of exchange within the case study communities, as outlined earlier, an aggregate analysis was undertaken utilizing the Categories of Exchange matrix developed in Chapter 2. Each category of exchange (i.e., irregular, formal, household and communal) was given a numeric placeholder in order to recode response. As noted earlier, although the irregular economy is a real component of the Saskatchewan economy, this study was not able to conclusively determine its presence or significance. There are significant limitations related to collecting accurate information for the irregular economy. Survey respondents would have been hesitant to answer questions that may have outlined potential illegal activity. Likewise, it is this irregular form of goods and services acquisition that is the most difficult to measure and define on a national, let alone regional scale (Smith, 1994 and Timberg, 1995). Therefore, none of the responses of any of the questions were classified as “irregular”.

The questions were grouped to deal specifically with the acquisition of goods and services. From each of these questions, each choice was examined to determine which of the four categories of

exchange they best fit. For example, if we look at question 7 in Appendix A, “ Who usually changes your oil?” the responses were classified as follows: yourself or another household member (household), a friend/non household member (communal), local garage or dealership (formal), non-local garage or dealership (formal) and other (could be any of the above depending on the response). This additional aggregate categorization resulted in a greater number of occurrences for each of the three categories dealt with in this study and provides a more comprehensive summary of the form of production and exchange carried out in these communities at the time the survey was conducted.

Once the grouping was completed, utilizing Statistical Package for the Social Sciences (SPSS), the share for each of the three categories of exchange out of the total number of choices for each of the grouped questions for each level of the urban hierarchy was calculated (Table 4.11). For example, if we look at Saskatoon, the highest level in the Central Saskatchewan urban hierarchy, we see that 49.96% of the total responses to the pre-identified survey questions were classified as formal types of exchange, 47.12% were classified in the Household category, and 2.92% were Communal in nature.

At first glance there does not seem to be a systematic pattern across the hierarchy in terms of the urbanization of the three forms of exchange. Upon further observation there appears to be a new grouping of places across the six-tiered hierarchy. For example, with respect to the Formal and Household components of Table 4.11, total number of responses for all survey respondents across all survey questions, those in Saskatoon and Prince Albert exhibit similar patterns of production and exchange with 49.96% / 50.56% (Formal) and 47.12% / 46.41% (Household) respectively.

TABLE 4.11 - METHODS OF EXCHANGE CONTINGENCY TABLE – SASKATOON URBAN HIERARCHY

Communities	Irregular	Formal	Formal (%)	Household	Household (%)	Communal	Communal (%)	Sum
Saskatoon	0	581	49.96	548	47.12	34	2.92	1163
Prince Albert	0	317	50.56	291	46.41	19	3.03	627
Humboldt	0	343	53.43	283	44.08	16	2.49	642
Lanigan	0	342	53.69	282	44.27	13	2.04	637
Watson	0	307	49.36	301	48.39	14	2.25	622
Villages	0	280	42.23	364	54.9	19	2.87	663
Total	0	2172	49.89*	2067	47.47*	115	2.64*	4354
*Average								
Source: Focal Goods and Services Survey (2000)								

A secondary level found the same hierarchical grouping, with those in Humboldt and Lanigan having virtually identical proportions in these categories with 53.42% / 53.69% (Formal) and 44.08% / 44.27% (Household). This “collapsing” of the hierarchical structure may be related to a critical mass of services. As implied in Stabler and Olfert’s work and the fundamental theories behind commercial and retail service location, once a community grows to a certain size new services will be introduced (Stabler and Olfert 1996, 2002). For example, Wal Mart will move into a new community once the community has a direct trading area of 12,000 people (Yadong, 2002). Once this Wal Mart is in place it will provide basic retail goods, oil changes and even certain grocery items into the community while a smaller community may not have the same formal choices for this range of goods and services. Ultimately, a community may have the same range of services or amenities as another community within the same population range, despite having populations that may differ by several thousand (e.g. 12, 000 to 15, 000).

The idea of arbitrary population ranges affecting the introduction of new services may change the way we categorize communities within a hierarchy. Therefore, we may be encountering a different set of thresholds in the categorization of urban places when the entire range of production/exchange options is considered than is apparent when only the formal mode of production is examined. For example, instead of the six categories used in this study, three may

be just as accurate in depicting the Central Saskatchewan urban hierarchy. As noted in Table 4.11, respondents in villages reported the highest level of household work of all those communities surveyed. As supported by the literature in Chapter 2, it appears that this phenomenon can be explained by the absence of key services located in these communities. As the formal inventory of basic goods and services decrease, alternative informal activities fill in the void. This basic principle is demonstrated in the lowest tier of this hierarchy. Those in villages reported the lowest share of formally-provided goods and services, reinforcing the idea that if basic services are absent from a community, residents will frequently be forced to adopt other means to acquire the service, including traveling to another community or utilizing informal means. This point is further reinforced by the fact that those in villages reported using household forms of production nearly 55% of the time, a significantly higher level than in any other place (see Table 4.11).

As outlined in Chapter 2, another characteristic of villages may provide further insight into the responses outlined in the above Table. Due to the nature of agricultural life predominant in much of rural Saskatchewan, closer social ties bind community respondents together, allowing for greater opportunities to share expertise and resources (services) (Felt, Murphy and Sinclair, 1995 and Halperin, 1996). The percentage of communal activity is proportionately high in villages in comparison to the other communities with the exception of Prince Albert and Saskatoon. Many of the residents of those smaller communities still have a more traditional and stronger family network that collectively contributes to the farm or off-farm business of the households. These relationships can span across generations with the transfer of agricultural property adjacent to the village through time. Adjacent property may also be owned by long-standing residents of the area, which may have resulted in stable, long-lived relationships. Small businesses within the community provide the same opportunities for strengthened relationships or special arrangements with customers who have been frequenting locally-owned businesses for a long period of time. These situations can all contribute to form the foundation for heightened communal or community participation in production and exchange.

4.4 Aggregate Community Responses by Age, Income and Household Size

The purpose of the following analysis was to determine if there were relationships between specific socio-demographic factors (e.g., age, income and number of residents per household) and the resulting modes of production chosen. The aggregate categorization of choices of production and exchange by individual questions, as described in section 4.3, was used once again as the basis of this analysis. Table 4.12 examines the aggregate relationship between these three socio-demographic factors and the mode of production choices within the survey results.

TABLE 4.12 - AGGREGATE COMMUNITY RESPONSES BY HOUSEHOLD INCOME AND HOUSEHOLD SIZE

	Under \$20,000	%	\$20,000-\$60,000	%	over \$60,000	%	Total
Formal	875	47.61%	525	28.56%	438	23.83%	1838
%	48.80%		50.68%		52.39%		
Household	863	49.77%	486	28.03%	385	22.20%	1734
%	48.13%		46.91%		46.05%		
Communal	55	59.14%	25	26.88%	13	13.98%	93
%	3.07%		2.41%		1.56%		
Total	1793		1036		836		
Total Respondents	92		47		37		176
Aggregate Community Responses by Age Category							
	15-29	%	30-59	%	over 60	%	Total
Formal	67	3.08%	1728	79.56%	377	17.36%	2172
%	42.95%		49.70%		52.14%		
Household	77	3.72%	1666	80.52%	326	15.76%	2069
%	49.36%		47.91%		45.09%		
Communal	12	10.43%	83	72.17%	20	17.39%	115
%	7.69%		2.39%		2.77%		
Total	156		3477		723		
Total Respondents	8		164		38		210
Aggregate Community Responses by Number of People Living in the Household							
	1-2	%	3-4	%	5 and Over	%	Total
Formal	1058	48.71%	718	33.06%	396	18.23%	2172
%	50.31%		50.63%		47.43%		
Household	985	47.61%	673	32.53%	411	19.86%	2069
%	46.84%		47.46%		49.22%		
Communal	60	52.17%	27	23.48%	28	24.35%	115
%	2.85%		1.90%		3.35%		
Total	2103		1418		835		
Total Respondents	105		68		37		210

Source: Focal Goods and Services Survey (2000)

Through an analysis of the first socio-demographic factor, total household income as collected in the 2000 survey, some significant patterns emerge. Respondents earning less than \$20,000/year acquire goods and services formally 48.80% of the time, while those in the next two income

brackets (i.e., \$20,000 to \$60,000, and >\$60,000) report 50.68% and 52.39% of possible responses, respectively. Simply put, those individuals in the lowest income bracket are a little less likely to acquire a good or service within a formalized manner. Conversely, households earning over \$60,000/year are more a little more likely to purchase goods or services formally. Conversely those households in the lower household income bracket, are again, a little more likely to employ household or communal means of production. For example, households within the under \$20,000 bracket chose communal survey options 3.07% of the time, while those earning \$20,000 to \$60,000/year and > \$60,000/year, are less likely (2.4% and 1.56% respectively) to acquire these goods and services communally. It has been shown in the literature that individuals faced with economic hardships are more prone to subsidize their incomes with alternative methods of exchange beyond formal purchase. Respondents making less than \$20,000 could be substituting formally purchased goods and services with alternative methods of exchange to a greater degree than wealthier households (Pahl, 1984; Roberts, 1994; Arsenault, Ellison and Reimer, 1997; Timberg, 1995).

An analysis of the second socio-demographic factor, age of respondents, provides less definitive patterns (Table 4.12). It is apparent that the younger the individual, the less likely they are to acquire goods and services formally. There is almost a ten percentage point difference (42.95% to 52.14%) in the choice of a formal option from the youngest group of respondents, to those that are over 60 years old. Likewise, those who fell within the 15-29 age bracket demonstrated a greater tendency to acquire goods or services through the Household category than the other two age groups. As the age of the respondent increases, so does the likelihood that production/exchange choices will not be Household-based. Prior research does not provide us with an explanation of this relationship between age and acquisition of goods and services. Therefore, interpretations of those results are based primarily upon speculative insight. For example, according to Statistics Canada in 1996, those over 60 years of age were most likely entering retirement or are retired. Retirees are more likely to be financially secure than those within the 15-29 year age bracket who are just beginning careers and establishing households, if not still attending school. Likewise, those in the middle years age bracket (30-59) have started

their careers or are established within their careers, and therefore have a greater disposable income than those in the 15-29 age bracket (Statistics Canada, 1996). As a result, a respondent's financial position can be correlated to age and to specific behavioural choices of respondents. Once again, "making do", or finding innovative ways to stretch financial resources would affect the likelihood of an individual acquiring a good or service through less formal means.

An analysis of the final socio-demographic factor, number of people per household, provides a pattern that coincides with a prominent aspect of past research findings. Starting with the largest households and descending to the smallest households, it becomes obvious that individuals within the largest households were less likely to choose a formal method of acquiring a good or service. Conversely, these same households were the most likely to utilize both alternative forms of goods and service acquisition than households in the other size groups. As for communal production, one-to-two person households were more likely to acquire goods and services in this manner than those in larger (i.e., three to four person) households. With the exception of this last aspect, the relationship between household size and mode of production choice seems to complement the existing research. This includes documentation of a strong relationship between kinship ties, especially in agrarian communities, and the propensity to acquire goods and services through alternative methods of exchange (Arseneault, Ellison, Riemer, 1995; Mingione, 1981a, 1981b). Large households would be more likely to utilize internal informal human resources to acquire certain services, while smaller households, through lack of human resources, may have a greater need to utilize more formal methods to acquire goods and services.

