

*The Effects of the Knowledge Economy on Women and Resource
Dependent Communities in Northern Ontario*

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Abstract

Historically women have often been confined to the home while their husbands were expected to earn a living to support their families. This was particularly true in resource communities as little job diversity existed, particularly for women, as the forestry and mining sectors have always been male dominated. These gender roles however are changing as we move into a post-industrial era characterized by the advancement of the knowledge economy. The knowledge economy is defined by the shift from an economy centered on the production of goods to the production and distribution of knowledge. While the changes associated with this are widespread the effect this will have on those communities established specifically for the exploitation of resources in industrial society and the women residing there are likely to vary from larger more diversified locations. The purpose of this research is to contribute to a greater understanding of how the changing economy has affected women's roles in the labour force and the home in the Northern Ontario communities of Atikokan, Hearst, Hornepayne and Red Rock through the analysis of census data from 1981 to 2006 and the personal accounts of 12 key informants via semi-structured interviews from the communities listed above. The interview participants were aware of the changes in their economy, particularly the high levels of unemployment and the decline in population. Census data confirms that these communities have experienced a change in the occupational structure of the communities as well as a declining population. With the increase in importance placed on education in these communities, women are becoming more involved in some areas of the economy but have experienced a decline in others with interview participants reporting little change in women's roles in the community. This thesis then concludes with recommendations for areas requiring further research.

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Chapter 1 - Introduction

Resource communities were established in Northern Ontario for the exploitation of the region's resources, particularly forestry and mining. These forms of employment have historically been characterized as a solely masculine domain. Due to a lack of economic diversity outside of the resource sector this left few employment opportunities for women in these communities. By the 1990s monopoly on employment in the resource sector by men was thought to be undergoing change as women began attaining employment in this industry and the secondary sector underwent expansion (Dunk 2002).

Post-industrial society emerged in the years following the Second World War (Bell 1973) which was then followed by the advancement of the knowledge economy which has brought about global change as the driving forces of the economy have shifted. While industrial society was characterized by the production of goods and reliance on tangible materials and manual labour, the knowledge economy is concerned with the creation, circulation and exploitation of knowledge (Carlaw, Oxley, Walker, Thorns & Nuth 2006). While these defining characteristics are not overly detailed the scope of the knowledge economy cannot be narrowed down to any one area. This thesis will focus on the areas of post-industrial society related to the economy, education and the changing role of women.

For the purpose of this thesis different characteristics of the knowledge economy will be focused on. The first is the shift from blue-collar jobs to white-collar occupations and the rising prominence of the service sector and how this change affects the populations of interest. The second is the increasing importance of educational attainment as a high school education is often no longer adequate in the current job market. The third characteristic of interest is the greater

involvement of women outside the home in paid employment as women take on more dominant roles in the labour market.

While the advancement of the knowledge economy has had widespread effects, this study focuses on the area of Northern Ontario, in particular the resource-dependent communities of Atikokan, Hearst, Hornepayne and Red Rock. The region of Northern Ontario was chosen for this research as it was largely developed for the exploitation of the regions resources in the industrial era (Southcott 2006) which has always been male dominated (Reed 2003). The experiences of women in these communities are likely to be quite different than those in urban areas due to the lack of economic diversity. While the high dependence on one economic sector is only one reason as to why Northern Ontario is known, particularly by its residents, to differ considerably from the rest of the province it is of principal concern in this thesis. This region, particularly the small resource communities, does not have the historical experience of adapting to a changing economy or the diversity that exists in larger locations to allow adjustment from one form of labour and production to another. Therefore it is of interest here to determine whether these communities have been affected by the knowledge economy and if so what form these changes have taken as it is possible that these communities will not be able to adapt and therefore be left behind in the new era.

The available literature on the economy of Northern Ontario leaves little doubt that changes are occurring. Research conducted by the North Superior Training Board among others outlines the socioeconomic changes that have occurred in the region. In the 2004 *Trends, Opportunities and Priorities (TOP) Report* the issues of youth out-migration, technological limitations, lack of training facilities and employment opportunities, loss of high paying jobs particularly in the resource sector, low levels of education held by residents and women's low

rate of participation in the higher paying occupations had been detected. By 2006 not only had these issues not been solved, but they had in fact intensified as growing numbers of individuals were finding themselves unemployed. In addition to the concerns previously outlined in the 2004 TOP Report was the issue of overall population decline as displaced workers were forced to look for employment elsewhere. This then resulted in a drop in demand for various “social services and programs, school enrolments, housing vacancies, retail and consumer services, community programs, and municipal tax revenues” (North Superior Training Board 2006: iv) as well as an increased reliance on food banks. Recommendations then changed from focussing on the reopening of mills to the need for greater diversification with less dependence upon the forest industry (North Superior Training Board 2006). By 2008 these trends had still shown no sign of slowing down (North Superior Training Board 2008).

Various explanations have been offered as to the causes of this forestry crisis. These include, but are not limited to, “global competition, a soft U.S. housing market, high electricity and other input costs, and the most recent surge in the Canadian dollar” (North Superior Training Board 2008). All of these effects are largely out of the control of the forest industry in Northern Ontario. This may have both direct and indirect effects on women in these communities. Those women who have been able to attain employment in the forestry sector are likely to experience unemployment as mills are forced to close or downsize. Other women may be affected through their husbands’ job loss or through layoffs in other companies as a result of the population decline associated with the forestry crisis.

With these changes that are occurring with the advancement of the knowledge economy, it is necessary to understand whether the situation of women is changing. In order to develop this understanding, this thesis examines this question through a mixed method technique of

qualitative and quantitative research. Interviews with 12 individuals from the four communities of Atikokan, Hearst, Hornepayne and Red Rock were conducted in an attempt to understand the changing situation of women in these communities. In addition census data were analyzed from 1981 to 2006 to determine how the economy, employment, education and women's roles in the home and workforce have changed over the last two and a half decades. These categories all relate to the knowledge economy and will therefore provide evidence as to the degree to which these communities and their residents have been affected by the changes in the global economy.

The knowledge economy and its effects on women's roles in Northern Ontario are examined throughout this thesis which consists of the following seven chapters: introduction, literature review, methods, analysis of census data, analysis of interviews, discussion and conclusion. The literature review examines the themes surrounding the traditional situation of women in resource dependent communities, the emergence of post-industrial society and the knowledge economy, how the economy is changing and the increasing role of the service sector, the myth of decentralization with the advancement of communication technologies, the effects on the resource industry, education and lifelong learning and how these have affected women's roles in resource-dependent communities. The changing role of women in resource communities both in the home and the workforce is examined to determine whether the knowledge economy has resulted in an expansion of their roles in these communities as it has in urban areas.

Chapter three outlines the advantages and limitations of a mixed method as well as the steps taken by the researcher during data collection. In the fourth chapter census data is analyzed from 1981 to 2006 for the categories of occupation, labour force activity, population, highest level of schooling and unpaid work to examine the gender shifts that are occurring. The occupational structure of the communities has changed during this time period; however, the

only category that increased for both genders from all four communities was management occupations. All other categories varied as to whether they increased or decreased by location and gender. Participation and employment rates were almost consistently higher for men than for women with the exception of Hornepayne in 2006. In terms of education there were fewer people in 2006 as compared to 1981 without a high school diploma and more who had completed their high school education as their highest level of schooling. Those with many of the other forms of higher education had also risen. Highest level of schooling is compared by gender for 2006 where females consistently have a lower percentage without a high school diploma and a higher percentage that have finished their high school education as their highest level of schooling than males while males consistently had higher numbers with a trades diploma or certificate than females.

In the fifth chapter the interview participants shared a common concern regarding the loss of jobs in their communities, both those locations where mills had closed and those where mills remained open. Participants believed that the local economy had begun to place greater importance on education as even general labourers at the mills are now often required to have a high school diploma. Participants also perceived women as having adopted a greater role in the labour force while men are taking on more responsibilities around the home. However, even though women have increased their participant rates in the workforce, the issues of gender inequality and discrimination still exist.

Chapter six compares the results from chapters four and five with the available literature on the topic. While prior research is in agreement with many of this study's findings there is a discrepancy regarding women's roles in resource communities between my own findings and those of some of the literature. My interview participants believed women had expanded their

roles beyond the home and men were beginning to share in the household responsibilities. While these findings were consistent with 2006 Census data other researches had not always found this to be the case (Reed 2003). Finally chapter seven provides an outline of the study's important findings as well as suggestions for future research.

Chapter 2 - A Review of the Literature

Resource Industry

Before the twentieth century the development of complete resource communities was rare; rather, work camps which were designed solely for men and provided few luxuries dominated. These camps initially employed mostly single men but would eventually expand to employ larger numbers of married men as well. These work camps were often not the men's home base therefore requiring them to commute to work. In the past, long-distance commuting entailed flying to the work camp, working long hours for a set period of days and then being flown home again. These work camps were used for both mining and forestry and did not entail the expense of developing a town as oftentimes these camps were "relatively impermanent, lasting from a few months to a few years, and frequently marked by a certain seasonality of operation" (Bowles 1992: 72). Resource communities have since become more common and characterize many communities in Northern Ontario.

It was these resource communities and the industries on which they are dependent that were most significantly affected by the economic changes associated with the knowledge economy, although the working class in the developed world in general was also affected. The pulp and paper industry has been an integral part of the Canadian economy since the early 1900s and a key employer in many small resource communities. However, due to a variety of factors, including technological advancements which made it difficult for older mills to compete, mill closures and layoffs became common in the late 1980s and early 1990s (Dunk 2002). This trend has continued right up until today as well paying jobs in resource industries become more and more scarce (North Superior Training Board 2006).

These mill closures and layoffs have significantly affected many communities in Northern Ontario. One crucial reason for this phenomenon is that a large number of these communities are single-industry towns dependent on either forestry or mining (North Superior Training Board 2006) and have been identified “on the basis that 30% or more of its labour force is in a single standard industrial classification” (Clemenson 1992: 153). These single-industry towns are characterized by their small size, their physical isolation and their dependence. In terms of population there are not many single-industry towns with more than 10,000 people. Many of them are physically isolated, particularly those classified as “new” single-industry towns as “opportunities for creating resource industries in or near established communities have decreased; therefore, the ‘resource frontier’ has moved further away from the established communities in the south” (Himelfarb 1982: 20). These “new” single-industry communities represent a shift away from the work camps of the past to organized communities with the greater involvement of the government and lower dependence on a single industrial employer. Finally, those residing in the community are dependent upon one employer which is usually a branch plant with its head offices located elsewhere. This dependence on one major employer has also changed to some degree with “new” single-industry towns as the government has become more involved in the development of these communities (Himelfarb 1982). A fourth characteristic outlined by Bowles (1992) is that single-industry towns tend to experience boom and bust cycles whereby they experience rapid rates of growth followed by decline and subsequently desertion of the community.

The resource communities of Northern Ontario were developed for the sole purpose of the exploitation of the region’s resources during the industrial era and, therefore, may not have the required resources or the diversity to adapt to a new economy (Southcott 2006). However,

many wood-based communities had undergone some degree of diversification by the mid-1980s to encompass another area of the resource sector such as mining (Clemenson 1992). The need for diversification to increase the sustainability of these communities became a concern following the recession in the 1980s as “if the economic base of a single industry community is threatened, whether by changes in the market (domestic or international), by depletion of a resource base, product substitution, technological change or other factors, the future of the entire settlement can be at risk” (Clemenson 1992: 155).

Women in Resource Communities

Women’s roles have historically been largely confined to the home. Even when females who are part of a nuclear family work outside of the home they are still “primarily responsible for domestic labour. This involves producing goods and services for the family’s use, such as cooked meals, clean clothes and a pleasant environment in the home” (Luxton 1980: 16). In addition, domestic labour also includes childbearing and childrearing. Women in the past often did not participate in the labour markets in resource-dependent communities, their responsibilities centred solely on the home. There were few occupational opportunities for women of any age as available jobs were often geared toward men. The clerical and service jobs that were available for women were frequently not plentiful enough to meet the demand. Often women had to out-migrate from resource-dependent communities due to the lack of employment opportunities (Lucas 1971). In order to avoid out-migration, many females chose to marry young (Himelfarb 1982).

The Birth of Post-Industrial Society and a Knowledge Economy

The emergence of post-industrial society occurred at the end of the Second World War. This new era grew out of the trends dominating industrial society and contained aspects that were predicted by both St. Simon and Karl Marx. It was Daniel Bell that first explicitly proposed the idea of a post-industrial society in his book The Coming of Post-Industrial Society (1973). In it he traces the emergence of post-industrial society to the creation of the atom bomb and the spotlight this innovation placed on the field of science. This was followed in 1946 by the first digital computer which was in turn closely succeeded by thousands of newer more advanced models within the next decade.

Bell defines post-industrial society as “changes *in the social structure*, the way in which the economy is being transformed and the occupational system reworked, and with the new relations between theory and empiricism, particularly science and technology” (1973: 13). There are certain core characteristics that are associated with a post-industrial society, the first of which is the shift from an economy centered on the production of goods to one focussed on knowledge and the service sector. This shift to knowledge and services is accompanied by the rise in importance of the professional and technical sectors and the increasing significance placed on theoretical knowledge that leads to innovation. It is around theoretical knowledge that various aspects of society and the economy will revolve. Other defining features of post-industrial society include:

Affluence, urbanization, infant mortality rates of 10 to 15 per 1000, high female labour force participation, low fertility, decreased importance of family and traditional religions, increased importance of the state, long life expectancy, and, of course, a substantial change in the locus of economic activity (Fuchs 1979: 154).

For the purpose of this thesis the main components of interest are those that relate to the economy, knowledge, education and the changing role of women in resource communities.

Many of the defining characteristics of post-industrialism also relate to the knowledge economy, the difference being that post-industrial society encompasses not only the economy but also the political and cultural realms (Bell 1973). This increasing importance of knowledge and the emergence of a knowledge economy date back to the beginning on the 1970s. A common definition of the knowledge economy employed in the literature is “economies which are directly based on the production, distribution and use of knowledge and information” (Carlaw *et al.* 2006: 673) which has been made possible with the development of the Internet (Harris 2001). While this definition has been criticized for including everything and nothing it does appear to be the case that the knowledge economy does not only affect those fields classified under science and technology but all sectors of the economy to some degree (Beckstead & Gellatly 2004: 6).

While an all encompassing definition is difficult to obtain from the available literature, there are several characteristics that are associated with the knowledge economy that aid in a general understanding of the concept. It is thought by some that as the economy changes from one dependent on the production and sale of tangible goods to one where knowledge is power (Gera & Mang 1998) it will eliminate gender, economic and social inequality with the global distribution of knowledge to all (Gillespie & Robins 1989). It becomes necessary for industries to make optimum use of the intellectual capital held by their employees in order to compete in what has become a global economy. This is then accompanied by a rise in both the service economy and white-collar occupations (Wurzburg 1998). Greater importance is being placed on education and skills and women’s roles in the labour force are changing (Beckstead & Gellatly 2004).

A Changing Economy

Knowledge-based occupations can be classified into three general categories. The first category is professional occupations which employ those with high education and skill levels for a high wage. The second class is management occupations which are “characterized by high relative wages but with a lower proportion of persons who have completed university-level education” (Beckstead & Vinodrai 2003: 14). The final group is technical occupations whose employees receive a lower wage yet have high levels of education. Throughout the census periods from 1971 to 1996 professional occupations had the highest percentage of knowledge employees while management occupations experienced the highest overall growth (Beckstead & Vinodrai 2003).

When the Canadian economy is broken down into goods producing, market services, and the public sector all three are found to have contributed to the increase in knowledge-based occupations between 1971 and 1996. The sector with the highest level of knowledge intensity throughout this period was the public sector which includes numerous occupations classified as knowledge-based such as doctors and university professors. However, the goods producing and market services sectors both experienced higher rates of growth, rising by 8% and 7% respectively (Beckstead & Vinodrai 2003).

The knowledge economy is often regarded as synonymous with information and communication technology (ICT). The ICT sector provided the necessary advancements in technology for the Internet and other forms of digital service that have enabled the global expansion of the knowledge economy. These innovations have provided “the means to access, process and distribute vaster amounts of data and information than ever before imagined” (Clarke 2001: 192). This sector experienced rapid growth in the 1990s in Canada. However,

while it increased by 31% in the decade following 1987 it still only makes up a moderate proportion of the total Canadian economy (Beckstead & Gellatly 2004).

The increased use of technology and greater importance placed on research and development has been seen by some as evidence that the economy is changing (Beckstead & Vinodrai 2003). It is these advances in technology and innovation that led to Castells' theory of the network economy. According to Castells, an information technology revolution took place in the 1970s which "altered the organisation of social and economic life in many parts of the globe ... [as] more and more dimensions of economic and social interaction are based on flows of capital, information and symbols through networks, especially electronic networks" (Tonkiss 2006: 43-44). This new economy is characterized by the global electronic "flow" of both information and finance. The network economy not only transcends the boundaries of the nation-state but also deals with the distribution of knowledge rather than material commodities and has a non-hierarchical, decentralized and flexible structure. The economy has shifted from one that was centred on the trade of tangible goods to one which is dependent on the "flow" of financial capital through electronic networks (Tonkiss 2006).

While there may be little disagreement that we have moved into a post-industrial society, there is still debate as to whether this change is for the better. While there is no disputing the fact that new jobs will be created in the knowledge economy with the advancement of the ICT sector, there is concern that these jobs will not be sufficient to compensate for those that it will eliminate. Van der Besselaar (1997) provides three reasons as to why there may be an overall loss of jobs with the new economy. The first is the rationalising effect which refers to the process of replacing workers with machines. The second is the substitution effect whereby older technologies are replaced by newer versions making both the older technologies and associated

jobs obsolete. The final explanation given for job loss in the new economy is relocation.

Relocation is when the production of newer technologies occurs in locations other than where the older versions were produced which means that “technological change may therefore change the spatial distribution of employment” (van der Besselaar 1997: 375). Another factor affecting the location of available employment is that job losses are occurring in some occupations more than others (ibid).

As job requirements and availabilities change, “a qualitative problem arises because the new jobs demand other types of skills than did the lost jobs, and the changing demand for skills may result in degradation of work and/or in polarisation of the occupational structure” (van der Besselaar 1997: 374). In terms of compensating for these losses it has been argued that technological progress will lead to increased capital which will then enable the creation of other forms of employment for previously displaced workers (ibid).

Another consequence of the changing economy is in relation to income distribution. As the knowledge economy has advanced there has been a rise in income inequality on a global scale. At least part of this growth can be attributed to the decline of the middle class due to fewer high quality, well paying jobs (Winson & Leach 2002; Lin 2007) which in Northern Ontario would include the forest industry.

While the knowledge economy did not emerge until the 1970s, changes in occupational structure were evident long before. Baum (1977) makes comparisons between labour force statistics from 1910 and 1967 during which time an economic shift was already evident. Those 57 years saw a 26% decline in those engaged in agricultural occupations and a 25% increase in those in professional, managerial or other white-collar occupations while the percentage of the

labour force in blue-collar and service jobs remained fairly stable. These constant statistics for blue-collar work would begin to change however in the 1970s with industrial restructuring that negatively impacted the working class.

The shift from blue-collar work to white-collar occupations has led some to attempt to classify entire industries as either knowledge-based or not. However, this classification is not possible as “there has been an increase in the level of knowledge intensity across all industry divisions, with the exception of the accommodation, food, and beverage services industry” (Beckstead & Vinodrai 2003: 33), with knowledge intensity being determined by the percentage of the working labour force in knowledge-based positions. The greatest overall increases of knowledge intensity between 1971 and 1996 “were seen in the logging and forestry (14%), wholesale trade (13%), finance and insurance (14%), and business services industries (10%)” (ibid). Of particular interest to this research were the high annual increase in knowledge intensity levels and the overall rise in the percentage of science-related professionals in many of the primary industries including logging and forestry and mining, quarrying, and oil wells (ibid).

Service Industry

The importance of the service sector was increasing by the 1960s and is commonly associated with the knowledge economy. The service sector is often loosely defined as “the tertiary industries, i.e. all those other than primary (e.g. agriculture, fishing, forestry) and secondary (manufacturing, mining, construction) industries” (Aarnio 1999: 383). Services are characterized as intangible, non-transferable, non-storable, and requiring direct contact with the customer (Aarnio 1999). Some examples of service industries include health-care services, business services, personal services, and engineering and architectural services (Rodie & Martin 2001).

The service sector is one area of the economy that is prospering in terms of job creation and contribution to the gross domestic product (GDP) in post-industrial society. By the 1960s the service industry contributed to over half of the GDP of the Organization for Economic Cooperation and Development (OECD) countries at which time this sector was most developed in the United States. Thirty years later the service sector would contribute 70 percent of the GDP and would employ a similar percentage of the population of the United States and many other developed countries (Aarnio 1999). This was also true for rural Canada as the service sector's share of the labour force grew from 65 to 70% between 1971 and 1986. By 1986 the service sector would constitute a greater proportion of the rural labour force than the goods producing sector (Trant & Brinkman 1992). The growth in the service industry is attributable to higher standards of living which allows for a greater disposable income as many of the products offered by this sector are considered extras and are therefore subject to change at the whims of the consumer population (Aarnio 1999).

Despite its large contribution to the GDP and employment opportunities in many developed countries, the service industry has been considered inferior in many ways to the manufacturing sector. It has been questioned "whether an excessively service-based economy can deliver sustained economic growth given the apparent slower productivity growth in services" (Aarnio 1999: 387). The manufacturing industry is associated with international trade and technological innovation and therefore perceived as necessary for producing exports needed to offset the cost of a country's imports. There is also concern that employment opportunities created in this sector will be of lower quality than those in manufacturing in terms of income and skill requirements. While manufacturing jobs tend to be full-time positions with benefits, employment in services is more often on a temporary, part-time and contract basis with a high

turnover rate (Aarnio 1999). The increase in part-time work has led to the emergence of the involuntary part-time worker. These are individuals who are employed in part-time positions but desire full-time employment (Winson & Leach 2002).

