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Abstract

Information and Communication Technologies (ICTs) have been touted as means of increasing economic development by providing improvements in the lives of people where the use of technology leads to better livelihoods. Despite the high access and use of ICTs in the United States, high unemployment and poverty rates among Native Americans and African Americans continues to rise while deepening existing income inequalities. Through a framing analysis of Native American and African American micro-entrepreneurs, this paper investigates the use of ICTs in six micro-enterprises. Our findings reveal strong community and infrastructure frames in Native American micro-enterprises and their use of Information Technology (IT) products and services for business and economic development. The African American micro-enterprises studied showed low levels of trust affecting their use of ICTs in their businesses. This has important implications for how ICTs may support these micro-enterprises.

Keywords: Information and Communication Technologies (ICTs), Micro-enterprises, Framing analysis, Digital Divides, Economic Development, Empowerment.

1. Introduction

Unemployment and poverty rates have risen sharply in the United States over the course of the recession. The effect of the recession has been particularly acute in Native American and African American populations, particularly, in the Midwest. According to the pew research center, 1-in-4 Native Americans and Alaska Natives are living in poverty and their unemployment rates have risen to 11.3% in 2013 and have had the highest unemployment rates in the Midwest of 16.8% [58, 56, 61]. Similarly, the unemployment rate among African Americans is at 13.4% [57]. Poverty rates in the Midwest are particularly high among African Americans and Native Americans. The US Census Bureau reports that the highest national poverty rates were for American Indians and Alaska Natives (27.0%) and Blacks or African Americans (25.8%) [58].

At the same time, Information and Communications Technologies (ICTs) have fundamentally shaped a dramatic transformation in the United States. ICTs are used by many private enterprises to improve their performance, productivity, and competitiveness in their marketplace. Qureshi et al. [33] found that targeted Information Technology (IT) interventions in micro-enterprises increase their chances of survival and stimulate their growth. Other studies of IT adoption in micro-enterprises have shown that effective IT interventions may have considerable potential for facilitating IT adoption among micro-enterprises across the United States and the world [42, 19]. The long period of rapid development of the United States economy over the past ten years coincides with significant investment in and diffusion of ICTs and their applications [39]. Yet, Native American and African American owned businesses – increasingly connected via mobile technology – continue to remain at the fringes of this prosperity.

In the last three decades, economic and ICTs development in Native American communities and reservations has focused on tribally owned businesses and to a lesser extent, industrial parks. In part, the tribal-based focus over individual development is culturally based. Most Native societies tend to be collectivistic rather than individualistic, and entrepreneurialism is associated with the latter. The lack of African American owned small businesses was also observed in the United States [9].

As a 'missing piece' of the research and teaching [45, 26], the use of ICTs is a challenge among Native American and African American owned small businesses, especially from women in rural areas of the US [1, 17]. Their unique ways of viewing ICTs means that their frames of reference need to be addressed when considering use of the technologies [31].

Overall, small businesses, including micro-enterprises face several challenges when adopting ICTs. Small and medium enterprises (SMEs) are significantly limited regarding financial and human capital [46]. They generally have limited access to market information [21] and rarely use strategic techniques such as financial analysis, forecasting, and project management [4, 12]. The readiness, availability, and uptake issues of ICTs will remain relevant for at least a generation [15]. While very few Native American small business owners were aware of public and private resources [44], the technopreneurship in Native American businesses would also face training and financial issues [7].

As micro-enterprises, small businesses of fewer than 5 employees, are the driving force and the central ingredient behind the economic growth and development of communities in the United States [31, 7, 11, 50], this study is an important first step toward examining how Native American and African American individuals understand and engage in micro-enterprises with particular emphasis on how ICTs are leveraged in this process. The research seeks to investigate the relationships between IT adoption and contextual factors and examine how these relationships will vary across Native American and African American owned micro-enterprises in a United States Midwestern city.

The overall question investigated in this paper is what are the key characteristics of Native American and African American owned micro-enterprises? How do they compare with each other in their use of ICTs? How can ICTs support the development Native American and African American owned micro-enterprises? This paper follows an inductive approach in the investigation of six micro-enterprises in a mid-western city known for having the highest poverty among African Americans. Native American owned micro-enterprises and African American owned micro-enterprises were interviewed using an IRB approved instrument to elicit their levels of ICT adoption. Using a framing analysis technique, the data was analyzed to reveal themes and frames relating to the ways in which ICTs were supporting the development of the micro-enterprises studied.

2. Literature Review

Norris [28] suggests that the digital divide is a multidimensional phenomenon that encompasses three distinct aspects: global, social, and democratic divides. van Dijk [49] proposes that differential access to ICTs is related to individual characteristics: level of income and education, employment, age, sex, and ethnicity. According to the National Telecommunications and Information Administration (NTIA), Native Americans, African Americans, low-income persons, and the less educated are more likely to lack access to information resources, especially when they reside in rural areas or central cities [23].