4.5 Population Indicators Evaluated with Community Profiles

By selecting a number of key socio-demographic indicators for each community from Statistics Canada spanning the census periods 1986, 1991, and 1996, a community profile of each study community was created. These indicators included population, population distribution by age, number of individuals who have completed a university degree, average total income, unemployment rate, participation rate, labour force numbers, number of married or common law

families, number of lone parent families, number of private households and average value of dwelling. The purpose of this longitudinal community profile is twofold. The first purpose is to ascertain whether relationships exist between these distinct socio-demographic factors and the survey results presented earlier. The second purpose is to describe the changes taking place in the study communities. This longitudinal analysis is important, as the main criticism of Christaller's original central place theory was its static nature (Parr, 1969, 1978; Preston 1991). As recent researchers, including Stabler and Olfert (1992, 1996, 2002) contend, the key nature of urban hierarchies is that they are evolving and in a state of flux. In fact, this is the basis of Stabler and Olfert's ongoing research and reanalysis (Stabler and Olfert, 2002). It is important to analyze the demographic factors of each community over a time continuum to gain a clear picture of the survey communities and the results of the survey.

Starting the analysis of community profiles (Table 4.13) with population changes and population distribution in conjunction with labour statistics, some interesting observations can be made. First and foremost, to reinforce the evolving nature of Canada's urban hierarchy, specifically as it relates to the unique nature of Saskatchewan, we see a decline in the populations of the lower-tiered communities from 1986-1996 (Humboldt, -0.28%; Lanigan, -19.66%, Watson, -13.71%; and Lake Lenore, -23.6%). All case study places except for Saskatoon and Prince Albert, the top two tiers of the urban hierarchy, had a decrease in population. This decline was consistent over the ten years for all of these communities, except for Humboldt, whose population in 1996 rebounded back to its 1986 level. Conversely, Saskatoon and Prince Albert demonstrated consistently strong increases over this time period (Prince Albert, 3.21%; Saskatoon, 8.81%). These findings are consistent with the rural-to-urban shift that has been occurring steadily in Saskatchewan over the last fifteen years (Census Canada 1986, 1992, 1996; Stabler and Olfert, 2002). This population shift is linked directly to the shift away from agriculture and resource based industries towards service industries (Stabler and Olfert, 2002). Understandably, the largest relative population growth of the six communities occurred in Saskatoon, an urban center that is also the only community within the hierarchy to retain growth in both agriculture and service sectors. Extending this investigation to a study of the labour force for service sectors, every

community, with the exception of Humboldt, had a steady growth in the proportions employed in services. Likewise, every community, with the exception of Saskatoon, demonstrated a decrease in the share employed in agriculture or resource-based industries.

The connection between the socio-demographic factors of population decrease/increase and labour force shift has a distinct connection to our survey findings. As communities grow, the level and selection of services grows with them. This increase in service availability and diversity provides more opportunities for residents to obtain goods and services in a formalized manner. Saskatoon and Prince Albert are still both growing within the Saskatchewan urban hierarchy. As a consequence of this growth, survey results illustrated a higher tendency by residents of both respective communities to opt for formalized choices over alternative methods within specialized services, as illustrated in Table 4.13 and discussed in the corresponding analysis. Conversely, population declines in the communities of Lanigan, Watson, and the villages can be linked to a lower likelihood of acquiring goods and services formally. Residents in these same communities had a higher tendency to use methods of household production for goods and service acquisition. There appears to be no definitive pattern in the use of communal work as it relates to the urban hierarchy in general and the community characteristics in particular. This suggests that as population decreases in communities, the critical mass of services decreases accordingly. Therefore, residents are more likely to be innovative and diverse in their quest to acquire goods and services.

Another socio-demographic characteristic worth noting is the >64 years of age category. With the exception of the villages, all communities experienced a significant increase in senior's population from 1986 to 1996 (see Table 4.13). Two conclusions can be made from this pattern in relation to this study. Firstly, as previously cited in the survey results and the corresponding analysis of the socio-demographic factors in the survey (see Table 4.12), seniors are more likely to attain goods and services formally. Comparatively, while those in the villages attained goods and services formally 42.2% of the time, the rest of the five communities within the hierarchy were at least seven percentage points more likely to acquire goods and services formally.

Secondly, it is evident through the community profiles that seniors are clustering around communities that have a higher critical mass of key goods and services.

The final relationship to be drawn between community profiles and the research findings is through income and property value. An overall pattern exists for both variables that can be surrogates for the community wealth. There are many indicators to measure a community's wealth, and this analysis only brings to the fore two of these; housing and individual wealth (Hackett 1998; Liebl et. al. 1998). From Saskatoon at the top of the urban hierarchy, to Lake Lenore, as a representative of the villages, there is a significant decline in both average annual household income and average house value. As indicators of community wealth, these two factors provide a strong picture of economic position of each community. As reinforced in the literature review and the previous socio-demographic analysis (Section 4.4), community or household wealth can affect the ways in which goods and services are acquired (Roberts, 1994; Arsenault, Ellison and Reimer, 1997 and Timberg, 1995).

The remainder of the socio-demographic factors in Table 4.13 do not demonstrate any significant patterns in relation to the research findings. The implications of further research based on elements of this remaining socio-demographic data will be discussed in the concluding chapter.

TABLE 4.13 - COMMUNITY PROFILES

Saskatoon	1986	1991	1996	Difference (1986-1991)	Difference (1991-1996)	% Change (1986-1991)	% Change (1991-1996)
Population	177659	186060	193647	8401.00	7587	4.73	4.08
Population (5-19)	38040	39640	42900	1600.00	3260	4.21	8.22
Population (>64)	17270	19990	22375	2720.00	2385	15.75	11.93
*Persons who have completed university degree (%)	10.1	11.5	22.20	1.40	10.7	13.86	93.04
Average total income (\$)	18447	21300	24284	2853.00	2984	15.47	14.01
Unemployment rate (%)	10	9	7.8	-1.00	-1.2	-10.00	-13.33
Participation rate (%)	70.4	70.4	68.9	0.00	-1.5	0.00	-2.13
*Labour force (all industries) (%)	95740	98405	99895	2665.00	1490	2.78	1.51
*Labour force (agri.and resource industries) (%)	3970	4165	4110	195.00	-55	4.91	-1.32
*Labour force (service industries) (%)	37820	49490	81275	11670.00	31785	30.86	64.23
Married or common law families (%)	85.3	84.5	82.3	-0.80	-2.2	-0.94	-2.60
Lone parent families (%)	14.7	15.5	17.7	0.80	2.2	5.44	14.19
Number of private households	45635	71840	76300	26205.00	4460	57.42	6.21
Average value of dwelling (\$)	78312	86545	98936	8233.00	12391	10.51	14.32
Prince Albert							
Population	33686	34181	34775	495.00	594	1.47	1.74
Population (5-19)	8185	8330	8605	145.00	275	1.77	3.30
Population (>64)	3980	4190	4385	210.00	195	5.28	4.65
*Persons who have completed university degree (%)	4.9	5.8	14	0.90	8.2	18.37	141.38
Average total income (\$)	16657	21563	22722	4906.00	1159	29.45	5.37
Unemployment rate (%)	11.7	10.9	10.9	-0.80	0	-6.84	0.00
Participation rate (%)	67.2	65.6	65.6	-1.60	0	-2.38	0.00
*Labour force (all industries) (%)	16015	16070	16195	55.00	125	0.34	0.78
*Labour force (agri.and resource industries) (%)	820	700	690	-120.00	-10	-14.63	-1.43
*Labour force (service industries) (%)	6150	8485	13545	2335.00	5060	37.97	59.63
Married or common law families (%)	83.1	81.6	77.7	-1.50	-3.9	-1.81	-4.78
Lone parent families (%)	16.9	18.4	22.3	1.50	3.9	8.88	21.20
Number of private households	11890	12410	12875	520.00	465	4.37	3.75
Average value of dwelling (\$)	63305	70468	76152	7163.00	5684	11.32	8.07
Humboldt							
Population	5090	4989	5074	-101.00	85	-1.98	1.70
Population (5-19)	530	985	1045	455.00	60	85.85	6.09
Population (>64)	1015	1125	1240	110.00	115	10.84	10.22
*Persons who have completed university degree (%)	17.4	13.4	12.3	-4.00	-1.1	-22.99	-8.21
Average total income (\$)	16278	19134	20837	2856.00	1703	17.55	8.90
Unemployment rate (%)	10.3	6.9	6.2	-3.40	-0.7	-33.01	-10.14
Participation rate (%)	59.7	62.2	59.2	2.50	-3	4.19	-4.82
*Labour force (all industries) (%)	2240	2360	2290	120.00	-70	5.36	-2.97
*Labour force (agri.and resource industries) (%)	215	330	180	115.00	-150	53.49	-45.45
*Labour force (service industries) (%)	790	1015	420	225.00	-595	28.48	-58.62
Married or common law families (%)	90.7	90.2	89.7	-0.50	-0.5	-0.55	-0.55
Lone parent families (%)	9.3	9.8	10.3	0.50	0.5	5.38	5.10
Number of private households	1915	1995	2095	80.00	100	4.18	5.01
Average value of dwelling (\$)	64031	68673	77433	4642.00	8760	7.25	12.76
Lanigan							
Population	1695	1397	1368	-298.00	-29	-17.58	-2.08
Population (5-19)	440	325	305	-115.00	-20	-26.14	-6.15
Population (>64)	220	240	260	20.00	20	9.09	8.33
*Persons who have completed university degree (%)	5.3	5.3	17.9	0.00	12.6	0.00	237.74
Average total income (\$)	17552	21890	13898	4338.00	-7992	24.72	-36.51
Unemployment rate (%)	9.3	4.9	9.4	-4.40	4.5	-47.31	91.84
Participation rate (%)	67.2	66.4	65	-0.80	-1.4	-1.19	-2.11
*Labour force (all industries) (%)	785	710	695	-75.00	-15	-9.55	-2.11
*Labour force (agri.and resource industries) (%)	230	230	180	0.00	-50	0.00	-21.74
*Labour force (service industries) (%)	240	340	560	100.00	220	41.67	64.71
Married or common law families (%)	93.3	92.4	82.3	-0.90	-10.1	-0.96	-10.93

