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The Development and Psychometric Testing of the Expressive and Instrumental Online Neighborhood Network Uses Scale (ONNUS)

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Abstract

The current study presents an instrument to measure online neighborhood network (ONN) uses from a social capital perspective. Prior studies have provided tentative evidence that ONNs, developed on social media platforms, can be a means for residents to develop social capital. However, to investigate this claim, a quantitative measurement instrument tailored to group- instead of ego-centered networks, is necessary yet currently lacking. A multi-phase method was applied to develop and test the psychometric properties of our instrument. Drawing upon existing literature, we conceptualized two types of ONN uses: expressive and instrumental uses. Both constructs were subsequently operationalized in a series of research steps. The construct validity (both exploratory and confirmatory), criterion and theoretical validity, and internal consistency of the instrument were tested on a sample of ONN users (n = 668) in Flanders (Belgium). The findings showed that the designed instrument is valid and reliable for assessing ONN uses. As such, the means are provided for investigating the role of ONNs in neighborhood relationship and social capital development, discern between different types of ONN users, and to assess the quality of ONNs with respect to the neighborhood's social life from a policy perspective.

Keywords: Social capital; social media; online neighborhood networks; scale; ONNUS; psychometrics

Introduction

The goal of the present study is to develop an instrument to measure social media use in a neighborhood context. A fairly recent phenomenon is the appropriation of social media platforms such as Facebook in neighborhood contexts by residents, emerging as self-organized online neighborhood networks (ONNs). These ONNs allow neighborhood residents to organize themselves around particular interests (Bouko & Calabrese, 2017; Gregory, 2015), facilitate the exchange of goods (Rufas & Hine, 2018), to circulate neighborhood related information and news (De Meulenaere, Courtois, et al., 2020; Gulyas et al., 2019; Turner, 2015) or neighborly support (De Meulenaere, Courtois, et al., 2020; López & Farzan, 2015; Silver & Matthews, 2017), and to do so beyond the confines of offline personal local networks, allowing them to bridge to neighborhood residents otherwise not known to them (De Meulenaere et al., 2021; De Meulenaere, Courtois, et al., 2020). These studies explored the variety in ONN uses, the subjective experiences of its users, and suggest that these ONNs foster a sense of community and stimulate neighborhood attachment, thereby allowing to develop local social relations and build social capital. Still, these claims are often under theorized and surmised rather than actually investigated, while little is known to whom these outcomes might pertain or what types of engagement with ONNs are necessary to bring them about.

To date, a theoretically grounded conceptualization and operationalization of observed ONN uses is lacking. However, understanding which types of behaviors within these ONNs are more likely to produce favorable

neighborhood and individual level outcomes allows to gain a better understanding of how social media play a role in the social life of neighborhoods. Several scales have been proposed and used to measure social media use (Sigerson & Cheng, 2018). Yet, often these scales measure motivations for use rather than use (Gil de Zúñiga et al., 2012; Kim & Jung, 2017), are tailored to ego-centered personal social networks rather than group-centered networks (Ellison et al., 2007; Vitak, 2014), or have been developed and used among adolescents and young adults (Sigerson & Cheng, 2018), which is not the expected population of ONNs (Albanesi et al., 2007; Hampton, 2007). In addition, earlier studies on local digital community networks have used a time-based measure (Hampton, 2007) or reduced the scale to the use of a selection of platform features (Capece & Costa, 2013). Therefore, the aim of the present study is to develop a quantitative instrument to measure individual-level ONN uses, the Online Neighborhood Network Uses Scale (ONNUS), that can be used in self-report surveys, thereby focusing on neighborhood centered social relationship development and the capitalization on these relations. To do so, we draw on the social capital framework of Lin (2004), while taking into account the neighborhood setting (Kusenbach, 2006; Mollenhorst, 2015; van Dijk et al., 2013; Waverijn et al., 2017; Wellman & Wortley, 1990) as well as the social media context (Ellison, Gray, et al., 2014; Ellison, Vitak, et al., 2014; Vitak, 2014).

This paper is structured as follows. In the theoretical framework, we first discuss the adopted social capital perspective and its relation to social relationship maintenance behaviors. We then provide a short definition of ONNs before discussing their uses from the outlined social capital perspective. The theoretical framework ends with a discussion of the expected relations of the developed ONNUS scale and related constructs, to assess its criterion and theoretical validity. Subsequently, we outline the followed methodological procedures, present our results and end this paper with a discussion of our findings.

A Social Capital Perspective on Social Relationship Maintenance

Prior studies indicated that a significant portion of the content posted to ONNs contains requests for help or assistance from neighbors, ranging from 47% (De Meulenaere, Courtois, et al., 2020) to 83% of all posts (López & Farzan, 2015). Besides sending requests, ONN users have been observed to share and discuss neighborhood related information and issues (De Meulenaere, Courtois, et al., 2020; Turner, 2015), and to express opinions and judgements (Gregory, 2015). A useful starting point to conceptualize these ONN uses from, a social capital perspective is Lin's (2004) theorizing on the behavioral component of social capital. According to Lin (2004, p. 41), "social capital is rooted in social networks and social relations and is conceived as resources embedded in a social structure that are accessed and/or mobilized in purposive actions." Lin emphasizes expressive actions as the actions through which the relations and the network as a whole are maintained. These expressive actions involve acts of communication such as small talk, sharing information, and reacting to the shared information, whereby the interaction partners acknowledge the relation that exists between them. As such, both interaction partners aim to safeguard the relation and the resources contained within the relation. Accessing those resources, in turn, is considered as capitalizing on earlier made investments in the form of resource mobilization (Lin, 2004). In the context of ONNs, the requests users pose to their fellow neighbors can be considered as resource mobilization, while the sharing of information, expressing opinions and online social interactions can be regarded as acts of communication that constitute the expressive actions.

Conceptualizing and Operationalizing Online Neighborhood Networks and Their Uses

Drawing on prior studies on online social relationship maintenance (Ellison, Vitak, et al., 2014; Vitak, 2014) and online resource mobilization behavior (Ellison, Gray, et al., 2014) we conceptualize the social capital behaviors discussed above as *expressive* and *instrumental uses* respectively. The first type entails those active communicative behaviors that are aimed at maintaining the existing social network. The second type pertains to the mobilization of the resources contained within the network maintained through expressive actions. Before elaborating on these uses, we first define ONNs.

Defining Online Neighborhood Networks

Drawing on the aforementioned exploratory studies, we present a definition of ONNs along three interrelated dimensions, being their geographical delineation, the social network and the content circulating within the network, and the socio-technical infrastructure of the social media platform they are developed on. Consistent

with other studies (Capece & Costa, 2013; De Meulenaere, Baccarne, et al., 2020; De Meulenaere, Courtois, et al., 2020; Foth, 2006; López & Farzan, 2015; Vogel et al., 2021), we define an ONN as a self-organized and geographically bounded online network of neighborhood residents developed on a social media platform. It allows the residents of a contiguous spatially delineated area (Gan et al., 2021) perceived as a neighborhood by its residents to interact with each other by sharing neighborhood related news, information and opinions, ask each other for help, and respond to each other's posts. The shared content is typically aggregated in a social news feed, accessible by all members of the network. Through their uses of the ONN, that is sharing content, interacting with other neighbors, and asking questions, ONN users effectively produce and reproduce the ONN.

Expressive Uses

Online social relationship maintenance behaviors in the context of personal online social networks have been investigated in relation to sense of belonging and relational closeness and are coined as Facebook Relational Maintenance Strategies (FRMSs) (Ellison, Vitak, et al., 2014; Vitak, 2014). Taking into account how individuals make use of social media's affordances, it is argued that these FRMSs involve a combination of active and passive online behaviors directed at specific contacts. This includes sharing content, commenting in a supportive manner, but also passively browsing the profiles of those contacts or specifically looking up personal information. To study such relationship maintenance behaviors in an ONN context, we focus on the active behaviors because those are the behaviors through which the relationship is affirmed and made visible, and which effectively produce the network. More specifically, by adopting the active online behavior dimensions from the FRMSs scale we can discern two dimensions in the expressive uses construct, being *shared interests* and *supportive communication*.