Chakraborty and Bosman [6] measure the inequalities in home PC ownership in the United States by applying the Lorenz Curve and the Gini coefficient. Based on the data gathered in 2011, authors found that the inequalities in PC ownership are substantially smaller among white households than among African American households in the United States. According to Mossberger and Tolbert [24], the most important factors affecting access to information technology are race and economic resources. From the 1,837 valid responses, African Americans and Latinos had lower access to the Information Technology. In another study conducted by NTIA in 2010, household broadband Internet use rate for Native Americans was only 48.3%, and 49.4% for African Americans, while the average overall average was 63.5% [29].

The second-level digital divide was introduced in 2002 to eliminate the binary classification of technology use by only taking into account whether somebody does or does not take the Internet into consideration [14]. In a study conducted by Blanchflower et al. [3], scholars identified that Native American owned and African American owned small businesses faced challenges when obtaining credit that go beyond observable differences in their creditworthiness. Chen et al. [7] conducted a case study on a Native American-owned manufacturing enterprise's efforts to implement new strategies for expansion and diversification. Garsombke and Garsombke [11] conducted comparative analysis on Native American entrepreneurs and non-Native American entrepreneurs. Findings suggest that parents being an entrepreneur, objective versus subjective thinking, orientation and perceived barriers to startup are the potential differences between the two types of businesses.

The majority of revenue-generating enterprises in Native American communities are tribally owned [25]. However, it appears that within recent years, small individually owned enterprises have also become an increasingly important economic base for these communities. The Effective State Policy and Practice [25] identifies several challenges Native American

small businesses are facing. First, there is a lack of business development training and technical assistance resources. Second, there are low levels of general financial literacy. Third, there is inadequate and inappropriate financing for Native American enterprises. Also, there is a lack of Native American participation in the CS/CE program [50]. Limited education in computers and computer-related courses in high school, personal motivation, small number of Native Americans in higher education, and lack of encouragement from family and friends could be the cause. Carte et al. [5] conducted an analysis of a case study of an e-learning initiative in Sri Lanka. The result suggested that learning by doing could improve the IT related skills and awareness, especially from female employees.

The concept of development has its roots in the economics of the firm. Development is defined as "the interruption of the business cycle", according to Schumpeter [40], and is often used to describe growth in organizations and the regions in which they reside. Development has been seen as an economic phenomenon that leads to better livelihoods. Also, the main purpose of development is to spread freedom and its "thousand charms" to the citizens [41]. Development is a concept that is considered both theoretically and politically, and is inherently both complex and ambiguous [43]. The liberalization of economies replaced the animated development practice in 1950s and 1960s. Willis [51] refers the "Modernity" to a "condition" if being modern or being like the industrialized counties of Western Europe and North America in particular. The Modernity encompasses industrialization, urbanization, increased use of technology, and application of rational thinking [51]. Some scholars define development as the diffusion of modernity [13], while some define development as economic growth [37]. The United Nations Development Program defines development as human progress. The Millennium Development Report [47] breaks development into eight goals: 1. Eradicate extreme poverty and hunger. 2. Achieve universal primary education 3. Promote gender equality and empower women 4. Reduce child mortality 5. Improve maternal health 6. Combat HIV/AIDS, malaria and other diseases 7. Ensure environmental sustainability and 8. Develop a global partnership for development. For the purpose of this paper we use the following definition: the concept of development has its roots in the economics of the firm. The outcomes from the adoption of ICTs on development can be assessed in a number of ways. The measures of economic development most often used are in terms of: increase in income, job creation, and clientele [33]. The definition used in this research is *improvements in the lives of people where the use of technology leads to better livelihoods*.

Information Technology is a driving force behind economic growth and has fundamentally changed the way people live, not only in developed countries but also in developing countries. ICTs are used by many private enterprises to improve the performance, productivity, and competitiveness in the marketplace[1]. However, the use of ICTs is a challenge in both developed and developing countries [52, 39]. Development may be inhibited by a lack of understanding of ICTs [35]. Growing demand for information and communications services, combined with technological advances, growing infrastructure, and falling prices, has allowed more and more people across the globe to join the information society.

The concept of empowerment has been used to describe power and control in organizations [31]. In a study conducted by Kimaro and Nhampossa [20], IT initiatives were found to be top-down and controlled by the power of top managers who lack adequate IT skills. Historically, empowerment was viewed as a motivational construct [8]. Also, Hughes [16] identifies that there is a debate about whether women are 'forced' or 'voluntarily' self-employed when there is a broader definition of 'push' factors is used.

