

## Rapid Communication

# Internet Use as a Predictor of Sense of Community in Older People

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### Abstract

The Internet opens new options for communication and may change the extent to which older people use other modes of communication. The importance of older adults' participation in cyberspace has increased as Internet use for commerce and communication has increased. The present study explores how older adults' Internet use affects their sense of community. An online survey was conducted at the University of Sydney to determine the associations between Internet use and seniors' sense of community and well-being. Participants were recruited online. There was a positive association between a sense of belonging to an online community, sense of community, and well-being. Seniors' use of the Internet for communication and information, and the frequency and history of their Internet use, were consistently related to a greater sense of community.

### Introduction

AS IN MANY OTHER COUNTRIES, the Australian population is aging. The World Health Organization reported that the number of people aged 60 and over as a part of the global population will double from 11% in 2006 to 22% by 2050.<sup>1</sup> As the population of elderly people is increasing, the use of computers and the Internet is increasing in the world. This rapidly expanding Internet may bring an opportunity for community creation.<sup>2</sup> The social engagement and participation of older adults in society are indicators of successful aging.<sup>3</sup> Following social changes over recent years, many older people are at risk of social isolation.<sup>4</sup> It has been estimated that one in four older people suffers from loneliness.<sup>5</sup> Feelings of loneliness are inversely related to one's sense of community<sup>6</sup> and can be a significant risk factor for suicide among older adults.<sup>7</sup>

Sense of community is "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together."<sup>8</sup> A strong sense of community has many positive outcomes,<sup>9</sup> including empowerment, sense of efficacy, life satisfaction, improved well-being, and happiness.<sup>10-12</sup> In contrast, absence of sense of community prompts feelings of alienation, loneliness, depression, and suicide.<sup>11,13</sup> Online communication presents many new opportunities for a sense of community without regular face-to-face communication.<sup>14-18</sup>

The study of the Internet's effects on sense of community is still in its early stages. The present study investigates the relationships between Internet use, sense of community, and well-being in elderly people. The proposed exploratory study aims to investigate the following hypotheses: (1) there is a relationship between Internet use and sense of community in elderly people, and (2) there are associations between Internet use, sense of community, and well-being in elderly people.

### Methods

Data were collected online between February and July 2006 from 222 Internet users in Australia aged 55 years or older. The majority of respondents (62%) were female. Nearly half (48.4%) were aged 55 to 64, 23.5% were aged 65 to 69, and 28.1% were 70 or older. The survey included a general set of demographic variables, an extroversion scale from the Big Five Personality Test,<sup>19</sup> with alpha reliabilities of 0.78, and the Psychological Self-Perception of Health,<sup>20</sup> with alpha reliabilities of 0.91, which were treated as control variables because they have been associated with Internet use and social participation.<sup>21</sup>

Respondents were asked to indicate on a 4-point scale (ranging from *less than 4 hours* to *more than 16 hours*) their frequency of Internet use during the previous week. History of Internet use was measured with a 4-point scale ranging from *less than 1 year* to *over 7 years*. Participants also were

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TABLE 1. PRINCIPLE COMPONENT FACTOR ANALYSIS FOR SENSE OF COMMUNITY SCALE

Component and items	Factor loadings			Variance explained
	F1	F2	F3	
F1. Sense of alienation from community				
Society has stopped making progress	0.785			
People do not care about other people's problems	0.746			
I cannot make sense of what's going on in the world	0.667			
Society isn't improving for people like me	0.665			
The world is becoming a better place for everyone	-0.529			
The world is too complex for me	0.513			
I don't feel I belong to anything I'd call a community	0.305			
				17.28%
F2. General sense of online community				
The Internet has allowed me to communicate with all kinds of interesting people I otherwise would never have interacted with		0.785		
I can find people who share my exact interests more easily on the Internet than I can in my daily life		0.710		
Talking with people on the Internet is as safe as communicating with people in other ways		0.690		
I feel I belong to an online community on the Internet		0.629		
The Internet isolates people from one another		-0.440		
Information on the Internet is as trustworthy as information from television and newspapers		0.394		
				14.28%
F3. Positive sense of community				
I have something valuable to give to the world			0.663	
People who do a favor expect nothing in return			0.627	
I believe that people are kind			0.596	
				9.6%
Total variance explained				41.16%

asked to indicate on a 3-point scale (*more, no change, less*) whether using the Internet had changed how much time they spent talking to people face to face, talking to people on the telephone, getting out and about, pursuing hobbies or interests, and doing paid or voluntary work. The survey also measured the range of applications for which respondents used the Internet with the Internet Breadth Scale,<sup>21</sup> which includes five subscales: finding new people, entertainment, com-

merce, communication, and seeking information (reliability coefficient 0.79 to 0.95).

