





Perceived Social Support as a Factor of Rural Women's Digital Inclusion in Online Social Networks

El apoyo social percibido como factor de inclusión digital de las mujeres de entorno rural en las redes sociales virtuales

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ABSTRACT

This article presents the results of a study on the digital inclusion of rural women in social networks. Its main objective is to understand the social support perceived by these women within online social networks and its relation to digital inclusion, considering also whether there are differences in the degree of support depending on age, family status and employment status. To do this, we applied two scales measuring perceived social support and digital inclusion to 478 women from rural areas of Andalusia aged 18 to 65. The results showed a medium level of support, with significant differences found in the social support perceived by women depending on their age, family status and employment status. Women, who were young, students, single, with no children and who use Tuenti and Facebook perceived a higher level of social support in social networks. We also observed a strong relation between perceived social support and the digital inclusion of women in social networks, with similarities appearing in studies carried out in different contexts and social groups. The discussion looks at implications for the formation of an active and participatory citizenship of women in social networks.

RESUMEN

Este artículo presenta los resultados de un estudio sobre la inclusión digital de las mujeres rurales en las redes sociales. Su objetivo fundamental es conocer el apoyo social percibido por las mujeres dentro de las redes sociales online y su relación con la inclusión digital, considerando también si existen diferencias en el grado de apoyo en función de la edad y la situación familiar y laboral. Para ello, aplicamos sendas escalas de medida del apoyo social percibido y la inclusión digital a 478 mujeres de entornos rurales de Andalucía con edades comprendidas entre 18 y 65 años. Los resultados muestran un grado de apoyo medio, encontrando diferencias significativas en el apoyo social percibido por las mujeres en función de su edad y situación familiar y laboral. Son las mujeres jóvenes, solteras, estudiantes, sin hijos que usan Tuenti y Facebook las que más apoyo social perciben en las redes sociales. Asimismo, se observa una fuerte relación entre el apoyo social percibido y la inclusión digital de las mujeres en las redes sociales, mostrando coincidencias con otras investigaciones realizadas en otros contextos y grupos sociales. La discusión de resultados presenta algunas implicaciones para la formación de una ciudadanía activa y participativa de las mujeres en las redes sociales.

KEYWORDS | PALABRAS CLAVE

Social networks, rural women, digital inclusion, women's studies, social capital, digital divide, digital literacy, lifelong learning. Redes sociales, mujer rural, inclusión digital, estudios de las mujeres, capital social, brecha digital, alfabetización digital, aprendizaje permanente.

1. Introduction and current situation

With the incorporation of settings and resources making interaction and online communication much easier, the Web 2.0 has opened up the spectrum of possibilities for education and learning, but it has also had an effect on social exclusion (DiMaggio, Hargittai, Celeste & Shafer, 2004; Livingstone & Helsper, 2007), as it constitutes a setting for the exercise of citizenship which depends on social factors such as age, social class, gender, educational level or geographical location.

Several reports have warned of the obstacles faced by rural women over access and use of technologies (LaRose, Gregg, Strover, Straubhaar & Carpenter, 2007; Lichy, 2012; Rebollo, García-Pérez & Sánchez-Franco, 2013), highlighting several factors which may contribute to their digital exclusion. Previous studies have shown that gender inequalities may be perpetuated beyond actual access to digital technologies, being observed in other dimensions such as autonomy of use, experience, skill and types of use and social support (Hargittai, 2010).

These studies have shown that access is a necessary condition but is not in itself enough for digital inclusion (hereinafter DI) and the exercise of full digital citizenship. This concerns above all the intended and advanced uses of the technologies and their integration in daily activities (Castaño, Martín & Vázquez, 2008; García, López de Ayala & Catalina, 2013).

In a review of the literature on gender and the use of technology Hargittai & Shafer (2006) warned that, due to the greater share of responsibilities taken on by women in their homes and in the upbringing of their children, women had less time to use the computer and navigate on the Internet, suggesting that gender inequalities persist even when the obstacles of access and basic use have been overcome.