First, *shared interests* refer to the extent to which ONN users proactively share content with the ONN and interact about communal interests (Vitak, 2014). Social relations often form around particular foci, in this case the neighborhood or neighborhood related events or issues. On ONNs we see that users keep up with local news (De Meulenaere, Courtois, et al., 2020; Gulyas et al., 2019) and reminisce about times past, announce deaths of fellow residents, give advice, or share information about local events (Bouko & Calabrese, 2017, p. 11). By jointly discussing this neighborhood related information, they form an online community (Gregory, 2015). In addition, users tend to see these ONNs as a way of connecting to their local community (Gulyas et al., 2019) increasing their awareness about their neighborhood at large (De Meulenaere, Courtois, et al., 2020). Thus, by sharing content about the neighborhood, the common ground of the relationship is expressed and reaffirmed.

Second, *supportive communication* pertains to those behaviors that users engage in through the ONN to either implicitly or explicitly signal support by reacting to other's activities within the network in a supportive manner (Vitak, 2014). The provision of social support is a central pillar in maintaining social relations (Lawler & Yoon, 1996; Uehara, 1990), which is not different in a neighborhood context (Kusenbach, 2006). In online personal social networks, this materializes in sending birthday wishes or liking what others have posted (Donath, 2007; Wohn et al., 2016). In addition, it is key that these acts of supportive communication have a positive tone (Vitak, 2014). In a neighborhood context, emerges in the form of responding to mobilization requests in the context of lost belongings and pets (Turner, 2015), or reacting in a positive way to posts made to the ONN (Bouko & Calabrese, 2017). Moreover, earlier research has indicated that there appears to be a strong imperative among neighbors to help each other, while being helped should be reciprocated by gratitude and / or similar favors (Kusenbach, 2006).

Instrumental Uses

Online mobilization requests are defined as "posts that request some type of assistance from one's network, which might take the form of an informational question, a request for advice, or help with a physical need" (Ellison, Gray, et al., 2014, p. 1106). Similar to the expressive uses construct, we can discern two dimensions of instrumental ONN uses, being *informational* and *tangible support mobilization requests*, thereby drawing on earlier studies on online resource mobilization (Ellison, Gray, et al., 2014; López & Farzan, 2015), and the nature of neighbors as support providers (Kusenbach, 2006; Mollenhorst, 2015; van Dijk et al., 2013; Waverijn et al., 2017; Wellman & Wortley, 1990).

The first dimension of instrumental ONN uses are *tangible support mobilization requests* and refers to users' intentions to activate the ONN to obtain tangible support and physical assistance, such as neighborly domestic

help, help with small problems, or borrowing tools. Although neighbors tend to be less likely to provide support in comparison to kin or friends (Wellman & Wortley, 1990; Plickert et al., 2007) they can emerge as supportive ties, aided by their physical proximity, and have been found to provide tangible support such as lending household items or performing small household jobs (Mollenhorst, 2015; van Dijk et al., 2013; Waverijn et al., 2017; Wellman & Wortley, 1990). Moreover, earlier studies have observed neighbors requesting such types of help from each other (De Meulenaere, Courtois, et al., 2020; López & Farzan, 2015). The second dimension entails *informational support mobilization requests* and refers to users' intentions to activate the ONN to obtain neighborhood related information and advice. Even though less frequently observed in offline neighborhood relations (Wellman & Wortley, 1990; Plickert et al., 2007), ONNs are arguably well suited to facilitate informational support exchange. Informational support, or the exchange of advice and the provision of useful information, guidance or feedback to deal and cope with routine or more stressful situations (Sherbourne & Stewart, 1991; Thoits, 2011; Wellman & Wortley, 1990), can easily be provided online, without much effort for the support provider. Moreover, requests for recommendations, opinions and factual knowledge constitute a significant part of the content on ONNs (López & Farzan, 2015).

Although both types of instrumental uses have been frequently observed, it remains difficult to estimate the amount of people that have engaged in such mobilization requests. In addition, we aim to capture the latent intention to capitalize on the present relations, not the effective observable behaviors per se. As such, it is opportune to investigate whether respondents are inclined to engage in such behavior, rather than asking to what extent the respondents have engaged in social resource mobilizing behavior using a local social media network.

Criterion and Theoretical Validity

To summarize, we conceptualized two two-dimensional constructs in the previous section for the ONNUS under development, being expressive (shared interest and informational support) and instrumental uses (tangible and informational support mobilization). The first construct refers to a set of active communicative behaviors aimed at maintaining the online neighborhood network, while the second construct measures the intention of ONN users to activate the resources contained within that network. Before discussing the procedure through which these constructs are operationalized and psychometrically tested below, we first elaborate on the expected relations of the scale under development and related measures, to assess the ONNUS' criterion and theoretical validity (DeVellis, 2003; Harrington, 2009).

Both expressive and instrumental uses pertain to specific online behaviors and interactions with the social media platform. The dimension shared interests requires individuals to post and share information, while supportive communication presupposes that the like button and commenting functions are frequently used. To engage in instrumental uses, users will need to post a message, while the like button and commenting functions are less important, and they do not share information. Hence, in terms of criterion validity, we expect that shared interests will correlate strongly with sharing and posting behavior, supportive communication with posting and reacting to messages, and both tangible and information support mobilization intention with posting, but not with sharing, commenting or liking behavior.

To assess the scale's theoretical validity, we assess its association with both neighborhood and online sense of community (Buckner, 1988; McMillan & Chavis, 1986). The FRMSs, the scale the expressive uses constructs are indebted to, has been found to be positively related to perceived relational closeness and sense of belonging (Ellison, Vitak, et al., 2014; Vitak, 2014). In a neighborhood context, these outcomes can be regarded as the perception of having something in common with the other neighbors and experiencing a sense of community. In addition, neighboring behaviors such as sharing information and helping each other is constitutive of having a sense of community, sometimes even considered to be part of it (Unger & Wandersman, 1985). Similarly, experiencing a sense of community comes with the expectation that needs will be met (McMillan & Chavis, 1986), hence, the idea that social resources can be mobilized from the community. Accordingly, we expect that the scale's four sub-dimensions will correlate positively with neighborhood sense of community.

At the same time, these behaviors are performed within the confines of ONNs, meaning similar association with online sense of community can be expected as well. Participation in virtual communities has been found to be positively associated with experiencing a sense of belonging and shared emotional connection (Hsu & Liao, 2014),

while online sense of community has been found to be positively associated with social support exchange (Gibbs et al., 2019). Hence, we expect that the four sub-dimensions will correlate positively with online sense of community.

Method

The study was conducted in two phases. The first exploratory phase entailed generating an item pool and developing the constructs. For this, we relied on a literature review, in-depth interviews ($n = 14$), a series of cognitive interviews ($n = 28$) and an expert review ($n = 3$). In the second phase, we first tested the reliability and item evaluation among a small sample ($n = 52$), and thereafter tested the validity and internal consistency of the developed constructs on a cross-sectional sample of ONN users ($n = 668$) in Flanders (Belgium). Table 1 provides an overview of the different research steps taken in each phase, the used samples, and their socio-demographic characteristics.

Phase One: Item Generation and Scale Development

Item Generation

First, an item pool was generated based on the findings from a literature review (cf. De Meulenaere, Courtois, et al., 2020; Ellison, Vitak, et al., 2014; López & Farzan, 2015; Vitak, 2014) and a secondary analysis on a series of in-depth interviews with ONN users, in which they were asked about their uses, interpretations, and perceived outcomes of the ONN(s) in their neighborhood. This resulted in a preliminary item pool of 37 items.

Table 1. Overview of the Conducted Studies and Sample Characteristics.