3. Methodology

Framing analysis is used to arrive at an understanding of how ICTs can support the development of Native American and African American owned micro-enterprises. Through framing analysis the ways in which ICTs may be perceived and used can be explored. This framing analysis follows a constant comparison approach in which a wide range of meanings may be revealed through an objective procedure [59]. "The method begins with scrutinizing one text at a time and proceeds to create tentative categories of frames until a set of categories that are mutually exclusive and exhaustive for all frames comprising the articles is established" [59, p. 79]. Through the framing analysis, this research builds theory from data systematically gathered and analyzed from the research process.

This research follows a qualitative inductive approach that investigates six cases of micro-enterprises in underserved communities of a Midwestern city. These research questions are investigated through frames developed by Qureshi and Lamsam [31] used by Native American-owned small businesses, including micro-enterprises.

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[1] http://unctad.org/en/docs/tdr2011_en.pdf

Data was collected through interviews and observations to discover key characteristics of Native American and African American micro-entrepreneurs that influence their use of ICTs in their businesses. A framing analysis of the data enables the researchers to identify themes and frames that relate to how the micro-enterprises compare with each other in their use of ICTs.

3.1. Criteria for case selection

Based on existing literature, with the help of ReferenceUSA[2], which contains data of all registered U.S. based businesses; we ascertained several criteria for selecting the cases. Reasons for selection consist of the following: 1) Income levels are lower than the average income of small businesses, 2) Micro-enterprises with fewer than 5 employees, and 3) Businesses that will benefit from ICTs even though they are unable to access and use ICTs because of their lack of knowledge and skills. These criteria were developed on the basis of the literature and previous studies in this area (see [33]). They are listed in Table 1:

Table 1 Criteria for case selection

Description	Requirement
General Information	The cases should be randomly chosen from the Database.
Challenge	The micro-enterprises are facing challenges in operation, e.g., lack of resources, lack of knowledge, and lack of skills.
Ownership	The ownership of micro-enterprise should be sole proprietorship or partnership.
Owner	The owner of the micro-enterprise is Native American or African American.
Potential	The micro-enterprises should have 1) potential to grow and expand their businesses by the usage of IT. 2) enough funds to invest in IT 3) desire to gain access to new markets.
Years of operation	The micro-enterprises should exist for more than one year, so that endogenous variables lead to the challenge, e.g., lack of cash flow, lack of management can be excluded.
Scale of the Business	The micro-enterprises should follow the criteria of the official definition micro-enterprise (Employees fewer than five)

4. Case Studies

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[2] www.referenceusa.com

Data was collected through interviews carried out in person from six metropolitan-based micro-enterprises, two of which are owned by African Americans and four micro-enterprises owned by three Native Americans. These cases are described in the following sections.

4.1. Native American Business-PIS

PIS is a family-owned store. Both the owner and founder are Native Americans. Currently, only 0.7% of the population is Native Americans in this Midwestern metropolitan area. The store offers an assortment of turquoise and silver jewelry, bead and quillwork, pottery, Pendleton and saddle blankets, buckskins, arrows, dreamcatchers, kachina dolls, wood carvings, t-shirts, books, Native American music, teas, herbs, flutes, and craft supplies.

Currently the owner is the daughter of the founder. Due to the insufficient funding for the business, the owner could not afford to hire employees. However, from 2007 to 2008, the owner did hire several part-time employees to support the micro-enterprise. It appears that the owner is trying different ways to promote her business, not only including commercials from TV, magazine, and the Yellow Book phone directory, but also from the Internet. The owner purchased a domain and a website which was outsourced to a third party with monthly subscription. The owner's son helped establish a Facebook account for the store. Occasionally, promotions would be available via the store Facebook page and the website. The owner has a fax machine, a fixed line telephone, and a Point of Sale (POS) machine onsite. There is no Internet coverage in the store. There is a paper-based guest book in the store for potential customers. Customers can write feedback and the owner will contact them by the phone.

Most of the time, the owner reaches the supplier via phone. The owner was very afraid of using the Internet and technology because she thought it was difficult for her to learn, and she did not think the Internet could help her communicate with customers well. The store website offers limited information. According to the interview, the owner of the store witnessed that customers were shifting their information-seeking process from the Yellow Book to websites like Google and Facebook.

The store has always suffered from shoplifting due to the lack of funding and employees. The owner could not fully control the space of the store. Interestingly, the owner installed a fake camera in the middle of the store, hoping it would deter the thefts. The owner does not know how to seek the support from the government or other organizations.

4.2. Native American Business-RIT

RIT is a Native American owned micro-enterprise in a small city adjacent to the metropolitan area. They provide different Native American gift services, including Native jewelry, artifacts, and Minnetonka moccasins. The owner of the store is a middle-age Native American woman. The store is highly engaged with the local Native community. Twice weekly, the store offers Native American embroidery courses. Serving as an information hub for the local communities, regular customers contribute to the majority of the sales.

Similar to PIS, the store also faces shoplifting challenges due to the lack of employees. However, the owner is willing to invest in alarms, cameras, and monitors. The Information Technology greatly reduces the issue.