The lower quality of jobs in the current economy will result in greater income gaps between the rich and the poor as well as between men and women, as women are often concentrated in these part-time, temporary and contract positions (Aarnio 1999). Those women who are employed in full-time positions often still earn significantly less than men employed full-time. This is also the case for part-time work; men in these positions on average earn more than women (Winson & Leach 2002). Income inequality by gender can be attributed to the services sector consisting of occupations which are either highly paid such as those in advertising or poorly paid such as those in the food industry. As with other sectors of the economy, women employed in services continue to earn less than men as women tend to be concentrated in the low paying service jobs while men tend to be located in those which are higher paying (Nelson & Lorence 1988).

There are some parts of the service industry that continue to be low-paying, with low skill requirements which are often associated with women, and easy, low cost access for new entrants into the industry (Rodie & Martin 2001) while other areas have become more closely associated with information technology (IT) which is a male dominated industry (Miozzo & Soete 2001). Alic (1997) distinguishes between these two types of service industries as either knowledge-based or tertiary. Knowledge-based services employ those with high levels of skills for high levels of pay, often require lifelong learning and usually involve the use of computers. Tertiary services employ those with low skill and education levels for low levels of pay, positions are often replaced by automation, and there is little opportunity for occupational advancement.

The service sector's extensive investments in information technology (Scott 1999) have led to its ownership "of most of the information technology systems" (Miozzo & Soete 2001: 163). These high technology services require telecommunications infrastructure for distribution, access to which is necessary for involvement in these services. Gaining access to both the network and information requires significant investment which cannot be met by all regions of the world (Miozzo & Soete 2001).

Services continue to grow as they are increasingly being traded internationally "even if this often requires the physical movement of consumers (consumer-mobility trade, e.g. tourism), or of service providers, which requires the establishment of production units in foreign countries" (Aarnio 1999: 385). It is now possible for companies to outsource jobs in the lower-skilled information technology positions (van den Besselaar 1997) such as data processing which is often associated with women's work. The increasing occurrence of outsourcing has been made possible by the increased global interconnectivity associated with the knowledge economy which allows employers to take advantage of the low labour costs in other countries (May 2000). Another variation of outsourcing that is occurring is in the 'brain drain' of Canadians to the United States knowledge-based industries (Beckstead & Vinodrai 2003).

Outsourcing work in the service sector is rather straightforward as unlike manufacturing jobs, it requires little preparation and investment in infrastructure (May 2000). Although outsourcing is a growing concern for many areas of Canada, it is unlikely that it will have many direct effects on the communities that are studied for this research, as it tends to be larger organizations located in urban centres that have the means of benefitting from outsourcing. Outsourcing also requires advanced use of information and communication technology which has not been developed as extensively in rural areas as it has in urban centres. Rural locations are

further disadvantaged as they are now forced to compete globally in attracting new businesses and investors to their communities (Clark *et al.* 1995).

As services move away from requiring the presence of both the producer and the consumer of the service in the same time and place, rural locations may be better able to compete in this sector by expanding their consumer base outside of a given community. As the importance of geographical proximity to clients' declines, rural communities may be able to attract businesses that were previously dependent exclusively on one population. This change could also be disadvantageous to rural locations as those services which are offered locally are now forced into competition with those in other areas (Rodie & Martin 2001).

Rural Areas and the Myth of Decentralization

A common topic in the literature relating to the knowledge economy and rural areas is that of equality and decentralization. This is the idea that geographical distance can now be transcended by means of electronic communication allowing everyone equal access to information and knowledge which underlie economic success in the new economy.

Theoretically, technological progress will not only alleviate the inequalities between regions, but also between rural and urban locations (Gillespie & Robins 1989). It is believed that telecommunications and information technology "will overcome traditional barriers of time and space and by improving remote access and reducing communications costs, will significantly enhance the competitiveness and viability of rural firms" (Clark, Ilbery & Berkeley 1995: 172).

While it remains plausible that technological advancements will result in global equality, there exists a great deal of literature that disagrees that this will result. For these researchers digital technologies, rather than rendering geographical location irrelevant, have instead created

new and more complex global varieties of social and developmental inequalities. On a micro-scale communication technologies and the information they possess are largely available only to those who have the financial capital to purchase it. Information is becoming more of a private commodity than a public right (Gillespie & Robins 1989).

One requirement for remaining competitive and successful in the knowledge economy is the ability to attract and retain individuals with high skill levels (Beckstead & Gellatly 2004). This may be particularly difficult for rural communities as knowledge-based occupations are often associated with urban areas. This predominance of communication technologies in core regions is “both in the concentration of infrastructure within them and in the uptake and utilization of available networks and services” (Gillespie & Robins 1989: 13). The infrastructure necessary for taking advantage of communication technologies is often acquired by rural regions significantly later than by urban regions as new innovations will initially be developed where the profit from the investment is highest (Berkeley, Clark & Ilbery 1996). A study conducted by Beckstead *et al.* (2003) was able to “demonstrate that employment in Canadian technology industries is highly concentrated in large urban centres, and that the geographic concentration of ICT activity has accelerated in recent years” (Beckstead & Gellatly 2004: 26).

Rural regions have been found to use communications technologies less than those in urban areas. These different levels of usage are problematic in that rural locations would actually need to use these technologies more than urban regions in order to compensate for their distance from markets and from the information/knowledge held by specialists in those areas. When these rural regions do make use of communication technologies however “the ‘space-binding’ bias of these networks tends more to favor the penetration of [these] peripheral regions by centrally located organizations” (Gillespie & Robins 1989: 13). While this could lead to

economic growth for the rural locations it could also result in the closure of locally owned businesses that find themselves unable to compete against a larger company (Berkeley, Clark & Ilbery 1996). These larger companies whose main office is located outside the community are unlikely to have the commitment to the community possessed by local business owners (Korsching & Allen 2004). This would be counterproductive in the attempt by rural locations to become/remain independent from the urban regions (Berkeley, Clark & Ilbery 1996). However, despite this possible outcome, technological progress is still seen as necessary for the advancement of a region (Gillespie & Robins 1989).

Another disadvantage for rural locations is in relation to knowledge spillovers. Despite the continued decline in communications and transportation costs, industries, those employing advanced manufacturing technologies, are still geographically concentrated. Due to this continued trend there are three “widely acknowledged advantages of regional agglomeration [which] are knowledge spillovers; specialized, skilled labour; and input sharing” (Marshall 1920 as cited in Yeo 2008: 13). Plants are more likely to adopt a new technology if they are in close geographical proximity to another similar plant which has previously adopted the same technology suggesting that communication and information sharing occurs between plants in the same region. When a potential adopter of technology is located in the same region as a previous adopter of the same technology, they can share information and determine whether that specific technology is the best choice in terms of costs and return on investment (Yeo 2008).

Another factor influencing technology adoption is having the ability to attain both information and resources from another branch location. Smaller companies or those that are Canadian owned are less likely to adopt new technologies than plants with numerous branches or that are foreign owned (Yeo 2008). While Northern Ontario may have some multi-plant

companies in the resource sector due to the vast resources available in the region, there are few, if any, knowledge-based multi-plant or foreign owned firms. This has put Northern Ontario at a disadvantage in terms of technology adoption and in attracting knowledge-based industries to the region.

Beckstead & Vinodrai (2003) found that the three provinces with the highest percentage of people employed in knowledge-based occupations (Ontario, Quebec and British Columbia) “are also home to Canada’s largest urban centres, as well as a number of small- and medium-sized cities while predominantly rural areas are often construed as being backwaters of the ‘new economy’” (39). However, beginning in the 1970s and continuing on through the 1990s the different levels of knowledge intensity between urban and rural locations in Canada decreased with the largest growth in knowledge intensity between 1971 and 1996 occurring in rural areas.

The Changing Economy and Resource Communities in Northern Ontario

Given the global changes that have been occurring with the emergence of a post-industrial society communities will need to adapt. For the resource communities in Northern Ontario that were developed for the sole purpose of resource exploitation during industrialism adaptation may be more difficult than it will for larger urban centres. The decline in the forest industry in Northern Ontario became particularly poignant at the beginning of the twenty-first century. In the two year period from 2001 to 2003 the District of Thunder Bay lost 500 jobs in the forestry sector. This loss was minimal compared to the nine months between September 2005 and June 2006 when more than 2,000 jobs were lost in forestry and mining in the Thunder Bay District. These closures not only affected the communities in which the mills were located but also other mills in the region as they are often interdependent (North Superior Training Board 2006).

The impacts of these mill closures and layoffs are not limited to the resource industry. In the Thunder Bay Census Management Area in 2006 there was one mill closure, one indefinite shut down of a production line and one mill became idle. This has resulted in other major companies choosing not to reinvest in their businesses due to the current economic uncertainty. Some businesses have been forced to lay off workers and many are not hiring new workers. Particular areas of the economy that have been affected are the Canadian Pacific intermodal, chemical suppliers, and those that provide other supplies and equipment to the forest industry (North Superior Training Board 2006). It was therefore proposed in a 2004 community action plan that in order to successfully compete and survive, communities in Northern Ontario needed to diversify their economies (North Superior Training Board 2004).

The closures and layoffs in the resource industry have not only impacted the economy but have also had various social implications. Population decline is a serious consequence of mill closures, particularly for those communities without a large population to begin with. From 1996 to 2001 the resource communities of Northern Ontario all underwent population decline (Southcott 2006: 24), with an overall decrease of 4.8%. Two of the Census Metropolitan Areas (CMAs) located within the region, Greater Sudbury and Thunder Bay, experienced the largest declines in population in Canada during this period at -6% and -3.7% respectively. Those communities that did see a population increase during this period were most often located in the southern part of the region or near an urban centre (Southcott 2006), while Northern Ontario's share of the total population of the province declined by 0.4% between the 2001 and 2006 Censuses. These declining numbers can be attributed at least in part to families having to look for work outside of the region (North Superior Training Board 2008).

Outmigration is the dominant solution employed for dealing with the economic difficulties that are occurring, but this may not be an option for everyone. According to Hollywood's (2002) paper on the British Mining Industry, due to the importance of the location of natural resources such as coal, when a mine closed in the past workers would migrate to another location for work. The location of natural resources such as iron ore and lumber are also important in Northern Ontario as the exploitation of these resources, at least initially, requires physical proximity. However, between the mid-1980s and 1990s over 200,000 jobs were lost in the British mining industry. Previously when a mine was shutdown, workers had the option of relocating to another site but with the steep decline in this industry this is often no longer an option and many are now remaining immobile despite unemployment. This is also true for Northern Ontario as the resource sector has experienced decline throughout the region.

Mining in Northern Ontario has not been impacted as heavily as the forestry sector. While mine closures have occurred, "mining exploration throughout the north is strong. According to the Ministry of Northern Development and Mines, the province's 43 operating mines generate almost \$1 billion in wages and salaries – mostly in Northern Ontario" (North Superior Training Board 2008: 12). As a result of the high levels of mining exploration and the retirement of many employed in this sector, thousands of new workers will need to be recruited. The areas of Northern Ontario that will likely be most affected by this trend are the northeast and parts of the northwest (North Superior Training Board 2008).

Many workers in Northern Ontario who have lost their jobs have found rotational employment in other areas, especially in Alberta. These rotational shifts allow employees, usually men, to go home between work periods as many families choose to remain behind instead of making a permanent move with the husband. However, "moving to where the work is

... will not be a good choice or even an option for all displaced workers” (North Superior Training Board 2006: iv).

Another social implication of the mill closures and layoffs in Northern Ontario is that of youth out-migration. This phenomenon has been identified by many communities in the region as a growing concern (North Superior Training Board 2004). While the out-migration of youth, those aged 15-29, is common it becomes an issue when those that leave are not being replaced by others of this age group coming into the community. The most common destination for out-migrating youth from both urban and rural locations is an urban centre within their home province (Southcott 2006).

Youth-outmigration has been a concern of resource communities in Northern Ontario since the end of World War II. During this time, resource industries in the region experienced high turnover rates as few of the young men who came to work had any intention of remaining for long. Then in the 1960s the issue of youth out-migration was extended to include those from the region who had to leave in order to acquire a postsecondary education and who were unlikely to return to the north. The solution for this was to ensure that youth had the option of remaining in the north for postsecondary schooling with the development and expansion of Lakehead University and Laurentian University. While the degree of concern has fluctuated over the decades, youth out-migration remains a significant issue for Northern Ontario (Southcott 2006).

Looking specifically at youth out-migration between the 1996 and 2001 Censuses shows that the rate at which the younger age groups are leaving the region is increasing. The rate of youth out-migration from 1971 to 1976 was 8.5%, from 1976 to 1981 it was 9.5%, from 1991 to 1996 it was 7.1%, and between 1996 and 2001 youth out-migration from Northern Ontario rose

to a staggering 18.3%. The three districts in Northern Ontario with steadily high rates of youth out-migration were Rainy River, Sudbury and Timiskaming (Southcott 2006). This overall rate of youth out-migration from Northern Ontario can be attributed to “challenges in gaining entry into well-paying permanent jobs and limited access to education and training in rural communities [which] serve to force our youth to explore opportunities in other parts of Ontario and elsewhere” (North Superior Training Board 2008: 8).

Overall, the industrial structure of Northern Ontario continues to vary significantly from the province as a whole. Northern Ontario has always had more jobs classified as blue-collar including the railway, mining and forestry industries than Ontario as a whole and in 2001 still had 7.55% of its workforce employed directly by the forest industry. Public sector employment is also more common in Northern Ontario including the education, social assistance, health, and public administration sectors. However, Northern Ontario has a lower proportion of its workforce employed in the manufacturing sector than the province as a whole at 10.7% and 16.4% respectively. Ontario as a whole also has a higher proportion of jobs associated with the knowledge industry at 21.1% compared to Northern Ontario at 12.5% (Southcott 2006).

Education for Life

One of the main characteristics of the knowledge economy is the increasing importance placed on education and lifelong learning. A considerable amount of literature on the topic assumes that with the advancement of the knowledge economy people will be required to continually achieve higher levels of education. Since the end of the 1930s the length of time individuals have been spending in school has been increasing so that today there are few people who have not received their high school diploma. The number of individuals that have completed postsecondary education has also risen and now makes up over 30 percent of the labour force.

Not only has the percentage of those enrolling in postsecondary education increased, but so has the number of those who have participated in an employee training course (Livingstone 1999). Therefore as the importance of knowledge and skills escalates so too does the importance of the university institution (Sörlin & Vessuri 2007).

Throughout the twentieth century there was a gradual increase in the level of education required for various occupations as employers began requiring minimum levels of education from their employees. By the 1960s almost all professional occupations required a postsecondary education of their employees and the 1980s saw a college diploma become mandatory for many managerial positions. Those in clerical work went from needing a high school diploma following World War I to requiring some level of postsecondary education. This growing need for education even affected the manual labourer, as before the 1980s these workers did not require a high school education (Livingstone 1999). The requirement of a high school diploma for manual labour would affect those employed in the forest industry in Northern Ontario. Overall, the proportion of those in knowledge-based occupations possessing university degrees is higher than that of other occupations (Beckstead & Vinodrai 2003).

With the increasing importance of education, lifelong learning has been facilitated by advancements in the ICT sector with the Internet as the modern teacher. The use of ICT in classrooms “is a powerful tool for learning, helping teachers explain difficult concepts, giving access to a huge range of examples and resources, and engaging pupils easily” (Robertson 2005: 164). With the use of ICTs people from more locations can have access to quality education (ibid) which includes those groups that have traditionally been excluded from formal education (Guile 2001). These declining costs and easier access to distance learning (Alic 1997) could

therefore help raise the education levels of the communities in Northern Ontario and provide an opportunity for displaced workers to acquire further qualifications.

While studies support the increasing trend toward higher education and lifelong learning there is also research to suggest that “the collective learning achievements of adults far outpace the requirements of the economy as paid work is currently organized [and that] it is the relative withering of good jobs with decent pay that is the central problem creating the education – jobs gap” (Livingstone 1999: 164). While a slight increase in technological skill is required with the new economy, the increase in other forms of knowledge is not necessary with the current job market. This then leads to higher levels of underemployment whereby individuals are overqualified for their current occupation or for the job opportunities that are available (De Weert 1999; Livingstone 1999). In Canada, surveys have found that approximately 20% of the labour force, particularly the younger generation, is overqualified for their jobs. Yet despite this statistic, education levels continue to rise (Livingstone 1999).

Those residing in some of Canada’s rural regions support this proposal that high levels of education are not necessarily required for the acquisition and maintenance of well-paying employment. In many of these rural locations, secondary schooling did not become normalized until the mid-twentieth century and even today attending a postsecondary institution has not become routine. Researchers (Davey 1978; Gaffield 1987; McCann 1982 as cited in Corbett 2005) have attributed this lower importance placed on education to “such factors as diverse uneven development, local labour markets, patterns of informal education, and direct socialization to adult roles” (Corbett 2005: 53). Even with the emphasis that is placed on the need for a certain level of education to remain above the poverty line those in rural communities still appear able to survive with little formal education. This corresponds with studies that have

found that “in rural Canada, the economic ‘returns’ on education were significantly less than in urban communities” (ibid: 54).

In rural communities, education is often synonymous with out-migration despite advances in long-distance learning. In Corbett’s study (2005) on rural education and out-migration from rural Nova Scotia migration was positively correlated with level of education, with the more education an individual had the more they were likely to move more than 50 kilometres away from their rural origins while those who remained within a 50 kilometre radius tended to have lower levels of educational attainment.

Out-migration from these coastal communities was found to have decreased since the 1960s and 1970s. Out-migration is positively correlated with opportunities available “and it has become increasingly difficult for many Atlantic Canadian youth to make the transition to western and central Canadian cities because of uncertain employment conditions and high urban living expenses” (Corbett 2005: 61). In addition to the high cost of living and uncertain job market, the 1980s and 1990s witnessed an increase in the cost of university and college tuition, a deterrent for those without sufficient financial capital as well as those who did not see an advantage to further education in the first place (ibid).

In Northern Ontario, with its focus on resource-based employment, education levels are significantly lower than in Ontario as a whole. Men in this region were previously able to make a decent living in blue-collar jobs without a high school diploma. While education levels in the region have been increasing due to the higher skill requirements of the forestry and mining industries, the gap between Northern Ontario and Ontario in terms of educational attainment has continued to grow. Until recently, young individuals were not encouraged to further their

education, particularly women, as there were few employment opportunities for the highly skilled in this region. However, although low levels of education are becoming less feasible, even in Northern Ontario, with the advancement of the global knowledge economy in 2001 only 10.7% of Northern Ontario residents over 20 years of age had a university degree compared to 19.2% of Ontario (Southcott 2006). This can have negative consequences for the region in attracting knowledge-based businesses if there is not a readily available educated workforce to fill the potential positions.

While low education levels in Northern Ontario are problematic they exist at least partly as a result of there not being enough job opportunities for those with a postsecondary education. In small resource communities such as those studied here, there is little demand for individuals qualified in areas such as the fine arts or sociology. Instead the educational credentials that seem to be most useful in resource communities are those in the trades such as electricians, mechanics and plumbers. Despite their inability to acquire jobs in the resource sector, in the past women were discouraged from furthering their education due to the lack of employment opportunities available in the community for those types of skills. Today the lack of available job opportunities can be seen in the high levels of youth out-migration as many who leave Northern Ontario for a university education often do not return (Southcott 2006).

The Role of Women in the Knowledge Economy

From a social constructivist perspective, women's participation rates in various sectors of the knowledge economy are dependent on the societal views and definitions attached to these areas. Although this perspective is criticized for its categorization of men and women as groups, giving little attention to the individual experience (Trauth 2002), a social constructivist approach

is nevertheless useful for understanding the differences in men and women's participation rates in the knowledge economy in Northern Ontario.

There has been significant research conducted focusing on the gender wage gap. Work which is more often associated with women than men is often devalued in society today and as a result lower paying than male dominated occupations. Cohen and Huffman (2003) found that for women in female-dominated jobs "not only is the average wage in their jobs lower than that for comparable male-dominated jobs, they also earn less relative to men in the same jobs" (457).

In recent decades women have continually been expanding their roles in the workforce. However, both the general labour market and knowledge-based occupations still employ more men than women. Another difference between knowledge-based and non-knowledge based occupations is that "the pace of change is slower in knowledge-based occupations compared to all occupations" (Beckstead & Vinodrai 2003: 25).

Both genders, particularly women, have seen an increase in those employed in management occupations. Males still have a greater proportion employed in this category as well as in the business and public sectors while women have been found to dominate in the technical occupations (Beckstead & Vinodrai 2003). When these are broken down even further women were found to "make up over 60% of the workforce in ... – professional membership associations (73%), lawyers and notaries (64%), business associations (63%), accounting and bookkeeping services (62%), publishing industries (61%), and political organizations (61%)" (Beckstead & Gellatly 2004: 31). Those high knowledge occupations that place greater importance on education also tend to have greater proportions of women employees (ibid). Women therefore have significant involvement in many types of knowledge occupations.

Women in Information Technology (IT)

Most of the available literature focusing on women in the new economy deals with their role in the IT sector in which they continue to be underrepresented, particularly in managerial positions (Lemons & Parzinger 2007). The hope for gender equality in the IT sector stems from the realization that the supply of high-skilled workers does not meet the demand in this field. However, despite this skill shortage there has been a decline in the number of women choosing employment in the information sector (Trauth 2002). Between 1996 and 2002, the number of women IT professionals only rose by 0.3 percent in the United States, making up just over a quarter of those employed in this field. This discrepancy is even more pronounced in the higher level positions as women account for only 13 percent and their wages are estimated to be nine percent lower than their male colleagues in the same position (Lemons & Parzinger 2007). However, "IT work remains one of the best prospects for women in terms of salary, career path, rewarding office-based environment, and intellectually stimulating work" (Varma 2002).

Gender inequality exists in the IT field despite the belief that the emergence of new knowledge occupations should not have had time to develop the same gender barriers as other sectors (Allen, Reid & Riemenschneider 2004), and that the importance of a person's knowledge and skill should outweigh the importance of his/her gender (Kelan 2007). At least partial blame for this inequality is attributed to women's apparent lack of interest in understanding computers and technology, which has led to initiatives being undertaken to increase women's enrolment in computer science and engineering degrees. Another explanation for the underrepresentation of women is that "technology is not gender neutral. Technologies are gendered by design and by association, and gender and technology are co-constructed" (Kelan 2007: 501). Because many aspects of technology, including computers, are characterized as masculine, fewer women are

likely to identify with them, and therefore tend to view themselves as less technologically competent than men (Kelan 2007).

