

Article

## Unpacking Social Media’s Role in Resource Provision: Variations across Relational and Communicative Properties

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**Abstract:** New information and communication technologies (ICTs) challenge existing beliefs regarding the exchange of social resources within a network. The present study examines individuals’ perceived access to social, emotional, and instrumental resources by analyzing relational and Facebook-specific characteristics of dyadic relationships. Results suggest that the social and technical affordances of the site—including visibility of content and connections, as well as streamlined processes for interacting with a large audience—may augment existing perceptions of resource access for some ties while providing a major (or sole) outlet to interact and exchange resources with others. Specifically, weaker ties appear to benefit more than strong ties from engagement in directed communication and relationship maintenance strategies, while additional variations were observed across relationship category, dyad composition, and geographic proximity. In summary, these findings provide new evidence for how positive relational gains may be derived from site use.

**Keywords:** social capital; social provisions; social network sites; Facebook; relational closeness; relationship maintenance

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### 1. Introduction

The rise of information and communication technologies (ICTs) has created a number of novel ways for individuals to connect, interact, and exchange resources. Over the last decade, the “persistent and pervasive” nature of social media [1] has reshaped interpersonal communication and information

dissemination. Whereas people's communication habits were largely constrained by geography two decades ago, newer communication channels break down spatial and temporal boundaries between individuals and groups, enabling rich interactions regardless of physical location.

Considerations of how social media enables the exchange of social resources has been one of the most studied topics in the social sciences for nearly a decade, with a number of researchers establishing positive correlations between SNS use and social capital [2–12]—a construct that encompasses both actual and potential resources available within a given network. Broadly speaking, these studies have established a set of variables correlated with greater perceptions of access to a wide range of resources. For example, using a national dataset of Americans, the Pew Internet Project found Facebook users reported higher levels of emotional support (e.g., receiving advice) and companionship (e.g., spending time with network members) compared with non-users [1]. Furthermore, recent work has unpacked this relationship by establishing specific behaviors that associated with increased perceptions of social capital from their network, including directed communication [2], social grooming and relationship maintenance behaviors [7], and posting status updates [13], as well as various constructs related to social capital, such as using the site to obtain a favor [14] or get an answer to a question [15,16].

By and large, these studies operationalize social capital using adapted versions of Dmitri Williams' [17] Internet Social Capital Scales, which are based on the work of Putnam [18] and divide social capital resources into bridging (access to new people and ideas, or informational resources) and bonding (access to social, emotional, and instrumental resources). Based on this framing, bridging social capital encompasses interactions with a broad range of people, seeing oneself as part of a "global" community, and generalized reciprocity; bonding social capital includes access to both supportive and scarce resources, as well as the ability to mobilize solidarity. These scales have received some criticism in recent years regarding construct validity (e.g., [19]), with arguments suggesting Williams' scales conflate social capital with social support. While this argument holds merit, studying supportive exchanges provides significant insights into how social capital functions within a given community, as these resources are the relational "glue" that holds relationships together at the individual and community levels. The present study focuses on individuals' perceived access to social provisions from a specific tie in their Facebook network. Weiss [20] argued that people's sense of well-being is sustained largely through the provision of social, emotional, and instrumental resources, with the types of provisions varying by relationship (e.g., family member, spouse, coworker).

This article extends existing research on computer-mediated communication and social capital perceptions in several notable ways. First, its theoretical grounding describes the role these technologies' affordances play in changing relational dynamics, thus highlighting how resource exchange embedded within a mediated communication platform may function differently than in offline contexts. Second, it moves beyond network-level assessments of resource perceptions to consider dyadic relationships. Third, it employs system-generated metrics to analyze the relationship between these potential relational signals and resource access. Finally, it analyses variations in perceived access to resources across relational characteristics—including tie strength, relationship category, dyad composition, and geographic proximity—providing important insights into theories of interpersonal communication and relationship maintenance. Findings echo network research from the 1980s arguing that when it comes to resource provision, there are "different strokes for different folks" [21] while

also providing new insights into how relational and interactive factors may influence Facebook's role in helping people connect, share knowledge, and offer support.

## 2. Social Network Site Affordances, Social Capital, and Resource Provision

Use of social network sites (SNSs) has become a pervasive aspect of daily life for hundreds of millions of people around the world. Facebook reached one billion active users in 2012 [22] and is used across generations and nationalities to connect people with their social ties. In an update to their original definition, Ellison and boyd [23] argue that SNSs contain three distinguishing characteristics: identifiable profiles, a list of publicly articulated connections, and the ability to consume, produce, and interact with user-generated content on the site. These sites contain a range of affordances that differentiate them from other forms of communication (on- and offline). For example, Treem and Leonardi [24] note that social media make information more visible through features such as the "About Me" page, while unlike many other interactions, most content shared on these sites is persistent and can be archived and searched at a later time. These sites also enable associations between both people and content, creating expansive networks that include "friends of friends." These "public displays of connection," as termed by Donath and boyd [25] serve both a vetting purpose for unknown connections and assist in novel information access and diffusion [26].

Recent work has considered how social media's affordances enable social capital exchanges. Social capital describes potential and actual resources available to a person through interactions with members of network [27]. Lin [28] describes the concept as "investment in social relations with expected returns in the marketplace" (p. 19), highlighting the important role of both communication and reciprocity (whether specific or general) to resource exchange. SNSs afford high visibility of disclosures and the ability to interact quickly and easily with both immediate network members (*i.e.*, Friends) and one's extended network (*i.e.*, friends of friends) [26]. SNSs also enable numerous opportunities for both specific (e.g., he Liked my post; I'll like his) and generalized (e.g., so many people offered to help me move that I think I'll help one of my friends out with their project) reciprocity, a key component of social capital [7].

Since resource exchanges occurring via Facebook and other SNSs are more visible and persistent than exchanges occurring in offline spaces, communicative acts such as answering a question or offering support will signal the "good deed" to both partners' networks and may lead to more exchanges of resources [7]. For example, Morris *et al.* [16] classified the informational requests Facebook users made through the site. They found that people generally used Facebook to obtain information resources because they had greater trust in their existing network than other sources, such as a Google search; likewise, people tended to provide information resources (*i.e.*, commenting on the post) for altruistic reasons, because of their relationship with the asker, and because of a belief in generalized reciprocity. Looking specifically at perceptions of social capital, new work by Ellison and colleagues found that people who requested resources through Facebook reported higher levels of perceived social capital and were more likely to respond to resource requests from Facebook Friends [4], while engaging in social grooming activities, such as responding to a Friend's question or offering support for good or bad news shared via the site, positively predicted users' perceived bridging social capital [7]. Finally, Lampe and colleagues [8] found that mobilization requests (*i.e.*,

asking one's network for some kind of resource) received significantly more comments, and those comments were received quicker, than non-mobilization requests. The authors argue that network presence is not sufficient to accumulate resources; rather, it only occurs through active engagement with network members. This is not to suggest that all research this area has found positive correlations between SNS use and resource exchange; for example, Stefanone and colleagues [29] found no relationship between perceptions of social capital and enacted social capital (operationalized as responding to a request to label images), with nearly 80% of instrumental requests sent by research participants going unanswered. Findings from similar study in which Facebook users posted status updates requesting a small favor (*i.e.*, completing a small survey) suggested that Williams' [17] scales may be too broad to capture specific types of resource exchanges; while the full bonding and bridging scales did not correlate with resource provision, subsets of these scales measuring "individual benefit" and "meeting new people" positively correlated with the number of responses to the survey request [14].