This explains why the DI of groups at risk of exclusion in these new settings has become a target of public policies.

In Andalusia (southern Spain), the main objective of the Information Society Plan for Andalusia is to digitally educate the groups at greatest risk of digital exclusion and the aim of the Strategic Plan for Equality between Women and Men is to promote the participation of women in the construction of the Information and Knowledge Society with special emphasis on women in rural settings, elderly women and women with disabilities. In this paper, we study the perceived social support (hereinafter PSS) of Andalusian women in rural settings in online social networks and their relation to the degree of DI.

1.1. Perceived social support in the learning and use of ICTs

The influence of social support in the attitudes, perceptions and performance in Science and Technology has already been studied (Rosson, Carroll & Sinha, 2011; Rice, Barth, Guadagno, Smith & McCallum, 2013), with gender differences being found. Some studies have underlined the importance of social support for predicting and explaining women's attitudes and interest towards technologies in general (Alario & Anguita, 2001; Castaño, 2008), breaking down the myth of female technophobia. Vekiri & Chronaki (2008) showed that access, frequency and the variety of activities are less significant predictors of skills and motivation towards technology than PSS, which indicates that providing quality experiences with technologies may not reduce gender differences if this does not go hand in hand with a social setting of support.

In turn, Bimber (2000) and Carpenter & Buday (2007) discovered that women and elderly people tended to use ICTs for social reasons and for a relational purpose. Prins, Toso & Schafft (2009) showed the influence that the meaning of belonging to the group and strong relations of support had on the will of women to continue learning. In their study, Lin, Tang & Kuo (2012) found that empathetic understanding and the support of other people were the main source of encouragement for adult women in their ICT learning process, finding that social support enabled them to overcome their fear of being made to look ridiculous and their anxiety over the use of ICTs. Pfeil, Zaphiris & Wilson (2009) also found that the older people in their community were able to offer useful advice and support based on their own experience and, as they had similar interests, they were able to empathize and build mutual understanding, which encouraged their learning, perseverance, self-confidence and empowerment in relation to ICTs.

Fuente, Herrero & Gracia (2010) showed the close link between PSS and commitment and continuity in the use of ICTs, pointing out that the fact that virtual communities are heterogeneous in terms of the sociodemographic profile of their participants and homogeneous in terms of their interests and values makes them a potential source of support (Herrero, Meneses, Valente & Rodríguez, 2004; Fuente et al., 2010). This was reiterated by Sloep & Berlanga (2011), who considered that an essential feature of a learning social network is that it should involve people who share fairly similar interests, making trust and support among participants the central part of the interaction.

Several studies have found gender differences in the use and relations of people with technologies (Wasserman & Richmond-Abbott, 2005; Hilbert, 2011). However, the Web 2.0 and, in particular, online social networks have changed the presence and participation of women in online settings. Some studies have revealed that activities related to keeping in touch with friends and relatives are carried out mainly by women (Clipson, Wilson & DuFrene, 2010; Mazman & Usluel, 2011). Sánchez-Franco, Buitrago-Esquinas & Hernández-Mogollón (2012) found that the online social network is a setting which fosters interdependence between people and their social capital, encouraging their active participation and commitment to the community.

Other studies have also underlined the value of online social networks to go beyond the physical-geographical barriers of communities enabling, on the one hand, local communities to strengthen their ties and keep together and, on the other, links to be developed with people with common interests and values who are far away geographically (Castells, 2001; Kollock & Smith, 2003). Godfrey & Johnson (2009) proposed a model for access and use of the Internet for elderly persons based on the enrichment of the digital circles of support; in other words, through sustainable digital communities which strengthen local communities and in which people adopt more active roles. This study demonstrated that digital circles of support produced an increase in confidence and a reduction in anxiety when using social networks and they also facilitated ICTs integration in daily life through support services in activities which were important for them.

