

Challenges and limitations in the use of ICTs by women entrepreneurs from rural communities

Key words: women entrepreneurs, Information and Communication Technology (ICT), fare trade, ecommerce.

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Information and Communication Technology (ICT) requirements are present in most areas of our personal and professional lives. Muñoz (n.d.), a study published by Inmujeres, mentions that ICTs are one of the main economic growth levers and that a growth division can be observed among economies which have not adopted the use and exploitation of ICTs and those that have. The author stresses that "the indigenous population in rural areas is one of the groups that face the greatest obstacles to accessing these tools" (p. 31). Additionally, the author highlights the need to improve the distribution of products, noting that "a company can be very successful in the production of goods or services, but if it does not manage to channel them to a market it will be difficult for the company to survive. The narrowness of the markets constitutes the main bottleneck for all business ventures" (p. 46).

This work presents original and empirical data, the results of research project number 268235, entitled "Training model in the use and exploitation of Information and Communication Technologies for the implementation of an electronic commerce system

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for women from social companies", sponsored by the Conacyt Inmujeres Sector Fund. The main goal of the project is to promote the abilities of women who work in social companies in the use and exploitation of Information and Communication Technologies (ICTs) through a specific training model for the implementation of an electronic commerce system that contributes to improving their educational conditions, entrepreneurship and the growth of their companies.

Objectives

This work presents two specific objectives:

1. To describe the action research process, identifying the planning, action, observation and reflection stages (spiral cycle of Kemmis and McTaggart, 1988, as cited by Latorre, 2005) in a project with a group of women entrepreneurs from rural areas whose problem is the sale of their products at a fair price without middlemen via an electronic commerce system.
2. To identify the main challenges and limitations of the beneficiaries of the project in terms of the use of ICTs for electronic commerce of their products.

Action Research Approach

This research is conducted under a qualitative Action Research (AR) approach. The techniques used were: interviews, focus groups, direct observation during the training courses given to 40 women from rural communities during the second semester of 2017.

The first use of the term Action Research is attributed to Lewin in 1944. Lewin argued that social problems (as opposed to the theoretical interests of positivist scientists) should serve to motivate social research. He developed a social research model that involved a spiral cycle including planning, action, observation and reflection. The essential activities of AR are mainly involvement and improvement. Involvement refers to the active participation of the researcher in the process in all planning, action, observation and reflection stages. Improvement is the manner in which the particular social intervention changes the situation by intensifying the understanding of the researched subjects of their ability to control the situation and further improve practice (Schwandt, 2007).

Theoretical framework

The internet has opened up a field of attractive businesses for women because, according to Contreras and Aramayo (2012), "it provides greater flexibility in terms of time and work and allows women to compensate for the lack of mobility and perform jobs more in keeping with their preferences and attributes. All of this generates benefits for society" (p. 6). In the results of a study conducted on 2,018 women owners of internet businesses, these authors found that these businesses were mainly small, without employees, financed with personal savings and that the income obtained from their internet business represents approximately 40% of their total personal income. The majority of entrepreneurs surveyed were retailers with limited knowledge of computing and telecommunications and had oriented their businesses towards the internet.

Verges (2012) conducted a study on the participation of women in ICTs and warned that the digital gender divide still exists. In particular, it is maintained in reference to what has been called the second divide (Castaño, 2008, as cited by Verges, 2012), which involves the divide between women and men beyond access to ICTs. In other words, although the inequality between women and men is decreasing with respect to access and basic use of ICTs, the same does not appear to be occurring with regard to ownership, skills and effective use of the technologies.

Some of the main benefits that the use of ICT brings to social enterprises are access to resources, such as voluntary work and financial funds, the creation of applications, the creation of networks and access to new channels and markets. (Frączkiewicz-Wronka and Wronka-Pośpiech, 2014)

According to Zinnbauer (2007) there is ample evidence to suggest that ICTs are helping to expand, transform and diversify social capital. The author mentions some tools and the effect they generate, such as tools for communication and the exchange of basic collaborative information, namely e-mail, interactive tools such as blogs and collaborative work platforms which allow joint creating annotating and sharing information elements.

The identification and analysis of the challenges and limitations of the program beneficiaries are performed and supported by three main theories: the stranger theory, the empowerment of women theory and the technological affordance theory.

The term stranger describes those groups that have had restricted access to opportunities in the social, political and economic structure (Buttler 2005, as cited by

Godwyn, 2012). Strangers use entrepreneurial initiatives as a strategy for counteracting discrimination. Women are also considered strangers because their characteristics are not as well acknowledged as the qualities of men in the workplace, in addition to the fact that they move between domestic and work obligations (Godwyn, 2012).