It is also worth noting that social capital is often confounded with the construct of social support, which Shumaker and colleagues define as "an exchange of resources between two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient" [30] (p. 11). This definition makes differentiating the constructs especially difficult, as both involve interpersonal resource exchanges. Social support is more narrowly focused on exchanges that enhance relational health and well-being; however, it is embedded within the framework of social capital. Therefore, this study examines resource exchanges and outcomes of those exchanges separately, using Weiss' framework of social provisions [20]. This is discussed in further detail in the Methods section.

In sum, research has established a largely positive relationship between interactions on Facebook and users' perceived access to social resources from their network, although there is debate regarding how resource exchange should be operationalized [19] and how different operationalizations correlate with site behaviors [14,29].

### **3. Current Study: Relationship Maintenance Strategies and Perceived Access to Resources**

Much of the social capital literature has distinguished resource provision based on characteristics of the interaction partners. For example, Putnam [18] argues that stronger ties are more likely to provide the emotional resources associated with bonding social capital, while weaker ties provide access to new people and ideas, which is associated with bridging social capital. This relationship is echoed in work by Mark Granovetter [31], who argued that tie strength was positively related to factors such as the emotional intensity, intimacy, and reciprocal communication in the relationship; this implies that stronger ties are more likely to be providing support-based resources. The "strength of weak ties," on the other hand, is their connections to people outside of one's network, who can provide new information, such as when one is seeking a new job. Likewise, Weiss [20] argued that resource provision varies across relationship categories (*e.g.*, family members, romantic partners, friends). For example, Weiss noted that nurturing resources were highest in parent-child relationships, while attachment resources were high with spouses and female friends. Similar conclusions were reached in research on communities and resource provision a decade later, highlighting the different roles served by different network members [21].

Because SNSs' affordances facilitate quick and simplified communication with network members across a number of characteristics, traditional conceptualizations of how relational closeness and resource provision interact need to be re-evaluated. Importantly, affordances such as visibility and persistence of content, as well as the public articulation of the network, may facilitate resource exchanges between dyads that may not have otherwise interacted. For example, "bridging" ties' role has been traditionally associated with novel information provision [32]; however, SNSs enable weaker ties to also provide emotional and social support—and just as easily as stronger ties.

A final factor to consider is the characteristics of communication occurring via the site. For example, frequency of communication—both on Facebook and through other channels—has been positively linked to relational closeness by Ledbetter and colleagues [33]. Relationship maintenance strategies, which encompass a range of interactions and behaviors between two ties, have been linked to a number of constructs in offline relationships, including liking, loving, satisfaction, and commitment [34]. More recently, Vitak [35,36] developed a measure of relationship maintenance occurring through Facebook to account for the site's affordances, as well greater variance in behaviors across relationship types. She found that engagement in relationship maintenance behaviors positively correlated with relational closeness and satisfaction, and was associated with perceptions that Facebook enhanced relational quality.

The present study seeks to unpack the social, technical, and relational characteristics associated with one's perceived access to social resources from different types of ties. Furthermore, it will expand on existing work analyzing the relationship between Facebook use and resource provision (typically operationalized as a social capital measure) by examining these exchanges at the dyadic level. Network-level conceptualizations and operationalizations of resource availability [37–40] do not enable us to ask questions regarding how the technology's affordances affect the relationship between relationship type and the resources exchanged. In other words, this data collection enables exploration of variations in resource provision across various types of social ties to determine whether Facebook's affordances affect the dyad/resource relationship.

### *Hypotheses*

Research has begun to unpack the nuances between relational characteristics and outcomes of Facebook use [12,41,42]; however, these analyses predominantly focus on tie strength as the distinguishing factor. A notable exception to this is some earlier work by Baym and colleagues [43] who looked at variations in media use across various types of relationships (*i.e.*, family, partners, same-sex vs. cross-sex friends, and acquaintances). Their research focused on differences in face-to-face, phone, and general Internet-based communication; however, much has changed in the years since these data were collected, which raises the question of the extent to which, if at all, Facebook has "leveled the playing field" in terms of resource exchange. Facebook's social and technical affordances alter interaction dynamics by making disclosures visible to one's entire network regardless of the content of that disclosure and by simplifying the process of interaction and resource exchange. Therefore:

RQ1: How does one's perceived access to resources from a Facebook Friend vary across relational characteristics?

An important dynamic of SNSs is they typically flatten users' social networks, providing little if any distinction between one connection and another. This collapsing of contexts [12,44], as seen in a Facebook users' "Friends" list, makes it difficult for the casual observer to distinguish between close friends and mere acquaintances, between coworkers and classmates. That said, Facebook provides users with a number of relational indicators via its "See Friendship" page.<sup>1</sup> This page provides user- and system-generated data connecting two Facebook Friends on the site—mutual Friends, interactions, tagged photos and posts, shared interests, *etc.* These data may serve as proxies for relational closeness; for example, Granovetter [31] notes that stronger ties have more mutual friends than weaker ties, while being tagged in a large number of photos together indicates that two Friends share similar interests and spend time together. Therefore, this study argues for a positive relationship between these system-generated indicators of relational closeness and perceptions of access to resources.

H1: System-based proxies for relational closeness are positively associated with perceived access to resources from a specific Facebook friend.

Relationship maintenance behaviors are necessary to "to keep a relationship in a satisfactory condition" [45] (p. 165) and are associated with a number of relational outcomes, including closeness and satisfaction [34], as well as access to various emotional, informational, and instrumental resources [7]. Relationship maintenance behaviors on SNSs have been framed as "social grooming" [7,46]; they signal attention, build interpersonal trust, and create an expectation of reciprocal attention, which is associated with access to social capital [28]. Certain Facebook behaviors serve a relationship maintenance purpose and have been positively associated with perceptions of closeness and social capital. For example, Ledbetter *et al.* [33] found that frequency of Facebook interaction with a Facebook friend positively predicted perceived relational closeness with that person. Ellison *et al.* [7] found that specific communication behaviors, such as wishing a Facebook friend "happy birthday" or Liking a status update, positively predicted perceived bridging social capital. Burke and colleagues found a similar relationship between directed communication and bonding [3] and bridging [2] social capital. Therefore, it is expected that engagement in relationship maintenance strategies and directed communication with a Facebook Friend will be positively associated with perceived access to resources.

H2: Engaging in (a) relationship maintenance strategies and (b) directed communication with a specific Facebook Friend through the site are positively associated with perceived access to resources from that person.

While the affordances of Facebook play a large role in supporting the main effect detailed in the previous hypothesis, the literature also suggests an interaction effect between relational closeness and the communication strategies dyads use to maintain their relationship. However, the direction of the effect is not clear. Traditional communication theories would argue that the relationship between tie strength and perceived access to resources is so strong that strong ties benefit the most from their Facebook interactions. On the other hand, weaker ties are likely to rely on Facebook much more in maintaining their relationship due to a reduced number of communication channels available [47].

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<sup>1</sup> As of October 2014, the "See Friendship" page is accessed by visiting a Facebook Friend's profile page, clicking on the "..." button near the top of the page, and selecting "See Friendship."

With this in mind, and considering the affordances of social media in lowering barriers to interaction, it is possible that weaker ties may benefit more from Facebook interactions. Some recent empirical studies would support this latter argument. Recent research by Rozzell *et al.* [48] found that Facebook users perceived comments posted on the site from weaker ties to be just as supportive as those from stronger ties. Likewise, qualitative research by Vitak and Ellison [49] suggested that, for some users, the source of support did not matter nearly as much as the support itself, with comments from more distant ties still valued. Finally, research using server-level data found that weak ties are the primary source of information diffusion on Facebook [50]. Therefore:

H3: Relational closeness moderates the relationship between engagement in (a) relationship maintenance strategies/(b) directed communication and perceived access to resources from a Facebook friend.