Most of these studies have analyzed the relation between PSS and the attitudes and uses of ICTs in general and Internet in particular, rather than focusing specifically on the use of online social networks and, when they have done so, they have studied child and adolescent populations, not adults. In parallel, the scientific literature has documented that gender is not the only factor which can have an influence on the digital divide: age and geographical location also play a part. Focusing specifically on the social support of

adult women in rural areas in social networks and how this relates to their DI therefore constitutes a highly interesting research objective. This is particularly the case when one considers that the strategic plan over the last decade in Spain and Andalusia has been oriented towards digital inclusion and citizenship of women with attention on specific groups (elderly women, rural areas, etc.). For that reason, we aim to answer the following questions:

- What level of social support do they perceive in their personal social networks? What is the profile of

This indicates that the policies on digital inclusion have produced good results in terms of accessibility, with a large majority of women using this technology at a functional level. However, we have still not seen the effects of these policies at other levels and in different forms of network usage. International studies have pointed out that it is necessary to look at digital inclusion beyond mere access and include aspects about routine and advanced uses of ICTs.

the women who perceive most support in the social networks?

- To what extent is PSS in the social networks related to these women's level of DI?
- What level of DI do these women show? What challenges do women in a rural setting face in terms of DI?

2. Material and Methods

2.1. Participants

This study involved 478 women from rural areas of Andalusia; their ages ranged from 18 to 65 and they were selected using a quota sample based on age and municipality. The following inclusion criteria were used to select these women: a) having a minimum of one year's experience in the use of an online social network; b) having their residence and normal activity in a rural area and, c) representing different profiles in terms of age, educational level, family situation, etc. On the basis of Act 45/2007, December 13, for sustainable development in the rural setting, we considered rural areas to be municipalities or smaller local corpo-

rations with a population under 30,000 and a density below 100 inhabitants per Km².

Most of the women in the sample lived in a family (98.1%), and of these 54.8% had children while 43.3% did not. A majority had either completed university (39.7%) or secondary education (29.7%). A further 17.9% had completed compulsory primary education while only 12.7% had failed to complete compulsory education. Nearly half of the women had remunerated employment (48.8%) or were unemployed (21.80%). There was also a presence of students (12.6%) and housewives (11.8%). As for their social networks, 43.5% used both Facebook and Tuenti while 41.6% only used Facebook.

2.2. Instruments

The questionnaire we used included the following sections:

- Sociodemographic characteristics and level of studies: participants were asked about their age, educational level, family situation and their current occupational situation.
- PSS scale: prepared ad hoc from previous studies (Zimet, Dahlem, Zimet & Farley, 1988; Sherbourne & Stewart, 1991), its design took on a functional perspective of the PSS, according to which we were interested in the perception of support of the person using the social networks; in other words, the perception that there were people in their network who provided them with emotional, material and relational support. This scale consisted of twelve 5-point Likert type response items (from 0 –never– to 4 –always–). Applying a categorical principal components analysis with an optimal scaling procedure for ordinal data, we obtained a very high reliability coefficient with a Cronbach alpha of 0.955 and optimal construct validity, as all the items presented high saturation rates in the principal component with a mean of 0.816 and a standard deviation of 0.053 which indicates scale unidimensionality.
- DI Scale: designed ad hoc on the basis of previous reports (Becerril & Ramos, 2007; Gimeno, 2011), it consisted of 21, 5-point, Likert type response items (from 0 –never– to 4 –always–), 7 related to access, 7 to use and 7 to production. This scale showed a high reliability coefficient for Cronbach's alpha of 0.905, and optimum construct validity indexes, with a mean saturation of the items in the principal component of 0.567 and a standard deviation of 0.157.