To assess participants' sense of online and offline community, participants rated 17 items on a 5-point scale that ranged from *strongly disagree* to *strongly agree*<sup>2</sup> (published reliability coefficient 0.86). Principal component factor analysis reduced these 17 items to three factors: positive sense of offline community, sense of alienation from offline commu-

TABLE 2. IMPACT OF INTERNET USE ON LIFE SATISFACTION AND SOCIAL ACTIVITIES

Characteristics	Impact of Internet use		
	Better/more (%)	No change (%)	Worse/less (%)
Life satisfaction			
General health	27	68	5
Contact with family and friends	66	34	3
Involvement with hobbies or interests	58	38	4
Contribution to community life	34	65	1
Overall happiness	59	40	1
Social activities			
Talking to people face to face	10	83	7
Talking to people on the telephone	32	65	3
Getting out and about	7.5	85	7.5
Pursuing hobbies or interests	10	54	36
Doing paid or voluntary work	2	77	21

TABLE 3. SUMMARY OF MULTIPLE REGRESSION ANALYSES OF SENSE OF COMMUNITY AND INTERNET USAGE

Criterion	Significant predictor	$\beta$ -regression coefficient	F	Unique variance due to predictor
Positive sense of offline community	Age	-0.060	6.02	2%
	Education	0.117	9.65	4%
	Subjective health	0.396	5.67	2%
	Information	0.056	3.40	1%
	$F = 7.78, p = 0.000, R^2 = 9.4\%$			
General sense of online community	Population density	0.188	13.79	6%
	Frequency of Internet use	0.125	8.04	3%
	Communication	0.092	10.35	9%
$F = 9.94, p = 0.000, R^2 = 13\%$				
Sense of alienation from offline community	Gender	-0.230	4.44	2%
	Education	-0.180	18.26	8%
	Subjective health	-0.466	4.57	2%
	History of Internet use	-0.157	14.52	6%
	$F = 9.35, p = 0.000, R^2 = 14.5\%$			

community, and general sense of online community (Table 1). Measure of sampling adequacy was 0.69 ( $p < 0.001$ ).

Well-being was assessed using the 17-item Australian Wellbeing Index,<sup>22</sup> which is based on average levels of satisfaction with a range of personal and national life aspects (reliability coefficient 0.7). To confirm the results of this well-being measure, participants also were asked to indicate on a 3-point scale (*better, no change, worse*) whether using the Internet had changed how satisfied they felt with their general health, contact with family and friends, involvement with hobbies or interests, contribution to community life, and overall happiness. The associations between the Internet use, sense of community, and well-being were examined using Spearman rank order correlation, analysis of variance (ANOVA), and hierarchical multiple regression.

## Results

Most respondents (90%) used the Internet at least 4 hours per week, with 29.3% reporting more than 16 hours per week. Nearly half of the respondents (44.1%) had used the Internet for more than 7 years; only 2.3% had used the Internet for less than 1 year. Frequency and history of Internet use were positively correlated ( $r = 0.211$ ). Participants used the Internet primarily for communication ( $M = 2.42$ ), seeking in-

formation ( $M = 2.23$ ), and commerce ( $M = 1.80$ ). The majority of respondents reported that Internet use had improved their satisfaction with general health, contact with family and friends, involvement with hobbies or interests, and overall happiness. For all other life satisfaction and social activities, the majority of respondents reported no change (Table 2).

There was a significant positive correlation between sense of online and offline community ( $r = 0.173$ ), between sense of online community and the impact of Internet use on life satisfaction ( $r = 0.245$ ), and between sense of offline community and well-being ( $r = 0.549$ ). Sense of alienation from offline community was inversely related to well-being ( $r = -0.349$ ).