The owner purchased a personal computer and an iPad to better control the stock of the store. There is no website for the store. But the owner does have two Facebook pages to better communicate with the customers and local communities.

4.3. Native American Business-TCO

TCO is a Native American owned small business in a medium size city of the metropolitan area. They serve over 90 tribal and Native American health service clinics in 15 states. It was founded in 1993, the store provides full service, discount eyeglass program.

The owner of this business is a Native American in his 60s. Usually he sends and receives emails via a smart phone and desktop to remotely communicate with other employees. Since most of the business and transactions are conducted offline, the owner does not need to worry about information security issues. The owner has a website to demonstrate the product online, it is also outsourced to a third party.

According to the interview and observation, the owner was very open to the use of Information Technology. He outsources the majority of the IT-related work since he is not familiar with infrastructure and information security.

4.4. Native American Business-SPI

SPI began in 1992 with selling toothpaste, towels, and concrete barriers to the federal government. It wasn't until 1995, with the passage of the Federal Acquisition Streamlining Act that the sale of meat and frozen meat products became the dominant sales product for SPI. SPI started manufacturing meat products in a local plant and soon expanded the sales.

SPI gains an advantage in the bidding process by pledging to purchase a percentage of the total contract from small disadvantaged businesses. Another advantage that SPI experiences is that they are a Small Disadvantaged Business due to owner's status as a Native American. He is an enrolled member of the Cheyenne River Sioux Tribe of Eagle Butte, South Dakota.

TCO and SPI are owned by the same Native American. Currently he has a website outsourced to a third party. The owner of the store does not emphasis a lot on the advertisement in the Internet since he said "you cannot taste the meat online". While on the other hand, as one of the wholesalers in the industry, he focuses a lot on the offline promotion for the product.

4.5. African American Business -CJK

Located in a predominantly African American neighborhood with some of the highest child poverty rates in the country, this micro-enterprise, CJK is a family owned restaurant famous in the area for its food. The facility is not well maintained, since the owner does not spend a lot for the rent. The restaurant is difficult to be located and does not have clear signage for customer parking. Of the three employees two were middle-aged African Americans and the third employee was a young African American male.

The owner was defensive during the interview. The owner utilities a credit card machine for business as well as a fixed line phone to reach customers. Overall the owner does not use other advanced technology. The computer is only used for personal purposes. Majority of the customers come from the local neighborhood. Potential customers from other parts of the city are not willing to dine at this restaurant because the area is perceived unsafe. From the observation and interview, this micro-enterprise was highly embedded into the local culture, community, and environment.

4.6. African American Business - LAP

The fourth micro-enterprise, LAP, is a used car dealer in the south part of the city. Currently there are two employees in the store. The owner is a middle-aged African American male. The other employee was the owner's son. Both have college degrees. According to the interview, the car dealership requires technology that supports information retrieval. First, they need to upload the profile of the pre-owned car to the database, which is available online. Second, to connect to the administration of the car dealership, a fax machine and printer are used. Third, to better serve customers, they have Internet connected to the popular car price

database (e.g. Kelley Blue Book [3]) to get current information about prices. Also, they need to connect to a third party supplier to get repair history. However, neither employee was familiar with the information technology they use. There is only one computer in the office. They computer is 6 years old and is running Windows XP, the RAM is 1GB, which makes the computer slow. Also, according to the observation, neither employee knew how to adjust the resolution of the computer screen. The business owner was willing to invest money in technology. However, neither trust information technology. They were afraid to replace the old computer with a new computer because they thought they would lose all the data in the computer. Also, they thought they had to invest additional time to customize a new computer.

5. Framing Analysis

Framing has been used in Information Systems as means of identifying the deep structures in ideology and rhetoric related to Information Technology diffusion [60]. It is a rhetorical strategy used to identify deep structures of meaning in communication, observable facts, and actions. In this study, framing analysis is used to understand why micro-enterprise owners use technology and how the ICTs they use may support the development of Native American and African American owned micro-enterprises. Although both sets of micro-enterprise owners face similar resource constraints, we expect the framing analysis to shed light into their unique characteristics and ideologies that influence how their ICT adoption affects the growth of their businesses.

In their framing analysis of Native American newspapers, Qureshi and Lamsam [31] offered a set of themes and frames. We draw upon these and add to them in our framing analysis of micro-enterprise owners. The main frames identified in the transcripts are as follows:

The main frame for this analysis is Development as defined in the theoretical section as improvements in the lives of people where the use of IT leads to better livelihoods. This frame is also associated with the creation of new opportunities and income generation as a result of interventions, in this case ICT. Within this main frame, the following sub-frames were identified in the transcripts:

1. Workforce Development -- increase of productivity of people as a result of training in ICT;

2. Infrastructure Development -- provision of technologies, services, and media networks to support the micro-enterprises; and

3. Community Development -- use of ICTs to support the creation of shared goals and values as they relate to a group of people, in this case a tribe or nation. Family, friends, and other people who help with the ICT usage.