## 4. Method

In October 2012, the author invited 3000 non-faculty staff at a large U.S. university to participate in an online survey regarding their Facebook use. The survey remained open for two weeks and collected 415 responses. Respondents were generally female (76.2%), 44 years old ( $SD = 11.12$ ; range: 22–71), White (88.9%), and well-educated, with the majority of participants having a college degree or higher (72.2%).<sup>2</sup>

### 4.1. Procedure

Following an online informed consent procedure, participants logged into their Facebook account and selected a Facebook connection from their “Friends List.” Based on the profile layout at the time of data collection, participants were asked to select the person in the top left position of the “Friends box” located on the right side of the profile. This method was employed to obtain a sample with greater variance in relational closeness than is typically seen in similar studies (e.g., [33,51,52]).

Participants then answered a series of questions regarding their relationship with the selected Facebook friend, including: frequency with which they communicated with the person on- and offline; relational closeness; perceived access to social provisions; the specific behaviors they engaged in with the person through Facebook; and demographic items. Unless otherwise noted, response options ranged from 1 = Strongly Disagree to 5 = Strongly Agree.

### 4.2. Measures

#### 4.2.1. Perceived Access to Social Resources

Weiss' [20] research on social provisions identified six types of resources exchanged within interpersonal relationships: (1) attachment; (2) social integration; (3) opportunity for nurturance; (4) reassurance of worth; (5) reliable alliance; and (6) guidance. A decade later, Cutrona and Russell [53] developed and validated the Social Provisions Scale, containing four items for each of the

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<sup>2</sup> See the Limitations section for information on interpreting results in light of this sample.

six social provisions. They correlated these scales with a number of variables, including adaptation to stress [54], parenthood, [55] and loneliness [56]. Some of the subscales are specific to a limited number of relationships (e.g., nurturing is generally representative of parent-child relationships), so the current study employs the two subscales that most closely reflect the resources discussed in social capital research: (1) Guidance ( $\alpha = 0.72$ ,  $M = 3.14$ ,  $SD = .76$ ) measures the degree to which a person feels s/he has people to turn to for advice (*i.e.*, emotional and informational resources); while (2) Reliable Alliance ( $\alpha = 0.85$ ,  $M = 3.38$ ,  $SD = 0.86$ ) assesses whether a person believes someone will provide him/her with tangible assistance when needed (*i.e.*, instrumental resources). According to Weiss [20], provisions of reliable alliance are most often derived from family members, while provisions of guidance usually come from trusted ties able to provide emotional and informational resources during difficult life events.

While the resources Weiss [20] describes are typically provided by stronger ties, SNSs like Facebook lower the transaction costs associated with interacting, and the site affords the ability to easily “Like” or comment on updates from a variety of connections. Therefore, it is important to establish whether the affordances of SNSs alter more conventional theories regarding relationship type and resource provision. Vitak *et al.* [57] found a positive correlation between having family members on Facebook and reliable alliance, whereas reciprocal communication (regardless of tie strength) positively correlated with guidance. More recent research has found that Facebook communication predicted increases in perceived relational closeness [41] and that strong ties are more likely to provide Facebook Friends with social support following loss of a job [42]—which is contrary to the work of Granovetter [31].

While treated as separate constructs in work by Cutrona and Russell [53–56], the Guidance and Reliable Alliance subscales are highly correlated ( $r = 0.72$ ) and tap into the same overarching conceptual construct this study evaluates: perceived access to social resources. Therefore, the two scales were merged. The original wording of the items was modified to reflect the specific Friend the participant was evaluating (e.g., “*There is someone I could talk to about important decisions in my life*” became “[*Person’s name*]<sup>3</sup> is someone I could talk to about important decisions in my life”). Confirmatory factor analysis led to removal of one item from each of the subscales, with the final, six-item scale ( $\alpha = 0.88$ ,  $M = 3.48$ ,  $SD = 0.95$ ) being a good fit to the data,  $\chi^2(6) = 12.16$ ,  $p > 0.05$ , CFI = 0.996, RMSEA = 0.05. See Table 1 for means and standard deviations for items included in the final scale.

**Table 1.** Items, Means, and Standard Deviations for Perceived Access to Social Resources Scale.

<i>Items</i>	<i>M</i>	<i>SD</i>
I can depend on (person’s name) to help me if I really need it.	3.64	1.14
I can’t depend on (person’s name) for aid if I really need it. [reverse-coded]	3.64	1.20
I can count on (person’s name) in an emergency.	3.52	1.21

<sup>3</sup> In the instrument, participants were asked to enter the Facebook Friend’s name or a nickname prior to answering questions. That name auto-filled in statements to reinforce that participants should only consider their relationship with that person when responding.

**Table 1.** *Cont.*

<i>Items</i>	<i>M</i>	<i>SD</i>
I would not turn to (person's name) for guidance in times of stress. [reverse-coded]	3.29	1.28
I can talk to (person's name) about important decisions in my life.	3.25	1.26
I could ask (person's name) for advice if I were having problems.	3.54	1.17
Full Scale ( $\alpha = 0.88$ )	3.48	0.95

#### 4.2.2. Relational Closeness

As noted above, numerous studies (e.g., [20,31,41,58]) have identified variations in resource provision based on tie strength (*i.e.*, relational closeness). Therefore, Dibble, Levine, and Park's [59] validated Unidimensional Relationship Closeness Scale was included to measure how close participants felt to the person for whom they were completing the survey. Confirmatory factor analysis suggested the full, 10-item scale was not a good fit to the data, so one item was removed and several covariance paths were added between error estimates. The final, nine-item scale included in analyses ( $M = 2.69$ ,  $SD = 0.61$ ) was a good fit to the data,  $\chi^2(19) = 44.64$ ,  $p = 0.001$ ,  $CFI = 0.994$ ,  $RMSEA = 0.058$  and was reliable ( $\alpha = 0.85$ ). Table 2 presents means and standard deviations for items included in the final scale.

**Table 2.** Items, Means, and Standard Deviations for Dibble *et al.*'s [59] Unidimensional Relational Closeness Scale.

<i>Items</i>	<i>M</i>	<i>SD</i>
My relationship with (person's name) is close.	2.60	1.26
When we are apart, I miss (person's name) a great deal.	3.01	1.34
(Person's name) and I disclose important personal things to each other.	3.21	1.23
(Person's name) and I have a strong connection.	3.11	1.15
(Person's name) and I want to spend time together.	2.90	1.29
(Person's name) is a priority in my life.	3.10	1.29
I think about (person's name) a lot.	2.72	1.26
My relationship with (person's name) is important in my life.	3.51	1.17
I consider (person's name) when making important decisions.	2.34	1.22
Full Scale ( $\alpha = 0.85$ )	2.69	0.61

#### 4.2.3. Relationship Maintenance Behaviors

While the established scale for measuring relationship maintenance behaviors [34] has been validated [60] and applied [52,61] in various online settings, it is both limited in capturing the full range of behaviors that can be accomplished through mediated communication and makes assumptions regarding relational closeness and geographic proximity of a relational dyad. Therefore, Vitak [35] developed and validates [36] a four-factor scale measuring Facebook-specific relationship maintenance strategies that people in dyadic relationships might employ via the site.