Purpose	N	Age		Gender	
		M	SD	Male	Female
<i>Phase one: item generation and scale development</i>					
Item generation (<i>In-depth interviews</i>)	14	49.36	11.82	8	6
Content validity (<i>Cognitive interviews</i>)	28	35.15	15.1	50%	50%
Expert review	3	N/A	N/A	N/A	N/A
<i>Phase two: psychometric testing</i>					
Preliminary reliability test and Item evaluation	52	40.04	22.43	40.4%	57.7%
EFA, CFA, validity, and reliability	668	44	15.6	27.5%	72.5%

Note. N/A = Not Applicable.

Content Validity

Second, the 37 items were presented to a convenience sample of ONN users ($n = 28$) to assess the content validity of the items in structured face-to-face interviews. Respondents were members of different ONNs on Facebook and were contacted via direct messages on Facebook. They were asked to respond to the items as they would normally do when completing a questionnaire. In addition, for each item, they were asked if they experienced any difficulties or ambiguities, and if so, to indicate what part of the item was difficult and how they would adjust it. In addition, respondents were asked to indicate those items that most closely described their use of ONNs and whether there were some issues not addressed by the current item pool. Several items were rephrased or omitted based on the results of these interviews, resulting in a reduced item pool of 31 items. Next, a panel of experts ($n = 3$), familiar with either scale development and psychometric testing, social media use, or both, reviewed the items' content validity. Taking into account the wording, scaling and item allocation based on the construct definitions. Based on their opinions, some of the items were rephrased, and the item pool was further reduced to 25 items. In addition, the decision was made to use a 7-point Likert scale, ranging from 1 = *totally disagree* to 7 = *totally agree*, to allow respondents to provide for more nuance in their responses. Sample items for expressive use are: "I share information about my neighborhood with the online group" (shared interest) and "I react in a supportive manner to bad news about the neighborhood" (supportive communication). Sample items for instrumental use are "I would consider asking for a babysit via the online group" (tangible support mobilization)

and “When confronted with an unusual traffic situation in my neighbourhood I would ask the online group for more information” (informational support mobilization).

Phase Two: Testing the Psychometric Properties

The psychometric properties of the developed constructs were tested in several ways. First a preliminary reliability and item evaluation test was conducted on a convenience sample of Flemish ONN users ($n = 52$). Second, we tested the factor structures and construct validity on a sample of Flemish ONN users ($n = 668$) by means of both exploratory (EFA) and confirmatory factor analyses (CFA). Third, we tested the criterion and theoretical validity of the two two-dimensional constructs, and finally, we assessed the reliability.

Preliminary Reliability and Item Evaluation Test

First, a preliminary reliability and item evaluation test was conducted ($n = 52$) in order to further reduce the number of items per construct. Similar to the cognitive interviewers, respondents were members of different ONNs on Facebook and were directly contacted via Facebook. Consistent with De Grove et al. (2016) and in line with the recommendations of DeVellis (2003) and Spector (1992), we first inspected the individual items for extreme means (< 2.8 or > 5.6), low variation (< 1.26), and their contribution to the total variance explained of the constructs in order to determine which items could be removed. In addition, we also considered the reliability statistics in terms of Cronbach’s alpha ($> .7$), corrected item total correlations ($> .4$), and squared multiple correlations ($> .4$) to decide whether to remove an item or not (De Grove et al., 2016; Worthington & Whittaker, 2006). Still, theoretical considerations prevailed over data driven decisions, meaning items were only removed as long as the conceptual merit of the construct was not jeopardized. Based on the findings, four additional items were removed, reducing the total number of items to 21.

Factor Structure and Construct Validity Test

Both exploratory (EFA) and confirmatory factor analyses (CFA) were applied to test the intended factor structure and construct validity. We used Qualtrics to administer an online questionnaire to a sample of Flemish ONN users by posting an invitation in 95 different ONNs, after asking permission from the ONN’s administrator(s). An ONN was identified as an online group on an SNS, having a specific reference in the name to a neighborhood in a major city (population > 100.000), a small city (population < 100.000) or village and with references to that geographical entity in the group description. No explicit limits were used with respect to ONN size, as no information pertaining to their distribution exists. Still we ensured to include a wide range of sizes, by including differently sized municipalities. In order to do so we developed a selection matrix, taking into account both neighborhood characteristics in terms of size, geographical location, and level of urbanism. Only one invite was posted in each group, while five vouchers of €15 were distributed among those who completed the survey. The initial sample consisted of 1096 respondents, of which 668 were retained after removing those who did not complete the entire survey.

EFA was done using principal axis factoring (PAF) with Oblimin Rotation in SPSS 25. We opted for an oblique rotation technique because of the expected correlations among the dimensions of the expressive and instrumental use intentions constructs respectively. In addition, the number of factors was fixed at two for both constructs because of the conceptualized second order factor structure for both the expressive and instrumental uses constructs. Factor loadings of .40 or higher were considered acceptable (Khazaei-Pool et al., 2016). However, any data driven adaptations with respect to further item pool reduction suggested by the EFA were considered conceptually before applying them (DeVellis, 2003). The expressive and instrumental uses constructs were analyzed separately because of their conceptualization.

CFA were performed in Mplus, testing the model fit of the factor structure obtained from the EFA. Model fit was evaluated using multiple fit indices, including relative χ^2 , CFI / TLI, RMSEA, and SRMR. Values above .90 for CFI / TLI are considered as indicators of good model fit, while RMSEA values between .10 and .08 are considered an average fit and below .08 a good fit. Likewise, SRMR values below .05 indicate a good fit (Byrne, 1991; Ponnet, 2014). Relative χ^2 values are ideally below 2 (Byrne, 1991), yet with larger sample sizes, χ^2 tests of model fit are almost always significant (Brown, 2006; Kline, 2005).

Criterion and Theoretical Validity

Criterion validity of both the expressive and instrumental uses constructs was tested by means of the following binary questions pertaining the uses of Facebook groups: I post messages; I share content; I like posts; I react to messages. To assess the construct validity, we investigated the correlations of the sub-dimensions with psychological sense of community and online sense of community. We included Buckner's (1988) psychological sense of community scale as a measure of neighborhood sense of community ($\alpha = .89$), using six items measured on a 7-point scale. A sample item is "Living in this neighborhood gives me a sense of community." Online sense of community was measured using Hsu & Liao's (2014) shared emotional connection ($\alpha = .82$) and sense of belonging ($\alpha = .86$) scales, adapted to an ONN context. Sample items are "What I want is similar to what the other members of this group want" (shared emotional connection) and "I feel strongly connected to the online group" (sense of belonging).

Construct Reliability

Finally, we tested the construct reliability by assessing the internal consistency of the developed measures. Consistent with other studies (DeVellis, 2003; Spector, 1992), alphas equal to or higher than .7 were considered to be acceptable.

Results

Construct Validity

Exploratory Factor Analysis

Table 2. Factor Loadings of Exploratory Factor Analyses on Expressive and Instrumental Uses ($n = 668$).

	Expressive uses		Instrumental use intention	
	Factor 1	Factor 2	Factor 1	Factor 2
EU_SI1	-0.768	0.074	IU_I1	0.534
EU_SI2	-0.777	0.057	IU_I2	0.541
EU_SI3	-0.872	-0.060	IU_I3	0.755
EU_SC1	-0.128	0.511	IU_I4	0.875
EU_SC2	-0.247	0.518	IU_T1	-0.051
EU_SC3	0.073	0.898	IU_T2	0.782
EU_SC4	0.052	0.886	IU_T3	0.610
			IU_T4	0.836

Note. Principal axis factoring, Direct Oblimin rotation, Pattern matrix. Fixed to four factors, factor loadings $>.4$ are printed in bold. EU_SI = Expressive Uses - Shared Interests; EU_SC = Expressive Uses - Supportive Communication; IU_I = Instrumental Uses - Informational support mobilization; IU_T = Instrumental Uses - Tangible support mobilization.