Godwyn (2012) conducted a study on the empowerment of women at Women's Business Centers (WBCs). Women's Business Centers (WBCs) are institutions that support women in social and economic disadvantage to start a business. These centers have worked for more than a decade and their success has been documented to provide training and advice to women in business formation using pedagogical techniques. The WBCs centers are similar to the institutions belonging to Grameen Bank whose founder is Muhammad Yunus.

The results of the aforementioned research on WBCs showed that the beneficiaries were four times more likely to start a business than the general population of women in the United States, better overcame social stereotypes and have a greater tendency to perceive women as authorities.

The technological affordance theory is used to examine how and when technology permits a change to the work that is performed and the type of change that it offers. This approach makes it possible to uncover the possibilities that technology affords as it is involved in work practices for reorganization at work and, as such, power and professional identity. In other words, the changes in work organizations, conditioned by technology, cannot be fully explored unless technology is considered a significant component as opposed to simply a facilitator of change.

Results

Before presenting the following results, it is important to clarify that the intention of accomplishing objective one of this work is not only to mention the approach, but to describe the process that was carried out throughout the project financed by the Conacyt Inmujeres Sector Fund, as a further contribution to a model that followed the parameters of the spiral cycle of Kemmis and McTaggart (1988, as cited by Latorre, 2005)

The next graph describes the action research process, identifying the planning, action, observation and reflection stages (spiral cycle of Kemmis and McTaggart, 1988, as cited by Latorre, 2005) in this project with a group of women entrepreneurs from rural areas whose problem is the sale of their products at a fair price without middlemen via an electronic commerce system. (See Graph 1).

The focus is meeting the project's the general objective, which is: to foster the capabilities of women working in social enterprises in the use and management of Information and Communication Technologies (ICT), through a specific training model , for implementing an electronic commerce system which contributes to improve their education, entrepreneurship and business growth conditions.

Graph 1
The action research process of the project with a group of women entrepreneurs.