Table 4.13 Continued							
Watson							
Population	965	884	837	-81.00	-47	-8.39	-5.32
Population (5-19)	185	195	185	10.00	-10	5.41	-5.13
Population (>64)	240	255	250	15.00	-5	6.25	-1.96
*Persons who have completed university degree (%)	1.5	1.1	13.3	-0.40	12.2	-26.67	1,109.09
Average total income (\$)	11669	18900	18239	7231.00	-661	61.97	-3.50
Unemployment rate (%)	6.9	11.5	3.8	4.60	-7.7	66.67	-66.96
Participation rate (%)	58.4	48.4	59.1	-10.00	10.7	-17.12	22.11
*Labour force (all industries) (%)	430	290	380	-140.00	90	-32.56	31.03
*Labour force (agri.and resource industries) (%)	80	40	45	-40.00	5	-50.00	12.50
*Labour force (service industries) (%)	140	95	225	-45.00	130	-32.14	136.84
Married or common law families (%)	75.9	88.8	90.3	12.90	1.5	17.00	1.69
Lone parent families (%)	24.1	11.2	9.7	-12.90	-1.5	-53.53	-13.39
Number of private households	380	350	360	-30.00	10	-7.89	2.86
Average value of dwelling (\$)	39350	44457	48194	5107.00	3737	12.98	8.41
Lake Lenore (a representative example of the 4 surveyed communities)							
Population	370	336	290	-34.00	-46	-9.19	-13.69
Population (5-19)	97	92	80	-5.00	-12	-5.15	-13.04
Population (>64)	80	70	60	-10.00	-10	-12.50	-14.29
*Persons who have completed university degree (%)	5.4	4.4	10.3	-1.00	5.9	-18.52	134.09
Average total income (\$)	13755	15478	18550	1723.00	3072	12.53	19.85
Unemployment rate (%)	N/A	21.7	N/A	N/A	N/A	N/A	N/A
Participation rate (%)	66	51.1	71.1	-14.90	20	-22.58	39.14
*Labour force (all industries) (%)	175	115	130	-60.00	15	-34.29	13.04
*Labour force (agri.and resource industries) (%)	65	40	35	-25.00	-5	-38.46	-12.50
*Labour force (service industries) (%)	70	55	70	-15.00	15	-21.43	27.27
Married or common law families (%)	100	100	100	0.00	0	0.00	0.00
Lone parent families (%)	0	0	0	0.00	0	N/A	N/A
Number of private households	125	120	105	-5.00	-15	-4.00	-12.50
Average value of dwelling (\$)	54198	33129	43777	-21069.00	10648	-38.87	32.14
*Data from 1996 may not be comparable to 1986 or 1991 data							
Source: Statistics Canada - Detailed Questionnaire, Provinces to Municipalities (1986, 1991), Statistics Canada - Community Profiles (1996)							

4.6 Categories of Unpaid Work – Census Metropolitan Areas – 1996

Table 4.14 contains information on the twenty-five census metropolitan areas (CMAs) that make up Canada's macro urban system in 1996. Even though the populations and economic significance of these places are much greater than the Saskatchewan communities incorporated into this earlier case study, many of the same principles still apply. Toronto is viewed as the dominant community in Canada's urban system. Vancouver, Montreal, Calgary, and Ottawa are clearly second level tier communities in this system. Communities in the third tier would include Winnipeg, Edmonton, Halifax, and Quebec City, etc... Within these communities there are differing economic, social, cultural and geographical variables that may affect the ways in which households attain goods and services, as was the case in the Saskatoon Region.

In order to provide a more comprehensive perspective on the roles of alternative forms of

production across an urban hierarchy, this table describes three services that have been previously reported as having the potential to be acquired in multiple ways. Housework, seniors care, and childcare were all services evaluated in the 1996 Canada Federal Census to determine the number of unpaid hours that were allocated to each specific. Table 4.14 summarizes these data for the CMAs.

TABLE 4.14 - SERVICES PROVIDED AT HOME, CANADIAN CENSUS METROPOLITAN AREAS, 1996 (%)

Community	Population 15 years and over	Unpaid Housework		Unpaid Seniors Care		Unpaid Childcare	
		No hours (%)	Over 60 hours (%)	No hours (%)	Over 60 hours (%)	No hours (%)	Over 60 hours (%)
Toronto	3,374,725	12.94	3.86	85.3	2.36	5.5	9.53
Montréal	2,662,050	12.49	3.24	84.98	1.86	4.2	10.69
Vancouver	1,476,980	12.02	3.79	85.07	2.27	5.89	8.75
Ottawa - Hull	793,030	9.33	3.52	83.76	2.16	5.6	9.86
Edmonton	665,315	10.42	4.59	83.43	2.47	7.43	9.47
Calgary	639,055	10.47	3.93	85.8	2	7.05	8.85
Quebec	546,085	11.92	2.92	84.64	1.6	3.48	11.53
Winnipeg	525,125	10.53	4.45	81.55	2.56	6.97	9.34
Hamilton	493,065	10.9	4.51	83.68	2.49	6.74	9.02
London	311,915	10.14	3.77	84.06	2.22	6.51	9.21
Kitchener	296,285	10.73	4.01	85.12	1.97	6.55	9.82
St. Catharines-Niagara	295,970	11.59	5.06	82.23	2.85	7.15	8.96
Halifax	263,575	12.07	4.83	85.94	2.41	7.51	8.13
Victoria	249,360	10.74	3.81	83.61	2.46	6.07	7.39
Windsor	219,860	11.75	4.95	83.76	2.47	7.23	9.46
Oshawa	202,955	10.04	5.05	84.52	2.18	9.28	9.21
Saskatoon	166,690	8.91	5.3	82.09	2.35	8.15	9.68
Regina	148,695	8.62	4.59	82.65	2.26	7.74	10.07
St. John's	137,830	13.83	6.15	84.39	3.05	8.17	8.16
Sudbury	127,630	10.68	5.2	82.77	2.58	6.99	9.59
Chicoutimi-Jonquiere	127,485	11.58	4.41	82.19	2.04	4.77	12.62
Sherbrooke	116,845	10.63	2.44	83.76	1.67	3.8	12.1
Trois-Rivières	112,765	11.12	3.08	81.51	1.87	3.8	11.76
Thunder Bay	99,805	10.81	4.54	81.22	2.64	6.91	9.43
Saint John	98,560	13.23	5.31	82.92	2.91	8.42	8.38

Source: Canada's Workforce: Unpaid Work - Metropolitan Areas and Census Agglomerations (1996)

Without examining the data contained in Table 4.14 (all three work categories) through rigorous statistical testing, there does not appear to be a relationship between the share of households engaged in either extreme (i.e., no hours/week; >60 hours/week) of hours worked and the population. The number of hours does not increase as the population increases. This could be attributed to a number of factors. Firstly, although these communities vary significantly in population size, they are all still very large metropolitan areas and might be expected to provide a more similar basket of services and economic environments. Virtually the same types of healthcare, retirement, and housecleaning options are available in all if these metropolises, whereas this would not be the case in the small communities in central Saskatchewan. We may

see only see significant variations at lower levels of the urban hierarchy, in the set of formally provided goods and services, as was the case in this study.

Even though there are no observable linear relationships when across all 25 Census Metropolitan Areas as a whole, there does appear to be a pattern at a regional level. For example, Regina and Saskatoon are virtually identical both in their population and in the share of households providing extreme levels of home-based childcare, senior care and housework. This may be a result of similar regional stature and economic make-up. The same situation exists for Calgary and Edmonton, where household production behaviours are also very similar. At the top of the Canadian urban hierarchy, the three largest CMAs of Toronto, Vancouver and Montreal exhibit similar behaviour. Other regional similarities include the Maritime communities and, more generally, the Ontario urban places as groups. Once again, there may be regional attitudes or cultural norms that result in similarities among communities within specific regions.

Providing a statistical measure for these observations, one-tailed and two-tailed Pearson Correlation tests were conducted to determine whether there was a significant link between the size of a CMA and these three home-based production variables. Tables 4.15 and 4.16 illustrate these correlations for both unpaid housework and seniors care and the population of the census metropolitan areas for two specific categories; the share of households engaged in no hours of unpaid activity and the proportion engaged in more than 60 hours of unpaid activity

Using a one-tailed test is justifiable on the basis that prior research (and indeed this study) suggests there is an inverse relationship between population size and participation in informal production. Table 4.15 does show a degree of association between community size and the variable representing “0” hours of unpaid housework (i.e., +0.353, significant at $p < 0.05$). Therefore, in this case there is a statistical relationship between community size and the prominence of alternative methods of exchange. In this case, the association or relationship may not imply a cause and affect relationship between the two variables. Due to the large size of the communities in this data set it may not be realistic to perform a regression test on the data but

rather to state only that a relationship exists.

TABLE 4.15 - CORRELATIONS - UNPAID HOUSEWORK AND POPULATION SIZE OF CMA (1-TAILED)

	Populations of CMAs (over 15 years old)	% engaged in "0" hours of unpaid housework/week	% engaged in "60" hours or over of unpaid house work/week
Populations of CMAs (over 15 years old)	1	0.353*	-0.329
% engaged in "0" hours of unpaid housework/week	0.353*	1	0.131
% engaged in "60" hours or over of unpaid house work/week	-0.329	0.131	1

*Correlation is significant at the 0.05 level (1-tailed).

Both one and two-tailed tests were conducted to determine whether there was a relationship between community size and the amount of time spent on unpaid childcare. There were no statistically significant relationships found.

The final table in this analysis (4.16) does suggest a statistical relationship between population size and the number of hours spent on unpaid seniors care, at least for the “minimal” extreme. In other words it could be implied that, larger centers have a larger share of households with no unpaid seniors care (as measured in hours per week). This correlation further reinforces that community size can have an impact on the mode in which goods and services are acquired. As was the case in the relationship outlined in Table 4.15 this implied relationship could only be reinforced through regression testing, which is unrealistic given the size of the communities in question.

TABLE 4.16 - CORRELATIONS - CARE FOR SENIORS AND POPULATION SIZE OF CMA (1-TAILED)

	Populations of CMAs (over 15 years old)	% engaged in "0" hours of unpaid seniors care/week	% engaged in "10" hours or over of unpaid seniors care/week
Populations of CMAs (over 15 years old)	1	0.451*	-0.177
% engaged in "0" hours of unpaid seniors care/week	0.451*	1	-0.277
% engaged in "10" hours or over of unpaid seniors care/week	-0.177	-0.277	1

*Correlation is significant at the 0.05 level (1-tailed).

4.7 Conclusions

The original analysis of bundles of questions identified a slight pattern of formal and alternative methods of exchange across the various categories of goods and services. Starting with the lowest order goods and services (i.e., All Consumer Services), those in the lowest-tiered communities, such as the villages, demonstrated the greatest likelihood of using alternative methods of exchange. The likelihood of alternative exchange within lower-tiered communities is particularly high in the case of traditional do-it-yourself home or housework. Similarly, these communities are less likely than the higher-tiered urban places to acquire the service formally.

As goods and services become more specialized, alternative activity is present in all communities. This is particularly evident in the two highest order categories (Table 4.9 and 4.10). Within these categories the incidence of alternative exchange for the urban centres of Saskatoon and Prince Albert is at times greater than their rural counterparts. Despite this urban versus rural pattern of exchange, it is important to note that across the entire spectrum of exchange within these categories, the village respondents, still indicated a higher level of

alternative exchange. While you might expect greater formality with greater specialization across the hierarchy, perhaps these results are related to the fact that the specialty services covered in the survey involve services that do not fulfill daily, weekly or even monthly needs. Rather, these services cover needs that may only arise for a homeowner every five to ten years (e.g. replacing the roof on your house). It is likely that the homeowners considered the costs and benefits of providing these services individually rather than formally when responding to the questions.

Finally, there is conclusive evidence that non-local trade and exchange within rural communities is more prominent than in urban places. When asked whether they purchased goods or services locally or non-locally, those interviewed within lower-tiered rural communities more consistently identified a non-local business than their urban counterparts. In fact, for some services in the highest order places, non-local consumption of services was nonexistent.

The regrouping of questions according to formal, household and communal methods of exchange provided a more concise summary of the patterns of exchange across the urban hierarchy.

Similarities in goods acquisition occurring between communities adjacent to one another in the urban hierarchy (Saskatoon and Prince Albert; Humboldt and Lanigan) provided a unique pattern suggesting that differences across the six-tiers of the hierarchy were not fully distinct, especially when considering all forms of economic exchange. Reinforcing the previous analysis of the survey results, the village respondents demonstrated the greatest likelihood to choose informal over formal methods of exchange.