2.3. Procedure

In the selection, localization and questioning of the

women we were assisted by the Equality Monitors from the Women's Information Points (PIM in the Spanish acronym) of the municipalities involved. They were trained in how to administer the questionnaire correctly. The questionnaire was conducted by the interviewer as a structured interview to ensure that the women understood the questionnaire and filled it in correctly. All interviews were conducted in municipal offices used for digital technology training and each lasted approximately half an hour. In all cases the women taking part were informed of the voluntary and anonymous nature of their participation in the study and why it was being conducted and they decided to participate without receiving any kind of compensation. Data was collected during the months of March, April and May 2012.

Once the data had been introduced into the SPSS statistical package (version 18 for Windows), we conducted an exploratory analysis of the variables to ascertain their structure and distribution. For this paper, we presented the results of the PSS and DI on a three point scale (rarely, sometimes and mostly) after checking that this recoding did not affect either its validity or reliability. A variable was created for each of the PSS and DI scales with the overall score from the sum of all the items, with the overall PSS variable on a 0 to 48 point scale and the overall DI variable on a 0 to 84 scale, consisting of three dimensions measuring access, use and initiative on the networks whose scales ranged from 0 to 28 points respectively.

To check the hypotheses of relation we applied Pearson's *r* and linear regression and Student's *t*-test and Anova for the hypotheses of difference, once we had checked the homoscedasticity of the samples with the Kolmogorov-Smirnov test.

3. Analysis and results

In terms of the primary objective of our research, identifying the level of PSS of women in rural settings in social networks, the data obtained indicate a mean of 24.11 and a standard deviation of 11.89, which corresponds to a medium level of support. This indicates that 36% of women perceive a medium level of support and 33.4% perceive a high level of support in the social networks, while 30.6% perceive little or no support.

Out of the group of aspects of the PSS studied, there are five which best define women's perception of social support in the networks: to have people they can have fun with, who express affection towards them, who they can talk to, who they share interests with and in whom they can trust. Table 1 shows the

measurements for the main tendency and dispersion in these items.

As figure 1 shows most of the women perceive a medium-high level of support in these indicators. However, some still find little support in the social networks, with 24% finding few people with whom to share interests and 30.5% finding few people in whom they can trust.

In contrast to these aspects, we found that a high proportion of women did not find support to explore new areas of their online identity (60.4%) or find people who understood their problems (41.5%) or to whom they could express affection over the internet (40.9%).

In turn, in relation to the profile of women who perceive most and those who perceive least support, the contrast tests point to significant differences depending on age ($F=9.038$; $p=0.000$), employment situation ($F=5.609$; $p=0.000$) and family situation, with differences being found in the marital status ($F=4.141$; $p=0.16$), having children (Levene's test; $F=7.522$; $p=0.006$; $t=3.051$; $p=.002$) and type of family ($F=3.394$; $p=0.035$). The Tukey tests (table 2) indicate that under -25 women who are students are the ones who perceive most support online; in contrast, middle-aged women with remunerated employment are the ones who perceive least social support. Furthermore, the Student's *t* test indicates that women who do not have children perceive more support than those who do.

As for the objective of studying the relation between PSS of these women online and their level of inclusion, Pearson's *r* indicates a correlation of 0.546 with a level of significance of 0.000, which shows a consistent relation between both variables. Furthermore, the linear regression indicates that perceived social support shows itself to be a predictor variable of the digital inclusion of this group of adult women in rural areas in

Item	Mean	Stand. Dev.
I have people I can have fun with	2.58	1.090
I have people who love me	2.38	1.204
I have people I can talk to	2.34	1.135
I have people I share interests with	2.23	1.213
I have people in whom I can trust	2.14	1.260

online social networks, explaining a percentage of variance of 29.8% ($R^2=0.298$; $p=0.000$).

Finally, as for the objective of identifying the level of DI of these women, we found that they showed a medium level of inclusion, with a mean of 37.27 and a standard deviation of 13.82. This indicated that 52.5% of the women showed a medium level of DI, 35.7% showed a low level of inclusion and only 11.8% expressed a high level of inclusion in online social networks.