The four factors are as follows. *Supportive Communication* ( $M = 3.68$ ,  $SD = 0.82$ ,  $\alpha = 0.88$ ) includes seven items that target specific behaviors users perform through the site to signal support for a specific

Friend, such as liking a post or sending birthday wishes. *Shared Interests* ( $M = 2.27$ ,  $SD = 0.92$ ,  $\alpha = 0.87$ ) includes seven items that focus on how users engage with Facebook's features to share content and interact about commonalities they share with a Friend. *Passive Browsing* ( $M = 2.91$ ,  $SD = 0.89$ ,  $\alpha = 0.82$ ) includes four items that measure both the frequency and the level of agreement participants report about browsing a Friend's profile page and photo albums. *Social Information Seeking* ( $M = 2.73$ ,  $SD = 0.93$ ,  $\alpha = 0.75$ ) includes five items tapping into the power to easily locate and interact with a Facebook Friend about both new and more mundane topics. Confirmatory factor analysis led to the removal of two items each from the Shared Interests and Social Information Seeking strategies. The final, 19-item model fit well to the data ( $CFI = 0.965$ ,  $RMSEA = 0.048$ ) and met threshold requirements for convergent and discriminant validity [36,62]. See Table 3 for means and standard deviations of all items in this measure.

**Table 3.** Items, Means, and Standard Deviations for Facebook Relationship Maintenance Strategy Scales [36].

Items	M	SD
<b>Factor 1: Supportive Communication</b> ( $\alpha = 0.88$ )	3.68	0.82
My Facebook interactions with (person's name) are generally positive.	4.11	0.76
(Person's name) is upbeat when we interact through Facebook.	3.62	0.90
When I see (person's name) sharing good news on Facebook, I'll like his/her update.	3.82	1.06
I make sure to send (person's name) a note (wall post, comment, private message, etc.) on his/her birthday.	3.53	1.32
I congratulate (person's name) when he/she shares news on Facebook about something big happening in his/her life.	3.79	1.08
(Person's name) always wishes me happy birthday on Facebook.	3.47	1.16
When I post about something good going on in my life, (person's name) will like it.	3.45	1.11
<b>Factor 2: Shared Interests</b> ( $\alpha = 0.87$ )	2.33	0.88
I share links with (person's name) on Facebook.	2.57	1.21
(Person's name) and I use Facebook to share links or videos about a celebrity or TV show we like.	1.90	1.04
When I see something online that I think (person's name) would find interesting, I'll send him/her a note about it on Facebook.	2.54	1.22
I've posted links or videos to Facebook with (person's name) specifically in mind.	2.17	1.18
I share funny stories from my day with (person's name) over Facebook.	2.18	1.08
I use Facebook to find out things (person's name) and I have in common.	2.33	1.10
<b>Factor 3: Passive Communication</b> ( $\alpha = 0.85$ )	2.91	0.89
Estimate the frequency with which you do the following: Visit his/her profile page.	2.61	1.01
Estimate the frequency with which you do the following: Browse his/her photo albums.	2.72	0.98
I browse through (person's name)'s profile page to see what he/she's been doing.	2.89	1.20
I browse photo albums posted in (person's name)'s profile.	3.44	1.11
<b>Factor 4: Social Information Seeking</b> ( $\alpha = 0.79$ )	2.73	0.86
I use Facebook to get to know (person's name) better.	2.55	1.14
I keep up to date on (person's name)'s day-to-day activities through Facebook.	2.57	1.17
(Person's name) posts updates to Facebook about his/her day-to-day activities.	3.06	1.21

Note: In the electronic instrument, participants were prompted to select a random Facebook Friend and enter their name (or a nickname) into a field on the survey. The name they entered auto-generated in all items about that person.

#### 4.2.4. Facebook Communication Frequency

Participants were asked to rate the frequency with which they interacted with the specified Facebook Friend through six types of private and public communication: private messages, Chat, private Groups, Wall posts, comments, and Likes on a five-point scale ranging from 1 = Never to 5 = Very Often. Exploratory factor analysis using principal components analysis and Promax rotation led to a four-item solution ( $\alpha = 0.88$ ,  $M = 2.74$ ,  $SD = 0.90$ ) measuring users' frequency of engagement in directed communication (*i.e.*, Wall posts, comments, Likes, and private messages) with a Facebook Friend.

#### 4.2.5. Relationship Length

An open-ended question asked participants to estimate how long they had known their selected Friend. The average length across all relationships was 18.25 years (median = 14.17,  $SD = 14.55$ ).

#### 4.2.6. Geographic Distance between Friends

Participants estimated how far the selected Facebook Friend lived by choosing from six options: (1) less than a 30-minute drive; (2) 30 min–1 h drive; (3) 1–2 h drive; (4) 2–4 h drive; (5) 4–6 h drive; (6) 6+ h drive. Discrete categories were chosen over an open-ended question because of the difficulty of accurately recalling this information. In addition, the options provided a range of responses from in-town Friends to those requiring a flight or multiple days of travel. On average, selected Friends lived slightly over two hours away ( $M = 3.13$ ,  $SD = 2.05$ ); however, the variable was bimodally distributed, with a significant percentage of respondents in the closest geographic category (33.9%) and the farthest geographic category (27.8%). The full variable was used in regression analyses (as regressions are generally robust against normative assumptions; see [63]), while a three-category variable was created for additional analyses. The three categories capture the two extremes (<30 min; 6+ hours) as well as a category for “mid-range” Friends. Participants were distributed relatively evenly across groups.

#### 4.2.7. Additional Facebook Variables

Five variables were included in analyses to measure various aspects of participants' Facebook use. First, general site use was included as a control variable, as presence on the site could influence perceptions of resource access. Participants were asked to estimate the number of times they checked the site in an average day on a scale of 1–5 (“Less than once per day” to “More than 15 times per day”;  $M = 2.40$ ,  $SD = 1.15$ ). Next, two measures were employed to capture the size of users' Facebook networks. First, participants were asked to estimate the number of total Facebook Friends they had ( $M = 265.19$ , median = 188,  $SD = 290.76$ ). Second, they were asked to estimate the number of those Friends they considered to be “actual friends” (for more on this measure, see Ellison *et al.*, [6];  $M = 100.86$ , median = 55,  $SD = 122.94$ ). Two additional system-generated variables were collected by asking participants to view the “See Friendship” page for the specified Facebook Friend and report (1) the number of mutual Friends they shared on the site ( $M = 22.63$ , median = 13,  $SD = 32.15$ ) and (2) the number of photos in which they were both tagged ( $M = 5$ , median = 0,  $SD = 21.40$ ).

#### 4.2.8. Data Analysis

Data were examined prior to running any analyses, leading to removal of eight cases when missing data was deemed non-random. Missing data accounted for no more than 1.5% for any one item, and the average number of missing cases across these items was 1.88 (0.44%); values were imputed using the Expectation-Maximization (EM) algorithm in SPSS' Missing Values Analysis [64].

Due to high range and variance in responses, the base-10 logarithm was calculated and used in regression analyses for four variables: (1) total Facebook Friends, (2) actual friends, (3) mutual Friends, and (4) tagged photos.

### 5. Findings

Table 4 presents a correlation matrix of major variables included in analyses. The hypotheses and research question were analyzed using SPSS v20. Findings are divided into two main sections focusing on how different relational and communication aspects relate to perceptions of access to social resource. The first section uses regression and interaction models to focus on Facebook-specific variables, while the second section unpacks three relational characteristics' relationship to resource access.