Gender schemas have been argued to affect opportunities for women in the knowledge economy. Gender schemas are the “cognitive structures of organized prior knowledge regarding the role expectations of individuals based on biological sex” (Bem 1993 as cited in Lemons & Parzinger 2007: 91). These schemas are ingrained from an early age through socialization and from observing the behaviours of others. Non-conformists are those that reject traditional gender-roles and therefore treat gender-related information differently than those who conform. It is more often those women who adopt non-traditional gender schemas who choose to participate in the male dominated information technology sector. Younger and more highly educated individuals were also found by Bem (1993) to conform to fewer traditional gender roles (Lemons & Parzinger 2007). That these schemas exist however is disadvantageous to women’s involvement in knowledge-based occupations.

Women in the Home

Despite the gradual advancement of women in many areas of the labour market they remain the dominant caregivers, which can inhibit the amount of time they have available to dedicate to their paid employment (Winson & Leach 2002; Zauchner *et al.* 2000) and has been labelled the cause of their lower earnings than men (Maume & Mullin 1993). Due to having almost sole responsibility for the care of both the young and the old, many women are forced to accept part-time and temporary positions (Winson & Leach 2002). Being the dominant caregivers outside of work was found to result in lower levels of job satisfaction and higher levels of stress for women (Zauchner *et al.* 2000). Changes in public policy regarding maternity

leave however have facilitated increased rates of participation by women in the workforce (Trauth 2002).

Women employed with young children were found by Maume & Mullin (1993) to be more likely to quit their jobs when they were reliant on their husbands for childcare or if they were earning low wages. Those women who have chose to resign from paid employment to devote their time to childcare, “their actions can signal to supervisors and colleagues alike the perception that women are not committed to their work, thereby setting in motion well-known processes of statistical discrimination” (Stone & Lovejoy 2004: 63).

Women, Resource Communities and a Changing Economy

While there have been global changes occurring with the advancement of the knowledge economy, today most women’s lives in resource communities in Northern Ontario continue to revolve around their spouses’ jobs rather than their own and those women who are employed are still often expected to take on the majority of unpaid work (North Superior Training Board 2004; Northwestern Ontario Women’s Decade Council 1990). A variety of factors have been perceived as contributing to women’s exclusion from the labour force in resource communities including a lack of employment diversity outside of the resource sector, a male dominated economy, isolation and financial dependence on their partners (Cloke and Little 1990 as cited in Reed 2003: 378).

Those women who have become involved in the forest industry in resource communities have often been met with gender inequality and discrimination. Females still tend to be concentrated in office positions in sawmills and pulp and paper mills which receive lower pay and fewer benefits than those working production in the mills. By the 1990s many women were

still not applying for these production positions due to the sexist attitudes of the male workers. Even when employed in positions directly associated with the primary industry they are still often considered secondary workers as Reed (2003) found “women employed in forestry jobs discussed restrictions in hiring and promotion practices and the lack of recognition for the contributions they made directly to the industry” (378). Those women who have been affected directly by the forestry crisis in the form of job loss often experience a greater decrease in wages and longer periods of unemployment than men (Reed 2003).

The gender imbalance in labour market participation rates continues to be greater in Northern Ontario than in the province as a whole, likely as a result of the high dependence on the resource sector. This dominance of resource industries in the north, and women’s inability to gain employment through them, has also resulted in a lower female population in the area than in the rest of Ontario. However, by the 1990s greater numbers of women were employed in the resource sector, and “the non-resource economic sectors of these towns had become more significant ... [and] women were benefiting from increased employment opportunities in these sectors” (Southcott 2006: 151). However, the job market continues to be characterized by gender imbalance as women are largely employed in sales, services and health sectors. Employment in professional services is also lower in Northern Ontario compared to Ontario as a whole, particularly for women. Perhaps as Northern Ontario embraces the post-industrial era it will not only result in more employment opportunities for women, but also a greater number of women relocating to the region (Southcott 2006).

Conclusion

Since Bell’s book on post-industrial society, the literature on this subject as well as the knowledge economy has grown considerably. Although the knowledge economy is often seen as

synonymous with the information technology sector, knowledge is becoming an increasingly important aspect in all industries. However, jobs are still being lost by those in the goods producing sector and there is uncertainty as to whether there are enough knowledge-based occupations to replace them. These knowledge-based jobs would require higher levels of skill and education than that possessed by many of the displaced manual workers.

Northern Ontario appears to be experiencing the negative aspects of the knowledge economy. Jobs are being lost at a rapid pace in the resource sector in the twenty-first century and knowledge intensive industries seem to be centralized in the larger urban areas of the province. This has resulted in a declining and aging population in the region as workers have been forced to look elsewhere for employment.

Women's participation rates have increased in knowledge-based occupations but they are still overrepresented in low paying service jobs and underrepresented in the resource sector. This clustering of women into these lower quality jobs can be attributed to early socialization in relation to the type of work that is appropriate for females.

The next chapter in this thesis will outline the methods used to collect data to determine if and how Northern Ontario is changing with the advancement of the knowledge economy.

Chapter 3 - Methods

The goal of this research is to both update and contribute to the information that is already available on the knowledge economy and women's roles in Northern Ontario. To this end, I used a mixed method which combines both quantitative and qualitative methodologies (Schneider 2007). A mixed method allowed me to generate a broad picture of how the economy is changing in Northern Ontario, particularly for women, through the quantitative analysis of census data, while qualitative interviews allowed individuals within Northern Ontario communities to explain how these economic changes affected them personally.

In addition to the difference in breadth and depth provided by qualitative and quantitative methods another significant difference between these two methods is the importance placed on both the researcher's and the participants' biography. Qualitative methodology often assumes that the researcher not only influences the participants' responses, but also is affected by the environment in his/her interpretations of the data that are collected (Rossman & Rallis 2003). The opposite is true for those employing a quantitative methodology as they associate reliability with objectivity or "that a characteristic exists independently of the point of view, experiences, bias, social position, or personal relationships of the person doing the measuring" (Garner 2005: 40).

Hypotheses

This study will test two hypotheses. The first hypothesis is based on the changes that have occurred in the structure of employment and available job opportunities in Northern Ontario with the emergence of post-industrialism. I hypothesize that in Northern Ontario these changes are more likely to result in a decline in available job opportunities than in a shift to more knowledge-based industry, as many small communities are unlikely to have the resources for a

major economic change. These northern communities will find it both necessary and desirable to adapt to the changing economy but due to location and lack of resources they may find it difficult to do so.

The second hypothesis is related to the fact that with this changing economy women have greater and more diverse opportunities in the labour market than in previous decades. A significant reason for this is related to the greater importance placed on education as well as the decreasing availability of work requiring high levels of physical strength. While literature suggests this to be true, I hypothesize that it is more difficult for women to become involved in new areas of the economy in small, rural communities, due to the limited job opportunities available for both genders.

SSHRC Project

The research for my thesis was conducted as part of a SSHRC funded study with my supervisor and his colleagues. The SSHRC project compares the effects of global, social and economic changes on land use in resource-dependent communities in the regions of Northwestern Ontario and Eastern Hedmark in Norway. The main hypothesis of this research is “that changes in global capitalism are universal and affect all regions in similar ways” (Dunk, personal communication, April 7, 2008). To conduct my part of the larger project, I was provided with funding to travel to the four case study communities: Atikokan, Hearst, Hornepayne and Red Rock. During stays in these communities I researched the economic development of the area and conducted a total of 46 interviews. Of those 46 interviews, 12 were conducted in either Atikokan or Hornepayne and 11 in either Hearst or Red Rock. The interview schedule was provided by those in the larger project with topics ranging from changes in the

economy to hunting and fishing practices. Upon completion of the interviews I was then responsible for their transcription.

Case Studies

Case studies are used to “understand a larger phenomenon through intensive examination of one specific instance” (Rossman & Rallis 2003: 104). Case studies were applied to four communities in Northern Ontario: Atikokan, Hearst, Hornepayne, and Red Rock. These communities were chosen by the larger project’s collaborators based on their rural location and their current or prior resource-dependency. These communities include backgrounds in forestry, mining and railroading, have small population sizes and are located within four different districts in Northern Ontario. Conducting case studies of these four locations allowed for a comparative analysis to be made (Rossman & Rallis 2003).

Due to the small population sizes of the four communities a difference of 1,000 people can be significant. There are likely to be many differences particularly between Hearst with the largest population of 5,620 and Red Rock with the smallest population of 1,063 according to the 2006 Census. The population sizes of Hornepayne and Atikokan fall somewhere in between with 1,209 and 3,293 respectively.

The Four Northern Ontario Communities

Although the four communities are similar in a variety of ways, their histories are somewhat unique. The settlement of Hearst was facilitated in the early 1900s by the construction of the Temiskaming-Northern Ontario Railway (TNO). The railway would remain an important part of the Hearst economy until 1930. Agriculture was also prominent but due to the short growing season farmers tended to produce for their own needs and today little farming is done in

the area. By far the most dominant employer in the community since the early 1930s has been the forest industry (Town of Hearst 2007). Today there are still two sawmills and a plywood plant operating in Hearst though only one continues to be locally owned (Hearst Public Library 2006).

Hornepayne is the only community located on Highway 631 which connects Highways 11 and 17. Hornepayne was established in the early twentieth century as a railroad community with the first train passing through in October 1915. The second dominant employer has been the lumber industry which started out small but was expanded by the Marathon Corporation which was then bought out by the Haavaldsrud's Timber Company whose family still owns the mill today (Easton, King & Collins 1978). According to the 2006 Census, Hornepayne had a population of 1,209 and continues to remain largely dependent on the locally owned sawmill and the Canadian National Railway (CN).

The community of Red Rock consisted primarily of Finnish farmers at the beginning of the twentieth century. In the latter half of the 1930s the Lake Sulphite Pulp Company purchased the land to establish a paper mill and a railroad track was built to provide transportation for the mill's products. It would not be until 1945 however that the Brompton Pulp and Paper Company would actually open a paper mill in the community which would later be purchased by Dominion Tar and Chemical (Domtar) (Young 1995). This would be the only major employer in the community until 2006 when the mill was shutdown indefinitely (Red Rock Community Adjustment Committee 2007).

Mines, sawmills and the railroad were all established in Atikokan and the surrounding area prior to the end of the nineteenth century (Township of Atikokan 2006). Mining would be

an important industry in Atikokan until the final closures in 1979 and 1980 at which time the community would experience a large decline in population (Township of Atikokan 2006). With these closures the forestry sector became dominant with the Sapawe Mill and the establishment of a particle board plant in 1975 (Township of Atikokan 2006), both of which would close in 2007 (AEDC 2008). The remaining major employer in Atikokan is Ontario Power Generation's coal fire plant but the government plans to shut it down (AEDC 2005).

These four communities are similar in their continued resource dependence since their establishment as early as the late 1800s. While none of the communities has been dependent on only one sector throughout their history, employment outside of the resource sector was never abundant. To varying degrees, all four communities were at some point dependent on the forest industry and the railroad.

Census Data

Analysis of census data allowed for a representative understanding of the effects of a changing economy on the four communities of interest. The census areas of relevance to this research are: population, age characteristics, educational attainment, participation and employment rates, occupation and unpaid work. Records from 1981 to 2006 were analyzed from community profiles created by Statistics Canada. The data were analyzed for an understanding of the overall changes in participation rates and education levels in the different sectors of the labour market over the 25 year period, as well as the changes associated specifically with women's involvement. This provided evidence that the employment structure is changing from one largely dependent on resources and male employment to one that is more diversified with new opportunities for women and a greater requirement for postsecondary education.

Reflexivity

As a researcher my social location played a role in both the topic choice for my thesis as well as the outcome of my interviews which is known as reflexivity. Reflexivity is the theory that “given this interpretive nature of qualitative research, the researcher’s personal biography shapes the project in important ways” (Rossman & Rallis 2003: 36). According to Gouldner, research can never be value free and therefore all of one’s values should be made apparent as many studies are conducted for reasons other than the objective accumulation of knowledge (1976 as cited in Neuman 2000). Not only does a researcher’s background influence his/her interpretation of the data but the presence of the researcher during an interview can affect the participants’ responses. The degree to which the researcher influences the actions of others depends on the length of time spent with the participant as well as the difference in the social locations of those involved (Rossman & Rallis 2003).

I chose to focus on Northern Ontario because of my personal interest in the region as I was raised in Hornepayne. Having grown up in a community with just over 1,000 people I can understand how detrimental it can be to lose one of the town’s main industries. I am interested in learning whether it will be possible for rural communities to develop new forms of employment.

Interviews

Interviewing is one of the principal means of collecting qualitative data. Interviews allow the researcher to attain an in-depth understanding of individual perspectives, seek clarification of a response, and to develop a perception of the context in which the participant responds (Rossman & Rallis 2003). This in-depth understanding can therefore be used as a means of further explaining quantitative data.

Interview Design

In-depth semi-structured interviews were conducted in the participants' communities at a location of their choice. The use of semi-structured interviews "involves the implementation of a number of predetermined questions and special topics. These questions are typically asked of each interviewee in a systematic and consistent order, but the interviewers are allowed freedom to digress" (Berg 2004: 81). While an interview schedule was used for each interview not all questions were asked of all participants or in the same sequence and follow-up questions were often posed to elicit more information from the respondents. The most common reason for the change in sequence of the interview questions was that the interviewees would unknowingly answer both the question posed and another that was to be asked later. One particular instance of this was with the question regarding families moving west to Alberta in search of employment. This was often brought up when either discussing the changes in the local economy or the changes in population. In these cases I would often still ask the question listed on the interview schedule, but began with the phrase, "you have already touched on this but" so that the participant knew that I was paying attention but was looking for clarification or elaboration.

Participant Recruitment

Ethics for my part of the SSHRC project as well as my own thesis was obtained on 20 October 2008 from the Lakehead University Research Ethics Board. Interviews were conducted with key informants who were believed to possess knowledge about different aspects of their community. Experts on the subject are used as "valuable information can be gained from these participants because of their positions in social, political, financial, or administrative realms" (Rossman & Rallis 2003: 192).

A limitation to the use of key informants is “that not everyone who should know about something is necessarily well informed” (Rubin & Rubin 2005: 65). Because the key informants used in this study consisted of people involved in various boards, organizations and forms of employment, they were not necessarily the ones who have been directly affected by post-industrialism. Interviews with women that are actually involved in areas of the knowledge economy would therefore likely be beneficial to the study, but due to time constraints interviews with key informants were chosen to allow for the collection of a broad range of information from a single participant.

A total of 46 people participated in interviews for this research, but due to time constraints, interviews with only 12 of these participants are analyzed for this thesis. These 12 participants were chosen based on whether there had been time during the interview to ask them the questions I had added to the larger projects interview schedule. This sampling frame was possible because the participant characteristics deemed necessary by the larger project were also suitable for this research and therefore of the 46 participants any could have been chosen as one of the 12 used here. However, this is a limitation to this research as it is likely that those with lengthy answers to the questions provided by those in the SSHRC project or those who only allotted a specific amount of time for the interview were not included in this thesis. Despite this limitation there was still considerable variation in the participants’ occupations/affiliations allowing for comparisons and perhaps even some generalizations to be made.

Immediately upon receiving confirmation of ethics approval potential interviewees were contacted by telephone for the first community that was studied. The majority of participants in all four communities were contacted after I arrived in their community. They were asked to participate in an interview involving questions related to various aspects of their community that

would be used for this thesis as well as for the larger project. Of all the potential participants that were contacted to take part in this research there were only three who refused to be interviewed.

One of the advantages I had as an interviewer was having an understanding of small town dynamics having grown up in Hornepayne. Particularly when doing my first set of interviews in Hearst I found it helped to make the participants more comfortable and talkative by mentioning that Hornepayne was my hometown as many of them are familiar with my family. While I thought that my roots would also be of particular help in securing interviews in Hornepayne, this was not exactly the case. I had people turn down participating in the interview based on the fact that we knew each other and that it would be 'awkward'.

One difficulty I set out believing I would encounter was my inability to speak French when conducting interviews in Hearst as the vast majority of residents are Francophone. However, only one individual after having spoken with me declined to participate. If a problem did arise due to my inability to communicate in French it was that the participants' responses may not have been as detailed a response when unable to use their first language.

While the researcher's name, affiliation, the purpose of the study and occasionally a couple of sample questions were provided to the potential interviewee, Weiss claims that an investigator should provide "the reasons for the study, the study's sponsorship, how the potential respondent's name was found, why the potential respondent was selected, ... whether confidentiality is guaranteed, and whether the interview will be tape-recorded" as well as the short explanation that had been given (1994: 35). In addition to those that refrained from participating were those that were not reachable and did not respond to messages that had been left, this however only occurred twice.

A common misconception that arose after introductions and the reason for calling were explained was that the interview would be conducted over the telephone. Upon clarification that a face-to-face interview was required most seemed more agreeable and willing to participate knowing it could be done at a later date and time, although some seemed apprehensive regarding the use of a tape recorder. Based on their comments, this apprehension was likely due to their uncertainty regarding whether they would adequately be able to answer the interview questions.

Those individuals who were considered key informants due to their position in the community thereby allowing them to have a general understanding of the different areas of interest covered in the interview questions were contacted to participate. Key informants were used as “valuable information can be gained from these participants because of their positions in social, political, financial, or administrative realms” (Rossman & Rallis 2003: 192). The use of key informants allowed for a variety of topic areas to be covered with each interviewee which was a necessary component of the SSHRC research. While the majority of these key informants were found using the towns’ websites, a few participants were suggested by other interviewees either on the phone or during their interview. Key informants that were contacted for interviews include teachers, principals, mayors, town councilmen/women, town clerks, employees of the larger industries, economic development officers, as well as others from various positions and groups within the community. As there was some variation in population size and consequently available organizations and industries, the types of key informants varied between communities.

Participant Characteristics

No guidelines were placed on participant characteristics such as gender or age. Instead individuals were contacted based on their role or position in the community, their availability, and their willingness to participate. Of the 12 interviews that are analyzed only three

respondents are male, the other nine female. While a more even split of genders may have been somewhat beneficial for comparison purposes, the views of women were of particular interest in this study.

The 12 individuals whose responses are analyzed in this thesis come from a variety of backgrounds within their respective communities. This is beneficial to the research as according to Rubin & Rubin, “the credibility of your findings is enhanced if you make sure you have interviewed individuals who reflect a variety of perspectives” (2005: 67). The 12 participants in this research have associations with education, town council, economic development, major industries in the community, town employment and organizations that were set up to enhance the lives of townspeople in various ways. Due to the small population sizes of the communities studied and the need for anonymity these occupation/affiliation of the participants’ cannot be given in correspondence with their community.

Interview Process

All interviews were conducted between 23 October and 16 December 2008 beginning in Hearst and followed by Hornepayne, Red Rock and finally Atikokan. All potential participants were contacted by phone and given a brief description of the purpose of the study as well as asked to choose a time and place for conducting the interview. Allowing the participants to choose the time and place of the interview not only shifts the balance of power and control to the interviewee but also made sense as they would have greater access/knowledge of suitable interview locations. This transfer of control often makes participants feel more comfortable during the interview process. Respondents were made aware that the information collected would be used both in this thesis and the SSHRC funded project.

The majority of the interview schedule was developed by the SSHRC project's collaborators and did not play any part in this thesis. However, questions that the SSHRC project included that pertained to employment or women have been included. In addition to the interview schedule developed by those on the larger project, this thesis required the inclusion of several other questions related to education and women's roles in the labour force as these are thought to be important components of the changing economy, a complete outline of which can be found in appendix A. These questions were posed to the majority of the 46 participants as prior to conducting the interviews the 12 that would be analyzed in this study had not been chosen. In those cases where these questions were not asked it was due to the time constraints of the participant.

The inclusion of Hornepayne as one of the case studies for this research was potentially problematic as I grew up there and continue to have many attachments. According to Rubin & Rubin, "strong personal feelings or biases cause you to distort what you are hearing. You may not follow up on leads that contradict your preconceptions, and in doing so may not get subtleties, evidence, or details that might lead you to question your beliefs" (2005: 82). Due to the small population size of Hornepayne, it is easy to believe that you know everything that is going on and much of what has happened in the past. It was therefore important for me to ensure that interviewees clarified their statements rather than assuming I knew to what they were referring. Rubin & Rubin also state that as an interviewer one "should resist the urge to make strong statements of your morality in the middle of an interview" (ibid). In many cases however, the interviewees were likely to know my opinions regarding some of the questions due to our pre-existing relationship, particularly those topics related to business, education and women.

The most common location of the interviews was at the participants' place of work or home. While many of these locations were ideal, providing both privacy and quiet, others were not. Interviews that took place in restaurants or other noisy locations were quite difficult to hear upon their transcription. However, of the 12 interviews that were chosen for my analysis only one was conducted in a public place. Background noise was not a problem with this interview as the location was the public library where a quiet atmosphere is enforced. The rest of the interviews took place in the participants' home or office/place of work. However, even though certain locations were not ideal for the taping of an interview other viable locations were not overly abundant. All four communities were small towns and therefore the number of public places suitable for meeting was limited. In addition to this was the researcher's lack of knowledge of the towns' infrastructure, other than Hornepayne, making it difficult to make possible suggestions for the interview location that would have been more ideal.

Although the locations at which the interviews were conducted tended to be quiet there were often many other distractions. A common distraction at both the participants' home and office was the telephone. When the interviewee did answer the telephone call the tape recorder was turned off and the participant reminded of the question after they were finished. Therefore this distraction did not have much of an effect on the interview, unless there was a time restraint set by either the participant or the interviewer. On the other hand some interviewees simply let the phone ring and kept answering the question. This made it difficult when transcribing as the ringing of the telephone was louder than the participant. Another distraction that occurred particularly for one of the interviewees was interruption by clients which considerably lengthened the time required to complete the interview. However, as with the telephone

interruptions, once reminded of the question this participant seemed able to begin where she had left off.

Another problem encountered during the transcribing stage of the research was the tape recorder was not always placed close enough or at the proper angle to the interviewee resulting in further difficulties in the transcription stage of the research. While this was the case for only one of the 12 interviews analyzed here due to too much distance between the tape recorder and the participant it was unfortunately a fairly common occurrence for the total 46.