It is perhaps the relationship between socio-demographic characteristics of communities and mode of goods and service acquisition that provided the clearest results. The strongest observations were found between low average household income and the propensity to seek alternative methods of exchange. These results, as fortified by research noted in the literature review, indicate that individuals with lower income are inclined to stretch their spending capacity by engaging in household and communal forms of goods and services acquisition. When analyzing the average age of respondents and mode of exchange choice, it was revealed that

younger respondents also demonstrated a stronger tendency to select alternative methods of goods and service acquisition over more formal means. Once again, this relationship might be linked to the economic position of respondents. Finally, when analyzing average household size, respondents from the largest households were more likely to acquire goods and services through household and communal production. This finding is consistent with research that indicates a direct relationship between kinship patterns and family ties and the presence of alternative methods of exchange. The socio-demographic patterns established in these findings provide a clearer picture of the factors that affect goods and services acquisition within Saskatchewan's urban hierarchy. The connection between these results and previous literature and research provides interesting implications for further research. This aspect will be discussed in the concluding chapter.

A comprehensive community profile of all communities over a ten year period provided some unique relationships between key socio-demographic factors within the communities and the survey results. Focusing on population fluctuations, labour force tendencies, age structure and household wealth, the community profile analysis is consistent with research and elements of the socio-demographic analysis discussed in the previous paragraph. Key among these findings is the pattern that occurs along the urban hierarchy. For example, every community within the urban hierarchy, with the exception of the villages, increased their share of senior-aged residents, who are more likely to acquire goods and services formally. Conversely, it is in the villages that one sees the greatest likelihood of obtaining goods and services through alternative methods of exchange. While all socio demographic factors did not provide conclusive support to the survey findings, elements of these factors and their relation to further research will be discussed in the concluding chapter.

In terms of the analysis of CMAs in relationship to home-based production a number of interesting regional patterns became apparent. Just as similar patterns occurred between communities adjacent to one another in the urban hierarchy in this study, similar patterns of goods and services acquisition were found between similar CMAs within regions. The

correlation coefficient tests performed on these same data provided evidence of a relationship between community size and methods of goods and services acquisition, albeit with only unpaid housework and unpaid senior care.

CHAPTER 5

CONCLUSIONS

This chapter reviews the primary objectives of this thesis and the methods used to accomplish these objectives. The results of the research included in this thesis are analyzed according to the original thesis objectives. As well, the implications of the research findings in relation to further research and areas of study are presented. Likewise, difficulties that evolved out of the research process will also be presented. This inclusive conclusion not only highlights findings specific to this research, but also provides suggestions that could facilitate further research in this area, and a discussion of the relevance of this thesis for personal, business and governmental choices.

5.1 Thesis Objectives

This thesis has attempted to study the multiple forms of exchange that exist across the Saskatchewan urban hierarchy through six communities in Central Saskatchewan that are representative of the provincial urban hierarchy. The purpose of this thesis was to provide an inclusive perspective on the nature of the urban hierarchy, by including a study of multiple forms of economic exchange that have been excluded in current models designed to categorize urban places. As a result, the accuracy and relevancy of current models designed to categorize urban places across a region to reflect the total economy of the region was analyzed as well.

The first step in meeting the thesis objectives was to undertake a detailed literature review. The research in the literature review provided a backdrop for the corresponding research undertaken in this study. The literature review had four objectives. Firstly, the evolution of central place theories from its original theorists to modern day was reviewed to discuss the applications of this theory in the context of the Canadian, and more specifically, Saskatchewan urban hierarchy. The second objective of this literature review was to provide an analysis of Stabler and Olfert's adaptation of the central place theory to a Saskatchewan context and provide a model to select study communities and devise survey questions. The third objective of this literature review was

to provide a study of the complex nature of goods and services exchange and acquisition. This included an analysis of all forms of exchange present across the urban hierarchy. Current models that attempted to categorize the different forms of economic exchange, such as those by Sharpe (1988) and Bates (1997), were studied to reveal the interconnectedness of all modes of exchange. Finally, a body of research highlighting the presence and importance of alternative methods of exchange beyond formal methods within urban and rural areas that shared similar characteristics to the Saskatchewan urban hierarchy was presented. All four of these objectives provided a context for the necessity of research that attempted to analyze the integration of current urban hierarchy models with research on alternative means of production.

After providing the context for the research in this study through various literature and previous research and establishing the relevance and importance of alternative methods of exchange within the Saskatchewan urban hierarchy, the primary data source was selected. Six communities within the service region of Saskatoon were selected using Stabler and Olfert's Saskatchewan trade center classification system. Likewise, survey questions were developed using Stabler and Olfert's inventory of goods and services available across the urban hierarchy. These multiple choice questions allowed respondents to select a number of possible responses that included not only where geographically a good or service was acquired (i.e., within the community the respondent lived, or within another community), but how the good or service was acquired. It is the *how* the good or service was acquired that is the key focal point of this research. Choices within the survey focused on three key methods of exchange (see Figure 2.1)- formal, household and communal.

After the original analysis of cross-tabulated results, questions were selected with responses based specifically on goods and service acquisition. Each choice within these questions was then slotted into one of the corresponding four categories: formal, household, communal, or other. This categorization allowed for a more accurate reflection of the activity carried out in each individual community at the time the survey was conducted. This allowed for a clear comparison of between each community in order to establish any hierarchical patterns of goods and services

acquisition. The next analysis studied the aggregate relationship between the mode of production choices within the survey results and three socio-demographic factors; respondent age, average annual income, and household size. This provided a complementary analysis of how specific socio-demographic factors affect an individual's tendency to utilize alternative methods of exchange. Some of these same socio-demographic factors could be compared to similar socio-demographic factors included in the community profiles. Studying the population changes, labour force changes, and changes in the proportion of elderly individuals within each community, as they compared with each community within the six-tiered hierarchy, suggested some significant patterns that related to survey findings. Likewise, a study of the average income and cost of dwellings, as indicators of community wealth, provided similar patterns across the hierarchy that confirmed prior research findings.

A study of the twenty-five census metropolitan areas that made up Canada's macro urban system in 1996 was undertaken to determine whether patterns of goods and service acquisition existed across the Canadian urban hierarchy that could be compared to the findings in this research. Hours of unpaid childcare, senior care and household work comprised Statistic Canada's 1996 findings for unpaid work in the CMAs. An understanding of the patterns of unpaid work that existed in Canada's urban hierarchy provided a means for understanding patterns that arose in the six-tiered communities that were a part of this study. Finally, a one-tailed Pearson correlation coefficient tests were performed on the information presented in these CMAs in order to delineate any relationships between population size and alternative methods of goods and service acquisition.

5.2 Thesis Results

It is apparent that the informal economy and alternative methods of exchange are an important part of the total economy of Saskatchewan's urban hierarchy. Looking at the survey results, as represented in table 4.11, residents in each community demonstrated an affinity for accessing goods and services through alternative methods. These results demonstrated that residents of all

of these communities were almost equally likely to choose between the formal and alternative methods of exchange. The exception to this pattern, which revealed itself in the original survey analysis as well, was within the villages. It is in these smaller, lower-tiered communities that the incidence of informal economic activity was stronger (up to seven percentage points more likely). Regardless of the connection between community size and the absence or presence in varying degrees of alternative methods of exchange, the point remains that these varying exchange mechanisms are a valuable and integral part to the total urban hierarchy and the local economy (Felt and Sinclair, 1990; Findeis, Jensen and Cornwall, 1993).

Slight differences in the capacity for different-tiered communities to access alternative methods within the urban hierarchy were apparent. As mentioned, it is consistently the lowest-tiered communities that have demonstrated this tendency. Similarly, there appears to be an aggregation of the urban hierarchy, across three rather than six levels, that corresponds to household economic behaviour choices. Likewise the Pearson correlation analysis of the metropolitan data did reveal some relationships between community size and alternative forms of goods and services acquisition.

The urban hierarchy of goods and exchange model is consistent with the findings presented here in that residents of lower order communities are more likely to travel elsewhere to acquire goods and services than those in larger places. Residents in Saskatoon and Prince Albert, when given the choice, rarely indicated that they went to another community, while those in the lower-tiered communities of Lanigan, Watson and the villages indicated this more consistently. This should not come as a surprise given the differences in availability of goods and services across the spectrum of the urban hierarchy. What it does suggest, however, is that one of the strongest influences in the likelihood of engaging in alternative forms of production is the local availability of the formal option. Take for example, the service of brake maintenance on vehicles. Residents in the three highest-tiered communities (Saskatoon, Prince Albert and Humboldt) only indicated the use of a non-local garage 3.3% of the time, while residents in Lanigan, Watson and the villages indicated this as an option 13.3%, 10.0% and 20.0% of the time respectively.

Although the preceding empirical results support the idea that there is a dichotomy in local vs. non-local acquisition of formal goods and services, it is important to note that the results across the urban hierarchy are less equivocal regarding the relationship between community functionality and the role or significance of informal forms of production. According to the literature cited on the presence of informal economic activity within rural communities, it had been assumed that the empirical results would conform more clearly to these findings. As is so often the case with research, outcomes were not as clear as the expectations. Although there is no one reason to explain the discrepancy between prior research and the results contained therein, several explanations can be suggested. First, the structure of the primary research data, specifically the survey itself, and the small number of survey respondents (60 in Saskatoon and 30 in each of the other communities) may have contributed to these results. Some of the choices to the questions in the survey may not have been specific enough to allow for a clear interpretation of all forms of economic activity present within households. Take for example, the question on plumbing repairs. As was previously discussed in the analysis, this question did not differentiate between minor and major repairs. Likewise, black market exchange, tax evasion, or the criminal element of the informal economy was not included in the survey, due to an assumed unwillingness of respondents to answer questions based on these modes of exchange. The subversive nature of the informal economy makes it difficult to track empirically (Portes, Castells, Benton, 1989). In regards to the number of respondents surveyed within each community, perhaps thirty individuals within a community, regardless of size, does not provide a sufficiently strong statistical cross section of the community. Therefore, any statistical tests, surveys or empirical measures that attempt to establish the presence or absence of informal economic activity may not provide a complete picture of the true nature of economic activity within an urban system.

The presence or absence of a formally-derived good or service should not be taken as the only, nor even the most powerful factor influencing economic behavioural choices. Key socio-demographic patterns in relation to the survey results were also discovered. These results were the clearest and perhaps represent the strongest implications for continued research in other fields

beyond geographical analysis of exchange patterns. For example, the greater an individual's income, the less likely they were to choose alternative methods of goods and service acquisition. Those who fell within the lowest income bracket (under \$20,000) demonstrated a greater tendency to acquire goods and services alternative. These findings complement corresponding research on the relationship between prevalence of informal economic activity in households with limited economic means and regions experiencing economic hardships (Pahl, 1984; Roberts, 1994; Arsenault, Ellison and Reimer, 1997). To further this comparison, a basic profile of household wealth for each of the six communities was constructed (Table 4.13) and revealed a hierarchical pattern. Beginning with Saskatoon, the average household income and dwelling worth decreased consistently for the other communities based on their size. Between the highest-tiered community of Saskatoon and the lowest tiered community of Lake Lenore, as a representative of the villages, there was more than a \$5,000 difference in average incomes, and over \$22, 000 difference in average dwelling values. These findings support previous literature that indicates a relationship between an individual's or community's financial need and the alternative acquisition of goods and services. These findings connect back to the hierarchy of goods and service exchange in that they are *hierarchical*; the pattern is linear and relates back to community size and services. Although this does not prove a direct relationship between the financial means to acquire goods and services and the choices made regarding mode of production, it does suggest that financial well being, geographical location and economic behavior are interrelated.

