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Національний університет «Києво-Могилянська академія»  
Факультет соціальних наук і соціальних технологій  
Кафедра соціології

**Магістерська робота**  
освітній ступінь – магістр

на тему:

**«ПІДХОДИ ДО ВИМІРЮВАННЯ СОЦІАЛЬНОЇ  
ПІДТРИМКИ В КОНТЕКСТІ САЙТІВ СОЦІАЛЬНИХ МЕРЕЖ»**

**THE APPROACHES TO MEASURING SOCIAL SUPPORT IN THE  
CONTEXT OF SOCIAL NETWORKING SITES**

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Магістерська робота захищена  
з оцінкою «\_\_\_\_\_»

Секретар ЕК \_\_\_\_\_  
«16» червня 2020 р.

Київ 2020

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## INTRODUCTION

Social networking sites have become some of the most popular online destinations of modern time, on par with the largest search engines and e-commerce platforms. Billions of people around the world visit online services, such as Facebook and Instagram, every day. In the last two decades, social networking sites have revolutionized not only online communication but human communication as a whole. Nowadays, they are in many ways determining its norms and conventions.

It is clear that social networking sites, or SNS for short, have had an outsize influence on our lives over the last dozen years. For most Internet users, they have become vital for keeping up with friends, relatives, and colleagues. The upshot of this change was that the growth of SNS has impacted how its users obtain and provide social support. Broadly speaking, social support is the currency of human interaction that we exchange virtually every time we interface with someone. Whether we are exchanging information, guidance, compassion, or something tangible, all of it can be considered a form of social support. Therefore, social support is a key ingredient of our wellbeing and has been linked to numerous positive outcomes for human health.

Even though it is now fairly obvious that social networking sites have drastically changed how we receive and provide social support on a daily basis, it is much less clear how much of their influence is causing positive outcomes and how much of it leads to negative ones. On the one hand, SNS have indeed made social support more accessible through neutralizing geographic distance. On the other hand, they have also made it more visible to people outside the exchange, thus highlighting the disparities that exist between levels of support that different groups of people enjoy. Alongside the incredible speed, with which the support online can travel and accumulate, the likes of Facebook and Instagram have also brought about an extensive practice of quantifying all possible aspects of human networking – the number of participants, the

rate and speed of their engagement with each other, and so on – which created a fertile ground for negative social comparison.

Thankfully, social networking sites and their effects on social support are being intensely studied by researchers in all parts of the world. There are now hundreds of scientific articles that in some way or another discuss “online social support” and “SNS-based social support.” A large number of surveys have been conducted on the topic resulting in the collection of thousands of data points.

However, when brought under a closer examination, many of these quantitative survey-based SNS social support studies reveal something rather noteworthy from the methodological standpoint. Namely, there seem to emerge two major trends in the character of the questions about online social support that respondents are being asked. The questionnaires from the first category try to gauge such support by asking about the intricate details that describe the experience of using social networks. Examples of such details include comments, “likes,” tags, postings, notifications, friend requests, et cetera; in other words, all the aspects of modern online communication that have either been introduced or radically changed by the creators of social networking sites. In this study, such elements of human interaction that are uniquely relevant to the domain of SNS are also referred to as “endemic” SNS categories.

By contrast, the second type of SNS surveys is characterized by not relying on these so-called endemic categories, either not as much, or not at all. Instead, the questions from such surveys ask about social support in a more general and straightforward way, using categories and language that we have been deeply familiar with since the time before the surge of online social platforms. Questions of this manner contain phrases like “interacting with my friends on SNS,” instead of phrases like “liking the posts of my friends” or “sending my SNS friend a private message.”

Although neither of the two approaches is inherently superior, they are likely to produce at least somewhat different results when applied to measuring social support simultaneously. However, no research that directly compares the two strategies appears

to have been carried out so far, judging by the extant literature available from this field. Therefore, it seems worthwhile to conduct a study that compares the two approaches to measuring social support in the context of social networking sites. This may help determine if one of them is actually more compelling than the other and if there are advantages to continuing using both. The results will inform future SNS research and hopefully help it deliver more reliable results.