The time at which the interviews took place varied considerably. Of the 12 interviews focused on here, all but two took place on a weekday. Of the other two, one took place on the weekend and the other during the evening. One reason for the predominance of morning and afternoon interviews is due to the fact that half of the interviewees participated while they were at work. This was possible as the participants' work either involved the promotion and advancement of the community or they occupy a position of some authority, as your average worker would likely not be able to do the same.

The majority of participants were contacted the first or second day after the researcher's arrival in their community. As many of the individuals contacted were employed, this early contact increased the likelihood that he/she would be able to fit an interview into their schedule. Despite outlining what the research was regarding upon first contacting the participants by phone some were still unsure as to what the interview questions would cover. Due to the broad scope of the interview they were then give a few sample topics such as changes in the economy, lifestyle and criminality. It is probably the use of the term knowledge economy that resulted in

some of the participants being slightly reluctant to participate until they had a better idea of what that concept entailed.

Very little small talk occurred before the interviews that did not pertain to the interview or the research being done. This may be at least partially due to the shy disposition of the researcher and her inability to generate/prolong this form of conversation. Another reason that small talk was not overly engaged in prior to the beginning of the interview was the large variation in time needed to complete the interview. As many of the participants had taken the time out of their workday to participate in the interview it was thought best to begin as quickly as possible in the event of a limited timeframe. In some cases the time restriction was set by the interviewer as interviews were often set up in such a way that upon completion of one interview the next would take place shortly after. While this scheduling did work out, in hindsight it was rather risky as it may have required one interview to be cut short in order to make it to the next one on time depending on the length of the participants' responses. Instead much of the small talk took place after the interviews, likely partially as a result of both the interviewee and the researcher feeling more relaxed and comfortable after having been in each other's company for a time.

Before the commencement of each interview the purpose of the research was again outlined. The participants were then required to read and sign the cover letter and consent form that were provided. These documents provided further details of the research, a guarantee of confidentiality and anonymity and the participants rights should he/she decide to take part in an interview. All participants also agreed to the use of a tape recorder. Each interviewee was asked, after having signed the consent form and prior to beginning the interview, if he/she had

any further questions. The only question posed by multiple participants was to be sent a copy of the results and final report from the research.

Interview length was estimated at an hour to an hour and a half for the purpose of the consent form. For the majority of the interviews conducted however this time length was not required. Of the 46 interviews conducted for the SSHRC project the length of time required ranged anywhere from 17 minutes to two hours. In some cases participants did not have the time to complete the last set of questions on women's employment as their time was limited or their answers to the other questions were so lengthy. These interviews were not chosen for this thesis as I did not require all 46 participants to answer the additional questions related specifically to my thesis. In the event of time constraints it is possible that the participants may not have provided as much detail as they otherwise could have.

As many of the interviewees that were met with held some form of power within their community there was less concern about transferring power and control to them than there would be with a vulnerable population. Instead the biggest concern was ensuring the interviewer was taken seriously despite a mild manner and young age. However, all interviewees were very friendly and appeared interested in the research that was being conducted. Another form of power held by the participants was that the interview was centred on various aspects of their community, something which they would hold more knowledge of than the researcher, with perhaps the exception of Hornepayne.

Methodological Limitations

As outlined by Southcott (2006), there are limitations to the use of census data. One problem is that of sampling error. The information on some of the topics used here is only found

on the long form, which is completed by only 20% of the population. The sampling error of the entire population, or even of a large urban center, would likely not be significant; however, the communities of interest would not be classified as large or urban. It is highly probable then that the census data used in this research contains a significant sampling error as a smaller the population has a greater possibility for error. A second limitation regarding the use of census data is the utilization of random rounding, whereby the results “are rounded up or down to the nearest 5-count” (Southcott 2006: 13). Although this is an attempt by Statistics Canada to maintain anonymity, in small samples it can significantly affect the results. Another limitation of particular relevance to this research is the length of time between censuses, the last census being held in 2006. Many changes have occurred in the three years since the last census as they are conducted only every five years between 1981 and 2006. These limitations, however, have been partially offset by also conducting interviews with key informants.

Data Analysis

Interviews

Most of the interviews were not transcribed until all 46 had been completed. Once the transcripts were complete and the 12 which would be used in this thesis were determined, interview questions were omitted from a copy of the transcripts that were not relevant to this research. Those questions remaining were in relation to the economy, population, education, employment and gender roles within the community and the home. The participants’ answers to these questions were examined to see whether they supported or refuted the study’s hypotheses.

Each interview response was reread to determine the main ideas outlined by the respondents. One interview question was coded for all participants before proceeding to the next

question to allow for a general idea of themes. The responses given by all 12 participants were then typed out under each question allowing for similar answers to be identified. Each interview question was coded separately and then linked during the writing of the analysis. While dominant themes such as job loss and population decline were predicted from the available literature, the explanations given for these occurrences often varied. Of those questions used in the following analysis, most of the ideas provided by the participants were used as they were often answered with little digression. However, due to the limited space and time, those responses that were not directly related to this research and were only given by one or two participants were often excluded from the analysis.

While themes were coded according to the interviewees' responses, the questions had already been organized around the main characteristics of the knowledge economy, mainly a changing economy and population size, employment, education and women's roles in the home and the workforce. It was these characteristics which in the end became the themes of the analysis and by which the respondents' answers were then grouped.

Upon completion of the coding it was determined that more information could be used on the topic of education as only one question had specifically referred to education and it was only concerned with youth outmigration for postsecondary education. An attempt was made to contact the 12 participants to ask them three extra questions on the topic of education in relation to the workforce and gender inequality. Seven of the 12 interviewees were able to be reached on June 16 and 17th, 2009 via telephone; their answers to these follow-up questions were included in the analysis.

Census Data

The census data for the years 1981 to 2001 were accessed from the Lakehead University library and for 2006, from the Statistics Canada website. The 1996 and 2001 Censuses were initially accessed via the Internet but 1996 did not include all the categories of interest and 2001 had categorized highest level of schooling differently on the Web than it had in the hard copies located in the library. This was unfortunate as the 1996 and 2001 community profiles on the Internet provided a breakdown of highest level of schooling according to gender while the community profiles available in the library did not.

The census categories of interest were then identified as being population sex and age characteristics, highest level of schooling, labour force activity, unpaid work, and population by sex and occupation major groups. For the 1996 Census the occupational categories were condensed and renamed and therefore the preceding three censuses of interest had to be regrouped accordingly, a breakdown of which can be found in Appendix D.

The data for these categories were then put into tables to facilitate the comparison between communities and, where applicable, by gender. For those categories in which a number was given instead of a percentage, the percentage was calculated and then the percent rate of change was calculated for many of the categories for each gender from all four communities. While an overall increase or decrease could be determined for the occupational categories, the exact percent rate of change could not when in either 1981 or 2006 there were no individuals employed in that sector.

Conclusion

The next two chapters will make use of the findings from the interviews and the census data in an attempt to better understand how the knowledge economy is affecting resource

communities and women in Northern Ontario. The census data will provide a comparison between the structures of the community from 1981 to 2006 while the use of interviews will illustrate the views and opinions of the residents of these communities. The following chapter provides an analysis of census data.

Chapter 4 – Analysis of Census Data

Census data were used to provide additional information relevant to the research topic.

The census data which will be analyzed in this chapter include: population and age characteristics, educational attainment, labour force activity, occupation and unpaid work. These categories were analyzed by gender for all four communities when the data were available.

While there are many similarities between the communities for each of the above categories, there are also some notable differences.

Population Change

All four communities involved in this research have been subject to population decline over the past three censuses. While Hearst had a significantly lower rate of decline than the other three communities, there was variation as to what year each experienced the highest rate of out-migration. There were also three communities that have been experiencing decline for the entire time period studied.

Table 1: Population Counts for the 1981 to 2006 Censuses

	1981	1986	1991	1996	2001	2006
Hearst	5533	5559/6066	6079	6049	5825	5620
Hornepayne	1850	1843	1610	1480	1362	1209
Red Rock	1448/1542	1509	1421	1258	1233	1063
Atikokan	4452	4345	4047	4043	3632	3293

Source: Statistics Canada, Census of Canada 1981 to 2006. The census years listed with two populations is due to a boundary change for those communities.

Throughout the time period from 1981 to 2006, none of the four communities had an overly large population as can be seen in Table 1, although two were considerably larger than the others. Despite variations between the communities in rate of increase or decline, for all six censuses they can be ranked from largest to smallest in the following order: Hearst, Atikokan, Hornepayne and Red Rock. As can be seen from Table 2, no one community consistently had

the greatest decline or the highest increase in population. A population that continues to decline is likely experiencing economic difficulties while an influx of people to a community can be the result of an increase in available job opportunities.

Table 2: Rate of Population Change between 1981 and 2001

	1981-1986	1986-1991	1991-1996	1996-2001	2001-2006
Hearst	0.5	0.2	-0.5	-3.7	-3.5
Hornepayne	-0.4	-12.6	-8.1	-8.0	-11.2
Red Rock	-2.1	-5.8	-11.5	-2.0	-13.8
Atikokan	-2.4	-6.9	-0.1	-10.2	-9.3

Source: Statistics Canada, Census of Canada 1981 to 2006.

The rate of change was lowest overall between the censuses of 1981 and 1986. The communities of Hornepayne, Red Rock and Atikokan all experienced a small decline the greatest being Atikokan with a -2.4% change. Hearst was the only community that saw a slight increase in population by 0.2%. The same three communities experienced a much larger decline in population between 1986 and 1991 with Hornepayne's being the highest at -12.6%. Red Rock and Atikokan also saw significant decline at -5.8 and -6.9% respectively. Hearst again saw the same increase of 0.2 %. Between the 1986 and 1991 Censuses however the Hearst boundaries were expanded adding another 507 persons to the population that had initially been calculated for 1986. This increase in land area was taken from the Unorganized Cochrane District.

For the 1996 Census the rate of decline since 1991 was highest for the communities of Red Rock at -11.5% and Hornepayne at -8.1%. The communities of Atikokan and Hearst only saw a slight negative population change at -0.1% and -0.5% respectively. In the following census Atikokan then went to having the greatest decline in population at -10.2% followed by Hornepayne at -8.0%. Hearst experienced its sharpest decline during the time period at -3.7%,

much lower than the greatest drop in population for the other communities. Red Rock then followed Hearst with the lowest rate of change between these censuses at -2.0%.

Despite the forestry crisis that was underway by the 2006 Census, each community except Red Rock had a census period in which the decline had been sharper than it was that year. It is likely that the rate of change by 2011 for these communities will be even greater due to the continued instability of the forest industry.

Youth Out-Migration

The literature has identified the out-migration of youth as a dominant and growing concern for Northern Ontario. The age range most likely associated with the out-migration for both employment and education is 15 to 34. The population was not broken down into age categories until the 1986 Census and therefore this analysis will not include 1981.

When the rate of population change by age category between 1986 and 2006 is calculated in Table 3 there are some very obvious trends. The first is that most of the eight age categories of interest experienced a decline in their percentage of the population in the 20 year period. These declines however were not always absolute as some age groups experienced an increase in population from one census to the next but often not enough to offset the decline experienced in other years.

Table 3: Rate of Population Change by Age Category between 1986 and 2006

Age Category	Hearst		Hornepayne		Red Rock		Atikokan	
	Male	Female	Male	Female	Male	Female	Male	Female
0-4 Years	-46.7	-36.4	-68.4	-63.2	-54.5	-63.6	-46.7	-45.4
5-14 Years	-14.6	-16.3	-52.5	-48.5	-50.0	-30.4	-45.1	-38.7
15-19 Years	-21.3	-19.6	-43.8	-23.1	-9.1	-50.0	-43.9	-44.7
20-24 Years	-41.4	-44.6	-66.7	-56.3	-78.6	-58.3	-58.5	-48.6
25-54 Years	5.3	7.1	-28.2	-26.4	-32.9	-23.7	-20.2	-19.5

55-64 Years	58.3	71.4	0	10	-31.3	-26.7	-15.2	-15.2
65-74 Years	22.6	100	75	20	12.5	42.9	-3.6	3.4
75 Years and over	70.6	100	0	-33.3	250	800	187.5	169.2

Source: Statistics Canada, Census of Canada 1976 to 2006.

The greatest declines in population were for the age category of 0 to four years of age and 20 to 24 years of age for both genders of all four communities. Whichever category did not have the highest rate of decline for a community would then have the second highest rate of decline. In Atikokan, the number of 20 to 24 year olds had the sharpest declines for both males and females. This was also true for the females of Hearst and the males of Red Rock. The age category of 0 to four years of age had the highest rate of decline for both males and females in Hornepayne as well as for females in Red Rock and males in Hearst. The greatest overall decline in the 20 to 24 age group could be as a result of these individuals having to leave the community in search of work or for postsecondary education. This age category was also likely in the past to have been the ones with children in the 0 to four group and therefore as one declines so does the other. Another explanation for the high rate of decline in this category is that most people today are not having as many children as people did in the past. One reason for people not having as many children is that they are often waiting until they are older to start a family once their schooling is finished or their careers are on track.

There is a similar pattern for the age categories with the third and fourth highest rates of decline. The third group with the greatest decline for both genders of all four communities were those five to 14 years of age. While the fourth was not unanimous, the age group of 15 to 19 had the highest rate of population decline for both genders from Hearst and Atikokan as well as the males from Hornepayne and the females from Red Rock. The fourth greatest decline for Hornepayne females was in the 75+ category and for Red Rock males was in the 25 to 54 age

category. However, the four age categories with the greatest declines in population were in the ages from 0 to 24 which constitutes most of a community's youth.

Although those aged 25 to 54 in the four communities were more likely to find out-migration necessary for employment and/or education there was little decline in this age category between 1981 and 2006. A possible explanation is that the mill closures had not occurred at the time of the 2006 Census in any of the communities and therefore most people would have still been employed. That Red Rock males in the 25 to 54 age category experienced the fourth highest rate of decline could be because the mill in this community would shut down before the end of the year so some men may have already found more stable employment elsewhere.

Another prevalent trend that was noted in the rate of population change according to age was those categories that experienced an increase in population over the 20 year time period. The age categories consistently with the highest increases in population were those 55 and up. In Red Rock, Hearst and Atikokan the greatest increases found in both genders were in the age category of 75 years of age and over with an increase of females in this group in Red Rock by 800%. The category with the highest increase for both genders in Hornepayne and the second highest for both genders from Red Rock and Atikokan was 65 to 74. For Hearst men and women and for Hornepayne women the second highest increase was in the 55 to 64 age category. These three age groups were in many cases also the only increases that occurred in any of the communities' populations. As outlined by the interview participants, seniors are staying within the communities after retirement more now than they had previously because of the cheap housing and cost of living. These communities also have more social activities available for seniors now than when they were strictly resource based.

Educational Achievements

Although a consensus has yet to be reached in the literature as to how much more education is actually needed in today's economy, there tends to be agreement that it has become increasingly important. Census data related to highest level of schooling is examined to determine whether the residents of the four communities are part of this trend to acquire more education using the census category for highest level of schooling.

Table 4: Percentage of the Population 15 years of age and over in 1981 and 2006 by Highest Level of Schooling

	Hearst		Hornepayne		Red Rock		Atikokan	
	1981	2006	1981	2006	1981	2006	1981	2006
Persons without a high school diploma	59.0	36.9	55.9	32.6	57.4	28.6	54.1	31.4
Persons with a high school diploma	12.3	25.3	19.3	33.2	13.0	28.0	12.6	29.2
Persons with trades certificate or diploma	4.5	10.0	4.2	7.9	5.1	9.1	6.1	11.8
Other non-university education	13.3	17.0	12.6	15.8	13.0	18.9	18.4	17.0
Persons with some university education	5.6	1.8	3.4	2.6	4.6	1.7	5.4	2.1
Persons with university degree	5.4	9.1	4.2	7.9	6.9	12.0	3.6	8.6

Source: Statistics Canada, Census of Canada 1981.

The proportion of the population of each community without a high school education shrunk between 1981 and 2006, though this category continued to contain the highest percentage of individuals throughout this time period. This was true for every community of every census year except for Hornepayne in 2006 when the highest percentage of people was in the category of those with a high school diploma. For the 1981 and 1986 Censuses those without a high school education made up over 50% of the population in all four communities. By 1991 Red

Rock and Atikokan's percentages had dropped to the high 30s and mid-40s respectively but Hearst and Hornepayne remained above 50%. It was not until 1996 that less than 50% of all four communities' populations would be without a high school diploma and these numbers would continue to decline until 2006 when they would all have their lowest percentage of their populations still without a high school diploma as their highest level of schooling.

The categories most often with the second highest percentage of the population for all communities between 1981 and 2006 were persons with a high school diploma and other non-university education only as their highest level of schooling. The other non-university education only category is defined as "accreditation by non-degree-granting institutions such as community colleges, CEGEPs, private business colleges and technical institutes" (Statistics Canada 2009). This category was renamed college certificate or diploma in 2001 and college, CEGEP or other non-university certificate or diploma in 2006.

There was a consistently large gap between the category with the greatest number of individuals and the category with the second largest number of people. While those without a high school diploma never had a lower percentage than 28.6% and was often much higher, those in the second highest category did not even make it over 20% until 1991. The numbers for these levels of schooling with the second highest percentage of the population would continue to increase throughout the time period studied. The categories with the second and third highest proportion of the population were persons with a high school diploma and persons with other non-university education only though whether the category was second or third varied by community. The only variation in terms of the category with the third highest percentage of the population was Red Rock in 1991 with 14% of its population having a university degree or higher.

After these three categories, the percentage of people with other levels of schooling was quite small. Persons with a trade certificate or diploma did increase slightly between 1981 and 2006 but never made up more than 17.4% of the population for any of the communities. The low levels could be due to mills only needing a small number of highly qualified people, as many positions do not require this level of training.

In terms of those with some university education and those with a university degree, the numbers are quite low even in 2006. The highest proportions of those in these two categories were in Red Rock in 1991 with 12.6% having some university education and 14.0% having a university degree. The percentage of the population with a university degree increased between 1981 and 2006 for all four communities while the percentage with some university education decreased.

The 2006 Census provides a breakdown of the highest level of schooling according to gender from which patterns can be discerned. For Hearst the highest level of schooling for the largest percentage of the population for both genders was those without a high school diploma, followed by those with a high school diploma. For the other three communities the highest level of schooling for the largest percentage of the male population was also those without a high school diploma followed by those with a high school diploma. For females it was the exact opposite. The highest level of schooling for the largest percentage of women in Atikokan, Hornepayne and Red Rock were those with a high school education and the second highest were those without a high school diploma. However, males from all four communities always had a higher percentage of the population as those without a high school diploma than females and females always had a greater proportion with a high school diploma than males.

Table 5: Percentage of the Population 15 years of age and over by Gender in 2006 for Highest Level of Schooling

	Hearst		Hornepayne		Red Rock		Atikokan		Ontario	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Persons without a high school diploma	38.9	34.8	36.0	30.3	29.4	27.8	34.7	27.6	22.3	22.2
Persons with a high school diploma	23.5	26.9	30.0	38.2	28.2	28.9	23.1	35.1	25.7	27.7
Persons with trades certificate or diploma	13.5	6.4	11.0	3.4	11.8	6.7	17.5	6.3	10.9	5.3
Other non-university education	14.3	19.4	16.0	14.6	20.0	17.8	14.6	19.4	16.5	20.1
Persons with some university education	1.3	2.0	3.0	2.2	0	3.3	1.5	2.6	3.8	4.4
Persons with university degree	8.0	10.1	5.0	10.1	8.2	15.6	8.6	8.6	20.8	20.2

Source: Statistics Canada, Census of Canada 2006.

There is considerable difference between genders in the percentage of people with an apprenticeship or trades certificates. The numbers for all four communities show that males consistently have a higher proportion in this category as compared to females. In the communities studied, the main employer for those with trade certificates would be the wood industry and this continues to be dominated by men, which explains the much lower proportion of women with this level of schooling. Men also had a higher percentage with a non-university certificate or diploma in the communities of Hornepayne and Red Rock, while this was true for females in Atikokan and Hearst.

All four communities had very low numbers of their populations with some university education. There was a higher percentage however of those with a university certificate, diploma or degree although these levels are also quite low particularly compared to those of the province as a whole where 20.8% of men and 20.2% of women have university degrees. For Hearst, Hornepayne and Red Rock females have a higher percentage with university degrees than males, while in Atikokan the proportion was the same for both genders.

Overall, it appears that educational attainment is still quite low in these four Northern Ontario communities. The population over 15 is characterized by high percentages without a high school diploma while a much smaller proportion has some form of postsecondary education. While the highest level of schooling is only examined according to gender for 2006, females appear to have higher levels of educational attainment than males but the difference is small.

Participation and Employment Rates

Participation and employment rates from the 1981 and 2006 Censuses were examined. The unemployment rate was not included in this analysis due to these statistics being particularly unreliable. The definition used by Statistics Canada for unemployment includes only those who are unemployed and searching for work and who qualify for unemployment insurance (Winson & Leach 2002).

For both 1981 and 2006 men had the highest participation and employment rates in all four communities. Of the four communities men from Atikokan had the lowest percentages for both employment and participation likely as a result of the mine closures no more than two years

before. For women, the lowest rates of participation and employment were in 1981 with Hornepayne women having the highest at 60.7 % and 54.2% respectively.

Table 6: Participation and Employment Rates by Gender for 1981 and 2006

	Participation Rate 1981		Participation Rate 2006		Employment Rate 1981		Employment Rate 2006	
	Male	Female	Male	Female	Male	Female	Male	Female
Hearst	81.2	49.2	74.8	58.4	73.9	44.8	66.1	54.0
Hornepayne	87.0	60.7	72.0	72.2	85.5	54.2	68.0	71.1
Red Rock	82.9	48.0	60.7	48.9	82.1	42.9	48.8	46.7
Atikokan	73.3	51.1	66.7	58.4	68.7	45.5	58.8	54.7

Source: Statistics Canada, Census Canada 1981 and 2006.

In 1981 men had higher rates of both employment and participation than women. This remained true in 2006 for Atikokan, Hearst, and Red Rock though the difference between genders was not as high as it had been in 1981 while women from Hornepayne in 2006 had slightly higher percentages of employment and participation rates. Red Rock was the only community in which the percentages for employment and participation rates for females in 2006 were still lower than 50%.