We ran an EFA for the nine items of the expressive uses constructs while the number of factors was fixed to two, in line with our conceptualization. The Kaiser-Meyer-Olkin (KMO) index (.856) and Bartlett's test of sphericity ($\chi^2 = 3281.79, p < .001$) indicated excellent sampling adequacy and the factor structure explained 65.2% of the variance. However, the factor structure was not the one we theoretically expected. Two items of the shared interests construct were considered a different factor, while the remaining items of the shared interests construct were grouped together with the supportive communication items. Upon further inspection, these two items had a higher mean and lower variance than the other items in the shared interest construct. In addition, the content of these two items referred to two similar, yet normative behaviors (sharing information with respect to lost belongings), whereas the other items in the intended construct refer to a more general information sharing behavior. Accordingly, we decided to remove both items and reran the EFA with seven items. The sampling adequacy was excellent (KMO = .874; $\chi^2 = 2601.77, p < .001$), and 72.10% of the variance was explained. The

expected two factor solution emerged, all items showed high factor loadings ($> .5$) on either the shared interests or the supportive communication dimension, and cross-loadings were minimal (see Table 2 for an overview).

Table 3. *Final Items.*

Construct	Items
<i>Shared interests</i>	
EU_SI1	I share information about my neighbourhood with the online group.
EU_SI2	When I see something online that I think the online group would find interesting, I'll share it with them.
EU_SI3	When I enjoyed something in the neighbourhood (an event, a nice spot, a funny happening...) I share it with the online group.
<i>EU_SI4</i>	<i>If I find a lost object (e.g. wallet, keys...) in the neighborhood, I share this in the online group.</i>
<i>EU_SI5</i>	<i>If I notice a lost pet in the neighborhood, I announce this in the online group.</i>
<i>EU_SI6</i>	<i>When I am annoyed with something in the neighborhood, I share this with the online group</i>
<i>Supportive Communication</i>	
EU_SC1	I react positively with a comment or a like when I see someone posting positive news about the neighbourhood.
EU_SC2	I react in a supportive manner to bad news about the neighbourhood.
EU_SC3	I respond to questions asked via the online group.
EU_SC4	I give others advice when they ask for it via the online group.
<i>EU_SC5</i>	<i>I try to contribute in a constructive manner to the online group</i>
<i>Tangible support mobilization intention</i>	
IU_T1	In case I needed physical assistance (for instance with lifting heavy things), I would consider asking my neighbours via the local online group to help me.
IU_T2	If I would urgently need something, I would consider asking the help from my neighbours via the online group.
IU_T3	I would consider asking for a babysit via the online group.
IU_T4	If I needed help with the repair of my bike, car or other object, I would consider asking for it via the online group.
<i>IU_T5</i>	<i>If I would have lost something valuable in my neighborhood, I would ask the online group whether someone had found it.</i>
<i>IU_T6</i>	<i>I would ask the online group if I could borrow someone's car</i>
<i>IU_T7</i>	<i>If I would be sick, I would consider asking the online group to assist me with minor chores.</i>
<i>IU_T8</i>	<i>If I would have lost a pet, I would ask the online group for help in finding it back.</i>
<i>Informational support mobilization intention</i>	
IU_I1	When looking for a good local bakery, butcher, bike shop, car dealer or similar commercial service, I would consider asking the local group for advice.
IU_I2	If I needed to know the opening hours of a local shop or service, I would consider asking the local online group.
IU_I3	If I noticed an unusual noise or other unexpected event in the neighbourhood, I would ask the local online group for more information.
IU_I4	When confronted with an unusual traffic situation in my neighbourhood I would ask the online group for more information.
<i>IU_I5</i>	<i>If I were the victim of a crime in the neighborhood (e.g. a stolen bike, burglary, hit and run...), I would ask the online group whether they had seen something.</i>
<i>IU_I6</i>	<i>I would consider asking the online group for advice if I needed to have something in my house repaired.</i>

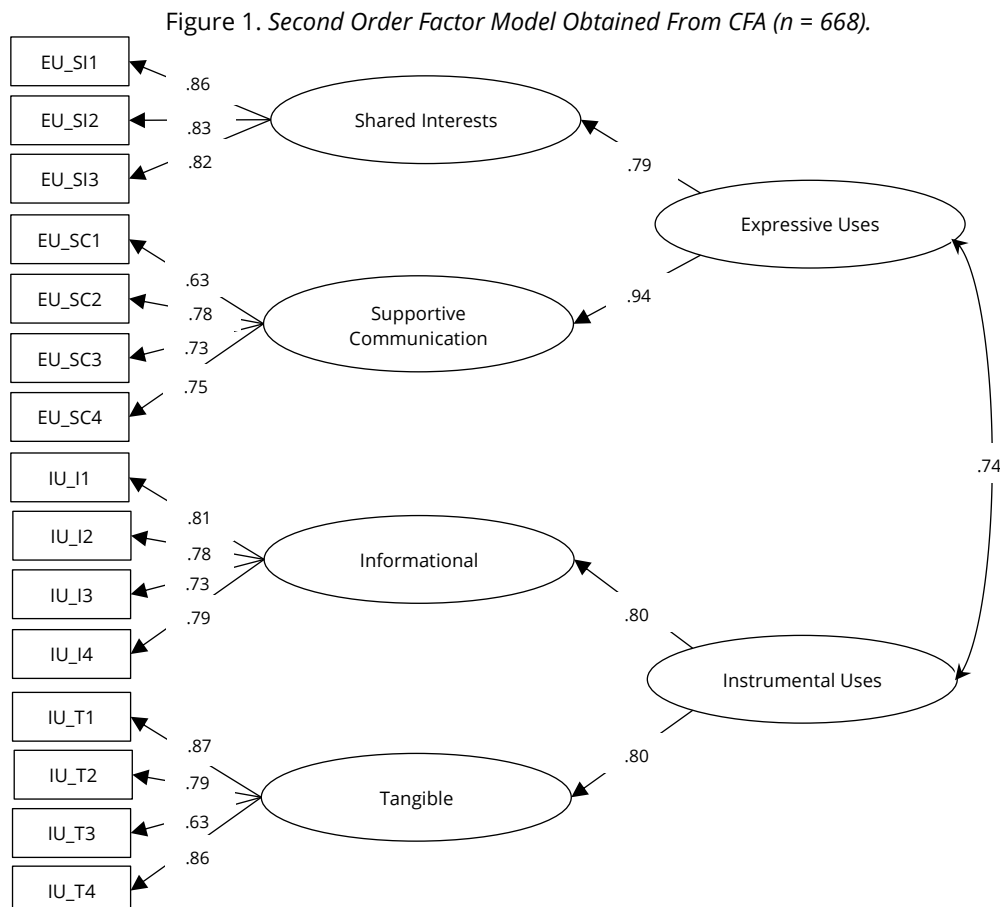
Note. The items for the Shared Interest dimension were derived from Vitak (2014) and adapted to a neighborhood context; Item SC1 was derived from Vitak (2014) and adapted to a neighborhood context; Item SC2 was derived from Ellison, Vitak, et al. (2014); Items SC3 and SC4 and the items for both IU_T and IU_I were self-developed. Items removed from the scale after Phase 2 are italicized.

Similarly, we conducted an EFA on the theorized instrumental uses constructs with 12 items, with the number of factors fixed to two, in line with our conceptualization. Sampling adequacy was considered excellent ($KMO = .916$; $\chi^2 = 4321.06$, $p < .001$). The two factor structure explained 61.5% of the variance but did not align with the two conceptualized factors. Inspection of the factor structure indicated that one item of the informational and two items of the tangible support mobilization constructs were grouped together in a first factor, while the remaining items constituted a second factor. Item level inspection indicated that the means of these three items in the first factor were significantly higher than those in the other factor, while their corrected item-total correlation was lower. The content of these three items aligned in that they all pertained to a hypothetical situation in which someone would have a need of high importance (i.e. having lost something important or faced a serious issue within the neighborhood). In contrast, the other items in both constructs relate to needs with lower importance or urgency. Accordingly, omitting the former three items will lead to more narrowly defined constructs.