The theoretical basis of this methodologically focused study primarily includes the substantial corpus of scholarly articles that are dedicated to the topics at the intersection of social networking sites and mental health. Most of these works have been published during the current decade. In particular, this study builds on the work of such authors as d. boyd, N. Ellison, R. Hayes, J. Meng, P. Thoits, and K. B. Wright.

Principally, two publications form the methodological foundation of this study. The first of them is a 2015 study by McCloskey and collaborators that is a good illustration of taking the “endemic” approach to measuring SNS-based social support. The 2016 article by Lin, Zhang, and Li serves as an example of a non-endemic approach to operationalizing social support in the context of SNS.

The *goal* of this study is to establish which of the two previously described approaches to the measurement of SNS-based social support has more validity and reliability – the endemic one or the non-endemic one. (This is also the study’s *research question*.)

Accomplishing this goal entails achieving the following *objectives*:

- outline the ways of defining social support in the context of SNS;
- overview the most prominent methods of measuring social support in the context of SNS;
- measure social support in a sample of active SNS users using the two quantitatively-driven strategies mentioned above;
- compare the results of the two measures against several other parameters related to social support and SNS usage.

Such a configuration of goals and objectives makes the two strategies of measuring SNS-based social support the *object* of this study. Accordingly, their degree of validity and reliability is the study's *subject*. The nature of the object of this study means that the latter has to be built on quantitative data. Online surveying was the sole means of gathering data for this study.

This study aims to contribute to the growing body of research on social support in the context of online social networks and social media more broadly by highlighting the strengths and weaknesses of some of the approaches that are currently being used in measuring SNS-based social support. As the user base of social networking platforms continues to expand, the line of research that is focused on the wellbeing of SNS users will continue gaining importance. Therefore, it is important to invest more resources into developing better tools to power such research; this study aspires to become part of this effort.

## **CHAPTER 1. THEORETICAL BACKGROUND ON SOCIAL SUPPORT AND ITS RESEARCH IN THE CONTEXT OF SOCIAL NETWORKING SITES**

### **1.1. CONCEPTUALIZATION OF SOCIAL SUPPORT AND ITS BENEFICIAL NATURE**

Social support can be broadly defined as any form of assistance that is exchanged through social relationships. More specifically, social support is the functional content of such relationships; it encompasses all the different kinds of benefits that humans can provide to each other (Heaney & Israel, 2008). As such, social support is inextricably linked to the concept of social networks. A classic definition of a social network describes it as a social structure that consists of a set of actors and a set of dyadic ties identifying social relationships that exist between those actors within a given social context (Arnaboldi, Passarella, Conti, & Dunbar, 2015). The level of network centrality (the measure of how central the individual's location within a network is) has been positively linked with the level of social support (Feeley, Moon, Kozey, & Slowe, 2010). The interplay of different social network compositions and social support is a subject onto itself that is beyond the scope of this chapter. However, since this text will deal with the topic of online social networks in further sections, it is important to establish this fundamental connection here.

The benefits that can be provided as social support take both tangible and intangible forms. One of the most widely adopted classifications of social support was proposed by House (1981). He distinguished between four major types of support: instrumental (tangible services and aid), emotional (expression of love, empathy, and caring), informational (provision of advice, suggestion, and other forms of information), and appraisal support (information that is useful for one's self-evaluation

and affirmation) (Heaney & Israel, 2008). Another categorization with significant traction is the five-part breakdown by Cutrona and Suhr (1992). They divided social support into tangible, informational, emotional, esteem support, which is aimed at validation of the person's feelings and abilities, and social network support, which enhances the individual's sense of belonging to groups with similar interests or social situations (Ko, Wang, & Xu, 2013).