The coded transcripts revealed labels related to IT perceptions and usage by the micro-enterprise owners. The labels were checked for inter-coder reliability by a second researcher. The labels were categorized into frames and tabulated as depicted in the following Table 2.

Table 2: Frames of Micro-Enterprises use of ICT

	Community	Infrastructure	Work Force	Total
PIS	9	13	2	24
RIT	5	11	9	25
TCO	3	7	5	17
SPI	4	6	4	15
CJK	3		1	4
LAP	3	5	2	11
Total	27	42	23	96

The frame for Infrastructure Development has the largest number of occurrences. The Native American owned micro-enterprises (PIS, RIT, TCO, and SPI) have access to and make use of a variety of technologies and services for their businesses. Examples of the use of ICTs in the micro-enterprises are as follows:

PIS: "I do conduct business by phone. Sometimes people will ask me different questions online. Occasionally I will receive questions about the products via emails.
Our website looks good, but I just do not know how many people will visit the website.
I use that [FB] greater than anything… Then after that I was so proud that I set up the account by myself. I put history information into the Facebook account."

The Native American micro-enterprise owner, PIS has the most ICT infrastructure in her micro-enterprise. She also draws upon the assistance of her community members in assisting her with the technology.

PIS: "In the past, we did some business online but it was my ex-boyfriend who set that up and I did not earn a lot of money because of that. "
"I do have a Facebook home page when my son helped me set that up so that I can communicate with customers. And I was a little bit resistant when my son helped me set up one. But it was great and easy to use."

[3] www.kbb.com

"I should use more of that technology in the future since my daughter who was a marketing person was encouraging me to focus on the online marketing. "

This connection between the use of ICTs in a micro-enterprise and community support is also apparent in the other Native American-owned micro-enterprises. It is apparent from the transcripts that the Native American culture is very community oriented and social network technologies are helping the Native American-owned micro-enterprises to connect with their customers and their broader community - hence the high Community Infrastructure scores. This is illustrated in the following:

RIT: "I think they [ICTs] are very helpful. I will jump up to Facebook and see what is going on. I stay in the loop of the community so I post things people share within the Native American community."
Also use Facebook to connect with customers: "My f Facebook little page gets about 500 likes and my big page I got over 3000. But I got lost in the big one since I have too many customers."

Comments relating to the Work Force development frame represent the ability of the micro-enterprise owners to do their work more effectively and efficiently. In some cases, being able to take control of their technology use enabled the Native American micro-entrepreneurs to feel that their business was doing better.

In trying to understand how the ICTs support the development of Native American and African American micro-enterprises, we identified themes. These themes are comprised of labels identified in the framing analysis to relate to how the ICTs helped or hindered the development of the micro-enterprises. These themes are illustrated in table 3 below:

Table 3: Themes of Micro-Enterprise ICT Support for Development

	IT Products & Services	Techno logy Skills	Business Economic Developme nt	Education Training Career Developm ent	Total
PIS	13		2		15
RIT	10	6	5		21
TCO	7	3	1	2	13
SPI		2	1	1	4
CJK	1		3		4
LAP	4	2		1	7
Total	35	13	12	4	64

Two of the Native American micro-entrepreneurs, PIS and RIT, had the most number of IT products and services in use for their businesses. The two African American micro-enterprises, CJK and LAP, used the least number of IT products and services for their businesses. The Native American micro-entrepreneurs also had more technology skills than the African American micro-entrepreneurs. It is also interesting to note that of all the micro-entrepreneurs who had pursued Education, Training, and Career Development activities, none (except for TCO), had made use of IT Products & Services and Technology Skills in their businesses.

To understand how ICTs affected development of the micro-enterprises, we identified labels relating to the Business Economic Development theme. While the Native American micro-enterprises (RIT and PIS) illustrated the largest number of labels in this theme, an African American micro-enterprise (CJK) also had a number of occurrences within this theme. Sections of their transcripts relating to Business Economic Development are illustrated as follows:

RIT: "I am paying the bills. Haha."

PIS: "My sales did go up. But I do not know it is because of the advertisement I purchased, or because of the economy. Back to 2007 and 2008, I almost made twice of the money I can make now."

CJK: "Yes, I use the credit card machine. That does help me"

The above analysis shows that the use of IT Products and Services in both Native American and African American micro-enterprises does enable the business to grow. Micro-enterprises owners that have information technology skills, in the case of RIT, the business development outcomes in terms of increased sales and economic development outcomes in terms of being able to grow, are greater. Whereas education and career development activities do not seem to enable the micro-enterprises to develop, even in the presence of technology skills, as is the case for LAP.