EFA with the nine items resulted in the expected two factor solution, explaining 67.6% of the variance, while sampling adequacy was excellent ($KMO = .910$; $\chi^2 = 3175.94$, $p < .001$). All factor loadings were above .5 and all items uniquely loaded on one of the extracted factors, except one (.36), which showed cross loadings on the other construct and was therefore removed. We ran a final EFA on eight items with factors fixed to two. Sampling adequacy was still excellent ($KMO = .892$; $\chi^2 = 2692.32$, $p < .001$) while 69.29% of the variance was explained. The returned factor structure showed (Table 2) that all factors loaded highly and uniquely on one of the two conceptualized dimensions. Table 3 presents the items in the final model.

Confirmatory Factor Analysis

We conducted a CFA with two second order constructs, expressive and instrumental uses to test whether a second order factor structure fits the data and to further refine the factor structure. Our results indicate that this factor structure fits the data (Relative $\chi^2 = 4.11$, $p < .001$, CFI = .950; TLI = .940; RMSEA = .068, 90% CI [.061, .076]; SRMR = .060) thereby confirming the theorized factor structure. The second order factor structure is presented in Figure 1.



Note. All coefficients are standardized. EU_SI = Expressive Uses - Shared Interests; EU_SC = Expressive Uses - Supportive Communication; IU_I = Instrumental Uses - Informational support mobilization; IU_T = Instrumental Uses - Tangible support mobilization.

Criterion and Theoretical Validity

The criterion validity of the instrument was tested by correlating the developed constructs to four binary Facebook group feature use measures. As shown in Table 4, we found significant correlations between both expressive uses constructs and the four criterion variables. As expected, shared interests correlates strongly with posting ($r = .50$) and sharing behavior ($r = .55$), while supportive communication correlates strongly with liking ($r = .42$) and commenting behavior ($r = .53$). The instrumental uses constructs also correlated significantly to the four criterion variables, albeit to a lesser extent. This is especially the case for the tangible support mobilization intention, showing low ($< .2$) correlations with liking and sharing behaviors.

Table 4. Spearman Correlations With Facebook Group Feature Use Binary Measures.

	Liking		Commenting		Posting		Sharing	
	<i>r</i>	<i>n</i>	<i>r</i>	<i>n</i>	<i>r</i>	<i>n</i>	<i>r</i>	<i>n</i>
Shared Interests	.300**	758	.469**	758	.504**	758	.545**	758
Supportive Communication	.422**	726	.530**	726	.436**	726	.348**	726
Informational support mobilization intention	.232**	692	.366**	692	.319**	692	.221**	692
Tangible support mobilization intention	.164**	668	.251**	668	.269**	668	.138**	668

Note. The Facebook group feature use variables were measured on a binary scale (0 = no; 1 = yes); ** $p < .001$.

Theoretical validity was assessed by correlating the four sub-dimensions to neighborhood sense of community and both shared emotional connection and sense of belonging with respect to the ONN. Table 5 indicates that all correlation coefficients are above .20, and most of them even above .40. Correlations between expressive uses constructs and online sense of community constructs varied between .49 and .64, meaning theoretical validity was very good. Likewise, moderate correlations were found between the expressive uses dimensions and psychological sense of community with the neighborhood. In terms of the instrumental uses dimensions, lower yet still substantial correlation coefficients were found, varying between .26 and .30 with respect psychological sense of community and between .33 and .44 with respect to online sense of community.

Table 5. Pearson Correlations Assessing Convergent Validity of ONNUS Scale.

	Psychological Sense of Community		Shared Emotional Connection		Sense of Belonging	
	<i>r</i>	<i>n</i>	<i>r</i>	<i>n</i>	<i>r</i>	<i>n</i>
Shared Interests	.38**	635	.49**	652	.64**	661
Supportive Communication	.44**	635	.55**	652	.60**	661
Informational support mobilization	.26**	635	.40**	652	.44**	661
Tangible support mobilization intention	.30**	635	.33**	652	.41**	661

Note. ** $p < .001$.

Reliability

Lastly, we checked the reliability of the ONNUS, both the expressive uses and instrumental use intention constructs, as well as for the four sub-dimensions separately, using Cronbach's Alpha. The internal reliability of the ONNUS was good ($\alpha = .91$), as was the reliability of both the expressive uses ($\alpha = .88$) and instrumental use intention ($\alpha = .89$) constructs. Equally satisfying results were obtained for each of the four sub-dimensions, with alpha's ranging from .83 (supportive communication) to .86 (shared interests) for the expressive uses constructs and from .83 (informational) to .86 (tangible) for the instrumental use intention constructs.

Discussion

The aim of this study was to develop the Online Neighborhood Network Uses Scale (ONNUS), an instrument to measure online neighborhood network uses that is embedded in a social capital framework, while taking the neighborhood setting and social media context into account. Specifically, we focused on how ONNs are used to

maintain local social relations and capitalize on those relations by asking for help from other neighborhood residents, thus taking the previously observed ONN practices into account (De Meulenaere, Courtois, et al., 2020; López & Farzan, 2015). We adopted the behavioral component of Lin's social capital framework to do so. At first glance, collective social capital frameworks (Coleman, 1988; Putnam, 2000) are a more straightforward approach considering the neighborhood context. However, there are two counter arguments. First, the *capital* in social capital refers to a resource that can be converted into a beneficial outcome. The outcomes in the case of ONNs appear to accrue more often to individual users rather than the neighborhood as a whole. If we consider the observed resource mobilization behaviors (De Meulenaere, Courtois, et al., 2020; López & Farzan, 2015), there is typically a single neighborhood resident that benefits from the network, not the entire neighborhood. That is not to say that no collective benefits can arise. For instance, an increased sense of community due to increased connections, but these are not the most direct or straightforward outcomes of the individual behaviors. Second, and related to this, the group level interpretations of social capital tend to confound social capital with norms and trust, social cohesion and solidarity, making it hard to discern social capital from its antecedents or its outcomes (Lin, 1999, p. 33).

Based on this, we came to a conceptualization and operationalization of ONNUS into two two-dimensional constructs. First, expressive uses consist of the sub-dimensions supportive communication and shared interest, and their items reflect the active maintenance of existing relations, or in this case, the network as a whole. Second, the instrumental use intention consists of informational and tangible support mobilization intention, and the items in the instrumental use intention constructs reflect the mobilization of the potential resources within the ONN.

After operationalizing the conceptualized constructs through a series of steps in which an initial item pool was gradually refined and reduced, we tested their validity and reliability, obtaining satisfying psychometric results for the developed scale and its sub-dimensions. The items loaded highly and uniquely on the intended factors in the exploratory factor analyses, with 72.10% of the variance explained by the expressive uses construct and 69.29% by the instrumental uses construct. In addition, the confirmatory factor analysis showed good fit indices, indicating that the theorized second order model fits the data. Both criterion and theoretical validity was good. It should be noted that correlation coefficients of the different sub-dimensions with the criterion variables tended to be moderate rather than high (Harrington, 2009), yet the found correlations can still be regarded as substantial as lower correlations are not uncommon when the criterion variables are measured as binary variables (DeVellis, 2003). Accordingly, we can interpret these results as evidence for criterion validity of the developed constructs. Similarly, the developed construct correlated moderately to strongly with both neighborhood and online sense of community, indicating good theoretical validity. Lastly, internal consistency was deemed good, with all constructs showing Cronbach's alpha coefficients well above the .7 threshold.