Not surprisingly, participants' sense of online community was related to frequency of Internet use. The general sense of online community was lowest ( $M = 2.50$ ) for participants who used the Internet fewer than 4 hours per week, higher ( $M = 2.85$ ) for those online 4 to 10 hours per week, and highest ( $M = 3.08$ ) for those who spent more than 16 hours online per week. A one-way, between-groups analysis determined that the differences were significant ( $MS = 2.06$ ;  $F = 3.91$ ;  $p < 0.01$ ). Similarly, sense of alienation from offline community was inversely related to history of Internet use. The mean sense of alienation from offline community score for participants who had used the Internet for less than 1

TABLE 4. SUMMARY OF MULTIPLE REGRESSION ANALYSES OF SENSE OF COMMUNITY AND WELL-BEING

Criterion	Significant predictor	$\beta$ -regression coefficient	F	Unique variance due to predictor
Personal well-being	PSC	0.124	9.08	4.1%
	SAC	-0.294	25.08	10.6%
$F = 9.65, p = 0.000, R^2 = 12.4\%$				
National well-being	SAC	-0.184	9.18	4.2%
$F = 3.52, p = 0.000, R^2 = 4.8\%$				

PSC, positive sense of community; SAC, sense of alienation from community.

year was 2.93; it was 2.84 for participants who had used the Internet for 2 to 4 years, 2.66 for those with a 5 to 7 year history of Internet use, and 2.40 for those who had used the Internet for more than 7 years. These differences also were significant ( $MS = 2.55$ ;  $F = 4.92$ ;  $p < 0.01$ ).

Table 3 depicts the results of hierarchical multiple regressions showing the relationship between Internet use, sense of community, and well-being. In all multivariate analyses, respondents' demographic characteristics, extroversion, and subjective health status were considered as control variables and were used in all multiple regression models. Therefore, the regression results contain these control variables along with dependent variables as predictors. Together, these three regression analyses explain 36.9% of the variance in the dependent variables.

Education, subjective health, age, and using the Internet to seek information accounted for 9.4% of the variance in positive sense of offline community. Participants aged 55 to 64 used the Internet to seek information, had a higher education level, reported better subjective health, and were likely to have a more positive sense of offline community. Population density, using the Internet for communication, and frequency of Internet use accounted for 13% of the variance in general sense of online community. General sense of online community was higher in respondents who lived in rural locations. Education, history of Internet use, subjective health, and gender accounted for 14.5% of the variance in sense of alienation from community. Sense of alienation from community was lower in females with higher education, better subjective health, and a longer history of Internet use.

Multiple regressions revealed that positive and negative sense of offline community predicted personal well-being ( $\beta = 0.124$  and  $-0.294$  respectively); those with better feelings of belonging to the offline community were more likely to have a higher personal well-being (see Table 4). Only sense of alienation from offline community was a predictor for national well-being ( $\beta = -0.184$ ) and accounted for 4.8% of the variance.

## Discussion

Nahm and Resnick claim that cyberspace provides a new connection to the outside world for elderly people that can enhance social communication and well-being of seniors.<sup>23</sup> This study confirmed that Internet use was associated with higher satisfaction with health, contact with family and friends, involvement with hobbies or interests, and overall happiness. For most participants, Internet use did not change the amount of time they spent talking to people face to face, talking to people on the telephone, or getting out and about, all of which are indicators of sense of community. These findings are consistent with earlier findings that Internet use is not related to poor social involvement and that Internet use increases social contact with friends and coworkers in the long term.<sup>24</sup> While participants' completion of the online survey may indicate an existing sense of online community, the level of sense of online community was higher in those who were more frequent users. Previous research has similarly found that frequent users of the Internet have a more positive sense of online community,<sup>25</sup> are more satisfied with their Internet support network,<sup>26</sup> and that short-term users are more likely to be lonelier than long-term users.<sup>27</sup>

While the absence of a sense of community prompts feelings of alienation and loneliness,<sup>12</sup> a strong sense of community is associated with a sense of efficacy, life satisfaction, and improved well-being. Using the Internet for communication was a good predictor for the general sense of online community. Much of the research literature supports the idea that the Internet expands existing modes of communication and ability to communicate and keep in touch.<sup>24,28</sup> Merkle has described the Internet as a social technology that is creating a new sort of interpersonal relationship.<sup>29</sup>

The results of the present study also confirm earlier findings that the impact of Internet use on loneliness and well-being depend on the purpose for which the Internet is used. Gross et al. found that loneliness and anxiety were more common in participants who used the Internet to communicate with unknown people.<sup>30</sup> Similarly, the present study found that using the Internet to find new people was associated with a sense of alienation from community and with lower well-being scores. The reason for this is not apparent from the present study, but it may be that participants who were using the Internet to find new people were doing so because they felt alienated and lonely. Taken together, the present study's results support the notion that Internet use supplements, rather than replaces, other modes of communication and that it can improve older adults' sense of community, well-being, and life satisfaction.

## Disclosure Statement

The authors have no conflict of interest.

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