Trust seems to be a key factor in the use of ICTs in African American micro-enterprises. This is illustrated in the following transcripts of African American micro-entrepreneurs:

LAP: "Yeah, I am willing to invest in a new computer, but I don't trust them. You know, they cannot ensure the safety of my data. In the future I am planning to get a new one. But nobody will touch my data. I am going transfer the data by myself."

CJK: "Oh, I do not need Information Technology to help me… People see the news and don't want to come down here where there are shootings. I don't know if it [a computer] will really help me improve my business."

It seems from our analysis so far, that the relative success of Native American micro-enterprises in using ICTs in their businesses has to do with the social networking components that suit their cultural characteristics well. It appears from these findings that the African American micro-enterprises are reluctant to use ICTs in their business because they do not trust the technology or feel that it can be of use for them.

Further research using a larger sample of Native American and African American micro-enterprises would have to be undertaken to test these findings. For the moment, the results of this analysis can be used to provide recommendations as to how ICTs may be used to further support micro-enterprise development.

6. Implications for Micro-Enterprise Development

According to the results, people are more likely to adopt easy ICTs, such as TV and credit card machines, compared to a personal computer, CRM software, and other advanced tools. This is also suggested in the study by Xiong and Qureshi [53].

Personal inequalities could lead to different performance in the access to ICTs. According to the interviews, African Americans and Native Americans are less likely to have access to ICTs.

While access to ICTs could lead to the direct effects of information provision and infrastructure development, personal inequalities could also lead to different performance of direct effects.

As stated in Xiong et al. [55], the characteristics of ICTs, and personal inequalities could potentially hinder the process of economic development and empowerment. It is important that micro-enterprise owners obtain certain abilities to operate Information Technology, while learning-by-doing could also be beneficial for the sustainable development for the micro-enterprises.

On the other hand, most of the owners did not realize there are multiple external funding and IT training opportunities for them provided by government and other organizations.

Lastly, it appears that micro-enterprises in these cases are highly connected to the nearby community and neighborhood. A majority of the customers come from friends and family in the communities as well as by word of mouth. If appropriated Information Technology can be applied and adopted, they would be able to survive through the digital divide.

7. Conclusion, Limitations, and Future Research

In this paper, based on the interviews from six Native American and African American owned micro-enterprises, we identify that the characteristics of ICTs, the access to ICTs, and personal inequalities could impact the direct effects of information provision and infrastructure development. Based on the research model developed by Qureshi and Lamsam (2008), we further conclude that the direct effects could lead to the economic development and empowerment.

The results suggest that the characteristics of ICTs, the access to ICTs, and personal inequalities could potentially hinder the process of economic development and empowerment. Our study yielded meaningful results as to the ways in which micro-enterprise owners will need to use ICTs to sustain themselves.

8. References

[1] Aspaas, H. R. (2004). Minority women's microenterprises in rural areas of the United States of America: African American, Hispanic American and Native American case studies. GeoJournal, 61(3), 281-289.

[2] Avgerou, C. (2008). Information systems in developing countries: a critical research review. Journal of information Technology, 23(3), 133-146.

[3] Blanchflower, D. G., Levine, P. B., & Zimmerman, D. J. (2003). Discrimination in the small-business credit market. Review of Economics and Statistics, 85(4), 930-943.

[4] Blili, S., & Raymond, L. (1993). Information technology: Threats and opportunities for small and medium-sized enterprises. International Journal of Information Management, 13(6), 439-448.

[5] Carte, T. A., Dharmasiri, A., & Perera, T. (2011). Building IT capabilities: learning by doing. Information Technology for Development, 17(4), 289-305.

[6] Chakraborty, J., & Bosman, M. M. (2005). Measuring the digital divide in the United States: Race, income, and personal computer ownership. The Professional Geographer, 57(3), 395-410.

[7] Chen, J. C., Parker, L. J., & Lin, B. (2006). Technopreneurship in Native American businesses: current issues and future with a case study. International Journal of Management and Enterprise Development, 3(1), 70-84.

[8] Conger, J. A., & Kanungo, R. N. (1988). The empowerment process: Integrating theory and practice. Academy of management review, 13(3), 471-482.

[9] Fairlie, R. W. (1999). The absence of the African-American owned business: An analysis of the dynamics of self-employment. Journal of Labor Economics, 17(1), 80-108.

[10] Flyvbjerg, B. (2011) "Case study" The Sage Handbook of Qualitative Research, 4th Edition Thousand Oaks, CA: Sage, 2011, Chapter 17, pp.301-316

[11] Garsombke, D. J., & Garsombke, T. W. (2000). Non-traditional vs. traditional entrepreneurs: Emergence of a Native American comparative profile of characteristics and barriers. Academy of Entrepreneurship Journal, 6(1), 93-100.