This is not the first study that provides an instrument to measure people's neighborhood experiences (Buckner, 1988; Gan et al., 2020; Nasar & Julian, 1995; Peterson et al., 2008), digital media use in neighborhood contexts (Capece & Costa, 2013; Kavanaugh et al., 2005; Kim et al., 2019), nor is it the first to provide an instrument to measure social media use in a social capital framework (Appel et al., 2014; Ellison et al., 2007; Vitak, 2014; Williams, 2006). However, the ONNUS is the first instrument to measure social media use with respect to social relationship development and capitalization in a neighborhood context, thereby extending beyond ego-centered personal social networks. As such, this study also surpasses the simple yet highly reductive approaches of using dichotomous (Matei & Ball-Rokeach, 2003) or time based measures (Hampton, 2007) to examine individuals' engagement with this type of online environments. Moreover, it provides the means to directly tap the uses of ONNs into a social capital framework, specifically in how individual neighborhood residents invest in and can draw upon the resources contained in local online social networks. Because of its focus on uses, it can also be investigated in relation to the motivation based measures that exist pertaining social media use (Gil de Zúñiga et al., 2012; Kim & Jung, 2017), allowing to examine which motivations align with which uses.

The developed measures also provide the means to distinguish users of self-organized ONNs in terms of how much they contribute to the network and engage in activities that maintain the ONN, and whether resource mobilization and network maintenance is something that is aligned within the same persons or not. Stated differently, do the users that capitalize on the network also perform activities that maintain the network and vice versa. In addition, the instrumental uses construct also provides a proxy for assessing the perceived value and access to the resources contained within the network. Having the intention to ask for help presupposes that the

ONN is perceived as a potential source for help. The latter also touches upon another possible use of the developed instrument. That is, the ONNUS might be used in an aggregated form, serving as an indicator of the perceived quality of the ONNs. ONNs scoring high on both expressive and instrumental uses might indicate that these are well-functioning neighborhood networks, providing the means for local social interaction and perceived as a means to receive neighborly support when needed. By focusing on the extent to which neighborhood residents invest in and or capitalize on ONNs, ONNUS allows us to investigate whether and for who ONNs can improve quality of life in neighborhoods. In that sense, ONNUS is an instrument to measure a specific component of contemporary neighborhood life, making it complementary to other scales oriented towards neighborhood life (e.g. OpenX; Gan et al., 2020) for which online neighborhood life is a blind spot. As ONNs allow users to reach out to neighbors and networks of neighbors beyond their personal local social networks (De Meulenaere, Baccarne, et al., 2020), future studies could further investigate this intersection of in-person and online neighborhood relations and how these relations develop and are acted upon. Personal social networks typically contain only a limited number of neighbors (Mollenhorst, 2015), while people often lack the motivation to extend their personal local social networks once they are formed (Kusenbach, 2008). Therefore, it would be interesting to investigate if and to what extent the use of ONNs could alter these dynamics. Lastly and more broadly, it might be interesting to test the instrument in different types of online networks. Since Facebook decided to funnel its attention more towards its groups section instead of personal social networks (Haack, 2019), the ONNUS can help in understanding how individual users engage with these networks, who invests in the online maintenance of those relations, and to what extent online relations are capitalized upon.

Limitations

First, the developed instrument measures online behaviors by means of self-reporting. To further validate the instrument, associations need to be sought between the developed instrument and objective observations of these behaviors, using server level data and a classification of both expressive and instrumental behaviors (cf. Ellison, Gray, et al., 2014; Joyce & Kraut, 2006). In addition, finding differences between the subjective and objective measures could be a fertile ground for further exploring the online behaviors and individuals' interpretation of their online behaviors.

Second, our psychometric results indicate that the instrument is valid and reliable, yet further validation is required on different samples in different populations. In addition, our sample was composed through a multi-stage clustering, yet participation was eventually based on self-selection, with only the ONNs being selected by us. Moreover, as we invited the users of the selected ONNs only once, we most likely attracted more active ONN users. Moreover, the sample on which we conducted the EFA and CFA was highly female (about 72%) and well-educated (about 60% received higher education), yet follows a normal distribution in terms of age. Little is known about the sociodemographic distribution of ONN use, yet the literature on local offline social interaction and local social networks indicates that the neighborhood becomes more prominent as people get older, get children and settle down (Guest & Wierzbicki, 1999; Hampton, 2007; Mollenhorst et al., 2009). Women typically have the role of social relationship maintenance bestowed upon them (Wellman, 1992 in Hampton & Wellman, 2003), resulting in larger personal social network sizes, including more neighbors (Hampton, 2007). Nevertheless, women (Smith, 2008) and well-educated individuals (Cifuentes et al., 2008; Demarest et al., 2013) are also more likely to participate in surveys, suggesting there is probably an unwanted bias in our sample on that account. Accordingly, further testing using random a-select sampling procedures and in different populations and in different contexts, preferably internationally, is required. Likewise, further validation with respect to related constructs is necessary to ascertain its convergent and discriminant validity.

Third, the developed measures only capture a part of the diverse ways in which ONNs are used (Bouko & Calabrese, 2017; De Meulenaere, Courtois, et al., 2020; Gregory, 2015; Gulyas et al., 2019; Turner, 2015; Silver & Matthews, 2017). Most importantly, because of our focus on investing in the online network, we did not include passive uses of ONNs in this scale. However, more passive uses such browsing and searching for information (cf. Vitak, 2014) are most likely to be more prevalent than active uses. Therefore, future studies might look into these passive uses that are not highlighted by the developed measure that might affect local social relationship development. One valuable approach to do so might be Communication Infrastructure Theory (Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006), as this also includes residents' connections to the local storytelling network.

Lastly, in the present study, we focused on ONNs on Facebook. Provided that a geographically bounded network can be created, in which users can post and react to each other's posts freely, and get an overview of interactions among the network members in a newsfeed-like stream of updates, then ONNs can develop on other platforms as well. Platforms such as Nextdoor (US), Nebenan (Germany) or Hoplr (Belgium) are obvious platforms on which ONNs can develop, given their neighborhood focus and the similar affordances of their platforms to the Facebook Groups feature. In future studies the developed scale should be tested in these environments as well to ascertain its cross-platform validity.

Conclusion

The purpose of this study was to develop an instrument to measure online neighborhood network uses from a social capital framework. Prior studies had indicated that the neighborhood networks, developed on social media platforms such as Facebook, could be a means for neighborhood residents to develop access to local social resources, hence develop social capital by engaging with online neighborhood networks. Through a series of research steps, including the conceptualization of the expressive and instrumental uses constructs, generating and trimming down an item pool, and psychometrically testing the developed constructs, we developed an online neighborhood network uses scales, the ONNUS, consisting of two two-dimensional constructs. The results of the validity and reliability tests show that the proposed operationalizations are sound. Accordingly, an instrument is developed to approach the use of online neighborhood networks from a social capital perspective, providing the means to investigate the role of online neighborhood networks in local social relationship maintenance and capitalization on said relations.

References

- Albanesi, C., Cicognani, E., & Zani, B. (2007). Sense of community, civic engagement and social well-being in Italian adolescents. *Journal of Community & Applied Social Psychology, 17*(5), 387–406. <https://doi.org/10.1002/casp.903>
- Appel, L., Dadlani, P., Dwyer, M., Hampton, K., Kitzie, V., Matni, Z. A., Moore, P., & Teodoro, R. (2014). Testing the validity of social capital measures in the study of information and communication technologies. *Information, Communication & Society, 17*(4), 398–416. <https://doi.org/10.1080/1369118X.2014.884612>
- Ball-Rokeach, S. J., Kim, Y.-C., & Matei, S. (2001). Storytelling Neighborhood paths to belonging in diverse urban environments. *Communication Research, 28*(4), 392–428. <https://doi.org/10.1177/009365001028004003>
- Bouko, C. G., & Calabrese, L. (2017). «T'es un vrai ... si ...»: Quand les seniors aiment leur ville au sein de groupes Facebook ["You are a real ... if ...": when seniors love their city within Facebook groups]. *Canadian Journal of Communication, 42*(2), 311–330. <https://doi.org/10.22230/cjc2017v42n2a3177>
- Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. Guilford Publications.
- Buckner, J. C. (1988). The development of an instrument to measure neighborhood cohesion. *American Journal of Community Psychology, 16*(6), 771–791. <https://doi.org/10.1007/BF00930892>
- Byrne, B. M. (1991). The Maslach Burnout Inventory: Validating factorial structure and invariance across intermediate, secondary, and university educators. *Multivariate Behavioral Research, 26*(4), 583–605. https://doi.org/10.1207/s15327906mbr2604_2
- Capece, G., & Costa, R. (2013). The new neighbourhood in the Internet era: Network communities serving local communities. *Behaviour & Information Technology, 32*(5), 438–448. <https://doi.org/10.1080/0144929X.2011.610825>
- Cifuentes, M., Boyer, J., Gore, R., d'Errico, A., Scollin, P., Tessler, J., Lerner, D., Kriebel, D., Punnett, L., Slatin, C., & PHASE in Healthcare Research Team. (2008). Job strain predicts survey response in healthcare industry workers. *American Journal of Industrial Medicine, 51*(4), 281–289. <https://doi.org/10.1002/ajim.20561>

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, 95–120.