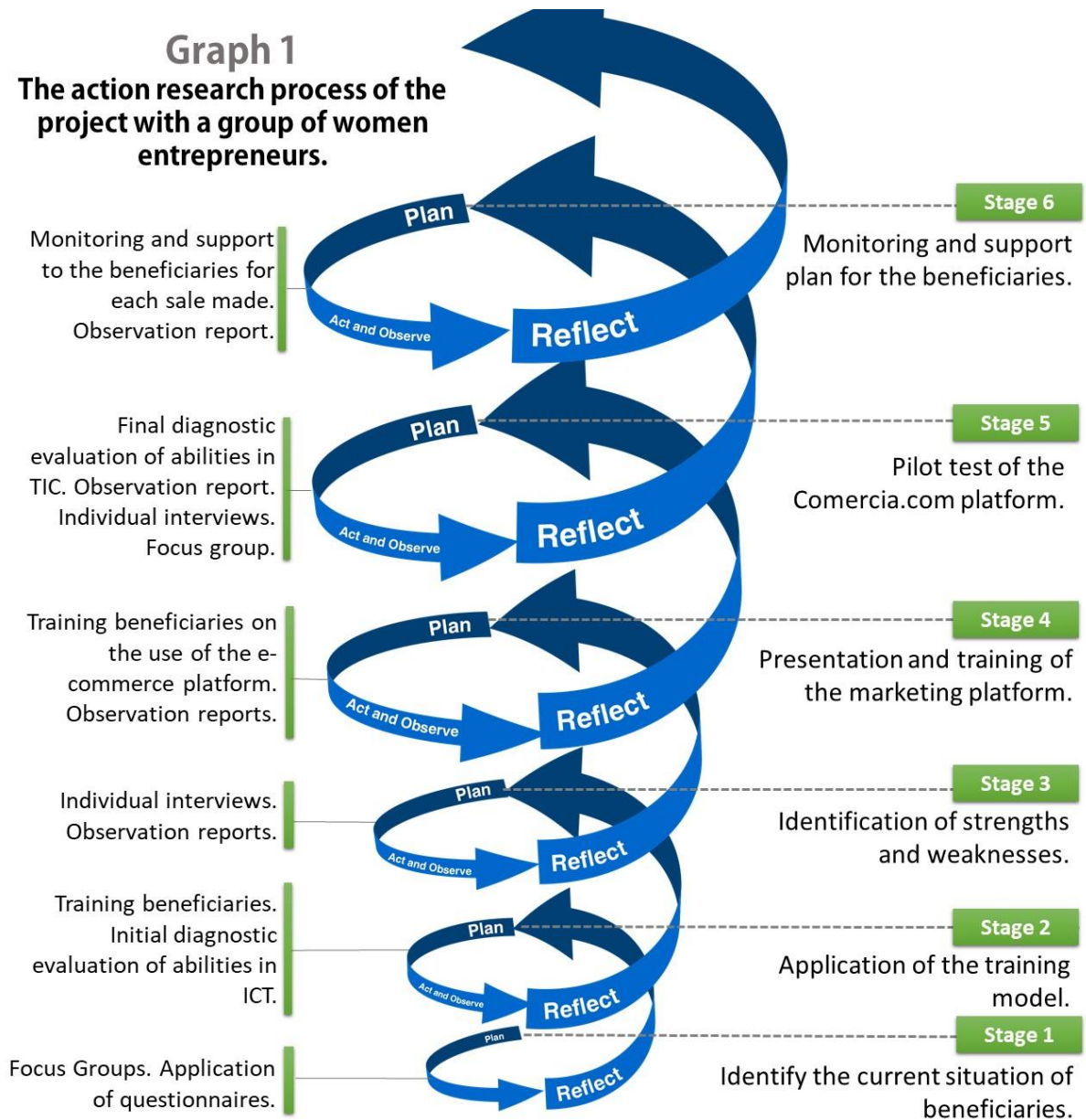


Chart 1 displays the plan, action, observation and reflection for each stage. The following Table presents a summary of the diagram.

Stage	Plan	Action and observation	Reflect
1	Identify the current situation of women in social microenterprises in terms of the use and exploitation of ICT and the operation of their companies.	* Creation of two Focus Groups. * Application of questionnaires that included: the identification of their characteristics, use and perception of ICT in their personal lives, businesses and operational issues related to their companies.	Analysis of the gathered information and design of the appropriate training model for the beneficiaries based on the analysis and their requests.
2	Application of the training model designed for the beneficiaries regarding ICT and the operability of their businesses.	* Training beneficiaries. *Initial diagnostic evaluation of abilities in ICT and operability of their companies by each course module. *Observation reports	Analysis of the gathered information and identification of the need to make a weaknesses and strengths analysis to fit the model and to conduct actions that improve the advantage of the beneficiaries in their training.
3	Identification of the strengths and weaknesses of each beneficiary in each training stage.	*Individual interviews *Observation reports	Analysis of the gathered information and adjustment of the training model and its manuals. Also, by request of the beneficiaries, a logistics manual was created and the product was sent to the final consumers.
4	Presentation and training to the beneficiaries of the marketing platform for their products taking into account the previous stages analysis.	* Training beneficiaries on the use of the e-commerce platform. *Observation reports	Analysis of the gathered information collected and identification of the need to adjust the e-commerce platform design with the internal and external observations of the platform use by the beneficiaries.

5	Pilot test of the Comercia.com platform designed to market the beneficiaries' products.	<ul style="list-style-type: none"> *Final diagnostic evaluation of abilities in TIC and operability of their companies by means of the e-commerce platform. *Observation report to identify weaknesses and strengths of each beneficiary in the e-commerce platform execution. *Individual interviews *Focus group 	Analysis of the compiled information and identification to elaborate a monitoring support plan as the beneficiaries mention that still they do not feel confident to use in an independent way, the Comercia.com platform.
6	Monitoring and support plan for the beneficiaries in the use of the Comercia.com platform	<ul style="list-style-type: none"> * Monitoring and support to the beneficiaries for each sale made. *Observation report 	Analysis of the gathered information and identification by the beneficiaries of the need to conduct marketing actions to promote the COMERCIA.COM platform

According to the second specific objective of this work, which is: to identify the main challenges and limitations of the beneficiaries of the project in terms of the use of ICTs for electronic commerce of their products; It can be spotted that one of the biggest challenges in this project is related to accessing physical infrastructure in the communities where the project was conducted.

Most of the beneficiaries do not have access to computers; therefore, they are unfamiliar with their use and on several occasions, they stated that they feel insecure and afraid to use them; it was observed that they perceive computers as a strange and expensive device.

They indicated they were able to perceive its benefits. They frequently mentioned that, with their own cell phones, or their children or husbands', they could search to improve their product and process designs; but with the use of personal computers, they could do more things.