Another related link seems to exist between the age of the respondents and the choice of mode of goods and services acquisition that is also connected to the aggregate community profiles. Older respondents (> 60 years) were more likely to select formal rather than alternative methods of exchange. Census-based demographic information for the six communities indicated that the share of the population >64 years was growing rapidly in every community with the exception of the lowest tiered community. The differences in the rate of this growth along the urban hierarchy provide the clearest connections to the survey results. The highest-tiered community of Saskatoon experienced a 28% increase in its senior-aged population, while the next three tiered

communities in the urban hierarchy saw increases of between ten to twenty percent. Watson's population of seniors grew by only 4% in this ten-year period, while Lake Lenore's population in this age category decreased by close to 17%. Since individuals within this age group are more likely to access goods and services formally, and there is a hierarchical relationship between growing senior populations and community size, these factors support the findings related to community size and the presence or absence of different forms of economic activity.

With respect to household size, those households with the greatest number of residents demonstrated the greatest likelihood for selecting alternative means of goods and services exchange. This reinforces the unique relationship between kinship patterns and family ties and the presence of informal economic activity that was cited in the research discussed in Chapter (Mackenzie, 1987; Boris and Daniels, 1989; Nozick, 1992; Anderson et al, 1994; Arseneault, Ellison, Riemer, 1995).

Another factor that reinforces the connection between community size and methods of goods and services acquisition is the population changes as reflected in the community profiles. Substantial population growth was evident in the two highest-tiered communities, while the remaining communities experienced population decreases. These population decreases in the smaller communities have a long-term impact on their ability to sustain formally provided services and, in the literature, this often results in a recategorization of these communities to a lower level in the urban hierarchy (Stabler and Olfert, 2002). It is these same communities (specifically Watson and the villages) that respondents demonstrated the greatest likelihood of acquiring goods and services in informal ways.

Although the original objective of this thesis was not to delineate between socio-demographic factors and goods acquisition, these findings complement the research findings, providing a clearer understanding of differences between communities across the urban hierarchy that can be connected to the presence of alternative modes of production. The relationship between key socio-demographic factors and goods and services acquisition, especially in relation to the

informal economy, also provides an avenue for further research, a topic that will be discussed in the next section.

The strongest conclusion that can be made from the cross comparison of Census Metropolitan Areas and the number of unpaid hours of childcare, senior care and household work, is the regional groupings that emerged. In the same regions, the CMAs that share similar economic features and are similar in size, are also very similar in the proportions of their populations engaged in these three functions within their households. Once again a comparison can be made between this finding and the survey results. In the survey, pairs of communities across the urban hierarchy shared similar patterns of formal and alternative, or informal exchange. Through this analysis, it has become evident that there is a relationship between community size and the alternative acquisition of goods and services that emerges on various scales of communities as well as various scopes of analysis (i.e., regional and national).

5.3 Implications and Recommendations for Further Research:

While undertaking market research, it is important for businesses to understand the threshold of their good or service within prospective communities. The presence or absence of a service for a business within a community, provided either informally or formally, will influence the location decision of that business. For example, if a potential entrepreneur is considering opening a seamstress business within a community, he or she needs to ascertain whether there will be market support, if the community will be able to sustain or support that business over an extended period of time, and if the service is currently being provided formally or informally. Community functionality indicators, such as population growth, average annual incomes and average cost of dwellings, as discussed in the analysis chapter, are strong indicators of market strength within a community. A study of these indicators over a ten-year period, as presented in the analysis chapter, provides a clearer picture of a community's functional growth and sustainability. These factors can assist business owners in predicting the sustainability and long-term market strength of a given community. Likewise, the informal presence of the prospective

business service can be just as important as the formal presence of the service when deciding on a potential location for a business. Taking the seamstress example one step further, if there is a retired seamstress in a lower order community such as Lanigan or Watson who has a reputation of doing good work for pay, or an exchange of labor, the presence and strength of this informal business may inhibit the growth of a newly introduced formal business within the community. Businesses need to have an understanding of all modes of production that exist within a community. From a business planning perspective, this research allows businesses to develop an understanding of the viability of relocation or the creation of a new business within a community.

From a community economic development perspective, understanding the importance of a variety of modes of production choices within a community will allow for a stronger, more inclusive strategic development plan, specifically when trying to attract sustainable businesses. Likewise, this research provides a complete picture for developers when forecasting community sustainability and functionality. As communities lose vital formal services, the presence of alternative methods of exchange may allow communities to maintain hierarchical functionality. This knowledge will allow developers to provide support to, and promote awareness of, alternative means of goods and services exchange within the community.

If a government understands the functionality of the community it is able to make an informed decision when allocating resources within a community. For example, if a government is looking at a community purported to be in decline, it may adjust its decision on whether to continue to support basic health and education services in that particular community. Ultimately, provinces such as Saskatchewan cannot afford to dilute public programs related to health and education by injecting resources into potentially declining and depopulating communities. However, if community functionality is evaluated on the basis of all methods of economic exchange combined, perhaps some of these declining communities may be able to demonstrate a measure of sustainability by delivering basic goods and services through alternative means.

When households consider moving to a new community they likely have an understanding of the

goods and services that are available formally within each community. Rarely will they have an informed assessment of the goods and services that might be available informally. A more comprehensive understanding of the range of available goods and services may entice more households to move to smaller communities. An understanding of whether the service capacity of a potential community is on the increase or decrease will also allow households to anticipate the future availability of key educational and health resources. As well, as individual agrarian-based households whose incomes rely upon an agricultural base, an understanding of the viability of achieving goods and services exchange through alternative means may provide these households with renewed ability to generate income or even subsist.

There were strong rationales to choose the specific communities utilized in this research, including that they were within the service region of Saskatoon, and that each belonged to a different hierarchical category. However, expanding the communities, or selecting communities within different service regions or geographical locations within the province may have produced different results. For example, the different context of Saskatchewan's northern communities, including distance from a trade center or relative isolation may play a stronger role in the presence of alternative methods of exchange. Since all of the communities included in this study were within the service region of Saskatoon, and within a ninety-minute automobile drive to this major center, traveling to this center to purchase and formally acquire goods and services may have constituted a more important factor in this region. Recent research supports the theory that inaccessibility to a major trade center has allowed communities to retain important hierarchical status, as the population is less likely to travel the great distances necessary to acquire services in larger centers (Stabler and Olfert, 2002). This inability or lack of desire to travel great distances to acquire services could then influence resident's tendency to seek out alternative methods of acquiring goods and services that are not formally present in their smaller, lower-tiered communities. Although research contained in the literature review did not directly cite isolation or distance from a trade center as a strong factor in the existence of alternative methods of exchange, this is a factor that is worth exploring further.

It is apparent that the adaptation of central place theory as an evolving study, albeit devoid of alternative methods of economic exchange, is a strong representation of the true nature of Saskatchewan's urban hierarchy. For example, in their most recent examination of the Saskatchewan urban hierarchy, Stabler and Olfert (2002) have extended their research by including many smaller places and defining Functional Economic Areas. Any further research on the presence of alternative methods of exchange within the Saskatchewan urban hierarchy should be structured using these redefined geographical boundaries and regions.

Just as research on the formal urban hierarchy continues to be redefined, reclassified, and reinvestigated to respond to the changing nature of this society, any research that attempts to analyze the comprehensive nature of exchange must include alternative production and be longitudinal. The new questions on the population census that incorporate unpaid child care, seniors care and household work will begin to provide this longitudinal dimension as the results from the 2001 census can be compared to the findings from the 1996 census at a variety of geographical scales.

The community profiles created through Statistics Canada research coupled with the socio-demographic information provided by respondents enriched the primary data gathered in this research. Specific research has cited a connection between homework and gender (Roberts, 1994; Arsenault, Ellison and Riemer, 1997). Adding a survey section that focused on gender, or single-parent households would further enrich the primary data. Likewise, finding patterns in the acquisition of goods and services exchange in relation to these categories would allow for a more holistic understanding of the relationship between alternative methods of exchange and household socio-demographic characteristics.

Another aspect of the primary data that hindered the research was the reclassification of Lanigan from Stabler and Olfert's 1990-1995 study of Saskatchewan's urban hierarchy. Lanigan has been reclassified again in Stabler and Olfert's 2002 study and is no longer part of the top 46 communities in its classification. As previously mentioned, Lanigan was originally classified as a

Full Convenience Centre, but was reclassified to a Minimum Convenience Centre in 1995. In order to have a Full Convenience Centre within the service region of Saskatoon, Lanigan's earlier classification was retained for the purposes of this study. Once again, it is the evolutionary nature of Saskatchewan's urban hierarchy that makes it difficult to fully reflect its unique economic relationship and patterns through research based within a fixed time period.

One final aspect of this research that limited the findings is the elusive nature of defining alternative methods of exchange. These methods of exchange are difficult to track through conventional research and are not tracked comprehensively through population censuses. While the survey questions in this study attempted to provide multiple options that could be grouped under broad categories of exchange, there exist many additional production options that could have been presented. For example, from the survey in Appendix A, the question that referred to interior renovations provided the following options: yourself or another household member, utilize the help of a non household member (family/friends), employ contractors/renovators, other. Undertaking the service yourself is classified as a *household* method of attaining the service and utilizing the assistance of family or friends is *communal*, while employing someone is *formal*. The "other" category, however, opens up many more complex possibilities. Consider the following hypothetical possibility as a response to this last option, "My friend is a general contractor and obtained the renovation materials at cost. He helped me do my renovations and then I helped him build his new fence ". This response includes both a formal, but not fully conventional, form of goods acquisition (i.e. purchasing the materials at cost) and an alternative, communal-based form of service acquisition, including traditional trade and barter (exchange of help for help). Statistically, these complex relationships are very difficult to track. This does not include cases in which respondents may be involved in illegal means of acquiring goods and services. In this case, they would likely be unwilling to respond truthfully to the question. These *invisible* economic transactions are often complex and interconnected, and therefore difficult to reveal and clearly define (Bagnasco, 1995).

It is expected that this inclusive study of alternative methods of goods and services exchange

within the Saskatchewan urban hierarchy may encourage future researchers, theorists, policy makers and community developers to evaluate, appreciate and predict the depth and scope of all modes of production within communities.