**Table 4.** Correlation Matrix of Variables Included in Analyses.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Resource Access	1													
2. Relational Closeness	0.77 **	1												
3. Strategy: Support	0.46 **	0.46 **	1											
4. Strategy: Interests	0.39 **	0.43 **	0.56 **	1										
5. Strategy: Passive	0.36 **	0.49 **	0.57 **	0.49 **	1									
6. Strategy: Info Seek	0.04	0.14 **	0.42 **	0.42 **	0.49 **	1								
7. FB Communication	0.38 **	0.45 **	0.73 **	0.59 **	0.62 **	0.43 **	1							
Frequency														
8. Relationship Length	0.05	0.16 **	0.00	-0.11 *	0.05	-0.02	0.04	1						
9. Geographic Distance	-0.16 **	-0.12 *	0.04	-0.06	0.12 *	0.09	0.05	0.18 **	1					
10. FB Checks Per Day	0.14 **	0.05	0.42 **	0.31 **	0.16 **	0.21 **	0.36 **	-0.18 **	-0.01	1				
11. Total Friends <sup>a</sup>	0.11 *	0.06	0.35 **	0.21 **	0.10 *	0.11 *	0.27 **	-0.19 **	-0.01	0.47 **	1			
12. Actual Friends <sup>a</sup>	0.24 **	0.18 **	0.40 **	0.21 **	0.20 **	0.13 **	0.34 **	-0.09	-0.02	0.38 **	0.65 **	1		
13. # Photos Tagged <sup>a</sup>	0.40 **	0.51 **	0.30 **	0.33 **	0.29 **	0.03	0.32 **	-0.01	-0.13 *	0.09	0.21 **	0.18 **	1	
14. # Mutual Friends <sup>a</sup>	0.28 **	0.37 **	0.24 **	0.22 **	0.19 **	0.01	0.23 **	0.09	-0.09	0.13 *	0.40 **	0.31 **	0.45 **	1

Notes: \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; <sup>a</sup> Log10 transformations were used in this analysis.

#### 5.1. Facebook-Specific Predictors of Perceived Access to Resources

A hierarchical (*i.e.*, nested) OLS regression was conducted to observe relationships between participants' perceived access to social resources from a specific Facebook Friend and a number of relational characteristics present in offline and online environments. In the first step of the regression, four baseline variables were entered—sex and age of the participant, length of the relationship (in months) with the selected Facebook friend, and geographic distance between them. Note that relational closeness was not included in this set of analyses because of its high correlation to the dependent variable ( $r = 0.77$ ), which raises issues of multi-collinearity. In the second stage, a number of participant-specific and dyad-specific Facebook variables were entered into the regression. These

included the average number of times the participant checks Facebook per day (a proxy for site use), the number of reported total and actual Facebook Friends (see [6]) and two system-based metrics: the number of mutual Friends the dyad shares on Facebook and the number of photos in which both people were tagged. In the final step of the regression, each of the four relationship maintenance strategies [36] were added separately, as well as the Facebook communication frequency variable. Facebook frequency was evaluated separate of the relationship maintenance strategies because of the high correlations between the variables ( $r = 0.43\text{--}0.73$ ). See Table 5 for full regression details.

**Table 5.** OLS Regressions Predicting Perceived Access to Emotional and Instrumental Resources From a Specific Facebook Friend ( $N = 407$ ).

	Steps 1 and 2 are Common to all Regressions		Facebook Relationship Maintenance Strategy				
	Step 1: Controls	Step 2: FB Use	Supportive Comm.	Shared Interests	Passive Consume	Social Info-Seek	FB Comm. Frequency
			Step 3: Strategy/Communication Frequency				
	Standardized Betas						
Sex: Female	0.036	0.021	−0.025	0.030	−0.018	0.021	−0.026
Age	−0.140 **	−0.007	−0.004	−0.039	−0.011	−0.007	−0.024
Relationship Length	0.124 *	0.065	0.042	0.093~	0.062	0.065	0.052
Geographic Distance	−0.181 ***	−0.115 *	−0.141 ***	−0.120 **	−0.159 ***	−0.116 *	−0.137 **
FB Checks Per Day		0.105 *	−0.006	0.029	0.072	0.104 *	0.026
Total FB Friends		−0.197 **	−0.203 ***	−0.187 **	−0.154 *	−0.197 **	−0.184 **
Actual FB Friends		0.237 ***	0.141 *	0.218 ***	0.191 ***	0.237 ***	0.180 **
Tagged Photos		0.333 ***	0.245 ***	0.251 ***	0.264 ***	0.333 ***	0.262 ***
Mutual Friends		0.098~	0.089~	0.071	0.079	0.099~	0.083
Maintenance Strategy/ FB Comm Frequency			0.396 ***	0.284 ***	0.251 ***	0.007	0.270 ***
F-test	5.153 ***	13.147 ***	20.116 ***	16.425 ***	15.431 ***	11.805 ***	15.424 ***
R <sup>2</sup> (adjusted)	0.040	0.216	0.325	0.280	0.267	0.214	0.266

Notes: ~  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ; Total Facebook Friends, Actual Facebook Friends, Tagged Photos, and Mutual Friends were Log10 transformed prior to analysis.

Looking at two offline proxies for relational closeness—relationship length and geographic proximity—both variables were significant in the first step of the regression ( $\beta = 0.12$ ,  $p < 0.05$  and  $\beta = -0.18$ ,  $p < 0.001$ , respectively). In other words, as the longevity of a given relationship increases and as the physical distance separating two people decreases, individuals perceive a greater access to resources from that Friend. This is in line with existing literature looking relationships in more traditional settings [58]. In addition, the negative coefficient for age ( $\beta = -0.14$ ,  $p < 0.01$ ) suggests that younger people perceive greater access to resources from network members than older people, which is in line with recent research using Facebook log data [4].

In the second step, five measures of Facebook use and network composition were added to the regression. The addition of these variables significantly increased the amount of variance the model explained (from 0.04 to 0.22) and caused age and relationship length to fall out of the model. To