The results indicate that the level of access and functional use of networks has been reached by a high percentage of these women, with the level of access being the one they reached most ($M=14.79$; $SD=4.96$) followed by the level of use ($M=13.74$; $SD=6.66$). This way, in terms of access we found that 60.4% of the women reported a medium level of access and 20% a high level. As for use, 35.8% reported medium level of use and 30.2% a high level, but 34% reported little or no use. However, the level of advanced uses of social networks, in other words, everything to do with the development of their own digital identity (autonomy, initiative, etc.) was the least present in these women and therefore received the lowest scores ($M=8.47$; $SD=6.13$). We found that 65.1% of the women indicated little or no activity on this level, while 26.1% indicated some initiative and only 8.8% showed a high level of advanced uses.

Thus, the more deficient aspects are those referring to: creating groups in the social network and making them more dynamic by inviting others to take part (67.9%), and how to follow a routine when using the internet (53.4%). To summarize, we can say that these women use online networks in a functional way, focusing on consultation, publication and comments about information.

Finally, in terms of access, we would like to point out that a high percentage of women stated that they had not received training courses (62.7%) and a substantial percentage even stated that they did not have access to these courses (29.5%) to learn how to use the networks, suggesting

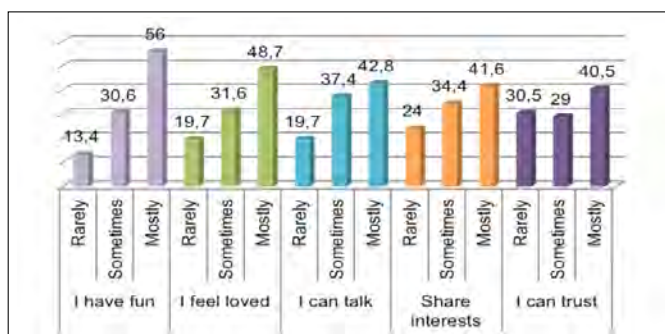


Figure 1. Distribution of women in some PSS indicators..

that their network learning had been done in informal settings through their own personal networks.

4. Discussion and conclusions

The results of this study allow us to state that women in rural areas perceive a medium level of support in the social networks, with three clearly differentiated groups emerging: a group of 30.6% of women who find little support, a group of 36% who find sufficient support and 33.4% who perceive a lot of support in the networks. When looking at the profile of these women, we found that the group which perceives most online network support consists of women who are under 25, students, single and without children. In contrast, we found that the group which perceived least online support were married women with children and with remunerated employment. Some studies (Hargittai & Shafer, 2006; Castaño, Martín & Vázquez, 2008) have found that the greater share of responsibilities assumed by women at home and in the upbringing of their children means that they have less free-time to use the computer and browse on the Internet, which lowers their online profile and prevents their digital skills from improving once the obstacle of access has been overcome. Thus, we have found significant differences in the perceived social support of women in a rural setting depending on their age, family situation and occupational situation, in favor of the group of young women who are university students, single and without children, observing the presence of a generational divide manifested in the perceived social support in online social networks. Although we can conclude that the level of social support that these women perceive is not just conditioned by age, but by other aspects of their life. These results coincide with those from other earlier studies which have documented the incidence of multiple factors in relation to the use and handling of technologies and Internet in general (DiMaggio et al., 2004; Livingstone & Helsper, 2007; Hargittai, 2010).