In 1981 the difference between participation and employment rates for men were higher than for women in Hornepayne and Red Rock but lower in Hearst and Atikokan. The percent difference between the participation and employment rates for females from all four communities in 2006 was consistently lower than those for men at the time of this census. In 2006 the employment rate was very similar to the participation rate for females from these northern communities while for men it remained considerably higher except for Hornepayne.

Occupational Structure

The census categories used for occupation changed in 1996 and therefore the 1981, 1986 and 1991 Censuses are regrouped under the new categories for the purpose of this analysis a breakdown of which can be found in Appendix D. The 1981 through 1991 Censuses did not have a category that corresponded to the natural and applied sciences and related occupations which originated in 1996. Comparisons of this category are only made for the 1996, 2001 and 2006 Censuses. There were also minor discrepancies in classification between the 1991 definition of two of the categories and 2006. The first is that those employed in early childhood occupations have been moved from the sales and service sector to occupations in social science, education, government service and religion and the second is that welders and machine operators have been moved from occupations unique to processing, manufacturing and utilities to trades, transport and equipment operators and related occupations. Neither of these changes had much effect on the results for this study as there would be minimal numbers employed in these categories in the four communities.

Males

The male populations of the four communities varied between 1981 and 2006 as to whether there was an increase or a decrease for the ten occupational categories used by Statistics Canada. There was an increase when comparing 1981 to 2006 Census data in males employed in management occupations for all communities except Hornepayne which experienced a decline. For the business, finance and administration occupations Hearst saw an increase while Hornepayne's numbers remained stable and the other two communities declined. The data for the natural and applied sciences occupations were not available in 1981, but by 2006 there were still no males employed in this sector in Hornepayne while Hearst had the highest numbers at

100. In health occupations there was a decrease in numbers for Hearst and Red Rock, Hornepayne continued to have no males employed in this sector and for Atikokan there was an increase. All of the communities excluding Hornepayne saw a decrease in males employed in the social science, education, government service and religion occupations as well as art, culture, recreation and sport occupations. There was no change in the numbers employed in the sales and services sector for Hornepayne a decrease for both Red Rock and Atikokan and an increase for Hearst. These occupations commonly associated with the advancement of the knowledge economy experienced more decline between 1981 and 2006 than increases in the numbers of men employed in these sectors of the economy. This is likely to vary when calculated by percent of the male population as Hearst was the only community whose male labour force was higher in 2006 than in 1981.

Table 7: Comparison of 1981 and 2006 Census data of Males by Occupational Category

	Hearst		Hornepayne		Red Rock		Atikokan	
	1981 Out of 1400	2006 Out of 1710	1981 Out of 560	2006 Out of 365	1981 Out of 485	2006 Out of 250	1981 Out of 1270	2006 Out of 870
Management	80	135	30	20	25	30	60	75
Business, Finance and Administration	50	85	15	15	15	0	35	25
Natural and Applied Sciences	N/A	100	N/A	10	N/A	0	N/A	20
Health	25	15	0	0	5	0	15	20
Social Science, Education, Government Service and Religion	60	45	15	15	20	10	35	30
Art, Culture, Recreation and Sport	40	10	5	10	20	0	85	20
Sales and Service	200	220	55	55	35	25	145	85
Trades, Transport and Equipment Operators	375	625	390	190	130	70	440	315
Primary Industry	175	175	20	0	5	20	210	100

Processing, Manufacturing and Utilities	320	300	5	50	200	90	80	180
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Source: Statistics Canada, Census of Canada 1981 and 2006.

For the three occupational categories associated with the resource sector there were more decreases in numbers than increases. For occupations categorized as trades, transport and equipment operators, Hearst was the only community to experience an increase in numbers from 1981 to 2006. Hearst and Atikokan again saw a decrease in the number of men employed in occupations in the primary industry while Hearst saw no change and Red Rock had an increase. In processing, manufacturing and utilities occupations there was an increase for Hornepayne and Atikokan and a decrease for Hearst and Red Rock.

The occupational category with the highest number for males between 1981 and 2006 was trades, transport and equipment operators and related occupations. Red Rock was the only community out of the four that had any census data in which the highest proportion of males were employed in jobs unique to processing, manufacturing and utilities. There does not appear to be any one year in which all four locations had their greatest numbers employed in the trades, transport and equipment occupations. However, Hornepayne had a consistently higher percentage of males employed in this field in all six census years with its lowest being in 2006, at 52.1%. The other communities also had fairly large numbers of their male populations in this category ranging from 22.7% to 42.2% throughout the time period of interest.

The occupational category most often employing the second highest percentage of men in all four communities between 1981 and 2006 was those unique to processing, manufacturing and utilities. For Hearst this was the second highest category for all six censuses while for Atikokan this was true for only four of the six and for Hornepayne and Red Rock three of the six. Other

categories that also had the second largest number of male employees were trades, transport and equipment for Red Rock, those unique to primary industry for Hornepayne and Atikokan as well as sales and services for Hornepayne. The proportion employed in each of these categories that constituted those with the second highest numbers ranged from 9.8% to 28.1%. Hornepayne has lower proportions found in these categories due to the majority of the male workforce being employed in the trades, transport and equipment sector. As with the area employing the highest percentages of men, there does not appear to be one specific census year that occupations unique to processing, manufacturing and utilities employed its greatest number of workers.

These two largest sectors in the four communities consistently employed over half of the male population in any given year in both Red Rock and Hornepayne while Atikokan and Hearst had slightly less than 50% in some years. This could be explained by the size of the populations of these communities. Red Rock and Hornepayne are much smaller in size than Atikokan and Hearst and are therefore less likely to have other industries available for men to find employment.

Sales and service occupations employ the third largest percentage of men in these four communities for three to five of the six census years studied. For Atikokan and Hearst employment in this field was third highest for five of the six censuses while for Hornepayne and Red Rock this was true for only three. This too could be attributable to the population size of these communities as the more people residing in a community the more businesses that will exist to cater to those people's needs. Hornepayne males were the only ones to experience an increase in the service sector for all five census years. Hearst and Red Rock's numbers fluctuated without any pattern while Atikokan in 2006 saw a decline in males in these types of occupations. The percentage of men employed in sales and services ranged from as low as 4.5%

to a high of 16.2%. While both of these extremes were from the community of Red Rock, Hearst was the community with a consistently high percentage of men employed in this sector.

Management occupations, although never employing more than 13.5% of males in any of the four communities, varied throughout the time period without any noticeable pattern. While employing the third largest proportion of men in three of the census years in Red Rock and two in Hornepayne, there were very few years for any of the communities that this sector employed more than 10% of the male population.

Another occupational category that saw considerable variation between 1981 and 2006 was occupations unique to primary industry. This form of employment tended to employ low numbers from Hornepayne and Red Rock, ranging from 0% for a couple of years to 12.8%, with overall averages of 3.7% and 6.6% respectively. The numbers for Hearst and Atikokan were slightly higher with a low of 7.7% and a high of 16.5%. The average percentage of those employed in these occupations was 11% for Hearst and 12.2% for Atikokan.

The five remaining occupational categories for all four communities had averages of less than 5%. These categories are not directly related to the resource sector which tends to be the major employer of men in these small northern locations. For the business, finance and administration occupation, Hearst had the highest overall average of 4.3% and Red Rock had the lowest at 1.2%. The range of averages for the natural and applied sciences and related occupations was quite similar with Red Rock being the highest at 4.6% and Atikokan the lowest at 1.5%. There was even less variation for the occupations in social science, education, government service and religion category as the highest was Red Rock with 4.6% of its male population employed in this sector while the lowest was Atikokan with 2.9%. The average

proportion of males in these communities working in the occupations in art, culture, recreation and sport was also quite small with the highest being Atikokan at 4.8% and the lowest being Hornepayne at 1.5%.

The category that consistently employed the lowest proportion of the male population in all four communities was the health sector. The highest average percentage for this type of occupation for men was Hearst with 1.5%. Both Hornepayne and Red Rock had no men employed in this field for four of the six censuses.

Females

Unlike males, females were slightly more likely to have seen an increase than a decrease in numbers employed in the census occupation categories for the four communities when comparing 1981 and 2006 data. There was an increase for females in all four communities for management occupations and social science, education, government service and religion occupations. There was also an increase for health occupations for all communities excluding Hornepayne where there was a slight decline. Hearst was the only community in which there was an increase in females in business, finance and administration occupations, perhaps due to their increased involvement in occupations outside of this sector in the other communities. Art, culture, recreation and sport occupations showed more variation with an increase for Hornepayne, a decrease for Red Rock and no change for both Hearst and Atikokan. Natural and applied science occupations in 2006 still did not employ any women in Hornepayne and Hearst, and only ten in both Red Rock and Atikokan. Finally, for sales and services Hearst almost doubled the number employed in these occupations, Red Rock also saw a slight increase but Hornepayne and Atikokan's numbers declined over this period.

Table 8: Comparison of 1981 and 2006 Census data of Females by Occupational Category

FEMALES	Hearst		Hornepayne		Red Rock		Atikokan	
	1981 Out of 765	2006 Out of 1305	1981 Out of 325	2006 Out of 325	1981 Out of 225	2006 Out of 210	1981 Out of 795	2006 Out of 775
Management	15	115	5	35	10	15	40	45
Business, Finance and Administration	225	245	80	35	60	20	205	105
Natural and Applied Sciences	N/A	0	N/A	0	N/A	10	N/A	10
Health	85	150	55	50	10	20	50	80
Social Science, Education, Government Service and Religion	75	175	15	50	35	40	40	150
Art, Culture, Recreation and Sport	30	30	0	10	0	0	35	25
Sales and Service	275	500	135	110	90	100	310	260
Trades, Transport and Equipment Operators	10	15	5	25	5	0	5	30
Primary Industry	10	15	15	10	5	0	60	10
Processing, Manufacturing and Utilities	25	55	0	0	15	0	25	55

Source: Statistics Canada, Census of Canada 1981 and 2006.

For those occupations related to the resource industry it was expected that women would have increased their involvement since 1981. While this was true for some communities it was not always the case as even when increases did occur the numbers of women in these sectors remained low. Red Rock was the only community in which there was a decrease in the number of women in the trades, transport and equipment operators occupations, while in the primary industry Hearst was the only community to experience an increase. Hornepayne had no females employed in the processing, manufacturing and utilities category for either the 1981 or 2006 Censuses while for Hearst and Atikokan there was an increase and for Red Rock a decrease.

This could be explained by women still being employed predominantly in office work at the mills.

The largest proportion of the female population in the four communities between the 1981 and 2006 Censuses was found in the sales and service occupations with the exception of Hornepayne in 1986. The percentage range for women employed in these types of occupations was from 27.0% to 47.6%. As with the categories employing high proportions of the male population, there does not appear to be any particular pattern to the increases and decreases between census years for this category.

The occupational sector with the second largest proportion of the female population in the communities between 1981 and 2006 was business, finance and administration occupations. This sector included employment in jobs such as secretaries which have historically been associated with women. While the percentages of any one community often ranged considerably from one census year to the next, there was little difference between the overall averages in this category by community. Hearst had the highest average percentage of women employed in the business, finance and administration occupations at 23.7% while Red Rock had the lowest at 20.2%. Except for Hornepayne and Atikokan in 2006, the sales and services and business, finance and administration occupations employed over 50% of the female workforce between 1981 and 2006 in the four communities.

Due to the large numbers of people employed in occupations in business, finance and administration and sales and services, the other eight occupational categories tend to employ significantly fewer women. Of those remaining eight, the occupational categories of health and social science, education, government service and religion tend to employ the largest proportions

of female workers, followed by management occupations. For the communities of Hearst and Red Rock the social science, education, government service and religion category had the highest percentage of the three followed by health and then management. Atikokan also has the largest proportion of the three in the social science group but management occupations have a greater number of female employees than health, while for Hornepayne health has the highest percentage and management the lowest.

Those employed in the natural and applied sciences occupations in the three most recent censuses have been minimal for all four communities. The highest overall average for the 1981 to 2006 time period was 2.7% in Red Rock, with Hornepayne and Hearst having no females employed in this sector at any time. Those employed in occupations in art, culture, recreation and sport are also minimal with the highest overall average again being Red Rock with 4.4%.

Only a small percentage of females employed in those occupations often associated with the resource sector: trades, transport and equipment operators, primary industry and processing, manufacturing and utilities. In terms of ranking these three categories from highest percentage employed to lowest for Hearst, Red Rock and Atikokan it went from processing, manufacturing and utilities to trades, transport and equipment operators to primary industry. For Hornepayne the highest percentage was in the trades, transport and equipment operators category followed by the primary industry and finally processing, manufacturing and utilities, the last of which did not employ any women at the time of any of the six censuses.

Gender Comparison

There were significant differences between the categories employing large numbers of females as compared to those for men. One such difference was in the occupations unique to

processing, manufacturing and utilities and trades, transport and equipment operators. These two categories were found to employ the highest percentage of men for the four communities for the majority of the census years studied while for women they were among the lowest. While the average percentage of men working in these two categories for all four communities was 28.9%, the percentage of women in these occupations was only 3.1% a difference of 25.8%. According to these numbers, mill closures and downsizing in Northern Ontario are significantly more likely to directly affect men than women.

Table 9: Gender Comparison of Percent of Population by Occupational Category from the 1981 Census

	Hearst		Hornepayne		Red Rock		Atikokan	
	Male	Female	Male	Female	Male	Female	Male	Female
Management	5.7	2.0	5.4	1.5	5.2	4.4	4.7	5.8
Business, finance & administration	3.6	29.4	2.7	24.6	3.1	26.7	2.8	13.5
Natural & applied sciences	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.3
Health	1.8	11.1	0	16.9	1.0	4.4	1.2	10.3
Social science, education, government service & religion	4.3	9.8	2.7	4.6	4.1	15.6	2.8	19.4
Art, culture, recreation & sport	2.9	3.9	0.9	0	4.1	0	6.7	3.2
Sales and service	14.3	35.9	9.8	41.5	7.2	40.0	11.4	33.5
Trades, transport & equipment operators	26.8	1.3	69.6	1.5	26.8	2.2	34.6	3.9
Primary industry	12.5	1.3	3.6	4.6	1.0	2.2	16.5	1.3
Processing, manufacturing & utilities	22.9	3.3	0.9	0	41.2	6.7	6.3	7.1

Source: Statistics Canada, Census of Canada 1981.

Table 10: Gender Comparison of Percent of Population by Occupational Category from the 1981 Census

	Hearst		Hornepayne		Red Rock		Atikokan	
	Male	Female	Male	Female	Male	Female	Male	Female
Management	7.9	8.8	5.5	10.8	12	7.1	8.6	5.8
Business, finance & administration	5	18.8	4.1	10.8	0	9.5	2.9	13.5
Natural & applied sciences	5.8	0	2.7	0	0	4.8	2.3	1.3
Health	0.9	11.5	0	15.4	0	9.5	2.3	10.3
Social science, education, government service & religion	2.6	13.4	4.1	15.4	4.0	19	3.4	19.4
Art, culture, recreation & sport	0.6	2.3	2.7	3.1	0	0	2.3	3.2
Sales and service	12.9	38.3	15.1	33.8	10	47.6	9.8	33.5
Trades, transport & equipment operators	36.5	1.1	52.1	7.7	28	0	36.2	3.9
Primary industry	10.2	1.1	0	3.1	8	0	11.5	1.3
Processing, manufacturing & utilities	17.5	4.2	13.7	0	36	0	20.7	7.1

Source: Statistics Canada, Census of Canada 1981.

Men also tend to be slightly more likely to be employed in the categories of management, natural and applied sciences and primary industry. While the average overall percentage of men from all four communities employed in management occupations was 7.0%, for women it was 6.3%, a difference of 0.7%. For the category of natural and applied sciences men had an average of 2.7% for the three censuses in which this was measured, while women had an average of 1.8%, a difference of 0.9%. For the primary industry the difference between the percentages of each gender employed was considerably greater with 8.4% of the male population and 1.8% of the female population working in this sector, a difference of 6.6%.

Occupations that were found to employ high percentages of women were sales and services and business, finance and administration. The average percentage of male workers in these two categories for all four communities was 7.1% while for women it was 30.0% resulting in a difference of 22.9%. The difference between the percentages of each gender employed in a particular category is greater when comparing occupations typically classified as male than those perceived as female. Women also have greater percentages compared to men employed in health occupations at a difference of 8.4%, occupations in social science, education, government service and religion with a 7.5% difference, and occupations in art, culture, recreation and sport with a difference of 0.8%.

The rate of change by occupational category between 1981 and 2006 was calculated for each community. According to this data both genders of all four communities experienced an increase in those employed in management occupations. However, this occupational category was the only absolute across both genders and all four communities; all other occupations had both positive and negative rates of change.

Conclusion

The four northern communities have undergone change in the areas of occupation, education and population between the 1981 and 2006 Censuses. Males throughout the period between 1981 and 2006 were largely employed in the trades, transport and equipment operators occupations and occupations unique to processing manufacturing and utilities. A large proportion of the female populations on the other hand were employed in the sales and service occupations and the business, finance and administration occupations. Management occupations was the only category to experience an overall increase in the percentage of employees for both genders for all four communities.

Levels of education in these four communities remains low as large percentages of the populations still do not have a high school education. This is likely due to there being few jobs in the communities in which education levels above high school are needed.

The population in these four communities is declining, particularly in the age groups between 0 to 24 years of age. There has been an increase however in those over the age of 55 as seniors are more likely to remain in the community after retirement now because of the cheap housing and cost of living. These findings in relation to population change agree with the responses from many of the interview participants discussed earlier. The following chapter provides an analysis of the responses of the interview participants.

Chapter 5 – Qualitative Data Analysis

Interview questions for this research were separated into three parts. The first section focused on the economy and employment, the second on education and the third on women's roles in both the labour market and the home. While the first two sections do not relate directly to the changing roles of women in resource dependent communities, they do have an effect on the lives of these women. Women may be directly affected by job loss in the resource sector or may experience it through their partners or other loved ones. The closures and downsizing of the industrial sector also limits the opportunities for women to become involved in this type of employment and result in greater competition for employment in other areas of the economy. In terms of education, if more importance is being placed on higher levels of schooling by employers it may result in greater gender equality in the workforce.

For the four northern communities studied, high levels of job loss are evident in the local economies. Red Rock and Atikokan at the time of interviews had been hit the hardest by job loss with one and two mill closures respectively. Employment in these communities has changed as available jobs tend to be low paying and more individuals, particularly men, are forced to look for work outside of the community and often in another province. These job losses have also affected the population as the communities have seen a decline in overall numbers but particularly in relation to youth. These jobs losses may provide married women with the opportunity to take on a more dominant role in the workforce as their husbands find themselves unemployed as women were reported by participants to have become more involved in various areas of the economy than they were previously though they are still underrepresented in the industrial sector. More importance is being placed on education by employers in the

communities, yet there are still few job opportunities available for those with a postsecondary education.

The Economy and Employment

Job Loss

The most common change in the four communities in which interviews were conducted was that of job loss. There was only one participant out of the total 12 who did not refer to job loss when referring to economic change within their community. These job losses not only tended to be in reference to the forestry sector and mill closures, but also included the closure of smaller businesses. The causes of these economic changes according to the participants were largely external to the community and beyond the control of local people.

All three interviewees from Hearst referred to the instability of the forestry industry; however only one related this to a loss of jobs in this sector. Job loss in the forestry was likely only mentioned by one participant as Hearst still has two sawmills and a plywood board plant in operation. Although the town may have seen a decline in jobs it was not as predominant an issue as in two of the other communities studied as the forestry industry still employed large numbers of people. The economic change for Hearst is in the current higher potential for job loss in forestry, rather than jobs loss itself in this sector. However, other business closures and layoffs have occurred. As one participant said “We’re at the time now that we see a lot of closures, a lot of jobs layoff. We’ve heard this week of three major stores closing in town which we haven’t known before” (10/28/08a).

The Hearst participants saw job losses as being caused by several factors, with global competition and an unstable wood market as the leading contributors. One participant attributed

the unstable wood market to the United States no longer requiring wood for building due to a surplus of houses while another mentioned the prevalence of large companies due to smaller businesses often not being able to compete in the global market. In this way the global economy is not only affecting the larger urban centres, but rural locations as well. Businesses were also seen to undergo closure or layoffs as a direct result of the loss or downsizing of a major industry.

Job loss was referred to as an economic change by all Red Rock participants as before its closure, individuals were able to attain employment at the mill. The job loss from the mill closure in 2006 in Red Rock was particularly evident as it constituted the community's only industry. That all three participants referred to this mill closure in some form as an economic change is not surprising due to their current lack of any type of industry. One participant with substantial knowledge regarding forestry also pointed out that the mill closure affected those in other areas of business as well such as the grocery store or the mill's suppliers or even the service industry in Thunder Bay because as the interviewee explained "our primary shopping focus is always Thunder Bay, there's no stores here to speak of except groceries and liquor [laughs] and so even our banking is in Thunder Bay" (11/24/08).

One of the causes of the mill closure was seen by two of the three participants as due to the high costs of running a mill, particularly energy costs. These participants were also in agreement with those from Hearst that increasing competition has been another contributor to the struggling forestry sector. The fluctuation in the Canadian dollar was associated with not being able to compete in the United States market as effectively and it was also noted that the wood industry in Red Rock was, and continues to be, dependent on larger companies. The softwood lumber issue with the United States was not mentioned by the three participants from this community.

Job loss was a common theme in the responses from all three Atikokan participants regarding changes in the economy; however, the type of jobs that were being lost was not. While two responses referred to the mill closures that had occurred, the third was in relation to the closure of smaller businesses in the retail sector. It was expected that the mill closures would be mentioned as Atikokan had seen the closure of both its sawmill and its particle board plant in 2007 (AEDC 2008).

Numerous reasons were provided to explain job loss in Atikokan. Two of the participants determined that at least part of the cause of the mill closures and the potential closure of the Ontario Power Generation plant were due to changes in government regulations. As one participant pointed out, “more impact of government decisions on the economy is simply government is more reactive to pressures from interest groups that result in decisions that severely impact the economy” (12/15/08). Another interviewee attributed the closure of the particle board plant to its mismanagement by outsiders. Other causes that coincide with those mentioned by participants from other communities are the fluctuations in the Canadian dollar, the wood market and the closure of smaller businesses as a result of the closure of one or more larger businesses.