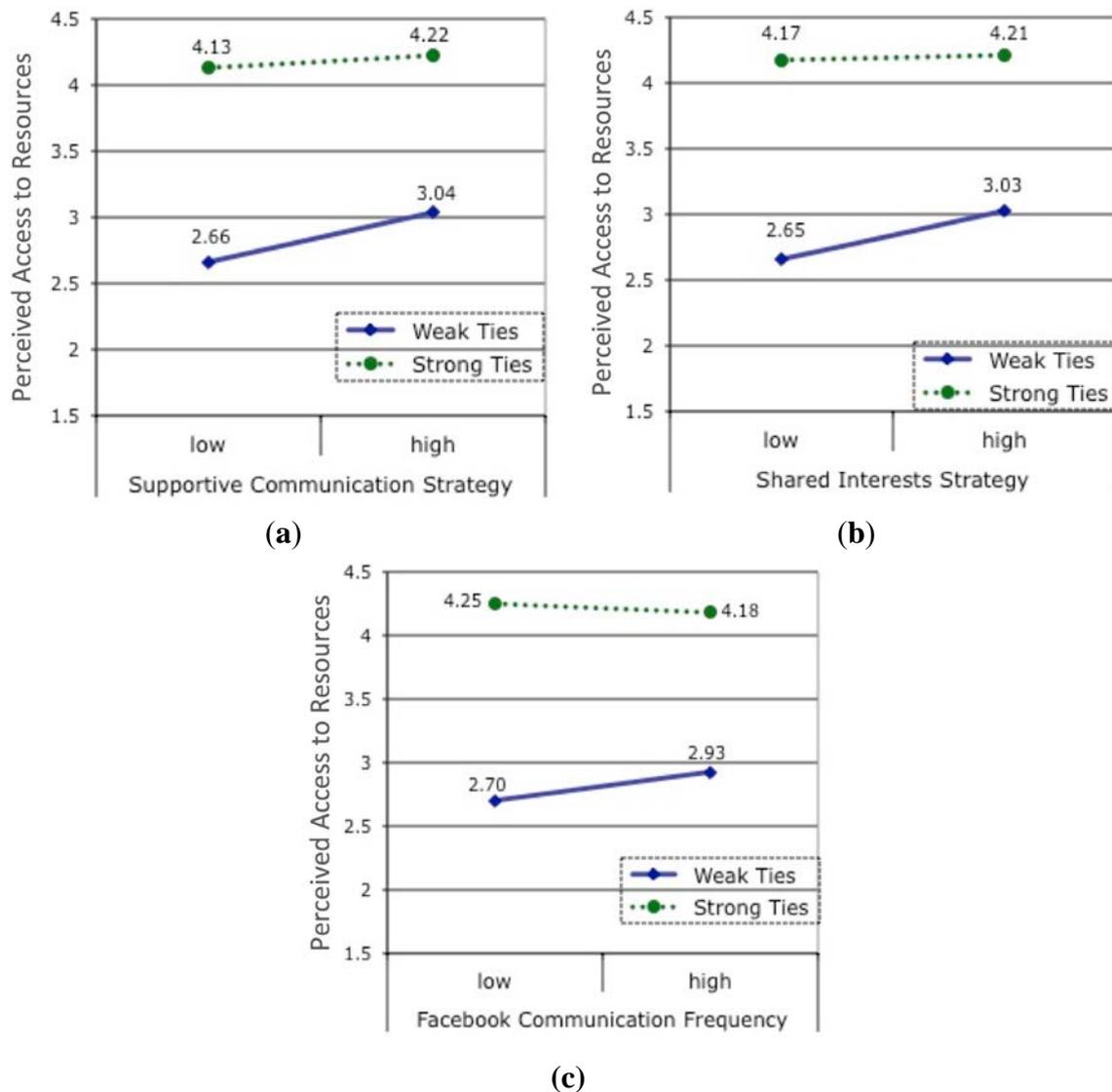
address H1, two system-based proxies for relational closeness were included in this step: the number of mutual Friends and the number of jointly tagged photos; these variables measure interconnectivity of networks and involvement in each other's lives. Tagged photos ( $\beta = 0.333, p < 0.001$ ) positively predicted access to resources, while the number of mutual Friends ( $\beta = 0.098, p = 0.075$ ) approached significance but did not reach the 0.05 cutoff. This provides partial support to H1. The other three variables included in this step—frequency of checking the site, number of total Facebook Friends, and number of actual friends—all significantly predicted the dependent variable, although the relationship between total Friends and perceived access to resources was negative, suggesting that interactions with individual Friends may be obscured by the sheer quantity of content associated with more Friends. On the other hand, those who reported more “actual” friends—which implies a higher quality relationship—perceived greater access to the same resources.

In the third step, the four relationship strategies developed [35] and validated [36] by Vitak were included, as well as a measure of the participants' frequency of communication with a specific Facebook Friend through directed methods (wall posts, Likes, comments, and private messages). Supportive Communication ( $\beta = 0.396, p < 0.001$ ), Shared Interests ( $\beta = 0.284, p < 0.001$ ), Passive Consumption ( $\beta = 0.251, p < 0.001$ ), and Facebook Communication Frequency ( $\beta = 0.270, p < 0.001$ ) emerged as significant predictors of perceived access to resources; in other words, engaging in specific communication patterns with a Facebook friend through the site was associated with increases in perceived access to emotional and instrumental resources. Social Information-Seeking, a strategy that captures individuals' desire to find out new information about network members, was unrelated to the dependent variable ( $\beta = 0.007, p = 0.885$ ). This provides partial support for H2a and full support for H2b.

Next, a between-subjects ANCOVA including the four relationship maintenance strategies and Facebook communication frequency was run, controlling for reported relational closeness. The overall model was significant,  $F(144, 262) = 5.91, p < 0.001, \eta_p^2 = 0.77$ . Furthermore, a significant interaction term was observed between all interaction and maintenance variables except Passive Consumption with relational closeness in predicting perceived access to social resources. This provides partial support for H5.

To further investigate the interaction effects, they were plotted using the Interactions in Multiple Linear Regression (IRSE) Excel tool [65], which plots two- and three-way interactions based on the full hierarchical regression model output. In each case, all independent variables were centered and interaction terms were created. Regressions including these terms found that Relational Closeness moderated Supportive Communication ( $\beta = -0.084, p = 0.009$ ), Shared Interests ( $\beta = -0.089, p = 0.006$ ), and Facebook Communication Frequency ( $\beta = -0.078, p = 0.016$ ). The negative coefficients suggest that increased engagement in these behaviors was associated with a larger increase in perceived access to resources for participants describing their relationship with a weaker tie (when compared to participants reporting on a stronger tie). See Figure 1 for graphs representing these interactions. Note that for the two relationship maintenance strategies, the slope is much steeper for weaker ties than stronger ties, while for communication frequency, there is a negative slope for strong ties, meaning increases in directed communication are associated with lower perceived access to resources.

**Figure 1.** Interaction effects between relational closeness and (a) supportive communication behaviors; (b) shared interests behaviors; and (c) Facebook communication frequency in predicting perceived access to resources from a specific Facebook friend. All interactions reveal that among weaker ties, increased engagement in communicative behavior is associated with a greater increase in perceived access to resources than is seen among strong ties.



5.2. Variations across Relational Characteristics

The final series of analyses delved into the relationship between three relational characteristics—relationship type, dyad composition, and geographic distance—with perceived access to resources (RQ1). Between-subjects ANOVAs were conducted, employing Scheffé post-hoc analyses of mean differences, and separate ANCOVAs analyzed relationships while controlling for relational closeness and interactive characteristics of the relationship.

First, a set of analyses looked for differences across relational categories of participants and their selected Friend. The instrument asked participants to list their primary relationship with the person they were evaluating (e.g., spouse, neighbor, former classmate). Fifteen categories of relationships

were pared down to the six most prominent: family member, spouse, current coworker, former classmate, close friend, hometown friend, and friend of a friend. A between-subjects ANOVA examined differences across relationship categories and perceived access to resources. The overall model was significant,  $F(5, 284) = 20.81$ ,  $\eta_p^2 = 0.26$ , with friend category significantly predicting perceived access to resources. Scheffe post-hoc analyses revealed a number of differences across friend categories. See Table 6 for mean differences across categories. Notably, the greatest levels of perceived access to resources came from spouses ( $M = 4.73$ ,  $SD = 0.32$ ), followed by friends of friends ( $M = 4.05$ ,  $SD = 0.72$ ) and family members ( $M = 3.70$ ,  $SD = 0.93$ ). Conversely, hometown friends ( $M = 2.85$ ,  $SD = 0.89$ ) and close friends ( $M = 2.93$ ,  $SD = 0.78$ ) fell below the midpoint in the scale.

**Table 6.** Results of Scheffe Post-Hoc Test of Differences between Relational Category and Perceived Access to Resources.