De Grove, F., Cauberghe, V., & Van Looy, J. (2016). Development and validation of an instrument for measuring individual motives for playing digital games. *Media Psychology*, 19(1), 101–125.
<https://doi.org/10.1080/15213269.2014.902318>

De Meulenaere, J. D., Baccarne, B., Courtois, C., & Ponnet, K. (2020). Neighborhood hotspot and community awareness: The double role of social network sites in local communities. *Communications*. Advance online publication. <https://doi.org/10.1515/commun-2019-0135>

De Meulenaere, J. D., Baccarne, B., Courtois, C., & Ponnet, K. (2021). Disentangling social support mobilization via online neighborhood networks. *Journal of Community Psychology*, 49(2), 481–498.
<https://doi.org/10.1002/jcop.22474>

De Meulenaere, J., Courtois, C., & Ponnet, K. (2020). Bottom-up hyperlocal media in Belgium: Facebook-groups as collaborative neighborhood awareness systems. In A. Gulyas & D. Baines (Eds.), *The Routledge companion to local media and journalism* (pp. 398–407). Routledge.

Demarest, S., Van der Heyden, J., Charafeddine, R., Tafforeau, J., Van Oyen, H., & Van Hal, G. (2013). Socio-economic differences in participation of households in a Belgian national health survey. *The European Journal of Public Health*, 23(6), 981–985. <https://doi.org/10.1093/eurpub/cks158>

DeVellis, R. F. (2003). *Scale development: Theory and applications*. Sage Publications, Inc.

Donath, J. (2007). Signals in social supernets. *Journal of Computer-Mediated Communication*, 13(1), 231–251.
<https://doi.org/10.1111/j.1083-6101.2007.00394.x>

Ellison, N. B., Gray, R., Lampe, C., & Fiore, A. T. (2014). Social capital and resource requests on Facebook. *New Media & Society*, 16(7), 1104–1121. <https://doi.org/10.1177/1461444814543998>

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook “friends:” Social capital and college students’ use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4), 1143–1168.
<https://doi.org/10.1111/j.1083-6101.2007.00367.x>

Ellison, N. B., Vitak, J., Gray, R., & Lampe, C. (2014). Cultivating social resources on social network sites: Facebook relationship maintenance behaviors and their role in social capital processes. *Journal of Computer-Mediated Communication*, 19(4), 855–870. <https://doi.org/10.1111/jcc4.12078>

Foth, M. (2006). Facilitating social networking in inner-city neighborhoods. *Computer*, 39(9), 44–50.
<http://doi.ieeecomputersociety.org/10.1109/MC.2006.305>

Gan, D. R. Y., Fung, J. C., & Cho, I. S. (2020). Neighborhood experiences of people over age 50: Factor structure and validity of a scale. *The Gerontologist*, 60(8), e559–e571. <https://doi.org/10.1093/geront/gnz111>

Gan, D. R. Y., Fung, J. C., & Cho, I. S. (2021). Neighborhood atmosphere modifies the eudaimonic impact of cohesion and friendship among older adults: A multilevel mixed-methods study. *Social Science & Medicine*, 270, 113682. <https://doi.org/10.1016/j.socscimed.2021.113682>

Gibbs, J. L., Kim, H., & Ki, S. (2019). Investigating the role of control and support mechanisms in members’ sense of virtual community. *Communication Research*, 46(1), 117–145. <https://doi.org/10.1177/0093650216644023>

Gil de Zúñiga, H., Jung, N., & Valenzuela, S. (2012). Social media use for news and individuals’ social capital, civic engagement and political participation. *Journal of Computer-Mediated Communication*, 17(3), 319–336.
<https://doi.org/10.1111/j.1083-6101.2012.01574.x>

- Gregory, J. (2015). Connecting with the past through social media: The 'Beautiful buildings and cool places Perth has lost' Facebook group. *International Journal of Heritage Studies*, 21(1), 22–45. <https://doi.org/10.1080/13527258.2014.884015>
- Guest, A. M., & Wierzbicki, S. K. (1999). Social ties at the neighborhood level: Two decades of GSS evidence. *Urban Affairs Review*, 35(1), 92–111. <https://doi.org/10.1177/10780879922184301>
- Gulyas, A., O'Hara, S., & Eilenberg, J. (2019). Experiencing local news online: Audience practices and perceptions. *Journalism Studies*, 20(13), 1846–1863. <https://doi.org/10.1080/1461670X.2018.1539345>
- Haeck, P. (2019, April 30). Facebook zet groepen centraal in grote redesign [Facebook puts groups at the center of big redesign]. *De Tijd*. <https://www.tijd.be/tech-media/technologie/facebook-zet-groepen-centraal-in-grote-redesign/10122466.html>
- Hampton, K. N. (2007). Neighborhoods in the network society: The e-Neighbors study. *Information, Communication & Society*, 10(5), 714–748. <https://doi.org/10.1080/13691180701658061>
- Hampton, K., & Wellman, B. (2003). Neighboring in Netville: How the Internet supports community and social capital in a wired suburb. *City & Community*, 2(4), 277–311. <https://doi.org/10.1046/j.1535-6841.2003.00057.x>
- Harrington, D. (2009). *Confirmatory factor analysis*. Oxford University Press.
- Hsu, C.-L., & Liao, Y.-C. (2014). Exploring the linkages between perceived information accessibility and microblog stickiness: The moderating role of a sense of community. *Information & Management*, 51(7), 833–844. <https://doi.org/10.1016/j.im.2014.08.005>
- Joyce, E., & Kraut, R. E. (2006). Predicting continued participation in newsgroups. *Journal of Computer-Mediated Communication*, 11(3), 723–747. <https://doi.org/10.1111/j.1083-6101.2006.00033.x>
- Kavanaugh, A., Carroll, J. M., Rosson, M. B., Zin, T. T., & Reese, D. D. (2005). Community networks: Where offline communities meet online. *Journal of Computer-Mediated Communication*, 10(4), Article JCMC10417. <https://doi.org/10.1111/j.1083-6101.2005.tb00266.x>
- Khazaei-Pool, M., Majlessi, F., Montazeri, A., Pashaei, T., Gholami, A., & Ponnet, K. (2016). Development and psychometric testing of a new instrument to measure factors influencing women's breast cancer prevention behaviors (ASSISTS). *BMC Women's Health*, 16, Article 40. <https://doi.org/10.1186/s12905-016-0318-2>
- Kim, Y.-C., & Ball-Rokeach, S. J. (2006). Civic engagement from a communication infrastructure perspective. *Communication Theory*, 16(2), 173–197. <https://doi.org/10.1111/j.1468-2885.2006.00267.x>
- Kim, Y.-C., & Jung, J.-Y. (2017). SNS dependency and interpersonal storytelling: An extension of media system dependency theory. *New Media & Society*, 19(9), 1458–1475. <https://doi.org/10.1177/1461444816636611>
- Kim, Y.-C., Shin, E., Cho, A., Jung, E., Shon, K., & Shim, H. (2019). SNS dependency and community engagement in urban neighborhoods: The moderating role of integrated connectedness to a community storytelling network. *Communication Research*, 46(1), 7–32. <https://doi.org/10.1177/0093650215588786>
- Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). Guilford Press.
- Kusenbach, M. (2006). Patterns of neighboring: Practicing community in the parochial realm. *Symbolic Interaction*, 29(3), 279–306. <https://doi.org/10.1525/si.2006.29.3.279>
- Kusenbach, M. (2008). A hierarchy of urban communities: Observations on the nested character of place. *City & Community*, 7(3), 225–249. <https://doi.org/10.1111/j.1540-6040.2008.00259.x>