[12] Ghobakhloo, M., Arias-Aranda, D., & Benitez-Amado, J. (2011). Adoption of e-commerce applications in SMEs. Industrial Management and Data Systems, 111(8), 1238-1269

[13] Habermas, J and Ben-Habib, S (1981) Modernity versus Postmodernity New German Critique, No. 22, Special Issue on Modernism (Winter, 1981), pp. 3-14

[14] Hargittai, E. (2002). Second-level digital divide: Differences in people's online skills. First monday, 7(4).

[15] Heeks, R. (2008). " ICT4D2.0: The Next Phase of Applying ICT for International Development", Computer, vol. 41, no. 6, pp. 26-33, Mar, 2014

[16] Hughes, K. D. (2003). Pushed or Pulled? Women's Entry into Self‐Employment and Small Business Ownership. Gender, Work & Organization, 10(4), 433-454.

[17] Jahrig, Shannon H (1996) Crossing the cultural divide: Organizational support for Indians in business Montana Business Quarterly; Summer 1996; 34, 2; ABI/INFORM Global pg. 2

[18] Kamal, M. and S. Qureshi, (2009). "Sustaining the Growth of Micro-enterprises that Adopt Information and Communication Technologies" Proceedings of the Second Annual Workshop on Global Development. Phoenix December. http://www.globdev.org/?q=node/71

[19] Kamal, M., Song, C., Qureshi, S. and K. Kriz. (2010)"Information and Communication Technology Interventions to Bridge the Digital Divide," 43rd Annual Hawaii International Conference on System Sciences (HICSS'10), 2010.

[20] Kimaro, H. C., & Nhampossa, J. L. (2005). Analyzing the problem of unsustainable health information systems in less‐developed economies: Case studies from Tanzania and Mozambique. Information Technology for Development, 11(3), 273-298.

[21] Madrid-Guijarro, A., Garcia, D., & Van Auken, H. (2009). Barriers to innovation among Spanish manufacturing SMEs. Journal of Small Business Management, 47(4), 465-488.

[22] Malecki, E. J. (1997)Technology and Economic Development: The Dynamics of Local, Regional and National Competitiveness 2nd edition. London and Boston: Addison Wesley Longman, 1997.

[23] McConnaughey, J., Everette, D., Reynolds, T., & Lader, W. (1999). Falling through the net: Defining the digital divide. Report by the US Department of Commerce, National Telecommunications and Information Administration (NTIA).[Available online: http://www. ntia. doc. gov/ntia home/fttn99/contents. html].

[24] Mossberger, K., Tolbert, C. J., & Gilbert, M. (2006). Race, place, and information technology. Urban Affairs Review, 41(5), 583-620.

[25] National Rural Funders Collaborative, 2014 http://www.nrfc.org/ln/documents/Ent%20Dev%20in% 20Native%20American%20Communities.pdf

[26] Nebraska Sioux Lean Beef, Part A (2008). A Teaching Case Study in Tribal Management for Oglala Lakota Collge. http://hpaied.org/images/resources/publibrary/NSLB_Pa rt_A.pdf

[27] Norris, P. (2001). Digital divide: Civic engagement, information poverty, and the Internet worldwide. Cambridge University Press.

[28] Norris, P. "Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide". Cambridge University Press, Cambridge. 320 pages 2001.

[29] NTIA (2010) Exploring the Digital Nation: Home Broadband Internet Adoption in the United States http://www.ntia.doc.gov/files/ntia/publications/esa_ntia _us_broadband_adoption_report_11082010_1.pdf

[30] Omaha chamber of commerce (2012) http://www.selectgreateromaha.com/Site_Selection_Dat a.aspx

[31] Qureshi, S., & Lamsam, T. (2008). Transcending the digital divide: A framing analysis of information and communication technologies news in Native American tribal newspapers. In Hawaii International Conference on System Sciences, Proceedings of the 41st Annual (pp. 124-124). IEEE.

[32] Qureshi, S., (2005) How does Information technology effect Development? Integrating Theory and Practice into a process model. Processsdings of the eleventh Americas Conference on Information Systems, Omaha, NE

[33] Qureshi, S., Keen, P. and M. Kamal, (2009). "Business Models for Development: The Global Capability Sourcing Model." In S. Kamel eds "E-Strategies for Technological Diffusion and Adoption: National ICT Approaches for Socioeconomic Development", IGI.

[34] Roztocki, N., & Weistroffer, H. (2009). Research trends in information and communications technology in developing, emerging and transition economies. Collegium of Economic Analysis, 20, 113-127.

[35] Sadowski, B. M., Maitland, C., & van Dongen, J. (2002). Strategic use of the Internet by small-and medium-sized companies: an exploratory study. Information Economics and Policy, 14(1), 75-93.

[36] SBA's Definitions of Small Business http://archive.sba.gov/idc/groups/public/documents/sba_ homepage/guide_to_size_standards.pdf

[37] Sachs, W. 1999. Planet dialectics: Explorations in environment & development. Zed Books, London, UK.