(I) Relational Category	(J) Relational Category	Mean Difference (I-J)	Standard Error	Sig.
Family	Spouse	-1.0331 ***	0.21252	0.000
	Current Coworker	0.2784	0.18488	0.811
	<b>Close Friend</b>	<b>0.7674 *</b>	0.21252	0.025
	Friend of Friend	-0.3562	0.13306	0.212
	<b>Hometown</b>	<b>0.8484 ***</b>	0.14162	0.000
Spouse	<b>Family</b>	<b>1.0331 ***</b>	0.21252	0.000
	<b>Current Coworker</b>	<b>1.3115 ***</b>	0.25977	0.000
	<b>Close Friend</b>	<b>1.8005 ***</b>	0.28011	0.000
	Friend of Friend	0.6769	0.22583	0.113
	Hometown	1.8815 ***	0.23099	0.000
Current Coworker	Family	-0.2784	0.18488	0.811
	Spouse	-1.3115 ***	0.25977	0.000
	Close Friend	0.4890	0.25977	0.617
	Friend of Friend	-0.6346	0.20004	0.077
	Hometown	0.5700	0.20584	0.179
Close Friend	Family	-0.7674 *	0.21252	0.025
	Spouse	-1.8005 ***	0.28011	0.000
	Current Coworker	-0.4890	0.25977	0.617
	Friend of Friend	-1.1236 ***	0.22583	0.000
	Hometown	0.0810	0.23099	1.000
Friend of Friend	Family	0.3562	0.13306	0.212
	Spouse	-0.6769	0.22583	0.113
	Current Coworker	0.6346	0.20004	0.077
	<b>Close Friend</b>	<b>1.1236 ***</b>	0.22583	0.000
	<b>Hometown</b>	<b>1.2046 ***</b>	0.16091	0.000
Hometown	Family	-0.8484 ***	0.14162	0.000
	Spouse	-1.8815 ***	0.23099	0.000
	Current Coworker	-0.5700	0.20584	0.179
	Close Friend	-0.0810	0.23099	1.000
	Friend of Friend	-1.2046 ***	0.16091	0.000

Notes: \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ; Bolded mean differences indicate that friend category (I) reported significantly *higher* perceived access to resources than friend category (J).

When controlling for relational closeness, a between-subjects ANCOVA was significant,  $F(6, 283) = 79.10, p = 0.001, \eta_p^2 = 0.62$ . The interaction between relational category and closeness was non-significant. When controlling for the various types of relationship maintenance strategies and directed communication dyads engaged in, models including Communication Frequency,  $F(6, 283) = 23.00, p = 0.001, \eta_p^2 = 0.33$ , Supportive Communication,  $F(6, 283) = 28.71, p = 0.001, \eta_p^2 = 0.38$ , Shared Interests,  $F(6, 283) = 24.04, p = 0.001, \eta_p^2 = 0.34$ , and Passive Consumption,  $F(6, 283) = 25.59, p = 0.001, \eta_p^2 = 0.33$ , were significant; this supports the regression findings presented earlier regarding the relationship between directed communication behaviors and perceived access to resources while controlling for relational closeness. None of the corrected models including the interaction term were significant.

The composition of the Facebook friend dyad (male-male, female-female, or mixed dyad) may also influence perceived access to resources. A between-subjects ANOVA revealed a small but significant effect of dyad composition on perceived access to resources,  $F(2, 404) = 3.18, p = 0.03, \eta_p^2 = 0.02$ . Scheffe post-hoc analyses revealed that mixed-sex dyads (*i.e.*, a male reporting about a female friend or a female reporting about male friend) reported higher perceived access to resources than male-male dyads ( $M = 3.57, SD = 0.97$  and  $M = 3.16, SD = 0.90$ , respectively). This difference was not observed when the two mixed-sex categories were broken apart. There was no difference between female-female and mixed-sex dyads, while female-female dyads ( $M = 3.50, SD = 0.94$ ) trended higher in perceived access to resources than male-male dyads, but not significantly so ( $p = 0.08$ ). When controlling for relational closeness, dyad composition was not significant.

A final relational characteristic to examine in further depth is geographic distance between Friends. The regression reported above established a negative relationship between geographic distance and perceived access to resources; however, the variable is bimodally distributed, with nearly two-thirds of all responses falling into the closest (<30 min) or farthest (>six hours) categories. Similar to dyad composition, the relationship between these variables was small but significant,  $F(2, 402) = 5.68, p = 0.004, \eta_p^2 = 0.03$ . Unlike dyad composition, when controlling for relational closeness, geographic distance predicted perceived access to resources,  $F(3, 401) = 199.41, p < 0.001, \eta_p^2 = 0.60$ . Examining differences across the three categories, Scheffe post-hoc analyses revealed a significant difference in perceived access to resources between those physically proximate ( $M = 3.66, SD = 0.99$ ) vs. those living the farthest apart ( $M = 3.26, SD = 0.03$ ). Those living between 30 min and six hours apart were not significantly different from either group. This suggests that resource-related relational benefits may extend farther geographically than previously thought.

## 6. Discussion

The present study contributes to a growing body of research on the outcomes derived from SNS use by focusing on how these sites' social and technical affordances enable access to diverse resources at the dyadic level. Specifically, it offers insights into how perceived access to emotional and instrumental resources varies across relational and interactive and communication habits. This study also provides unique insights into system-generated proxies of relational closeness, which could be useful in future research. Below, the findings are unpacked and interpreted in light of how they build on and expand previous work on relationship maintenance and resource exchange in the Facebook age.

Examining the role technology plays in resource exchange is an important undertaking because the affordances of sites like Facebook change the dynamics of interaction between people. These affordances impact the contextual information available about network members, how resources are exchanged, and who is involved in the resource requests and provisions. Whereas resource exchange has traditionally been linked to small, dense networks and communicated through more private channels, Facebook provides an avenue through which to both quickly broadcast messages to a large audience and to obtain requested support resources, either through the site (e.g., supportive comments) or through coordinating offline support (e.g., facilitating a home visit to a sick friend). As Ellison and Vitak [26] note, Facebook increases the accessibility of social resources by enabling social information-seeking (which helps establish common ground; see [5,66]), enabling wide broadcast of requests, and making relevant connections (especially friends of friends) more visible. For example, in a qualitative study of adult Facebook users, participants reported using Facebook to send updates to their network when a family member was sick or to share important information quickly; they compared the convenience of a Facebook status update to more time-consuming methods such as sending individual emails or making phone calls [49]. Likewise, research by Vitak [12] found that the amount of disclosures a user made through the site (via status updates) positively predicted social capital; she argued that such updates signal a resource request to one's network by providing relevant information and encouraging social interaction that may lead to fulfillment of that request. Compared with other types of posts, resource requests receive more comments and responses occur quicker [8].

While the broadcasting affordance is beneficial in getting a resource request out, research suggests that directed forms of communication (e.g., comments, Likes, wall posts) matter more when considering the social capital resources users can receive from their network [2,3,7]. Moving beyond broader, network-level perceptions of resource access, the present study looks at the dyadic level of interaction, finding that the frequency of directed communication, as well as engagement in three relationship maintenance strategies, positively predicts users' perceived access to resources from a specific Facebook friend. This provides support for the role of reciprocal communication in relationship maintenance and, subsequently, accruing and exchanging social capital resources, as noted by Nan Lin and other researchers [7,28,32]. Furthermore, the data reveal differences between resource access perceptions and relational closeness: as engagement in supportive interactions, discussion of shared interests, and directed communication increased, weaker ties saw significantly greater increases in their perceived access to resources than stronger ties.<sup>4</sup> This suggests that Facebook-based interactions may benefit weak-tie relationships more, which provides insights into arguments regarding media multiplexity [47,67] (*i.e.*, tie strength positively correlates with quantity of communication channels). If weak ties rely solely (or primarily) on Facebook to maintain a relationship, the potential for relational benefits increases at a greater rate than for dyads that can request and provide resources through alternative channels.