REFERENCES CITED

- ALLEN, P.M. and M. SANGLIER. 1981. Dynamic Model of a Central Place System II. IN Geographical Analysis, Vol. 13: 147-164.
- ALLEN, P.M. and M. SANGLIER. 1979. Dynamic Model of Growth in a Central Place. IN Geographical Analysis, Vol. 11: 257-272.
- ANDERSON, MICHAEL, FRANK BECHHOFFER and JONATHAN GERSHUNY. 1994. The Social and Political Economy of The Household. New York: Oxford University Press.
- ARSENAULT, MICHEL, BARRY ELLISON and BILL REIMER. 1997 The Informal Economy in Canada: metro and non-metro comparisons. IN VAN DEN BERG, AXEL AND JOSEPH SMUCKER (eds.) The Sociology of Labour Markets: Efficiency, Equity, and Security. Scarborough: Prentice-Hall 255-270
- BAGNASCO, ARNALDO. 1990. The Informal Economy. IN MARTENTELLI, A., SMELSER, N., Economy and Society: Overview in Economic Sociology. London: Sage 157-174
- BARNARD, JERALD R., JAMES A. MACMILLAN and WILBUR R. MAKI. Evaluation Models for Regional Development Planning. IN Regional Science Association, Volume XXIII.
- BATES, JUDY. 1997. Paid and Unpaid Work at Home: Contemporary Trends in North America and Britain. Queens University: Department of Geography.
- BEAVEN, K.S.O. 1977. Central Place Theory: A Reinterpretation. London: Longman.
- BENNETT, JOHN W. 1969. Northern Plainsmen: Adaptive Strategy and Agrarian Life. Chicago: Aldine Publishing Company.
- BERRY, BRIAN J. L. 1960. An Inductive Approach to the Regionalization of Economic Development. IN Essays on Geography and Economic Development. (Ed.) Norton Ginsburg. Chicago: The University of Chicago.
1975. The Human Consequences of Urbanization: Divergent Paths in the Urban Experience of the Twentieth Century. New Jersey: Prentice-Hall Inc.
1995. Comparative Urbanization: Divergent Paths in the Twentieth Century. New York: St. Marten's Press.
- BERRY, BRIAN J.L. and WILLIAM GARRISON. 1958. The Functional Bases of the Central

Place Hierarchy. IN Economic Geography . Vol. 34: 145-154

BERRY, BRIAN J. L. and FRANK E. HORTON. 1970. Geographic Perspectives on Urban Systems. New Jersey: Prentice-Hall Inc.

BERRY, BRIAN J. L. and JOHN B. PARR. 1988. Market Centres and Retail Location: Theory and Applications. New Jersey: Prentice-Hall Inc.

BICKMAN, LEONARD AND DEBRA J. ROG. Editors. 1998. Handbook of Applied Social Research Methods. (Eds.) Thousand Oaks, California: Sage Publications.

BLOOMQUIST, LEONARD E. 1990. Local Labor Market Characteristics and the Occupational Concentration of Different Socioeconomic Groups. IN Rural Sociology, Vol. 55: 199-215.

BOGENHOLD, DIETER and UDO STABER. 1991. The Decline and Rise of Self-Employment. IN Work Employment Society, Vol. 52: 223-229.

BOLLMAN, RAY D. 1992. Rural and Small Town Canada. Ontario: Thompson Educational Publishing Ltd.

BORIS, EILEEN. 1994. Home To Work: Motherhood and the politics of industrial homework in the United States. New York: Cambridge University Press.

BORIS, EILEEN and CYNTHIA R. DANIELS. 1989. Homework: Historical and Contemporary Perspectives on Paid Labor at Home. Urbana: University of Illinois Press.

BOSE, CHRISTINE E., PHILIP L. BEREANO and MARY MALLOY. 1984. Household Technology and the Social Construction of Housework. IN Technology and Culture. Vol. 25: 53-90

BRUNNER, EDWARD and J.H. KOLB. 1933. Rural Social Trends. New York: McGraw-Hill Book Company Inc.

BRYDEN, JOHN M. 1994. Towards Sustainable Rural Communities. Guelph: University School of Rural Planning and Development.

BUNTING, TRUDI and PIERRE FILION. Editors. 1991. Canadian Cities in Transition. Toronto: Oxford University Press.

BUTTON, K.J. 1984. Regional Variation in the Irregular Economy: A Study of Possible Trends. IN Regional Studies, Vol. 18.5: 385-392.

CASTLE, EMERY N. 1990. Persistent Poverty in Rural America. Boulder: Westview Press.

- CASTELLS, MANUEL and ALEJANDRO PORTES. 1989. World Underneath: The Origins, Dynamics and Effects of the Informal Economy. IN The Informal Economy: Studies in Advanced and Less Developed Countries. (Eds.) A. Portes, M. Castells, and L. Benton. Baltimore: John Hopkins University Press. 11-37
- CHRISTALLER, WALTER. 1966. Central Places in Southern Germany. New Jersey: Englewood Cliffs.
- CONKLING, E.C. 1963. South Wales: A Case Study in Industrial Diversification. IN Economic Geography, Vol. 39: 258-272.
- CONVERSE, JEAN M. and STANLEY PRESSER. 1986. Survey Questions: Handcrafting The Standardized Questionnaire. Beverly Hills: Sage Publications.
- DANESH, ABOL HASSAN. 1991. The Informal Economy: A Research Guide. New York: Garland Publishing.
- DANYSK, CECILIA. 1995. Hired Hands: Labour and the Development of Prairie Agriculture, 1880-1939. Toronto: McClelland and Stewart Inc.
- DAVIS, CRAIG H. and LAUREN E. DAVIS. 1987. The Local Exchange Trading System: Community Wealth Creation within the Informal Economy. IN Plan Canada, Vol. 27: 238-245.
- DENNIS, WILLIAM J. JR. 1996. Self-Employment: When Nothing Else is Available? IN Journal of Labor Research, Vol. XVII (4): 645-661
- DICKEN, PETER and PETER E. LLOYD. 1990. Location in Space: Theoretical Perspectives in Economic Geography. New York: Harper Row Publishers.
- DICKENSON, R.E. 1947. City, Region and Regionalism. London: Routledge & Kegan Paul
- DILLMAN, DON A. 1941 c1978. Mail and telephone surveys: the total design method. New York: Wiley.
- DUNCAN, CYNTHIA M. 1992. Persistent Poverty in Appalachia: Scarce Work and Rigid Stratification. IN Rural Poverty in America. (Ed.) C. Duncan. New York: Auburn House. 111-134
- EVENDON, L.J. 1980. Regionalism and the Cognitive Hierarchy of Towns. IN Regional Studies, Vol. 14: 473-490.
- EBDON, DAVID. 1988. Statistics in Geography. Blackwell: Oxford.

- FELT, F. LAWRENCE, KATHLEEN MURPHY and PETER R. SINCLAIR. 1995. Everybody Does It: Unpaid Work and Household Reproduction. IN Living on the Edge. University of Newfoundland: Institute of Social and Economic Research.
- FINDEIS, JILL L. LEIF JENSEN and GRETCHEN CORNWELL. 1993. Rural Employment Alternatives: Wage Work Versus Self-Employment and Participation in the Informal Economy.
- FITCHEN, JANET M. 1981. Poverty in Rural America: A Case Study. Boulder: Westview. 1991. Endangered Spaces, Enduring Places. Boulder: Westview.
- FREY, JAMES H. 1989. Survey research by telephone. Newbury Park: Sage Publications.
- FULLER, TONY and RAY D. BOLLMAN. 1992. Farm Family Linkages to Non-Farm Sector: The Role of Off-farm Income of Farm Families. IN Rural and Small Town Canada. (Ed.) Ray D. Bollman. Toronto: Thompson Educational Publishing Inc. Ch. 11
- FULLER, TONY, PHILLIP EHRENSAFT and MICHAEL GERTLER. 1989. Sustainable Rural Communities in Canada: A Discussion Paper. Saskatoon: First Rural Policy Seminar.
- GALPHIN, C.J. 1918. Rural Life. New York: Century
- GABER, JOHN. 1994. Manhattan's 14th Street Vendors' Market: Informal Street Peddlers' Complementary Relationship with New York City's Economy. IN Urban Anthropology, Vol. 23: 373-407.
- GERSHUNY, J.I. 1978. After Industrial Society?: The Emerging Self-service Economy. London: MacMillan.
1979. The Informal Economy: Its Role in Post-Industrial Society. IN Futures Vol.12: 3-15.
1983. Social Innovation and the Division of Labour. Oxford University Press.
- GERSHUNY, J.I. and I.D. MILES. 1983. The New Service Economy: The Transformation in Industrial Societies. London: Francis Printer Publishers.
- GERSHUNY, J.I. and R.E. PAHL. 1979. Work Outside Employment: Some Preliminary Speculations. IN New Universities Quarterly, pp. 121-135.
1980. Britain in the Decade of the Three Economies. IN New Society, Vol. 3: 7-9

- GERTLER, MICHAEL E. 1999. Sustainable Communities and Sustainable Agriculture on the Canadian Prairies. IN Community Processes for Sustainable Development. (Ed.) John Pierce. Vancouver: University of British Columbia. 121-139
- GOUDY, WILLIS J. 1990. Community Attachment in a Rural Region. IN Rural Sociology, Vol. 55: 178-198.
- GREEN, GARY P. and WILLIAM D. HEFFERNAN. 1986. Home Food Production in Rural Areas. IN Journal of Rural Studies, Vol. 2: 63-68.
- GREGORY, DEREK and JOHN URRY. 1985. Social Relations and Spatial Structures. New York: St. Martin's Press.
- GROVES, ROBERT M and ROBERT L. KAHN. 1979. Surveys by telephone: a national comparison with personal interviews. New York: Academic Press.
- HACKETT, STEVEN. 1998. Environmental and Natural Economics. New York: M.E. Sharpe Inc.
- HALPERIN, RHODA. 1996. Rethinking the Informal Economy: Implications for Regional Analysis. IN Research in Economic Anthropology, Vol. 17: 43-79.
- HARRIS, C.D. 1943. Functional Classification of Cities in the United States. IN Geographical Review, Vol. 33: 86-99.
- HAY, DAVID A. and GURCHARN S. BASRAN. 1992. Rural Sociology in Canada. Toronto: Oxford University Press.
- HEDLEY, MAX J. 1984. Relations of Production of the Family Farm: Canadian Prairies. IN Journal of Peasant Studies, Vol. 1: 71-83.
1985. Mutual Aid Between Farm Households: New Zealand and Canada. IN Sociologia Ruralis, Vol. XXV-1:27-39.
- HERBERT, DAVID T. and COLIN J. 1992. Cities in Space: City as Place. London: David Fulton.
- HODGE, GERALD. 1965. The Prediction of Trade Center Viability in the Great Plains. IN Regional Science Association, Vol. 15: 87-115.
- JENSEN, LEIF, GRETCHEN T. CORNWELL and JILL L. FINDEIS. 1995. Informal Work in Nonmetropolitan Pennsylvania. IN Rural Sociology, Vol. 60: 67-107.

- JOHNSTON, R.J., DEREK GREGORY and DAVID M. SMITH. 1992. The Dictionary of Human Geography. London: Blackwell Reference.
- KING, LESLIE J. 1984. Central Place Theory: Scientific Geography Series. London: Sage Publications.
- LAVRAKAS, PAUL J. 1987. Telephone survey methods : sampling, selection and supervision. Beverly Hills: Sage Publications.
- DAVID S. LIEBL and DANA R. FISHER; ANDREWS, E.; CAMPELLL G.; HAAS, K.; KLEMME, R.; MILLER, M.; PETERSON, M.; PINKOVITZ, B.; WENGERT, G. 1998. Indicators of Community Sustainability. University of Wisconsin
- LIPSIG-MUMME, CARLA. 1983. The Renaissance of Homeworking in Developed Countries. IN Relations Industrielles, Vol. 38 : 545-567.
- LOBAO, LINDA. 1996. Sociology of the Periphery Versus a Peripheral Sociology : Rural Sociology and the Dimension of Space. IN Rural Sociology, Vol. 61: 77-102.
- LOZANO, BEVERLY. 1989. The Invisible Work Force. New York: The Free Press.
- LOSCH, AUGUST. 1954. The Economics of Location. New Haven: Yale University Press.
- LYSON, THOMAS A., GILBERT W. GILLESPIE and DUNCAN HILCHEY. 1995. Farmer's Market and Local Communities: Bridging the Formal and Informal Economy. IN American Journal of Alternative Agriculture, Vol. 10: 108-113.
- MACAVOY, PAUL W. 1979. The Regulated Industries and the Economy. New York: W.W. Norton & Company.
- MACKENZIE, SUZANNE. 1987. Neglected Spaces In Peripheral Places: Homeworkers and the Creation of a New Economic Centre. IN Cahiers De Geographie Du Quebec, Vol. 31 : 247-260.
- MADDEN, C.H. 1956. Some Indicators of Stability in the Growth of Cities in the United States. IN Economic Development and Cultural Change, Vol. 4: 236-252.
- MARSHALL, JOHN U. 1975. City Size, Economic Diversity and Functional Type: The Canadian Case. IN Economic Geography, Vol. 51: 39-49.
1977. Christallerian Networks in The Loschian Economic Landscape. IN Professional Geographer, Vol. XXIX: 153-159.