[38] Schreiner, M. and Woller, G. (2003), "Micro-enterprise development programs in the United States and in the developing world", World Development, Vol. 31 No. 9, pp. 1567-80.

[39] Schreyer, P. (2000) The Contribution of Information and Communication Technology to Output Growth A Study of the G7 Countries. Retrieved on 2012.12.06

[40] Schumpeter, J. (1934). Capitalism, socialism, and democracy. New York: Harper & Row.

[41] Sen, A. (1999). Development as freedom. Oxford University Press.

[42] Song, C., and S. Qureshi, (2010) "The Role of an Effective IT Intervention for Micro-enterprises" in the 16th Americas Conference on Information Systems Proceedings. Lima, Peru, August 2010.

[43] Summer, A. & Tribe, M.A (2008) International development studies : theories and methods in research and practice London ; Thousand Oaks, Calif. : Sage, 2008.

[44] Swinney, J., & Runyan, R. (2007). Native American entrepreneurs and strategic choice. Journal of Developmental Entrepreneurship, 12(03), 257-273.

[45] Tipton, R. H. (2004). Microenterprise through Microfinance and Microlending: The Missing Piece in the Overall Tribal Economic Development Puzzle. American Indian Law Review, 29(1), 173-192.

[46] Thong, J. Y. L. (1999). An integrated model of information systems adoption in small businesses. Journal of Management Information Systems, 15(4), 187-214.

[47] United Nations, (2010) The Millennium Development Goals Report;New York.Retrieved on 2012.12.06 viahttp://www.un.org/millenniumgoals/pdf/MDG%20Report%202010%20En%20r15%20-low%20res%2020100615%20-.pdf

[48] United States Census Bureau (2011) http://www.census.gov/main/www/access.html

[49] van Dijk, J. A. G. M. (2012). The evolution of the digital divide: The digital divide turns to inequality of skills and usage. J. Bus, M. Crompton, M. Hildebrandt, & G. Metakides (Eds.), Digital enlightenment yearbook, 2012, 57-75.

[50] Varma, R. (2005) Out of the Mix: Native Americans in Information Technology Proceedings of the 2005 American Society for Engineering Education Annual Conference & Exposition

[51] Willis, K. (2005) Theories and Practices of Development. London: Routledge.

[52] Wolcott, P., Kamal, M., and Qureshi, S. (2008) Meeting the challenges of ICT adoption by micro-enterprises. Journal of Enterprise Information Management. Vol. 21 No, 6 pp. 616-632 DOI 10.1108/17410390810911212

[53] Xiong, J. , & Qureshi, S. (2012) Analysis of Information and Communications Technology Adoption between Small Businesses in China and the United States 18th Americas Conference on Information Systems (AMCIS 2012) Seattle, USA, August 9, 2012.

[54] Duncombe, R., & Heeks, R. (2002). Enterprise across the digital divide: information systems and rural microenterprise in Botswana. Journal of International Development, 14(1), 61-74.

[55] Xiong, J., Qureshi, S. and T. Trumbly-Lamsam. (2014). "Effects of the Digital Divide: Evidence from African-American and Native-American Owned Micro-Enterprises" Twentieth Americas Conference on Information Systems, Savannah, August, 2014.

[56] Krogstad, J.M. (2014). "1-in-4 Native Americans and Alaska Natives are living in poverty". Pew Research Center. June 13, 2014. http://www.pewresearch.org/fact-tank/2014/06/13/1-in-4-native-americans-and-alaska-natives-are-living-in-poverty/

[57] Desilver, D. (2013). "Black unemployment rate is consistently twice that of whites" Pew Research Center. August 21, 2013. http://www.pewresearch.org/fact-tank/2013/08/21/through-good-times-and-bad-black-unemployment-is-consistently-double-that-of-whites/

[58] Austin, A. (2013). "High Unemployment means Native Americans are still waiting for an Economic Recovery." Economic Policy Institute, Issue Brief #372. http://s3.epi.org/files/2013/HIGH-UNEMPLOYMENT-MEANS-NATIVE-AMERICANS-ARE-STILL-WAITING-FOR-AN-ECONOMIC-RECOVERY.pdf

[59] Song, Y. (2007) "Internet news media and issue development: a case study on the roles of independent online news services as agenda-builders for anti-US protests in South Korea." New Media Society, (9), pp.71-92, 2007.

[60] Barrett, Michael; Heracleous, Loizos; and Walsham, Geoff. (2013). "A Rhetorical Approach to IT Diffusion: Reconceptualizing the Ideology-Framing Relationship in Computerization Movements," MIS Quarterly, (37: 1) pp.201-220.

[61] Macartney, S.,Bishaw, A., and K. Fontenot. (2013). "Poverty Rates for Selected Detailed Race and Hispanic Groups by State and Place: 2007–2011." American Community Survey Briefs. February 2013. http://www.census.gov/prod/2013pubs/acsbr11-17.pdf