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<sup>4</sup> It is important to note that in these analyses (see Figure 1), stronger ties report higher perceived access to resources overall; however, the increase in that score (distinguished by the change in slope) suggests that weaker ties are "getting more" from their interactions with each other.

Looking at resource exchange at the dyadic level allows for a more nuanced examination of the specific relational and system-based characteristics associated with higher perceived access to resources. Unsurprisingly, relational closeness was strongly correlated to resource access; this supports research both in offline, face-to-face contexts (e.g., [20,21]) and, to some degree, on SNSs (e.g., [5,33,41]). However, this association appears complex, rather than linear. As discussed above, the interaction effects suggest weaker ties may benefit more than stronger ties when they use the site to interact with each other. Likewise, the ANCOVA looking at relationship category was also significant. Facebook's interaction structure and public News Feed of friends' activities enables interactions that would likely not have occurred outside of the site, such as when a user posts about her recent engagement and receives hundreds of Likes—even from people she hasn't spoken to in a decade. As Dunbar [68] has noted, sites like Facebook extend the lifespan of relationships beyond what would have occurred without the technology; the ability to keep in touch with a friend through passive and interactive strategies allows once-close friends to feel connected, even when they are no longer a primary resource for support.

Moving beyond relational closeness, analyses found that a number of proxies for relational closeness—both found embedded within the relationship and system-generated signals—also predicted perceived access to resources. Even though none of the items in the dependent variable explicitly required geographic proximity, the physical distance between dyad members was negatively correlated with resource access; that is, as the distance between two people increased, perceived access to resources decreased, even after controlling for relational closeness. Previous research looking at relationship maintenance found little to no difference in relational closeness between geographically proximate and distant connections [69,70]; that said, there is a difference between keeping in touch and exchanging meaningful resources. Furthermore, physical proximity facilitates access to more instrumental resources, such as going to a baseball game together or helping a friend move. In fact, traditional measures of relationship maintenance assume geographic proximity between partners [34,71], which was a driving motivation for Vitak's [35] development of the Facebook Relationship Maintenance Strategies scale. It is important to note that when considering the full picture of relationships and interactions (as described in the regression), geographic proximity is the only non-Facebook variable to retain significance, highlighting its role in perceived access to resources. That said, it explained less variance than several Facebook variables, including system-based and perceptual characteristics of interaction.

When examining differences across relationship type, spouses reported the greatest access to resources across the six groups analyzed. This is unsurprising, as romantic partners provide a number of social resources to each other [20,54,72]. Family members are also expected to provide various types of social support [20,21], which supports the high mean score for them. More surprising were the findings regarding friends of friends, as their mean score for resource provision was significantly higher for this group than for close friends. This may speak to the diverse informational resources that a heterogeneous network can provide [32] and to the benefits of activating latent ties, *i.e.*, connections who are technically connected (via mutual Friends) but not activated until some form of interaction occurs, such as comments on a status update [26,47]. One possible explanation for close friends' low perceived resource access is that these ties may be geographically dispersed; alternatively, as many have argued, SNSs—and Facebook specifically—have shifted our conceptualization of “friendship” [73,74] such

that a person viewed as a close friend may no longer associated with the same degree of relational intensity as they were prior to these technologies.

The strongest predictor of perceived access to resources—outside of relational closeness—was users' engagement in directed communication and relationship maintenance strategies on Facebook. Some researchers [2,4,7] have argued that disclosure alone is insufficient for accruing social capital-related resources. Instead, users must be actively engaged in interaction with network members to signal their presence to others. Because Facebook allows users to establish visible links to others through tagging, directed communication, and mutual Friends, these factors signal that a relationship is active and, as Burke and Kraut [41] note, speak to the quality of the relationship. Consistent with the findings presented here, recent research [3] found that the effects of directed communication on perceptions of relational closeness were greater for non-family ties and for those who do not engage in much interaction beyond the site.

Much of the give-and-take between Facebook interactions and perceived access to resources speaks to the concept of reciprocity, which features prominently in the social capital literature [28]. First, Facebook interactions provide a persistent, visible signal that may influence specific reciprocity, where a good deed is paid back directly. Second, generalized reciprocity [18,75,76] comes into play via these interactions, as the resource exchanges are visible to other network members and sometimes people beyond an individual's network (*i.e.*, friends of friends). Those who see a kind act performed by one person may feel more compelled "pay it forward" because of societal-level norms of reciprocity [18,76] guiding their actions. Overall, the ease with which Facebook facilitates these exchanges creates an environment for resource exchanges to be made with specific individuals, their identified network of Friends, or anyone viewing the update.

### *Limitations*

The data presented in this article represent a point-in-time survey of adult Facebook users' perceptions of their Facebook use and their relationship with a selected Facebook friend; therefore, it is important to recognize that the findings are correlational in nature and cannot establish causal relationships. Future studies should continue to evaluate social media's role in resource exchange through a variety of methods, including longitudinal work, use of server-level data, and collecting data from both members of a given interpersonal dyad. Furthermore, while the sample in this study was generally representative of the population (*i.e.*, the university's staff), the population itself is not representative of Facebook users, especially in terms of education. Conducting studies with a variety of types of users will provide more robust findings and increase our understanding of the relationship between Facebook use and social outcomes. Finally, the study's dependent variable encapsulated two of the six social provisions outlined by Weiss [20], combining them into a single (CFA-validated) measure; future research should further explore questions addressed in this study using a variety of measures of resource provision (including measures of social capital and social support) to determine how predictors vary across specific resources.

## 7. Conclusions

As ICTs become increasingly embedded within the social fabric of people's lives, it is essential to understand the mechanisms through which they operate, the uses and gratifications of users, and the relational outcomes derived from use. Sites like Facebook have seen a meteoric rise in popularity over the past decade, with hundreds of millions of people using them each day to connect with friends and others around the world. These sites contain a number of technical and social affordances that allow people to exchange a variety of social and informational resources, and previous research has established a positive relationship between SNS use and social capital, both as perceived by individuals [2–7,12,49,77] and as enacted through directed communication on the site. Looking at social support, research by the Pew Internet Project pairing survey and server-level data [1] has found that compared with non-users, frequent Facebook users report higher levels of overall support, emotional support, and companionship from members of their network.

The present study expands our understanding of how ICTs may be employed for a specific type of relational benefit—access to social, emotional, and instrumental resources, which are one of the bedrocks of individual relationships and successful communities. Findings reveal that both traditional characteristics associated with resource provision and Facebook-specific characteristics predict perceived access to resources, with the Facebook network characteristics, communication patterns, and engagement in relationship maintenance strategies generally having a stronger effect on the outcome variable. Furthermore, the study provides new insights into these variables at the dyadic level by examining resource provision across a number of relationship types.

Taken together, these findings suggest that Facebook's social and technical affordances—including visibility and association of users and content, the ability to broadcast content quickly to a wide audience, and the ease with which users can interact—serve an important relationship maintenance purpose that may increase access to relational resources and social support. Furthermore, users' perceived access to resources appears to vary across all relationship types; that is, as engagement in directed communication increased, weaker ties saw greater increases in resource perception than stronger ties. In addition, differences were observed across relationship category, dyad composition, and geographic distance. These factors should be considered as we develop theories of computer-mediated communication and interpersonal relationships to ensure they account for the unique features that influence relationship development and maintenance. Finally, analysis at this level reveals more nuanced relationships than previous studies looking at resource provision at the network level.

In light of these factors, future researchers evaluating the interpersonal benefits of social media should consider both the structure of the system as well as relational characteristics when evaluating the complex relationships between people, communication, and access to resources.

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## Conflicts of Interest

The author declares no conflict of interest.

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