1981. Industrial Diversification in the Canadian Urban System. IN Canadian Geographer, Vol. XXV: 316-332.
1989. The Structure of Urban Systems. Toronto: University of Toronto Press.
- MAXWELL, J.W. 1965. The Functional Structure of Canadian Cities: A Classification of Cities. IN Geographical Bulletin, Vol. 7: 79-104.
- MCCANN, LARRY D. and PETER J. SMITH. 1991. Canada Becomes Urban: Cities and Urbanization in Historical Perspective. IN Canadian Cities in Transition, (Eds.) Trudi Bunting and Pierre Filion. Toronto: Oxford University Press. 69-99
- MINGIONE, ENZO. 1981. Informalization, Restructuring and Survival Strategies of the Working Class. IN International Journal of Urban and Regional Research, Vol. 7: 311-339.
1981. Social Conflict and the City. New York: St. Martin's Press.
1985. Social Reproduction of the Surplus Labour Force: The Case of Southern Italy. IN Beyond Employment. (Eds.) N. Redcliffe and E. Mingione. New York: Basil Blackwell. 14-15
1991. Fragmented Societies. Massachusetts: Basil Blackwell.
- MORRIS, LYDIA and SARAH IRWIN. 1993. Unemployment and Informal Support: Dependency, Exclusion, or Participation. University of Essex: British Sociological Association.
- NELSON, H.J. 1955. Service Classification of American Cities. IN Economic Geographer, Vol. 31: 189-210.
- NELSON, M. 1999. Economic restructuring, gender and informal work: A case study of rural county. IN Rural Sociology, Vol 64. No.1: 18-43.
- NOZICK, MARCIA. 1992. No Place Like Home: Building Sustainable Communities. Ottawa: Canadian Council of Social Development.
- OERTON, SARAH. 1996. Beyond Hierarchy: Gender, Sexuality and the Social Economy. Great Britian: Taylor and Francis.
- O'KELLY, M. 1996. Agricultural Location Theory: Von Thunen's Contribution to Economic Geography. IN Progress in Human Geography Vol. 20: 457-475

- ORISHIMO, ISAO. 1982. Urbanization and Environmental Quality. Boston: Nijhoff Publishing.
- PAHL, R.E. 1970. Patterns of Urban Life. London: Longmans.
1984. Division of Labour. New York: Basil Blackwell.
1988. On Work: Historical Comparative and Theoretical Approaches. New York: Basil Blackwell.
1988. Some Remarks on Informal Work, Social Polarization and Social Structure. IN International Journal of Urban and Regional Research, Vol. 12: 247-267.
- PAHL, R.E., R. FLYNN and N.H. BUCK. 1983. Structures and Processes of Urban Life. New York: Longman Group Limited.
- PARR, J.B. 1969. City Hierarchies And The Distribution Of City Size: A Reconsideration of Beckman's Contribution. IN Journal of Regional Science, Vol. 9: 239-253.
1978. Models of Central Place System: A More General Approach. IN Urban Studies, Vol. 15: 35-49.
1979. Regional Economic Change and Regional Spatial Structure: Some Interrelationships. IN Environmental and Planning, Vol. 11: 825-837.
- PAYNE, JOAN and CLIVE PAYNE. 1993. Unemployment and Peripheral Work. IN Work Employment and Society, Vol. 7: 513-534.
- PECK, JAMIE. 1996. Work Place: The Social Regulation of Labor Markets. New York: The Guilford Press.
- POLANYI, KARL. 1944. The Great Transformation: The Political and Economic Origins of Our Time. Boston: Beacon Press.
- PORTES, ALEJANDRO, MANUEL CASTELLS, and LAUREN A. BENTON. 1989. The Informal Economy: Studies in Advanced and Less Developed Countries. Baltimore: The John Hopkins University Press.
- PORTES, ALEJANDRO and RICHARD SCHAUFFLER. 1993. Competing Perspectives on the Latin American Informal Sector. IN Population and Development Review, Vol. 19: 33-60.
- PORTES, ALEJANDRO and SASKIA SASSEN-KOOB. 1987. Making It

- Underground: Comparative Material On the Informal Sector in Western Market Economies. IN American Journal of Sociology, Vol. 93: 30-61.
- PRESTON, RICHARD E. 1979. The Recent Evolution of Ontario Central Place Systems In Light Of Christaller's Concept of Centrality. IN Canadian Geographer, Vol. 3: 201-221.
1985. Christaller's Neglected Contribution to the Study of the Evolution of Central Places. IN Progress in Human Geography Vol.9: 177-193
1991. Central Place Theory and the Canadian City. IN Canadian Cities in Transition. (Eds.) Trudi Bunting and Pierre Filion. Toronto: Oxford University Press.
- RAUCH, JAMES E. 1991. Modeling the Informal Sector Formally. IN Journal of Development Economics, Vol. 35: 33-47.
- RAY, MICHAEL. 1969. The Spatial Structure of Economic and Cultural Differences: A Factorial Ecology of Canada. IN Regional Science Association, Vol. 23: 7-23.
- REIMER, BILL. May, 1995. Informal Social Networks in Non-Metropolitan Canada. Concordia University: Department of Sociology and Anthropology.
- RICHARDS, J. HOWARD AND KA IU FUNG. 1969. Atlas of Saskatchewan. Saskatoon: University of Saskatchewan
- ROBERTS, BRYAN. 1994. Informal Economy and Family Strategies. Basil Blackwell Ltd.
- ROBINSON, KRYSTYNA. 1968. Central Place Theory 1: A Review. London: Centre for Environmental Studies.
- ROSS, DAVID P. and PETER J. USHER. 1986. From The Roots Up: Economic Development as if Community Mattered. Toronto: James Lorimer & Company.
- ROUNDS, RICHARD C. 1997. Changing Rural Institutions. Brandon: Canadian Restructuring Foundation.
- SASSEN-KOOB, SASKIA. 1989. New York City's Informal Economy. IN The Informal Economy: Studies in Advanced and Less Developed Countries. (Eds.) A. Portes, Manuel Castells and Lauren A. Benton. Baltimore: Johns Hopkins University Press. 60-77
- SAYER, ANDREW and RICHARD WALKER. 1992. The New Social Economy: Reworking the Division of Labor. Cambridge: Blackwell.

- SCHUMAN, HOWARD and STANLEY PRESSER. 1981. Questions and Answers in Attitude Surveys. Toronto: Harcourt Brace Jovanovich.
- SMITH, NEIL. 1986. Gentrification, the Frontier, and the Restructuring of Urban Space. IN Gentrification of the City. (Eds.) Neil Smith and Peter Williams. Eds. Boston: Allen and Unwin:15-34
- SMITH, PHILLIP. May, 1994. Assessing the Size of the Underground Economy: The Statistics Canada Perspective. IN Canadian Economic Observer, Cat. No. 11-01: 3.16-3.33
- SMITH, TOM W. 1987. That Which We Call Welfare By Any Other Name Would Smell Sweeter. IN Public Opinion Quarterly, Vol. 51: 75-88.
- SHARPE, BOB. 1988. Informal Work and Development in the West. IN Progress in Human Geography, Vol. 12: 315-336.
- STABLER, JACK C. 1986. Branch Line Abandonment and Prairie Towns: One More Time. IN Canadian Journal of Regional Science, Vol. 9: 207-219.
- 1987a. Trade Center Evolution in the Great Plains. IN Journal of Regional Science, Vol. 27: 225-244.
- 1987b. Non-Metropolitan Population Growth and the Evolution of Rural Service Centres in the Canadian Prairie Region. IN Regional Studies, Vol. 21: 43-53.
- STABLER, JACK C. and M.R. OLFERT. 1992. Restructuring Rural Saskatchewan: The Challenge of the 1990s. Regina: Canadian Plains Research Center.
1996. The Changing Role of Rural Communities in an Urbanizing World. Regina: Canadian Plains Research Center.
2000. On Everybody's Minds/Mouths. IN Skylines: Newsletter of the Saskatchewan Economic Developers Association.1-54
2002. Saskatchewan's Communities in the 21st Century: From Places to Regions. Regina. Canadian Plains Research Center.
- STABLER, JACK C., M.R. OLFERT and MURRAY FULTON. 1992. The Changing Role of Rural Communities in an Urbanizing World: Saskatchewan 1961-1990. Regina: Canadian Plains Research Center.
- STANBACK, T.M. Jr. and R.V. KNIGHT. 1970. The Metropolitan Economy: The

- Process of Employment Expansion. New York: Columbia University Press.
- STANDING, GUY. 1989. Global Feminization through Flexible Labor. IN World Development, Vol. 17: 1077-1095.
- STATISTICS CANADA. 1986. (2b) Detailed Questionnaire, Provinces to Municipalities
<http://estat.statcan.ca/>
1991. (2b) Detailed Questionnaire, Provinces to Municipalities
<http://estat.statcan.ca/>
1996. Community Profiles
<http://www12.statcan.ca/english/Profil/PlaceSearchForm1.cfm>
1996. Canada's Workforce: Unpaid Work - Metropolitan Areas and Census Agglomerations
<http://www12.statcan.ca/english/census01/products/standard/themes/>
- STELENYI, I. 1981. Structural Changes and Alternatives to Capitalistic Development In the Contemporary Urban and Regional System. IN International Journal of Urban and Regional Research, Vol. 5: 1-14.
- SWEDBERG, RICHARD. 1990. Economics and Sociology: Redefining Their Boundaries: Conversations With Economists and Sociologists. Princeton: University Press.
- TANZI, VITO. 1982. The Underground Economy in the United States and Abroad. Toronto: Lexington Books.
- THE GOVERNMENT OF CANADA. 1994. Farm Employment Handbook. Ottawa: Agriculture Employment Services.
- THOMAS, J.J. 1992. Informal Economic Activity. Michigan: The University of Michigan Press.
- TICKAMYER, ANN R. 1996. Sex, Lies and Statistics: Can Rural Sociology Survive Restructuring? (or) What is Right with Rural Sociology and How Can We Fix It? IN Rural Sociology, Vol. 61, No. 1: 5-24.
- TICKAMYER, ANN R. and TERESA A. WOOD. 1998. Identifying Participation in the Informal Economy Using Survey Research Methods. IN Rural Sociology, Vol. 63, No. 2: 323-339.
- TIMBERG, THOMAS. 1995. Review Article: The Poor versus the Disfranchised: Welfare

versus Empowerment. IN Economic Development and Cultural Change, Vol. 43, Issue 3: 651-662

TOKMAN, VICTOR E. 1992. Beyond Regulation: The Informal Economy in Latin America. Boulder: Lynne Rienner Publishers.