The one participant out of the total 12 that did not refer to job loss of any kind was a Hornepayne resident. This could be due to the fact that at the time of the interviews both major employers, the Canadian National Railway and Haavaldsrud’s Timber Company, had not undergone any significant downsizing and CN was actually in the process of hiring. This individual was also the only one to refer to women in terms of economic change, stating that women are now more involved in the community than they were previously.

Two Hornepayne participants associated job loss with fluctuations in the Canadian dollar and the advancement of technology. Technologies that are cost effective are being implemented by industries which then result in a downsizing of the workforce. When looking at CN specifically, one Hornepayne participant recalls that:

At one time it was the car department alone used to employ 20 to 25 people here only because there was a lot of repairs to be done to the cars. The new technology today with wheel bearings and so on has minimized that considerably to the point where there's very little in the way of maintenance being done in this terminal (11/04/08b).

There was unanimous agreement from all participants that jobs and the economy are one of the most contentious issues in the communities being studied. While the jobs already lost are obviously a contentious issue, for some it is the potential for further loss which could impact the population, as high rates of unemployment often force the out-migration of the younger generation. As one Atikokan resident explained, "unemployment of course is always very hard because people want to stay and there's just no work here for them right now" (12/10/08). Not many however expanded on why jobs were a contentious issue as this question was located in the middle of the interview questions and therefore the problem of job loss and unemployment had already been raised and explained by most.

Changing Employment Structure

With the closure and downsizing of the resource industry in many northern communities it follows that the type of employment found by the residents of the region will have also changed as those that are laid off are unlikely to find another job in the industrial sector in the region, forcing them to look for work in other sectors. The most common change in employment was an increase in lower paying jobs which was commented upon by participants from Hearst, Red Rock, and Atikokan. While some referred specifically to the rise in low paying jobs and the

absence of industrial jobs that were previously so dominant, others noted an increase in the retail sector as well as temporary and service jobs which were also grouped into low paying category.

An Atikokan participant commented that residents were becoming more accepting of lower paying jobs than they were previously but went on to say that:

Most people I find want the job whatever rate they were making before, they don't want to work at a job that's paying less unless they really have to and obviously you're not going to find those jobs that you're making the high money at any longer in Atikokan without having to move or look elsewhere (12/11/08).

Another participant from Red Rock agrees that it is difficult for people that are used to making at least 20 dollars an hour to accept a job that pays less. These lower paying jobs may become more appealing if those who lost their jobs are unable to secure other high paying employment once their employment insurance has been depleted.

Another employment change brought up by participants from the communities of Red Rock and Atikokan was the prevalence of unemployment and the need to move or commute in order to find work. For these three participants the high rate of job loss was the biggest change. This is easy to understand as Red Rock lost its only industrial employer and, according to one Atikokan participant, "it actually was 100 and some guys, close to 200 people at Sapawe and I would say it was over 100 at Proboard that have lost their jobs and some people have found employment out of town but there weren't a lot of jobs to find in town" (12/11/08). Moving or commuting for work has become one of few viable options for displaced workers as they are unlikely to all find work within the community.

One interviewee from Hearst and Hornepayne attributed the job losses as at least partially due to automation. Companies are able to downsize their workforce due to advancements in technology, which enables them to produce the same quantity or more while employing fewer

workers. Taking the Canadian National Railway as an example job loss occurred when the caboose was no longer deemed necessary in February of 1990 resulting in the need for fewer workers per train (Wilson 2006).

For two Hornepayne participants the biggest employment change was that of CN hiring. Although CN employs a significant proportion of the population they had not hired in Hornepayne for a long time. However, these individuals are being hired to replace the substantial number of baby boomers that are retiring; new jobs have not been created. This is promising for the town as these jobs are high paying and may require bringing in additional workers from outside the community. A larger consumer population would then benefit other areas of the community, particularly sales and services.

The next category of employment change is in relation to the decline in importance of the forestry sector in these communities as the focus shifts to what changes need to occur. An interest in greater economic changes was expressed by two participants each from Hearst and Atikokan. For Hearst there is hope that a mine will be opening near town which would then require a shift from investment in forestry to investment in mining by the community and its residents but dependence would still remain in the resource sector. For an Atikokan participant the shift that the local economy needs is from forestry to petroleum to profit from this market as Fort Mac and Weyburn Alberta have. The other Atikokan respondent believes the change that is needed is the adoption of more technology in order to compete with larger, more centralized companies. This shift could be beneficial to women as unlike when the mills initially opened they are more likely to apply for these new jobs and thereby have the same seniority as the men who are hired.

Only one interviewee mentioned educational requirements as being a change within people's employment. According to this Atikokan participant:

It used to be you could come out of school and get a job at the mine or the mill and you were set. That's not true anymore. You used to be able to go without education, you've got to have a basic grade 12 now and that doesn't even get you into many places anymore (12/10/08).

That only one participant would note the increasing importance of education as a change in employment was unexpected as a couple of the participants were employed in the education sector and many others held occupations that would have required some postsecondary education. Perhaps this was not foremost on their minds because the good paying jobs available in their communities have tended to be centred on resources.

While there was widespread agreement that job availability is declining in the resource sector in all four communities it was still possible that this was offset slightly by the increase in other industries. This however did not turn out to be the case. Seven of the 12 participants, including all three from Hornepayne, were unable to name even one new job that had recently become available. This may be due to my not having given a clear timeframe as to when these jobs could have emerged. Many of the participants were likely going back no more than a year. It is possible that if given a time period of five years in which new jobs could have emerged more examples would have been provided.

Of the five participants that were able to come up with new jobs that had been created in their community only two came up with more than one type. Three of the participants from Red Rock and Atikokan mentioned the establishment of an action center which created a small number of jobs. These were established just prior to the mill closures and their existence was well known as many people within the community had reason to access these services. These

centers offer a variety of services that result in its clients becoming reemployed, starting a business, retiring or furthering their education. Other new jobs included a couple temporary jobs at a mill, a few retail stores opening, construction workers and a small expansion in the healthcare sector.

Although the Hornepayne participants did not know of any new jobs becoming available in the community, two of them did see potential for new jobs related to the forest industry. The first participant saw possibility for the development of secondary manufacturing jobs that would make use of the wood processed by the local sawmill such as LacWood Industries in Hearst. Both participants mentioned that there was talk of a co-generation power plant opening which one of the participants perceives will create ten to 25 new jobs. He goes on to point out that these jobs will likely be technical in nature and may therefore require hiring those with the necessary skills from outside the community (11/04/08b).

For some of those that have found themselves unemployed in Northern Ontario self-employment may be the solution to their problems. This would enable the use of personal skills and would not require the individual to move or commute for work. Despite these potential advantages to self-employment, five of the 12 participants did not know of anyone starting their own business in their community. As to why the communities had seen little entrepreneurship there were a few reasons given. The first given by a Hearst respondent is that not many residents have the capital to start a business. Those that might benefit the most from creating their own jobs are often those that have been laid off from another industry and therefore have a reduced income. The second explanation outlined by a participant from both Red Rock and Hornepayne as to why people have not chosen self-employment is that it would be a very risky venture at this time due to the instability of the communities. All of the communities self-reported a declining

population which could result in not having enough people to sustain any new business ventures. A final reason given by the same Hornepayne participant was that “maybe because we’re so used to having two large employers and it’s easier to just work for someone else and make a good dollar than it is to try to invest and start a business” (11/04/08b). CN and Haavaldsrud Timber Company employees in Hornepayne make a good wage without having to risk any of their own finances by starting a business.

Those that were aware of people becoming self-employed in the community often did not know of many. In Hearst the only answer other than “no” that was given as to whether more people were becoming self-employed was that there had been some trials; however the respondent was not sure whether these trials had been successful. Red Rock also had only one participant that was aware of attempts at self-employment. This participant was able to think of four new businesses that had been started in the last year. In addition this Red Rock resident and another from Atikokan noted that there are people using their skills such as carpentry without starting a registered business. From Atikokan all three residents interviewed were able to list one or more businesses that had emerged including landscaping, handymen, carpenters and furniture making. From Hornepayne one participant could think of a general contractor that had recently started a business and another mentioned truck drivers and those who sell firewood. One Atikokan respondent explained that the reasons that people are becoming self-employed are:

First of all it is a global trend that’s taking place towards more self-employment. It is an option that is very accessible for people that are displaced workers in that it’s supported by the government through the self-employment benefit programs ... and it’s attractive for a lot of people in that they can run their small business from their home, still raise a family and probably cut corners in doing that (12/15/08).

While each of the four communities appear to have had a small number of people become self-employed they tended to be very small businesses and not necessarily successful. Although participants did not always indicate the number of individuals these new businesses employed, the nature of the businesses leads one to assume that it would not be more than ten and even that may be high. Therefore these new businesses are not opening at a rate that would offset the job losses caused by the decline in the major industries of these communities. However, according to a Hearst participant, community groups in the community are encouraging the establishment of smaller enterprises and a move away from dependence on one or two major employers.

Effects on the Population

When population changes occur in small communities they are often quite evident to the residents. Although they may not know the exact number of people in their community, in rural locations it is often common knowledge when a family out-migrates or a new one moves in.

That the communities were experiencing population decline was unanimously agreed upon by participants. While Atikokan, Red Rock and Hearst interviewees referred to the decline that was taking place presently, two of the respondents from Hornepayne believed the biggest decline to have happened over the last 20 years with the population now being somewhat stable. Hearst has also yet to see a large outmigration of people as the participants perceive only a slight decline.

Despite the decline in population, two Red Rock participants noted that people were not only leaving but there were also people moving into town. According to these interviewees what attracted these people to the community was the cheap housing and cost of living. As one of the participants explained:

In the past year or so we've had a lot of people coming to town for the inexpensive houses. Families, people whose husband is a truck driver so they can work from anywhere so why not live in Red Rock where things are relatively inexpensive, the housing is cheap, it's a nice community, so we're seeing that (11/21/08).

The other participant also includes retirees in those moving into the community as pensions can be stretched more easily when the cost of living is cheap. In addition to the cheap cost of living and houses, another advantage for Red Rock is its close proximity to Thunder Bay. With being only an hour away from shopping and other services and an international airport the feeling of isolation is somewhat alleviated.

Out-Migration for Work

The most common reason given for the decline in population was the need for individuals and families to out-migrate to find work. One would think that this would be particularly true for Atikokan and Red Rock as these communities have experienced mill closures over the last three years which constituted their main employers. However, in Hornepayne and Hearst out-migration might be necessary for youth to find employment as there is unlikely to be a surplus of available job opportunities, as hiring by the main employers likely occurs only when they lose one or more individuals who they had previously employed. It has also become more common for the male of the household to commute to work in Alberta and work on a rotational schedule.

Two participants both from Hearst noted that Alberta was a common destination for those looking for employment. It was somewhat surprising that this was not mentioned by members of the other communities as they also noted this trend when asked specifically. When the question of whether residents had moved out west to find work was posed, nine of the 12 interviewees saw this trend occurring.

While Hearst participants had noticed that there were some moving out west to find employment, Timmins, Sudbury and Ottawa were apparently more common destinations. As Hearst consists primarily of Francophone individuals these three locations may have been chosen by some due to their also having large Francophone populations which may then offer greater opportunities for finding employment in French. Timmins and Sudbury were also popular destinations until recently because of the mining boom. The Red Rock and Atikokan participants also all confirmed that moving out west to find employment was a common solution to job loss as Alberta had high paying job opportunities for blue-collar workers.

Hornepayne was the only community in which participants did not discuss people moving to Alberta in search of work, although from personal knowledge I know of quite a few youth who have made the transition. Youth are more likely to out-migrate to Alberta due to fewer responsibilities and the small number of job opportunities available to them in Hornepayne as when the interviews were conducted, the two main employers had not downsized or closed and therefore the older generation of workers were likely still employed and would not have had to move to find work. While out-migration to Alberta was not believed to be occurring in Hornepayne, participants did mention that it was common for those from the neighbouring communities of White River and Dubreville.

That people from Hornepayne were not reported to be moving out west for work does not mean that no one out-migrates from Hornepayne in search of work. In fact all three Hornepayne participants attributed local population decline to out-migration to larger cities for jobs. As one participant explained it:

There was no means to create new jobs in the community only because every other community in our neighbourhood, as I like to call it, is

suffering from the same dilemma that jobs are going elsewhere, that the larger centers are the ones that are getting all the new jobs in whatever form that they may be (11/04/08b).

While there were some individuals and families that had moved to Alberta, an even more common trend was for males, usually husbands, to commute out west for work. All three communities that had residents move to Alberta perceived an even greater number of commuters. I had not expected many people to be commuting between Hearst and Alberta due to their distance from a major airport. The extra time spent travelling would then shorten the length of time they were able to spend at home with their families.

Large numbers of commuters were expected for Atikokan and Red Rock due to the high number of people that lost their jobs with the mill closures in both communities. Unlike Hearst, these locations have the advantage of being close to Thunder Bay (Red Rock is one hour away and Atikokan is two hours away). Respondents gave a couple of reasons as to why husbands tended to commute to work out west rather than moving the whole family. As one Atikokan participant put it:

Like my husband had been at his place for 35 years so you're looking at people who had been at the places of their employment had been long time workers there so like a lot of them had a lot of seniority. Now if you go to someplace else you're going to be new on the seniority list so you're not guaranteed you're going to keep that job, if people have to go you're going to be the first one gone. So you don't really want to uproot your family and move someplace when you're going to be the first one gone if the economic turning slow (12/11/08).

The economy even in Alberta then is not stable enough for many people to move there permanently. The second reason why commuting is more popular than a permanent move at least in Red Rock is that "some people were unable to sell their house, there was a time where no houses were selling" (11/21/08). While some may choose to move despite being unable to sell their home, others may be unable to afford it financially.

While Hornepayne residents are unlikely to commute out west for work due to their still having employment within the community, their location is also not ideal for an out of province commute. Hornepayne is located a minimum of four hours' drive from a major airport thereby making it inconvenient for those on a rotational work schedule to get home.

Average Age of the Population

There seems to be agreement by participants that the population of their communities is aging. A total of six participants, two each from both Red Rock and Atikokan and one each from both Hearst and Hornepayne, referred to an aging population. The issue of youth out-migration was mentioned by another five participants. An explanation given for the aging population other than the out-migration of youth was the greater retention of seniors upon their retirement than had previously been the case.

Participants perceived the out-migration of youth and the aging of the population as attributable largely to a lack of available employment in the community. As one Hearst participant pointed out, "the job loss will not permit our youth to enter the workforce as compared to when the older population was retiring there would be place for additional youth" (10/28/08a). When there are no job opportunities in their community youth have no choice but to look for work elsewhere.

The loss of youth includes the loss of young families which then has an effect on the local schools. Two female participants with children from Red Rock and another from Atikokan mentioned the smaller class sizes as families with children move away. According to one of the Red Rock participants:

Education suffers for your children if your high school is just declining, declining, declining and the teachers are declining, declining, declining so then your children are not having the opportunities to pick the course loads that they would like so that when it comes to applying for postsecondary education you don't have those prerequisites (11/20/08).

As a result of the lack of course options, it is also becoming more common in Red Rock for parents to send their children to Thunder Bay for high school in order for them to have the required courses for postsecondary schooling. The other Red Rock participant notes that the elementary school class sizes are also shrinking to the point where there are now children in a triple grade class. Enrolment in Atikokan schools was also said to have decreased.

A final reason for the out-migration of youth given by a participant from Hornepayne was for postsecondary education. According to this respondent "a lot of them that go away to postsecondary education don't come back" (11/06/08). No other participants mentioned postsecondary education for explaining their aging population, perhaps because not many youth of the participants' acquaintance have left town to further their education. This explanation is unlikely as there are not very many well paying job opportunities for those with only a high school diploma especially with the downsizing of the forestry sector. A second more reasonable explanation is that due to the nature of the first section of questions pertaining to the economy; participants were more likely to relate the out-migration of youth to the search for employment.

Two interviewees from Hearst commented on the out-migration of the young retirees. It was the opinion of these two participants that upon retirement some individuals leave the community in order to be closer to their children and grandchildren who reside elsewhere. This is perceived as a great loss as this age group tends to be involved in various aspects of the community.

The age structure of the Atikokan population was further broken down by one resident based on gender. This participant perceives a disproportionately large number of males as compared to females between the ages of 18 and 45 in the community. He believes that this is due to past employment structure, where almost anyone could attain a job in the resource sector if they were male. While men were able to attain high paying employment without furthering their education, women were often unable to find employment in either the mining or forestry sectors and therefore were more likely than men to leave the community to further their education. These women then often did not come back because of the few job opportunities in the community that would make use of their skills or “they become romantically involved and end up settling wherever their spouse is” (12/15/08). This has been occurring for a few decades and reduces the number of women living in the community in their childbearing years resulting in an aging population.

Importance Placed on Education

According to the literature, education in today’s economy is becoming increasingly important in all sectors. However, as in many areas of society there may be a considerable difference between the level of importance of education in small rural communities as compared to that in urban centres. This section examines the participants’ views on educational attainment in their communities.

Of a total of eight participants that were contacted for follow up questions related to education as mentioned in the methods chapter, seven reported that their local economy places greater importance on education today than it had previously. While one Hearst respondent saw this occurring in certain areas such as management and leadership roles more than others, the majority saw a general rise in the importance of education across all sectors. More specifically,

for many of the interviewees a high school diploma is now deemed necessary for finding decent employment. Even general labour jobs or clean up at the sawmills now have a grade 12 requirement. Retail services was the only sector mentioned that still did not require a high school education. Only one participant made an attempt to explain why educational requirements were increasing. According to her, at least for industry jobs, it is because of computerization and modernization which leads to employers requiring their employees to have more education.

While educational requirements are rising in these communities, postsecondary credentials remain difficult to attain at these locations. While courses may be offered through Contact North in some communities, and Hearst has both a university and a college, the course/degree availability is minimal as compared to postsecondary institutions in larger centres. Therefore, it seems inevitable that the youth from these communities would have to relocate to attain a university or college education and that there would be a noticeable increase in those that graduate from high school that choose to do so.

Participants seemed more concerned as to what youth do once they have out-migrated and completed their education, rather than the actual numbers that leave to attain it. According to many of the participants, it is common for youth to out-migrate from their communities for postsecondary education. A Red Rock interviewee explained that the youth go away for variety in their education. What seems to concern participants most is the fact that many of the youth that leave do not come back upon completion of their schooling. One Atikokan respondent explained that “they always did [go away for school] but they used to be able to come back to it might be a mine manager’s job or one of the jobs that needed education more” (12/10/08). Now postsecondary graduates are even less likely than before to return to their home community

because there are often few, if any, jobs available that are related to their field of study. As a Hearst participant said “the jobs are limited [here] and don’t offer as much diversity as you would find in a larger city” (10/28/08). With limited job opportunities even if youth did want to come back to the community after completing university or college they often would not because the jobs are not available. However, despite this there are still some youth that choose to go back to these communities after getting a postsecondary education.

Very few of the participants could name sectors that would have job opportunities available for college or university graduates in their community. Only two participants, both from Hornepayne, referred to specific jobs/sectors. The first was the need for plumbers and the second acknowledged that the education and medical fields would require new well educated employees occasionally. However, while not specifying a sector of the local economy, one respondent each for both Atikokan and Hearst pointed out that the jobs that do become available tend to go to those with the higher education.

Hearst, Atikokan, and Hornepayne each had a participant who believed that while youth are currently managing to go away to postsecondary institutions this may change in the near future because of the hard economic times. The Hornepayne participant told me that “parents are struggling financially, but they’re still finding the means and the ways and the money to send their kids away ‘cause they know they need the education in order to be able to be self-sustaining as an adult” (11/06/08). In the future parents may not have the financial means necessary for postsecondary education for their children despite its increasing importance. For the two participants from Hearst and Atikokan it is more a matter of youth in the near future staying in the community while attaining a higher education. It is likely that Contact North which provides access to postsecondary schooling in many Northern Ontario communities through the use of

virtual classrooms and other forms of distance education may begin serving more youth right out of high school than they had previously. A Hearst participant believes the same could be true for the university and college in Hearst. Youth may no longer have the choice of going away for schooling as they have in the past.

Women

In Higher Education

Out of eight participants that were contacted for follow up questions, five including both male participants believed that the attainment of a higher education helps to at least partially reduce gender inequality in the workforce. According to two female and one male participant, employers are more interested in knowledge and skills than gender. They believed this to be particularly true when the job requires higher levels of education.

Three participants agreed that getting a higher education helped to alleviate gender inequalities but did not completely eliminate gender inequality. One female Hearst interviewee spoke of the inequality between genders in terms of employment promotions claiming that in some cases it is still more difficult for women to get promoted than it is for men and another female participant believes women need more education to be hired for the same job as a man. It was thought that gender discrimination still exists in some workplaces and would require considerably more time before it was eradicated completely. In terms of the industrial sector women were seen as still having to prove they are capable of doing the job.

Gender was perceived as irrelevant in terms of employment in today's economy by one male and one female respondent. This could be because these individuals are unaware of its

existence or they may be overly optimistic that hiring practices based on gender are a thing of the past.

In the Home

The responses given by those interviewed on the outlook for women in the home and their share of responsibilities were promising as all participants believed that men are now taking a more active role around the home. These household responsibilities often associated with women include both housework and childcare.

Only one participant believed that men were taking on more responsibility for childcare but not housework. This female Hearst resident sees this as the only role change in the home in the last 25 years. Even when both members of a couple work outside the home, housework is still mainly the responsibility of women. She believes one contributor to fathers playing a more predominant role in their children's lives is that many of them now have jobs where they are home every night. This may change if the forest industry continues to decline and more men are forced to commute to other areas for work.

The majority of participants believed that the responsibility for both housework and childcare is now being shared more equally between men and women. The most common reason given for men taking on more responsibility in the home is that both parents now tend to work outside of the home. As one female participant put it: "the guys have to do the same things as the women, they [women] won't stand for it [laughs]. Hey if you want a meal, then help me out here" (11/04/08). While this response suggests that women are no longer solely responsible for childrearing and household chores, only one male participant believes that the sharing of these tasks is equal. While there is agreement among participants that men are playing a more

dominant role in the home, 11 out of the 12 interviewed do not yet see the household roles of women and men as perfectly equal.