- Lawler, E. J., & Yoon, J. (1996). Commitment in exchange relations: Test of a theory of relational cohesion. *American Sociological Review*, 61(1), 89–108. <https://doi.org/10.2307/2096408>
- Lin, N. (2004). *Social capital: A theory of social structure and action*. Cambridge University Press.
- Lin, N., Ye, X., & Ensel, W. M. (1999). Social support and depressed mood: A structural analysis. *Journal of Health and Social Behavior*, 40(4), 344–359. <https://doi.org/10.2307/2676330>
- López, C., & Farzan, R. (2015). Lend me sugar, I am your neighbor! A content analysis of online forums for local communities. In *C&T '15: Proceedings of the 7th International Conference on Communities and Technologies* (pp. 59–67). ACM. <https://doi.org/10.1145/2768545.2768558>
- Matei, S., & Ball-Rokeach, S. (2003). The Internet in the communication infrastructure of urban residential communities: Macro- or mesolinkage? *Journal of Communication*, 53(4), 642–657. <https://doi.org/10.1111/j.1460-2466.2003.tb02915.x>
- McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology*, 14(1), 6–23. [https://doi.org/10.1002/1520-6629\(198601\)14:1<6::AID-JCOP2290140103>3.0.CO;2-I](https://doi.org/10.1002/1520-6629(198601)14:1<6::AID-JCOP2290140103>3.0.CO;2-I)
- Mollenhorst, G. (2015). Neighbour relations in the Netherlands: New developments. *Tijdschrift voor Economische en Sociale Geografie*, 106(1), 110–119. <https://doi.org/10.1111/tesg.12138>
- Mollenhorst, G., Völker, B., & Schutjens, V. (2009). Neighbour relations in the Netherlands – a decade of evidence. *Tijdschrift Voor Economische En Sociale Geografie*, 100(4), 549–558. <https://doi.org/10.1111/j.1467-9663.2009.00588.x>
- Nasar, J. L., & Julian, D. A. (1995). The psychological sense of community in the neighborhood. *Journal of the American Planning Association*, 61(2), 178–184. <https://doi.org/10.1080/01944369508975631>
- Peterson, N. A., Speer, P. W., & McMillan, D. W. (2008). Validation of a brief sense of community scale: Confirmation of the principal theory of sense of community. *Journal of Community Psychology*, 36(1), 61–73. <https://doi.org/10.1002/jcop.20217>
- Plickert, G., Côté, R. R., & Wellman, B. (2007). It's not who you know, it's how you know them: Who exchanges what with whom? *Social Networks*, 29(3), 405–429. <https://doi.org/10.1016/j.socnet.2007.01.007>
- Ponnet, K. (2014). Financial stress, parent functioning and adolescent problem behavior: An actor–partner interdependence approach to family stress processes in low-, middle-, and high-income families. *Journal of Youth and Adolescence*, 43(10), 1752–1769. <https://doi.org/10.1007/s10964-014-0159-y>
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon and Schuster.
- Rufas, A., & Hine, C. (2018). Everyday connections between online and offline: Imagining others and constructing community through local online initiatives. *New Media & Society*, 20(10) 3879–3897. <https://doi.org/10.1177/1461444818762364>
- Sherbourne, C. D., & Stewart, A. L. (1991). The MOS social support survey. *Social Science & Medicine*, 32(6), 705–714. [https://doi.org/10.1016/0277-9536\(91\)90150-B](https://doi.org/10.1016/0277-9536(91)90150-B)
- Sigerson, L., & Cheng, C. (2018). Scales for measuring user engagement with social network sites: A systematic review of psychometric properties. *Computers in Human Behavior*, 83, 87–105. <https://doi.org/10.1016/j.chb.2018.01.023>

- Silver, A., & Matthews, L. (2017). The use of Facebook for information seeking, decision support, and self-organization following a significant disaster. *Information, Communication & Society*, 20(11), 1680–1697. <https://doi.org/10.1080/1369118X.2016.1253762>
- Smith, G. (2008). Does gender influence online survey participation?: A record-linkage analysis of university faculty online survey response behavior. San Jose State University; ERIC Document Reproduction Service. https://scholarworks.sjsu.edu/cgi/viewcontent.cgi?article=1003&context=elementary_ed_pub
- Spector, P. (1992). *Summated rating scale construction: An introduction*. Sage Publications, Inc.
- Thoits, P. A. (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior*, 52(2), 145–161. <https://doi.org/10.1177/0022146510395592>
- Turner, J. (2015). Good dog, bad dog: Exploring audience uses and attitudes to hyperlocal community news media through the prism of banal pet stories. *Anthropological Notebooks*, 21(3), 39–50.
- Uehara, E. (1990). Dual exchange theory, social networks, and informal social support. *American Journal of Sociology*, 96(3), 521–557. <https://doi.org/10.1086/229571>
- Unger, D. G., & Wandersman, A. (1985). The importance of neighbors: The social, cognitive, and affective components of neighboring. *American Journal of Community Psychology*, 13(2), 139–169. <https://doi.org/10.1007/BF00905726>
- van Dijk, H. M., Cramm, J. M., & Nieboer, A. P. (2013). The experiences of neighbour, volunteer and professional support-givers in supporting community dwelling older people. *Health & Social Care in the Community*, 21(2), 150–158. <https://doi.org/10.1111/hsc.12006>
- Vitak, J. (2014). *Connecting in the Facebook age: Development and validation of a new measure of relationship maintenance* [Paper presentation]. International Communication Association 64th Annual Conference, Seattle, WA, USA.
- Vogel, P., Kurtz, C., Grotherr, C., & Böhmman, T. (2021). Fostering social resilience via online neighborhood social networks during the COVID-19 pandemic and beyond: Status quo, design dilemmas and research opportunities. Proceedings of the International Conference on System Sciences (HICSS). <https://doi.org/10.24251/HICSS.2021.370>
- Waverijn, G., Heijmans, M., & Groenewegen, P. P. (2017). Neighbourly support of people with chronic illness; is it related to neighbourhood social capital? *Social Science & Medicine*, 173, 110–117. <https://doi.org/10.1016/j.socscimed.2016.12.004>
- Wellman, B., & Wortley, S. (1990). Different strokes from different folks: Community ties and social support. *American Journal of Sociology*, 96(3), 558–588. <https://doi.org/10.1086/229572>
- Williams, D. (2006). On and off the 'Net: Scales for social capital in an online era. *Journal of Computer-Mediated Communication*, 11(2), 593–628. <https://doi.org/10.1111/j.1083-6101.2006.00029.x>
- Wohn, D. Y., Carr, C. T., & Hayes, R. A. (2016). How affective is a “Like”? The effect of paralinguistic digital affordances on perceived social support. *Cyberpsychology, Behavior, and Social Networking*, 19(9), 562–566. <https://doi.org/10.1089/cyber.2016.0162>
- Worthington, R. L., & Whittaker, T. A. (2006). Scale development research: A content analysis and recommendations for best practices. *The Counseling Psychologist*, 34(6), 806–838. <https://doi.org/10.1177/0011000006288127>

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