TREMBLAY, MARC-ADELARD and WALTON J. ANDERSON. 1970. Rural Canada in Transition. Ottawa: Agricultural Economics Research Council of Canada.

TRESS, R.C. 1938. Unemployment and the Diversification of Industry. IN Manchester School of Economic and Social Studies, Vol. 9: 140-152.

WHITE, ROGER W. 1974. Sketches of a Dynamic Central Place Theory. IN Economic Geography, pp. 218-227.

1977. Dynamic Central Place Theory: Results of a Simulation Approach. IN Geographical Analysis, Vol. IX: 226-243.

YADONG, LUO 2002 Multinational Enterprises in Emerging Markets Copenhagen : Copenhagen Business School Press

ZIPH, G.K. 1949. Human Behavior and the Principle of Least Effort. Massachusetts: Addison-Wesley.

ZUNKIN, SHARON and PAUL DIMAGGIO. 1990. Structures of Capital: The Social Organization of the Economy. New York: Cambridge University Press.

APPENDIX A

Focal Goods and Services Telephone Questions

Paul Andre Tremblay
Supervisor: Dr. Jim Randall

Interviewer Statements for Informed Consent

Introductory Statement:

Good-evening/morning/afternoon.

My name is _____.

I am conducting Master's Thesis research for the Department of Geography at the University of Saskatchewan.

This research focuses on the ways in which you and other people within six Saskatchewan communities acquire goods and services.

The purpose of this research is to better understand how the economies of cities and towns in Saskatchewan really work.

I was wondering if you could spare ten minutes of your time to answer a few questions on how your household obtains various goods and services.

Confidentiality Statement:

Before I start, I would just like to let you know that all the information gathered in this interview is strictly confidential and your name, household address and phone number will not be released to anyone at any time.

As well, all answers will be safeguarded and securely stored at the Department of Geography as required by University of Saskatchewan regulations.

The results of this interview will only be used as part of a larger group of respondents within a thesis and possibly in future journal publications or conference presentations.

If you feel uncomfortable answering any of the following questions please ask me to skip to the next question.

Community Service

This first set of questions relates to community-based services that may be available in your community (mention the place specifically).

- 1) Do you have a community watch program within your community?
 - a) yes
 - b) no
 - c) don't know

- 2) In the summer where would you or your family most likely go swimming?
 - a) pool on your property
 - b) pool owned by a neighbor or friends
 - c) community pool within your community
 - d) community pool in another community
 - e) we don't swim
 - f) other please specify

Transportation

The next set of questions deals with different means of transportation that you and your family use during everyday life.

- 3) Do you own a vehicle?
 - a) yes
 - b) no (If no, then skip to question #9)

- 4) How many vehicles do you own?

- 5) How did you get your vehicles?
 - a) private sale
 - b) trade
 - c) from a local dealership or used car lot
 - d) from a non local dealership or used car lot
 - e) other (please specify)

- 6) Who usually changes the oil?
 - a) yourself or another household member
 - b) a friend or relative
 - c) local garage or dealership
 - d) a garage or dealership out of town
 - e) other (please specify)

- 7) If new brakes were required on your vehicle, who would replace them?
- a) yourself or another household member
 - b) a friend or relative
 - c) local repair shop or dealership
 - d) a repair shop out of town
 - e) other (please specify)
- 8) How is your car usually washed and waxed?
- a) by yourself or another family member
 - b) by a friend or neighbor
 - c) at a manually operated coin op car wash
 - d) at a full service car wash/detail facility
 - e) other (please specify)
- 9) What is your occupation? (If retired or unemployed, skip to question #12)
- 10) Is your household your place of work?
- a) yes
 - b) no (If no, skip to question #12)
- 11) How do you usually travel to work?
- a) drive
 - b) utilize public transportation
 - c) get a ride with another driver
 - d) walk/bike
 - e) a combination of the above options (which ones specifically)
 - f) other (please specify)

Household Maintenance

The next set of questions is related to housing, household maintenance and repair.

- 12) Do you own your home?
- a) yes
 - b) no (If no, skip to question #19)
- 13) If you were going to sell your home what is the most likely way you would do it?
- a) a local real estate agency
 - b) an out of town real estate agency
 - c) sell it privately
 - d) other (please specify)
- 14) Are you the original owner of your house?
- a) yes
 - b) no (If no, skip to question #16)

- 15) Did you?
- a) build the house yourself
 - b) get most of the help from family and friends
 - c) employ a local construction company or contractor
 - d) employ a construction company or contractor from out of town
 - e) buy a developed off -sight prefabricated house
 - f) buy a developed off-sight prefabricated house from out of town
 - g) other (please specify)
- 16) When interior renovations are required (e.g., painting, wallpapering) for your home, how would the renovations usually be completed?
- a) yourself or another household member
 - b) utilize the help of a non household member (family/friends)
 - c) employ contractors/renovators
 - d) other (please specify)
- 17) When exterior repairs are required for your home (e.g., painting, roofing, paneling, stuccoing etc . . .), how would the renovations be completed?
- a) yourself or another household member
 - b) utilize the help of friends or neighbors
 - c) employ contractors/renovators
 - d) other (please specify)
- 18) How would you most likely attain building materials (lumber)?
- a) lumber yard (e.g., Beaver, Home Depot)
 - b) by cutting and milling it yourself
 - c) by buying privately
 - d) by obtaining it through trade
 - e) other (please specify)
- 19) When your rugs need to be cleaned in your home how are they usually cleaned?
- a) you rent a steamer and do it yourself
 - b) you borrow a steamer from family or friends
 - c) a rug cleaning company
 - d) a rug cleaning company from out of town
 - e) you own your own rug steamer and do it yourself
 - f) your superintendent or landlord cleans them
- 20) Who cuts the grass and maintains the lawn at your home?
- a) no lawn
 - b) yourself or another household member
 - c) a neighbor or friend
 - d) lawn care service
 - e) your superintendent or landlord
 - f) other (please specify)

- 21) Who would do the majority of plumbing repairs in your house?
- a) yourself or another family member
 - b) a professional plumber
 - c) a friend or neighbor
 - d) landlord or superintendent
 - e) other (please specify)
- 22) If your lawn mower was in need of repair, who would perform the repairs?
- a) yourself or another household member
 - b) a friend or neighbor
 - c) garage or dealership
 - d) other (please specify)
 - e) don't own a mower
- 23) If your T.V. broke, who would fix it?
- a) yourself
 - b) family member or friend
 - c) a repair shop in town
 - d) a repair shop out of town
 - e) other (please specify)
- 24) If your toaster broke, how would it get repaired?
- a) you or a household member would fix it
 - b) take it to a kitchen appliance repair shop
 - c) get new toaster
 - d) other (please specify)

Household Goods and Services

- 25) On average, how many times do you eat out at a restaurant per week?
- a) more than two times a week
 - b) twice a week
 - c) once a week
 - d) less than once a week
 - e) never
- 26) Who performs the majority of housekeeping duties in your household?
- a) a member of your household
 - b) a paid maid/housekeeper
 - c) cleaning service
 - d) other (please specify)
- 27) Does anyone in your household make beer or wine?
- a) yes
 - b) no

- 28) Does anyone in your household sew or knit for family or friends?
a) yes
b) no
- 29) If you have alterations or repairs (buttons, patches, hems) that need to be made to your clothing do you:
a) fix it yourself
b) have another household member or friend fix it for you
c) take it to a tailor/seamstress
d) other (please specify)
- 30) What is the gender of this person?
a) male
b) female
- 31) Does anyone in your household develop photo film?
a) yes
b) no
- 32) What is the gender of this person?
a) male
b) female
- 33) Who usually cuts or styles your household members' hair?
a) barber
b) a family member
c) other (please specify)
- 34) Do you have a vegetable garden?
a) yes
b) no
- 35) Does anyone in your household restore or refinish furniture?
a) yes
b) no
- 36) What is the gender of this person?
a) male
b) female
- 37) Does anyone in your home bake bread?
a) yes
b) no
- 38) What is the gender of this person?
a) male
b) female

- 39) Does anyone in your home preserve fruits, vegetables, pickles, or jams?
a) yes
b) no
- 40) Where do you get most of your books?
a) buy them new
b) borrow from a library
c) borrow from family/friends
d) trade or buy at the used book store
e) a combination of the above options (which ones specifically)
f) other (please specify)

Children

The following set of questions is based on youth and health related topics.

- 41) Do you have children 17 years old or under?
a) yes
b) no (If no, skip to question #46)
- 42) How many children do you have?
- 43) Are your children are young enough to require childcare during the daytime hours?
a) yes
b) no (If no, skip to question # 45)
- 44) How is this care usually provided?
a) stay at home parent
b) unpaid care from relative or friends paid day care
c) a paid nanny/babysitter
d) daycare facility
e) other (please specify)
- 45) Where do your children attend school?
a) a school in your community
b) a school in another community (please specify)
c) they are home schooled
d) a combination of the above options (which ones specifically)
e) other (please specify)

Health

- 46) Do any adults (e.g., elderly/disabled) from your household require extra personal care or assistance for medical reasons? (bathing, feeding, changing dressings)
a) yes
b) no (If no, skip to question #48)

- 47) How are their needs usually met?
- a) nursing home/care facility within community
 - b) nursing home/care facility outside of community
 - c) unpaid care provided by another family member or friend
 - d) other (please specify)
- 48) For minor medical problems such as flu/cuts/sprains do you usually:
- a) consult a physician at a medi-clinic, doctors' office hospital in your community
 - b) consult a physician at a medi-clinic, doctors' office hospital outside of your community
 - c) attend to it at home
 - d) other (please specify)

Financial

The following section deals specifically with personal finances and other money related issues.

- 49) Which of the following yearly income categories do you fit in (ask them to name letters only e.g. A or C etc...)
- a) less than 20,000
 - b) \$20,000-\$40,000
 - c) \$40,000-\$60,000
 - d) \$60,000 and over
- 50) Where would you most likely turn for extra money if you were in need?
- a) personnel savings/ cashing in stocks and bonds
 - b) a local bank
 - c) bank in another community
 - d) local Credit Union
 - e) relations/friends
 - f) a combination of the above options (which ones specifically)
 - g) other (please specify)
- 51) How are your tax returns calculated?
- a) tax accounting service (e.g., H&R Block)
 - b) you calculate them yourself
 - c) family/friend calculates them without cost to you
 - d) a self-employed accountant
 - e) other (please specify)
- 52) If you were in need of legal advice where would you go?
- a) family or friend
 - b) a lawyer in your town
 - c) a lawyer from another community
 - d) other (please specify)

53) Do you barter or trade goods or services with other households or businesses? (Example: I mow your lawn, you give me garden vegetables.)

- a) no
- b) yes (if yes explain)

What type of good or service did you provide:

What type of good or service did you receive:

General

Finally, I have a few general questions to ask you.

54) Which of the following age categories do you fit in (ask them to name letters only e.g. A or C etc...)

- a) 15-19
- b) 20-29
- c) 30-44
- d) 45-59
- e) 60 and over

55) How many people currently live in your household?

Post Interview Statement:

Thank you for participating in this interview.

Your input was very valuable to this research.

Have a good day/evening.