In addition to the lack of computers, internet access is poor. Most of the project's beneficiaries indicated they connect to the internet through their smart phones and in some cases they indicated that they went to cyber cafes to access a computer with internet. The later constrains the development of their technological skills and focuses them more on the social interaction and search for information instead of taking advantage of technology to develop their entrepreneurial capabilities.

Nevertheless, they were willing to continue learning; their motivation reflects their need for recognition and transcendence. They stated that selling their products through the platform is a way of revealing their work to the world and accomplishing their dreams,

they often said they were proud of their work and, through it, their values, their people and their culture is showcased.

The challenges in relation to the permanence and consolidation of entrepreneurial projects carried out by women in a rural environment, basically relate to these aspects:

- a. Make the business an important part of the family's income. Many women reported that their work helped their family cope with economic problems caused by unemployment and/or the economic needs in the family and believe that their work contributes to the well-being of their family, which provides strong emotional incentives to continue it.
- b. That their partner acknowledges the fact that his wife produces to sell in his entrepreneurial business and not for hobby or leisure. In many cases, the women in the project consider their work as a means to fulfill their dreams, despite doing it in their homes and at limited times, it is very important for their family to recognize their effort and consider it as valuable as her partner's counterpart.
- c. That the woman includes her family to manufacture the products she sells. Community work has a very important social component; it is a way in which knowledge is transmitted from generation to generation, from mothers to daughters. It is through the participation of family members in these productive activities that the knowledge and values of the family are perpetuated for generations. Likewise, the support of male partners in these activities is positively perceived and allows women to feel more confident and proud of their work. Finally it is worth

mentioning that the trade contributes to define and to reinforce the family identity and its teaching reinforces the family and gender roles.

- d. The position of the woman in the family and the family business. It was found that in the cases where the women had a strong position of power in the family core and in the business with family participation, the companies have greater possibilities of holding and of consolidating.

In relation to the limiting factors in the rural women companies on the use of the ICT in the electronic commerce are focused on three main factors:

- i. Social: The role of women in the family dynamics; although the support of the family in rural women's businesses was observed in many cases; it is not the case in domestic and family tasks: women who have their businesses report that they were able to work in them until their children grew and their family requirements were reduced
- ii. Structural: Supposing that the Internet and computer access is solved and the platform is able to outreach the offer of products from the social companies; another great limitation they must face is the lack of infrastructure for shipping merchandises. In the villages there are not many companies dedicated to these activities; in addition the shipping costs are high and the delivery time and places are limited.

- iii. **Educative:** Most of the women have little academic formation, reason why they face many limitations for planning, organizing and controlling their business operations, mainly related to budgeting, income and expenses control.

Another limitation that was observed and that affects the creation and development of entrepreneurial projects of women in rural areas is the gradual loss of interest in the artisan labor. Mass media and entertainment, such as television and annexes such as pay television, have caused that new generations of women lose interest in learning to do handicrafts. Many benefited women thought that young people no longer want to learn the trade of sewers, embroideresses or craftswomen; they prefer to sit in front of a television.

As a conclusion

When women are given the opportunity to work in an entrepreneurial project, either their own or of a family member, they feel motivated to be useful for more than just doing housework, but above all they are empowered and feel able to thrive by themselves. Therefore, the importance they give to their work lies in the variety of meanings they associate it with; either as a means to transcend and express their culture, a means to financially support their family and/or the way in which they can feel independent and own their own space.

In addition to this, ICTs have opened the doors to a new way of finding business opportunities for most of the benefited women from the program. It motivated them to investigate and to innovate their traditional products, even the opportunity of venture in

new markets and putting their products within reach of the world has made them dream on what they can achieve with their business.

*"... my dream is to have my stand, in fact I want to name it Castle.... I do not want it to look as an ordinary room, but to have the shape of a castle"
(Rural microentrepreneur of Motul, Yucatan, Mexico).*

"... I am cooking, washing, taking care of my son who is now 16 years old ..., I did not leave my world, now that my niece pushed me into this, and I see the magnitude of things, and I keep pushing, but there I go, and I can, I see that I can do it and that motivates me to say that I can even have something of my own"(Micro entrepreneur Sinanche, Yucatan, Mexico).

"My world opened up ... before, my world was just washing, ironing, cooking, cleaning... now I know I can earn my own money and I like it ..." (Small business owner Peto, Yucatan, Mexico).

A honey producer asked: "How can I craft honey soaps?" After the ICT courses she mentioned: "Now I can do more things with my product" (*Micro entrepreneur, Mani, Yucatan, Mexico*).

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