The most important dimensions of social support for women refer to the fact of finding people who they can have fun with, talk to, feel loved, share interests and trust. Most of the studies on social networks have highlighted shared interests and trust as defining features of online interaction (Herrero et al., 2004; Fuente et al., 2010; Sloep & Berlanga, 2011). Women in

Table 2. Post hoc Tukey tests of PSS depending on Age and Occupational Situation

Age				Occupational situation			
Age Ranges (1-4)	N	Subset for alpha =0.05		Occupational Situation (1-5)	N	Subset for alpha =0.05	
		1	2			1	2
Between 40 and 54	145	21.56		Remunerated employment	216	21.84	
Over 55	48	22.44		Housewife	52	24.25	24.25
Between 26 and 39	150	23.66		Unemployed	97	25.98	25.98
Up to 25	116		28.78	Retired/pensioner	22	26.23	26.23
Significant		0.604	1.000	Student	58		29.12
				Significant		0.305	0.205

rural settings show that the possibility of having fun, communicating –feeling connected- and feeling loved, are also aspects which are highly valued as part of the support they feel in networks. These results reveal the social and relational feeling that the use of online networks has for these women, which ties in with the results of other previous studies performed with adult women (Bimber, 2000; Carpenter & Buday, 2007). In contrast, women perceive little support to discover new areas of their digital identity and establish certain levels of trust and affective intimacy. Putnam (2000) points out that while face-to-face networks are dense and well thought through, virtual networks are watered down and real bonding is difficult. Our results indicate that women use online social networks to complement and extend their physical networks, suggesting that their activity revolves around their face-to-face networks.

The results obtained in this study allow us to conclude that there is a strong link between the social support perceived by these women in the social networks and their digital inclusion, which confirms the general tendency observed in other studies on the relation between social setting and the use of technologies (Vekiri & Chronaki, 2008; Prins, Toso & Schaff, 2009; Lin, Tang & Kuo, 2012). This study shows that social support is also a variable which predicts the use of social networks in adult women in rural areas, not just in the use of technologies in general by girls, adolescents and young women. However, it would be interesting to study the reasons for use to gain a better understanding of the role played by social support in digital inclusion and the improvement of social capital (Straubhaar, Spence, Tufekci & Lentz, 2012).

Our study also offers information to assess the impact of policies for digital inclusion of rural women in Andalusia. The results indicate that the level of digital inclusion reached by these women is medium, which means that the greatest percentage of women is situated at a level of access and functional use of the social networks. Some studies have highlighted the special obstacles faced by women in a rural setting in

terms of a full digital citizenship (LaRose et al., 2007; Lichy, 2012).

With this study we can state that the level of access and basic use is reached by the majority of women, but only 34.9% use it at an advanced level. This indicates that the policies on digital inclusion have produced good results in terms of accessibility, with a large majority of women using this technology at a functional level. However, we have still not seen the effects of these policies at other levels and in different forms of network usage. International studies have pointed out that it is necessary to look at digital inclusion beyond mere access and include aspects about routine and advanced uses of ICTs (Castaño, Martín & Vázquez, 2008; García, López de Ayala & Catalina, 2013). In this paper we have found that this also applies to the use of social networks. The results suggest a positive effect of digital inclusion policies in the access and functional use of social networks by Andalusian women in rural areas, but it would appear important to press on with these policies to stimulate advanced use of technologies, in general, and social networks, in particular, for women in the rural world, as a way of promoting their digital citizenship.

Our study also indicates that many women have not received training in the use of networks, suggesting that their learning is linked to informal contexts and personal networks. This suggests the need to re-think training strategies aimed at adult women in rural areas. Some studies have shown different strategies for encouraging the learning of ICTs (Godfrey & Johnson, 2009; Veletsianos & Navarrete, 2012; Greenhow & Gleason, 2013).

Our decision to adopt criteria for inclusion in the sample that women had to have at least one year's experience of use of networks undoubtedly accounted for the scarce presence of women who had completed primary education or had not completed any compulsory education. While this confirms what other international studies have stated about the influence of level of studies in the use of technologies, it indicates that the level of access and basic use of social networks has not been reached, because the percentage of women users in rural areas who did not complete formal education is still low. It would be interesting to investigate this group of women in more depth to identify the factors and mechanisms which encourage their interest, learning and experience in the use of these networks.

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Note

This survey is more extensive than that included in this article, as it covers other dimensions of the use that women make of social networks, and it belongs to a research project financed through a public call for funding projects of excellence.

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