Another explanation given by several interviewees as to why some men and women have a more equal share of household responsibilities is that when men are laid off they have more time to help out around the home. Both a male and a female respondent from Hearst even specified that this was only when the husband is laid off but the wife is not. These participants see the change of roles as only a result of the current high levels of unemployment and not a general change toward gender equality in the home.

The final example given by a few participants, two females and one male, from Red Rock and Atikokan was actually a digression in equality of household responsibilities. According to these respondents women are taking on an even greater role in the home due to many men having to commute to places such as Alberta for work. During the weeks in which the men are gone women again become solely responsible for the home as they are essentially single mothers for the three weeks out of a month or so that their husbands are gone for work. One Red Rock participant believes the commute to be difficult for everyone:

I think that women have sort of taken on much more in the home when the partners are gone so I think it's really changed the family dynamic. So it's harder on women because they're doing even more. I think it's harder on the children because they've lost that other parent and then I think it must be hard on the men to be away for such long periods of time away from their families sort of disconnected (11/20/08).

It can place a strain on the entire family when men have to work elsewhere and the effects this then has on the family and the children are still unknown.

It has become commonplace today for women to work outside of the home even when their husbands are already employed. While it was my opinion that in many cases women would

find employment in order to supplement their husbands' income and would not be the primary income earners, only one female participant believed that in most cases women were employed as a means of supplement their husbands' incomes and only a few were the main breadwinners.

All 12 participants recognized that there were cases in which women were the primary income earners in a household. While this has occurred in some cases, women as primary income earners has still not become the norm, as many of the high paying jobs in these small communities are in the resource sector which remains male dominated. When women are the primary income earners, the participants attributed it to two different circumstances.

The most common explanation for the cases where a woman is earning more than her partner is due to education levels. One Hearst participant recalls that in the past,

Because of the economic situation even though it was prosperity, women wouldn't get high paying jobs in the bush. So they often had to go to get a better education to get a nice, good paying job so that often you would see couples where the woman was not the sole earner but was earning as much if not more than her husband (10/25/08).

That women would have to attain higher levels of education than men in order to find well-paid employment in a small community was illustrated by the examples given by participants as to the jobs that women who are primary income earners hold, including government positions, hospital positions and teaching. The majority of positions within these sectors require some degree of postsecondary education.

While education was a common response as to why some women have become the primary breadwinner, it was not mentioned by any of the Red Rock participants. They also seemed less sure as to whether women were actually becoming primary income earners, saying that it was possible.

The other reason given by three females and a male from both Red Rock and Atikokan to explain why women are becoming primary income earners was that the male partner was currently unemployed or underemployed. There would likely have been numerous cases of this the year following each of the town's mill closures as many of the men would have been collecting unemployment during this year which gives them only a fraction of the income that they were making when they were employed. One participant explains that even after unemployment runs out it sometimes make sense if the woman is working for them to remain in Red Rock:

If your partner [wife] had a fairly decent job it probably would be to your benefit to stay here rather than to move your family to a larger center without being able to sell your home in a smaller place and then to sort of bear that sort of financial burden to move too really probably come out even (11/20/08).

In the Workforce

With the economy changing from one based on manual labour to one that places increasing importance on knowledge and education it seems plausible that women will be able to access more areas of the economy than they had previously. However, this may be more difficult in small rural communities as there currently may be few job opportunities available for either gender.

Women were seen to be gaining access to employment in the forestry sector by three quarters of the participants. There also seems to be agreement across communities as to the type of job positions held by women in this industry. For the community of Red Rock whose mill had closed before the interviews, the participants referred to the number of women in the mill and the positions they held when the mill was still operating. While Atikokan had also experienced mill

closures, residents tended to focus on areas other than forestry that women had become involved in.

Hearst offers the greatest opportunity of the four communities for women to find employment in the forestry sector as it has two sawmills, Tembec and Lecours, and a plywood plant, Columbia Forest Products. Two of the participants, one male and one female, believe that the plywood plant employs the greatest number of women out of the three companies.

There was agreement by both genders from Hearst, Hornepayne and Red Rock that women currently or previously employed at a local mill are employed only in certain areas. Those women employed at the mills are congregated in either production or office work no one knew of any woman operating machinery in the bush. Even those working as labourers in the mill often are not plentiful. In Red Rock, most of the women employed in the forestry sector worked in the office. One Red Rock resident estimated that of the 300 people or so employed in the mill only 15 to 20 of them were women. The respondent attributes these small numbers to women's attempts to enter this industry coinciding with the beginning of its decline in the late 1980s and early 1990s.

In Hornepayne women have become increasingly employed in the forest industry and the railroad though they remain male dominated. According to one male participant, women are working in the mill but not in the bush in the forestry sector and they have also been employed by the railway as conductors and engineers for the last ten to 15 years. Employment with CN and in the forestry sector are big steps forward for women as these positions are often some of the highest paying in the community and have historically excluded them.

Management positions also tend to offer well-paid employment and denote authority. In terms of women attaining management level positions in the four communities studied there were mixed reviews. One female Red Rock participant did not believe women were moving into management level positions but clarified that this was likely due to these positions not being available in the community, while another Red Rock resident could only think of one woman manager but thought there might be a few others. The third participant from Red Rock was one of two respondents, the other being from Atikokan, who noted that women had management and mid-management positions at a mill. Participants also mentioned several other areas outside the resource sector in which women had attained management level positions in their communities. These areas include hospitals, schools and banks.

Women were also found to have become more prominent in terms of business ownership. In Hearst, two of the participants referred to La Maison Verte, a greenhouse established by women in the 1980s that is still in existence today. According to one Hearst respondent:

It was in the late '70s, early '80s the ... Ministry of Natural Resources introduced a new policy where they would produce the trees that were replanted in the area. Whereas before that the greenhouses were in the Ottawa area and it was local enterprises that were to produce this and in the Hearst area it was a group of women that formed an enterprise (10/25/08).

This was the only business owned by women mentioned by any Hearst participants.

In Red Rock women business owners were not abundant as only one female respondent referred to women in this area and only in the capacity of making homemade goods and selling them. From Hornepayne, a male participant mentioned women business owners but does not believe these to be overly abundant or successful ventures. In Atikokan women business owners are apparently quite common as one female participant could think of three women who had

become business owners in the month prior to the interview. Another male Atikokan resident explained that for quite some time “there’s been a far larger percentage of businesses that were either owned and operated by women or by a man and wife together as opposed to male operated businesses” (12/15/08). As with self-employment in general, women business owners may be scarce due to the instability of the economy and an insufficient population to support many new businesses.

Only one participant, a woman, believed that women had not become involved in new areas of the economy without going on to name a couple of examples anyway. The other four participants that agreed that women were not becoming involved in new areas of the economy then proceeded to come up with a few areas in which they had or that they have been prominent in for a while. Overall, it seems that women are becoming an important part in some areas of the economy in these small communities but are still excluded from some of the job positions in the industrial sector.

As women become more involved in new areas of the economy, particularly those that had previously been dominated by men, it is possible that they will be subjected to gender inequality and experience greater discrimination based on their gender. Levels of gender inequality and discrimination may vary depending on the area of the economy that women become involved in, some may be more accepting of the employment of women than others. Only five of the 12 participants believed women were facing discrimination as they became involved in new areas of the economy none of which were men. According to the Hearst participant that believed this to be true, women still have to work harder to get the same recognition as men while still expected to take on most of the family responsibilities. Three of the other participants referred specifically to discrimination of women in the lumber mills in their

communities. In the sawmills particularly, women were often seen by their male coworkers as incapable of doing the work. Two female participants even argued that women in fact are not capable of everything men do. In one Atikokan respondent's opinion

There will always be a rich man's law and a poor man's law and a male and female gender gap ... because we are different and I think we're all equally as important and I think there are jobs that women shouldn't do. Physically we can't handle some of the ones men do but we have just as good of brains and we have just as good of action and everything else as anybody else (12/10/08).

This participant also believes that gender discrimination and inequality do not exist in small towns to the extent that they do in the city.

I had expected gender inequality and discrimination to exist in the four communities studied. However seven of my 12 participants, four females and three males, believed that women had achieved equality in the workforce in their communities. One participant even perceives gender equality to be nationwide, that Canadians as a whole have moved past the issue of gender. Another male participant thinks that gender equality has been achieved because women are capable of the jobs.

There are a couple of reasons that these participants may feel that gender inequality is an issue of the past. The first is that certain forms of inequality and discrimination may have become so normal and expected that they are no longer perceived as such. Some may have accepted that women do not work in certain areas of the economy; they may not think to question it. Women have also been found to have become increasingly involved in the service sector of the economy, including those jobs which are higher paying such as those related to education and health. Their greater participation in this sector may overshadow their continued exclusion from the industrial sector.

Conclusion

There is no disputing that the economies of communities in Northern Ontario are changing. The most common theme throughout the interviews was job loss and its effects on other areas of the community such as population. These job losses, although particularly prominent in the resource sector, have been widespread as many smaller businesses have also been forced to close with the downsizing or closure of the local mill. More importance is being placed on education by the residents and employers of these four communities. Even a general labourer is required to have a high school education now. While many of the youth in these areas do leave for postsecondary schooling, not many come back which is largely attributed to there being few if any jobs in their field in these communities.

Women have historically been excluded from resource dependent communities such as the four studied here. According to the participants women are today becoming more involved in different areas of the local economies, although they are still underrepresented in the forestry sector. Though inequalities continue to exist in these communities, educational attainment has contributed to greater gender equality. The next chapter compares the findings of both the interviews and the census analysis to the related literature.

Chapter 6 - Discussion

A mixed method was used to determine whether and how the economy and employment opportunities in Northern Ontario are changing with the advancement of the knowledge economy and how these changes have affected the roles of women in the four Northern Ontario communities of Atikokan, Hearst, Hornepayne and Red Rock. For some topic areas data were gathered from both interview participants as well as previous censuses while others such as a household's primary income earner were only covered by one of these methods. There was a two year period between the last census and the dates at which the interviews were conducted. While the interviews touched broadly on the changes in the economies, educational attainment and populations of these communities, as well as women's changing roles in the household and the workforce, census data were used to examine changes in the occupational structure for males and females, population changes, rates of labour force activity, unpaid work and highest levels of education within the communities.

This chapter compares and contrasts the findings from my own research with those of the existing literature on the topic of the advancement of a knowledge economy and the changes associated with this. The topics discussed are compared to the literature on the knowledge economy in general which tends to focus on urban locations as well as the literature that deals specifically with rural resource communities. The data gathered for this research study show that there has been a downturn in the economy in the four northern communities, and that certain occupations have seen a decline while others have undergone an increase in the number of employees. Men and women each tend to have two categories in which around 50% of their population is employed. Both the interviews and the census data show a slight increase in the levels of education held by residents with women often having higher levels of schooling than

men. Women are also slowly becoming more involved in new areas of the economy when the opportunities are available.

A Declining Population

As previous literature has predicted (Southcott 2006; North Superior Training Board 2008), all participants recognized that the population of their communities is in decline. The census analysis conducted for this research showed decline for the communities of Hornepayne, Red Rock and Atikokan over the period of 1981 to 2006, but Hearst experienced a slight increase in population between 1981 and 2006. Nevertheless, in Hearst the population has in fact been declining since 1991. The decline in population was perceived by interview participants to be largely associated with the lack of available job opportunities for youth as well as the out-migration of those who are now finding themselves unemployed in their later years.

Another trend mentioned by participants from Red Rock, Hearst and Atikokan was the increasing number of individuals, usually men, who are now commuting to work as far away as Alberta. This phenomenon was relatively new, as before the downturn in the forest industry in these communities men did not need to leave the region to find well paying employment. During the time in which the husband is away, their families take on many of the characteristics of a single parent home. For those two to three weeks a month the woman will not only be responsible for her own roles which likely includes doing housework, cooking and being the dominant care giver, but also her husband's, such as home maintenance. While there may be cases in which it is the woman that commutes to work, there was no discussion of this occurring during the interviews in the four communities.

While the need to commute for work is new in Northern Ontario the concept of long-distance commuting has been around since at least the 1940s. Long-distance commuting is defined by Storey & Shrimpton (1991 as cited in Houghton 1993) as

All employment in which the work is so isolated from the workers' homes that food and lodging accommodations are provided for them at the work site, and schedules are established whereby employees spend a fixed number of days working at the site, followed by a fixed number of days at home (281).

These rotational work schedules are used by those employing workers, particularly from Red Rock and Atikokan, in Alberta. This form of commuting was common in the nineteenth century for forestry workers when work camps predominated in the north instead of established communities (Bowles 1992).

Youth Out-Migration

The issue of increasing youth out-migration was addressed by the interview participants and supported by the census data. Most of the participants when discussing the aging population referred to the loss of the population's youth. Four of the participants related the out-migration of youth to the lack of available job opportunities in the community. Previously, in many of these communities individuals were able to find well paying employment right out of high school, this however, is no longer the case. Also mentioned by a few of the participants was the low school enrolment due to young families leaving. This included both elementary schools and high schools as some parents have chosen to send their children to Thunder Bay for high school in order for them to have access to the prerequisite courses needed for a postsecondary education.

The census data show that there indeed has been a decline in the number of youth in these four communities. While the communities of Hornepayne, Red Rock and Atikokan also

experienced a decline in the age category from 25 to 54 years of age, those age groups experiencing the greatest rates of decline were from 0 and 24 years old. This phenomenon of youth out-migration has become a growing concern for many communities in Northern Ontario (North Superior Training Board 2004). Youth out-migration is far from a new concern but instead goes back to the end of World War II with the high turnover rates of young male workers. Today youth are leaving resource-dependent communities not only in search of work but also to attend postsecondary institutions (Southcott 2006). Females have been found to out-migrate at greater rates than males due to the lack of employment opportunities in these types of communities (Corbett 2005). The general out-migration of youth will also have an effect on women's employment in the community in that the census data show that they tend to be employed offering services to a young population, particularly those occupations related to education.

Realizing the Importance of Education

Himelfarb (1982) describes educational attainment in single-industry towns as low due to industrial jobs requiring little more than on-the-job training. As a result, the low importance of education was passed on from generation to generation. In Corbett's 2005 study of a rural Canadian coastal community, this devaluation of education could still be seen particularly for males as educational attainment in this area was not associated with their employability.

Despite these previous findings related to education and rural communities, education is becoming increasingly important with the advancement of the knowledge economy and people are striving to acquire higher levels of schooling than ever before (Livingstone 1999). In accordance with the literature, many participants believed that the local economy is placing greater importance on education today than it has in the past and that this was true for most

occupations. The only occupation which was identified by one participant as not placing greater importance on education was the retail sector. The importance of education was recognized despite these communities not having an abundance of jobs which could be clearly classified as knowledge-based. As Beckstead & Vinodrai's (2003) assert, knowledge intensity levels are increasing for all sectors of the economy "with the exception of the accommodation, food, and beverage services industry" (33).

Regarding the out-migration of youth for postsecondary education, interview participants thought that this could contribute to the development of the community were the youth to come back upon completion of their diploma or degree. However, three quarters of the interviewees did not believe this to be the case as most youth who leave for postsecondary education often do not come back. The reason most often provided by participants for this occurrence was that there are often no job opportunities available for those with postsecondary education in their fields. This "correlation between educational credentials and the propensity for out-migration for rural communities" (Corbett 2005: 54) was found by Dupuis, Meyer, and Morissette (2000) and Tremblay (2001) (as cited in Corbett 2005). Out-migration is again based on the industrial structure of these northern communities as they lack the occupational diversity that is often attainable in larger centres (Southcott 2006).

Although participants did not believe that many of those that leave for postsecondary education come back, there has been a substantial increase in the educational attainment of those residing in these communities between 1981 and 2006. While all four communities saw a decrease in the percentage of the population without a high school diploma as their highest level of schooling, there were increases in the numbers of people in all categories for higher levels of schooling except for persons with some university education, and in Atikokan other non-

university education. This again goes back to what the participants noted, which was that jobs that previously had little to no educational requirements now often want employees to have at least a high school diploma.

The idea of not having the resources to attend a postsecondary institution as mentioned by three interview participants is also considered by Corbett (2005) as an explanation for smaller numbers of youth out-migrating from an Atlantic coastal community during the 1980s and 1990s. During these two decades there were significant increases in both tuition costs and the cost of living resulting in postsecondary education for their children being beyond the means of many parents. Even when the families were financially able to allow their children a postsecondary education “the returns on educational investment were dubious compared to projected returns from more ‘down to earth,’ small business ventures or in other endeavours in known local fields” (62).

Economic Changes

While this section will show that economic changes are indeed taking place in the four communities of Atikokan, Hearst, Hornepayne and Red Rock, these communities can still largely be classified according to Himelfarb’s (1982) characteristics of single-industry towns. All four communities have small populations, particularly Red Rock and Hornepayne, as not one of them in 2006 had reached 6,000 residents. According to Himelfarb this is normal for single-industry towns, as few reach a population of more than 10,000 people. The other two characteristics, isolation and dependence, can also be used to describe these communities to a certain extent. Of the four, Red Rock is the closest to a large urban center being only one hour away from Thunder Bay. All other communities are at least two hours away from an urban center with Hornepayne being the farthest, at four hours. In terms of dependence the

communities are no longer dependent upon a single employer, but in Hearst, Red Rock and Atikokan, all industrial jobs remain reliant on the forestry sector and therefore when the sector takes a downturn these communities are overwhelmingly affected. While Hornepayne is not dependent solely on the forestry sector, were the mill to close down the town would likely lose a significant percentage of its already small population.

Since the beginning of the 1970s, there has been a progression from an industrial society largely dependent on the production of goods and the use of manual labour to an economy in which increasing importance is being placed on the ability to produce and distribute knowledge (Carlaw, Oxley, Walker, Thorns & Nuth 2006). Beckstead & Vinodrai (2003) break knowledge-based occupations into three general categories: professional occupations, management occupations and technical occupations. The census categories that would not be classified as goods producing are: management occupations, business, finance and administration, natural and applied sciences, health, social science, education, government services and religion, art, culture, recreation and sport and finally sales and services. Those occupations related to goods production are: trades, transport and equipment operators and related occupations, occupations unique to primary industry and occupations unique to processing, manufacturing and utilities.

The consistent increase in those employed in management occupations constituted the only category to either increase or decrease for both genders in all four communities. In accordance with the literature which perceives an increase in knowledge-based occupations (Beckstead & Vinodrai 2003) there was a slightly higher percentage increase in those employed in the knowledge-based occupational categories as compared to those classified as goods producing. The decrease in those occupations associated with the industrial era was more profound for females than for males which, as one Red Rock participant explained, is due to

females not having the same seniority as men and therefore being the first to get laid off when a mill downsizes or closes. However, while these knowledge-based categories have seen an increase in employee numbers the percentage of the workforce employed in these occupations is still quite low, particularly for men, the majority of whom are often still employed in areas related to the resource sector.

The most reoccurring theme from the interview data gathered was that of job loss, particularly in the forestry sector but also the closure of smaller businesses. Job loss in relation to the forest industry was of particular relevance to the communities of Red Rock and Atikokan as they had both experienced mill closures in the period between the 2006 Census and the time of the interviews in November and December of 2007. These perceived high levels of job loss by participants corresponded with the data supplied by Statistics Canada as the unemployment rate in 2006 was founded to have increased for the male population of all four communities since 1981.

The existing literature focusing on the forest industry in Northern Ontario and Ontario as a whole is in agreement with these findings that this industry is in crisis. As many as 2,200 people were found to have become involuntarily unemployed due to mill closures throughout the province between 2003 and 2005 (Minister's Council on Forest Sector Competitiveness 2005). A 2006 study prepared by Trendline Consulting Services for the North Superior Training Board also supported the interviewees that perceived job losses also occurring in other sectors, an indirect impact of the mill closures and layoffs.

Two explanations given for the mill closures and downsizing by interview participants were due to their not being able to compete in a global economy and the high costs of running a

mill, particularly in regards to electrical costs. These findings also coincide with those of the Minister's Council on Forest Sector Competiveness (2005) as they point out that "delivered wood costs in general are higher in Ontario than in many competing jurisdictions. These costs much be brought into line with the global average" (2). In terms of energy costs the Minister's Council identifies this as a third of the operating costs of the forest industry and as a result mentions the need for alternative energy supply such as co-generation, which was also remarked upon by a Hornepayne interviewee as a step their local mill is hoping to take.

Another explanation given by two Hornepayne participants for the downturn in the forestry sector was that of automation resulting in the requirement of fewer workers. This falls under van der Besselaar's (1997) rationalising effect which reasons that there will be an overall loss of jobs in the new economy as workers are continually being replaced by machines. Dunk (2002) also attributed the closure and downsizing of some of the pulp and paper mills beginning in the early 1980s as due to technological advancements that they just were not able to compete against.

The economy portrayed by interview participants was one where jobs were being lost and were not being replaced. While all participants were aware of job losses occurring, seven of the 12 interviewees were unable to name even one new business or industry that had become available and only two were able to name more than one. Those new jobs that were mentioned by participants often did not employ many workers and were still part of the goods producing market or the service industry. This again is supported by van der Besselaar's (1997) work in which he outlines the potential problems associated with replacing the large numbers of jobs that will be lost as the economy changes.

Residents' inability to name more than a couple new types of jobs that had become available and the service nature of these jobs supports the idea that decentralization due to advances in digital technologies is a myth as has been suggested by studies by Gillespie & Robins (1989), Berkeley, Carlk & Ilbery (1996) and Beckstead & Gellatly (2004). With the loss or downsizing of major employers in the four communities it is now even more improbable that the establishment of the infrastructure required for the use of these communications technologies will occur to an extent that would alleviate the barrier of isolation. The capital that would be required to invest in these new technologies is unlikely to be available in these communities as interview participants have already expressed concerns regarding the smaller tax base with the loss of one or more industrial employers.

Service Industry

One change in terms of employment discussed by 50 percent of the participants was that more individuals were accepting lower paying, often temporary work. Interviewees pointed out that this is difficult for those who were previously making 20 dollars an hour or more to accept these minimum wage or contract jobs, but people have gradually become more tolerant of these positions. Of those interview participants that were able to think of new jobs that had become available in their communities all were part of the service sector except for those listed by Hornepayne respondents. While Himelfarb's (1982) definition of single-industry towns as being dependent on only one employer is often no longer true, the forest industry in these small communities is still often the main source for good paying employment (North Superior Training Board 2006).

While participants did not say explicitly that these service sector jobs that may have been available in their communities were inadequate the insinuation was there in their accounts of

residents initially not wanting this type of work or in their moving to find better employment rather than accepting lower paying jobs. This is in agreement with the literature which suggests that in many ways the service industry is still considered inferior to the manufacturing sector. Service jobs are often lower paying, without benefits and require little skills of employees (Aarnio 1999).

Despite these disadvantages to the service industry and the apparent increase in the numbers employed in this sector, there was considerable variation as to which communities and genders saw an increase or a decrease in the percentage of the population involved in these types of occupations. While Red Rock saw an increase in sales and services for both genders as well as Hornepayne males and Hearst females, both men and women in Atikokan saw a decline along with Hornepayne females and Hearst males.

Although much of the literature does tend to focus on the low quality jobs available in the service sector other related occupations also included in this sector are higher paying, better quality jobs. This discrepancy between the high and low wage jobs in the service sector has become a concern in the new economy and is attributed to industrial restructuring (Moller & Rubin 2008). Of those well paid occupations many are located in the public sector which has “been regarded as a source of particularly “good” jobs, especially for women” (Fuller 2005: 406). It is this sector in which many of the higher paying service jobs are located such as those related to education, health and finance. The census data for these three occupational categories did not exhibit a consistent increase or decline for the four communities between 1981 and 2006. Occupations in social science, education, government service and religion increased for females from all four communities and for males from Hornepayne and Atikokan. For women these were the greatest increases out of the three types of occupations. Females from Red Rock and

Hearst and both genders from Atikokan experienced an increase in health occupations while the rest declined. Females from all four communities saw a decline in business, finance and administration occupations while Hornepayne, Hearst and Atikokan males increased their percentage employed in this category. This decline for females could be attributed to their now being able to attain jobs outside of the offices for the resource industry. Overall, women have begun to see an increase in employment in the higher paying service jobs in these communities and not solely in sales and services.

Greater Equality for Women?

Education

With the growing importance of higher levels of educational attainment there is the possibility that this will contribute to the alleviation of any emphasis still being placed on gender during the hiring process by employers. Participants were divided as to whether this was occurring in their communities. On the one hand, two participants believed that gender was no longer an issue in the workforce, others believe that gender discrimination is still occurring as women are often required to attain higher levels of schooling than men in order to be offered the same job position.

The census data for educational attainment that was separated by gender was only acquired for 2006 but differences between males and females in this category can be discerned. For all four communities females had a smaller percentage of the population without a high school diploma than males and a higher percentage with a high school education as their highest level of education. Males, on the other hand, consistently had higher percentages with an apprenticeship or trades certificate or diploma. Females from Hearst, Hornepayne and Red Rock

had higher percentages with a university education than males, while for Atikokan the percentage for each gender was the same.

One explanation given by Corbett (2005) for the higher levels of education achieved by females in the Atlantic coastal community is that women are often not employed in the fishing businesses and therefore do not have the option to forego an education as males do while still being able to earn a decent wage. Similarly, some of my interview participants said that previously, young men were able to acquire good paying employment at the local mill right out of high school, but are now more likely to further their education as acquiring one of these jobs is no longer a guarantee.

In the Home

In general, household responsibilities have often been labelled as belonging to the women's domain. These "traditional conceptions of femininity and masculinity are strong in rural resource communities where women are seen as the primary care-givers and nurturers, and men as the providers and decision makers" (Gibson 1992 as cited in Reed 2003: 377). Studies by Frankenhäuser *et al.* (1989), Lundberg *et al.* (1994) and Wortman *et al.* (1991) as cited in Zauchner *et al.* (2000) also state that women are still largely responsible for both housework and childcare, as traditional gender roles continue to prevail. In contrast, my interview participants indicated that traditional gender roles and gendered household responsibilities were changing.

Two thirds of the participants believed that household responsibilities were either being split 50/50 or at least that men were taking on a larger role than they had in the past. The most common reason given for this greater sharing of household responsibilities was that both partners were working outside of the home. Only one of the interview participants did not believe that

men's and women's roles had been changed or reversed in the home in relation to housework even when both partners were employed. As Luxton (1980) did in her study of women's domestic labour, this participant observed that those women who become involved in the workforce then have less time in which to complete their household responsibilities, but these responsibilities are still considered primarily the women's duty.

Census data from 2006 however shows that men are taking on more responsibilities in the home. While the percentage of females from all four communities who reported hours of unpaid housework was higher than males the difference was quite small. The lowest percentage of women who reported unpaid housework was 92.7% while for men it was 87.6%, both of which are from Hearst. The greatest difference between percentages for men and women in a community was in Hornepayne with 95.5% of women reporting unpaid hours of housework and 89% of men at a difference of 6.5%. These statistics however do not provide the amount of time each gender spends on these unpaid responsibilities.

Although no longer solely responsible for managing the home and children, women continue to be disadvantaged as this work is often still primarily their responsibility when they are employed. This is often not the same for men as Luxton (1980) explains, "for the man there is a distinct separation between his workplace and his home, between work time and leisure time. He usually assumes that his wage labour fulfills his obligations within the division of labour of the family household" (46). This is not the case for women as for many their home is their place of work. Those women who are also employed outside of the home the jobs are often "lowest paid, least secure and most monotonous jobs" (ibid: 44). As a result, many women are not capable of supporting themselves and children without their husbands' income.

Several participants saw men as taking on a larger role in the home only because he was currently unemployed due to the downturn in the economy. A final scenario was that women were taking on even more of the household responsibilities because men were working a rotational schedule where they were gone for weeks at a time. Winson & Leach (2002) and Zauchner *et al.* (2000) argue that a woman's household responsibilities restrict the time they can spend on paid employment. That men in the four communities studied are taking on more household responsibilities therefore allows women greater opportunities to participate in paid employment.

As it becomes more commonplace for women to participate in the labour force, there are cases where they have also become the primary income earner of a household. My interviewees all recognized that this was in fact occurring, although it is still far from being the norm. The most common explanation given for these occurrences was that women were attaining higher levels of education that enabled them to obtain high paying employment. Another justification for women becoming the primary income earners was that their partners had lost their jobs and therefore, were making a fraction of their previous wages with employment insurance income.

In the Workforce

While interview participants did not believe that total gender equality had been achieved in the workforce with the rising importance of education, women have increasingly become involved in some of the census occupational sectors since 1981. The two categories in which women from all four communities experienced increased levels of participation were management occupations and occupations in social science, education, government service and religion though the degree of change varied significantly between communities. The percentage of women employed in the occupations unique to primary industry and business, finance and

administration occupations saw a decline during the time period in all four communities. This decline in the business sector included occupations such as secretaries and clerical work that have historically been considered women's work as many of these occupations are reliant on the primary industry for sustainability (Lucas 1971; Zauchner, Korunka, Weiss & Lützow 2000).

Whether there was an increase or decline in the trades, transport and equipment operators and related occupations and the occupations unique to processing, manufacturing and utilities, the percentage of the female population employed in these sectors never rose to more than 7.7% between 1981 and 2006. However, the participants of Reed's (2003) study of women in forestry in British Columbia argued that the census definition of those occupations unique to primary industry do not include many jobs directly related to forestry that employ larger numbers of women such as machine operators and truck drivers. To obtain a more detailed understanding of women's involvement in forestry the basic census categories require further tabulation which is costly to acquire.

There were three main areas of the economy in which interview participants believed women were becoming more involved. These were management positions, business ownership and the forestry sector. Management level positions held by women in the communities were commonly in areas such as hospitals, banks and schools. Women business owners, although mentioned by several participants, were not abundant as usually only one or two were named. However, 75% of the interview participants believed women were becoming more involved in the forestry sector. Those positions at the mills most commonly held by women, however, were in production or office work, not running the machinery in the bush. Reed's (2003) study also found women to be concentrated in jobs that were considered less important than those filled by men and therefore, women were paid less and received fewer benefits.

Of those interview participants who did believe women were continuing to face inequality and discrimination in the workforce, they saw this occurring in industrial occupations. Reed (2003) also found that women who attempted to become involved in the forestry sector “reported on outright exclusion from work opportunities or documented both sexism and marginalisation in their work environments” (375). Two of my female participants saw women as having to prove themselves capable of doing their work more so and more often than men which was also felt by Reed’s interviewees through exclusion and undervaluing. The other seven interview participants did not believe women to be facing new or increased levels of gender inequality or discrimination in the workforce in their communities. That women have in fact not achieved equality in these communities but are perceived to have can be disadvantageous as they may not question the status quo and their roles in the labour force and the home. Abundant literature exists highlighting the difficulties regarding gender equality that women are still experiencing in the paid labour force which often stems from their continued primary role in the home (Nelson & Lorence 1988; Maume & Mullin 1993; Cohen & Huffman 2003; Reed 2003; Stone & Lovejoy 2004).

Conclusion

The trends observed through the preceding analysis of interviews and census data of Northern Ontario communities are similar to the available literature on other regions. While there has been a slight increase in many of the occupational categories related to the knowledge economy, the proportion of the population employed in these jobs is often quite low. The population of the communities studied is continuing to decline, and youth out-migration is a growing though not new concern. Educational attainment has risen in these communities, and women have expanded their roles outside of the home and into various areas of the economy,

though inequalities are still perceived to exist by some. While participants' perceptions were often in support of the census data and the available literature, the interview participants' views regarding women may be a little optimistic. The final chapter gives a brief summary of these findings as well as recommendations for future research.

Chapter 7 - Conclusion

This thesis topic was chosen to contribute to the literature and thereby the understanding of the effect of the knowledge economy on the role of women in the home and the labour force in small resource communities in Northern Ontario. Many differences exist between Northern Ontario and Ontario as a whole. One important difference stems from the north being established in the early 1900s almost for the sole purpose of advancing industrial society by providing access to the regions wood and minerals (Southcott 2006). While much of the literature is in support of the movement into a post-industrial society and the advancement of a knowledge economy, it tends to refer to urban centres which will experience change differently and to varying degrees from the resource communities in the North.

There is some variation between the responses given by interview participants and the findings from the census data in terms of employment levels in the four communities. The most obvious explanation for this is that the census was taken in 2006 while the interviews were not conducted until the end of 2008. It was during this in between period that Red Rock had its mill shutdown and Atikokan lost both its sawmill and its particle board plant. While respondents often did not differentiate between men and women when referring to job loss, these losses were likely to have affected predominantly men, particularly in the forestry sector. While interview participants expressed concern over the high numbers who have experienced job loss, census statistics show that between 1981 and 2006 while some occupational categories did decline there were others that increased the percentage of the population they employed.

The expansion of the service sector is often associated with the advancement of the knowledge economy and the employment of large numbers of women. Several of the interview participants perceived an increase in some areas of the service industry in their community, but

these were often low paying positions such as retail. The census analysis is in agreement with this for some communities, as males in Hornepayne and Red Rock saw an increase in the percentage of the population employed in this sector as well as females from Hearst and Red Rock. However, the service industry is dependent on residents having a disposable income and therefore is likely to see a decline by the 2011 Census in Northern Ontario resource communities.

The populations of all four communities are currently in decline. Hearst saw a slight increase in population between 1981 and 2006 but has been declining since 1991. The declines experienced by the other communities were significant as the loss of even a couple hundred people can have considerable effect on locations which were not overly populated to begin with. This will affect women as many that remain in the community are likely to be employed in the service sector which is dependent on customers with a disposable income. Participants most often attributed this decline in population to out-migration in search of employment as available job opportunities are limited. Postsecondary education was another reason given for the population decline particularly in relation to the out-migration of youth.

The majority of participants also believed that their populations were aging which was corroborated by the census data and the literature (Southcott 2006). The age groups from 55 and older were the categories that most often experienced an increase between 1981 and 2006 while the 0 to 24 age groups all saw decline. Although those age 25 to 54 saw a slight increase for both genders from Hearst over this period this category for the other communities also declined. The decline of this age group becomes problematic as the loss of youth does not enable a population to replenish itself.

High paying jobs for those without even a high school education appear to be a thing of the past for these northern communities. While men were previously able to drop out of high school and acquire a job at a mill or in Hornepayne on the railroad, many of these companies are now requiring a high school diploma from their workers. According to many of the participants, most sectors of the local economy are now placing greater importance on education yet there are still few job opportunities available for those with a postsecondary education in these communities. However, youth have little choice today but to leave to attend a postsecondary institution as there are so few jobs even for those with lower levels of education. Thus more youth are leaving these communities for higher schooling and they were often not coming back as greater job diversity is available in urban centres. Despite this however, the data from the 2006 Census shows that education levels are rising in these communities though the greater numbers are still those with and without a high school diploma as their highest level of schooling.

For women the greater importance that is being placed on education is seen as a step towards gender equality by several of the participants, and two participants even thought that gender inequality was no longer an issue. From the census data it is obvious that though women have increased their participation in occupations related to industry they still constitute a very small percentage of this workforce. Those who were employed in the mills were often in the offices and small numbers in production but operating machinery in the bush still remains a solely male domain.

When taking into account other sectors of the economy a greater percentage of women were employed in management occupations and social science, education, government services and religion in 2006 than they were in 1981 for all four communities. The only occupational

category in which women did not increase their involvement in any of the communities was in relation to the primary industry. The areas of the economy listed by participants as now having greater contributions from women are as business owners and management positions. They also perceived a greater number of women working at the mills, either currently or before they were shut down; though their percentage of the workforce was still low and discrimination still a problem.

All participants believed that men were in some capacity taking on more responsibility around the home than they had in the past. For one participant this was only in relation to childcare while the rest were also referring to housework. One reason given for this was that men were laid off and therefore had more time than their partners to engage in childcare and housework. The second reason was that both males and females now tend to work outside the home and since females then have less time for their household responsibilities they are more equally shared yet as predicted by the literature (Luxton 1980; Reed 2003) household responsibilities are still considered women's work.

As women become increasingly involved in paid labour not only do their household responsibilities change, but it has also brought about changes as to who is the primary income earner. All 12 of the interview participants knew of at least one case in which a female in their community was the primary income earner rather than their male partner. The two explanations given for this were that women were attaining higher levels of education and therefore able to get higher paying jobs and because some men were unemployed resulting in female primary income earners due to the reduced wages for those on employment insurance.

Many of the topic areas covered in this thesis will be expanded upon further by the SSHRC study mentioned previously through the use of more interviewees and a larger interview schedule related to other changes in the economies of the four communities. For this thesis, more questions could have been asked to get a greater understanding of both the importance of education in these communities and why the participants believe it is growing in significance as well as women's roles in these economies and whether they are satisfied with their current rates of participation. Also the interview topics of self-employment and household responsibilities could have been compared to the census categories on these topics.

Further research and possible solutions are needed as to how resource communities can be diversified and allowed to embrace the post-industrial era. The almost sole focus on the resource industry since the establishment of these communities has resulted in greater difficulty in branching out to other economic sectors. Himelfarb's (1982) single-industry characteristics of isolation and small population size will be only two of many obstacles that will need to be overcome. More research is also needed on women's roles in the knowledge economy for both urban and rural areas. Very little literature exists on women in knowledge-based sectors other than information technology which is only one small area of the knowledge economy and is likely to be nonexistent in small resource communities in Northern Ontario. Further research could also be undertaken regarding the need for men to commute to other areas in search of employment. Men are having to travel increasingly far from home for employment and this is likely to have negative effects on the families they may leave behind, a concern that was identified by the North Superior Training Board in 2006 (Trendline Consulting Services 2006).

Overall it appears that these four communities are being affected by the advancement in the knowledge economy as they experience job loss and industry and business closures due to

the declining importance and growing competition in the forest industry. These negative impacts seem to be the main effects however as few new employment opportunities associated with knowledge have been established as the idea of communication technology has not resulted in decentralization as some literature suggests it will. The roles of both education and women are becoming more dominant in these communities but they remain minimal compared to those in urban locations. These four communities therefore need to shift their focus from the resource industry to the diversification of their economies and to ways in which this could be made possible as well as ways to entice those with higher levels of education back to the community and make better use of the female labour force.

Appendix A – Interview Schedule

Interview Schedule for Open-ended Interviews with Community Participants

1. Describe the three most fundamental changes in the economy that have taken place in your community in the last decade (note for an older participant the time frame may be longer).
2. In your opinion what are the causes of these changes.
3. To what extent did or might have local residents caused these changes.
4. To what extent were these changes beyond the control of local people.
5. Can you describe the effect of these economic changes on the nature of the local community population? (For examples is there a change in the age structure of the population, the number of married couples, the ethnic composition of the local population).
6. For the youth how much does furthering their education have to do with leaving the community?
7. What in your opinion are the most contentious issues for community members? What things are they most upset about? (Jobs, taxes, environmental issues, newcomers to the community, etc).
8. What sort of changes have there been in people's employment? Have new jobs or different kinds of jobs come into existence? Have more people become self-employed?
9. What role do remittances play in the current economy? Are there many people working in places like Alberta and supporting a family in Northwestern Ontario?
10. At the household level, have men's and women's roles have been reversed or changed? Are there cases where women have become the primary income earner?
11. Have women become involved in new areas of the economy? If so, which areas? In your opinion, are there any new forms of gender inequality that have surfaced with the changing economy?

Questions asked of 7 of the 12 Interview Participants on June 16 and 17 via Telephone

1. In your opinion does the local economy today place greater importance on education than in the past? Which sectors?
2. Are there many job opportunities available for those with a college or university education in your community?
3. In your opinion does the attainment of a higher education help reduce gender inequality in the workforce? Why or why not?

Appendix B – Cover Letter

Dear Potential Participant,

I would like you to participate in our study entitled “Changes in Employment in Post-Industrial Society: A Case Study of Resource-Dependent Communities in Northern Ontario”. This research is being conducted as part of a larger study financed by the Social Sciences and Humanities Research Council of Canada (SSHRC) comparing social change in resource dependent regions in Canada and Norway. It will also be used by me for my Master’s thesis. The research in Northern Ontario is being directed by my supervisor Dr. Chris Southcott of Lakehead University. The purpose of this research is to determine how the advancement of a knowledge economy has affected the communities of Northern Ontario, particularly in regard to employment and women.

You have been asked to participate based on your knowledge of employment and related trends in your particular community. Participants will be asked questions relating to any real or perceived variations in employment trends, the hardships or benefits the community has experienced with the decline in manual labour and the role and participation rate of women in this new economy. The interview will be conducted by myself, Ashley Olivier, and will require between an hour and an hour and a half of your time. This interview will be recorded and partially transcribed for use in my own thesis as well as the SSHRC project. Pseudonyms will be given to all participants to ensure confidentiality. The interview tapes will only be heard by the interviewer and the other researchers in collaboration with the SSHRC funded research. Any references to an individual’s responses will only be made if anonymity can be maintained. The resulting paper will be read by Dr. Chris Southcott and the interviewer and will be made available to Lakehead University faculty and students. Information collected will be stored under secure conditions at Lakehead University for a period of five years.

It is hoped that this research will help generate new ideas for employment in this region and assist your community in finding ways to deal with any problems arising from changes now occurring.

Participation in this interview is completely voluntary. Respondents may decline to answer any of the questions and may terminate the interview at any time. A summary of the research results may also be requested. Your involvement in this study is greatly appreciated. If you have any questions or concerns please contact me at saolivie@lakeheadu.ca, or Dr. Chris Southcott at csouthco@lakeheadu.ca or the Research Ethics Board at Lakehead University at (807) 343-8283.

Sincerely,

S. Ashley Olivier

Appendix C – Consent Form

Consent Form

I agree to participate in the research project entitled “Changes in Employment in Post-Industrial Society: A Case Study of Resource-Dependent Communities in Northern Ontario”, which is being conducted by Ashley Olivier, 955 Oliver Road, Thunder Bay, ON, P7B 5E1, 807-629-4648. I understand that participation is voluntary; I can withdraw my consent at any time and have the results of the participation returned to me, removed from the experimental records, or destroyed.

The following points have been explained to me:

1. This research is being conducted to meet the requirements of a master’s thesis in sociology at Lakehead University. While there are no guaranteed benefits to be accrued from this research, the interviewer will attempt to provide some helpful suggestions as to how communities in Northern Ontario could better integrate itself into the new knowledge economy.
2. The procedures are as follows: an interview lasting an hour to an hour and a half will be conducted at a place and time of the participants choosing within the timeframe that the researcher is staying in the community.
3. There may be discomforts or stresses faced during the research as the questions will be geared toward difficulties that the interviewee and his/her community may be currently facing regarding the economy.
4. There is minimal risk that the participant may feel emotional distress following the interview due to its focus on economic situations that may be beyond the interviewee’s control and that may have a direct or indirect impact upon them or someone they know.
5. The results of this participation will be anonymous and will not be released in any individually identifiable form without the prior consent of the participant unless required by law. The participant’s name or any other identifying factors will not be included in the research report.
6. The interview will be recorded.
7. Participation is voluntary, and you can choose to withdraw at any time.
8. Information collected will be stored under secure conditions at Lakehead University for a period of five years.

Signature of the Investigator

Date

Signature of the Participant

Date

PLEASE SIGN BOTH COPIES, KEEP ONE AND RETURN THE OTHER TO THE INVESTIGATOR.

Appendix D – Census Occupational Categories

1996 -2006 Census Categories	1981-1991 Census Categories
Management occupations	Managerial, administrative and related occupations
Business, finance and administration occupations	Clerical and related occupations
Natural and applied sciences and related occupations	N/A
Health occupations	Occupations in medicine and health
Occupations in social science, education, government service and religion	Teaching and related occupations
Occupations in art, culture, recreation and sport	Technological, social, religious, artistic and related occupations
Sales and service occupations	Sales occupations; Service occupations
Trades, transport and equipment operators and related occupations	Machining, product fabricating, assembling and repairing occupations; Construction trades occupations; Transport equipment operating occupations
Occupations unique to primary industry	Primary occupations
Occupations unique to processing, manufacturing and utilities	Processing occupations

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