The two further conceptual distinctions that are essential for painting a comprehensive picture of the notion of social support are its direction and subjectivity (Han, Han, Qu, Li, & Zhu, 2019). First, it has been empirically established that people's feelings about the level of social support they have access to can be meaningfully separated from the amount of support that they end up actually obtaining or providing (Barrera, 1986). Researchers have found that the perception of support has a greater effect on wellbeing than the actual, objective amount of support obtained (Gilmour, Machin, Brownlow, & Jeffries, 2019). It has also been linked to health outcomes more consistently (Haber, Cohen, Lucas, & Baltes, 2007). This distinction is captured by the dichotomy of perceived versus enacted (also known as received) social support (Barrera, 1986). The second distinction, known as the directional one, also breaks down social support into two types, receiving and giving, since social support is a form of exchange (Uehara, 1990).

A high level of social support is strongly correlated with better health outcomes (House, 1981), both in terms of physical and psychological health (Thoits, 2011). Increases in social support have been correlated with a lower risk of cardiovascular diseases and strongly associated with improved immune function, ultimately resulting in decreased disease mortality (Uchino, 2006). Higher levels of social support are also related to increased quality of life, wellbeing, and self-actualization, which is a term that denotes the fulfillment of one's potential (Wang, Wu, & Liu, 2003).

Furthermore, when it comes to mental health, social support is particularly influential since it can have a facilitating effect during life transitions and important life events (Cobb, 1976). It is also instrumental in coping with stress by serving a



buffering role against stressors, such as individual negative events and ongoing strains (Dean & Lin, 1977). By boosting the individual's sense of mastery over life and the feeling of mattering to other people social support lessens the impact of emotional distress (Thoits, 2011). Another indirect way through which social support may reinforce the person's health is through a mechanism called social comparison, which refers to people's ability to receive behavioral guidance by comparing their lifestyle choices with those of their reference group (Uchino, 2006). Essentially, an individual whose peer group has a high share of people practicing some kind of health-promoting habit is likely to eventually adopt that habit themselves. The behavioral change is induced not just strictly by cross-referencing the different lifestyles, but also through receiving advice and encouragement from the people who are practicing a particular healthy habit.

The goal of this section was to provide a brief overview of the essential features of social support, list its most important outcomes, as well as highlight the fact that it is a multifaceted concept that is connected to an extensive array of phenomena. As a matter of fact, its scale and importance are so great that social support is considered to be the most widely used concept in social science (Oh, Ozkaya, & LaRose, 2014). Since social support is directly responsible for satisfying some of the most basic needs of social individuals, such as belonging and self-worth (Chung, Yang, & Chen, 2014), and is closely connected to people's emotional and material states, it is also a central concept in the scientific discussion of human health and wellbeing (Oh, Lauckner, Boehmer, Fewins-Bliss, & Li, 2013). As such, social support is considered to be a positively loaded term with connotations to "beneficent intentions or consequences" (Thoits, 2011).

Of course, social support as a whole is not the focus of this study, which is the reason why here this concept is not covered as exhaustively as it could be; numerous existing inquiries already fulfill this purpose. Therefore, this theoretical review will be hereafter dedicated to the topics of social networking sites and online social support, which are more immediately relevant to the subject matter of the present study.

## **1.2. THE EXPLOSION OF SOCIAL NETWORKING ONLINE AND THE RISE OF SOCIAL NETWORKING SITES (SNS)**

The World Wide Web infrastructure has been accommodating the exchange of social support right from its initial stages of development. The arrival of the publicly available Internet in the early 1990s has provided many advantages in the department of exchanging social support, such as the removal of spatial, temporal, and geographic constraints intrinsic to real-life human interactions. The effects of such transition, unsurprisingly, have been wide-ranging. On the one hand, the Web proved to be a powerful egalitarianistic force that made social support available essentially twenty-four hours a day, seven days a week, and effectively erased international borders, allowing the support to be exchanged omnidirectionally. On the other hand, the Internet erected new barriers, notably, technological ones. At least initially, the access to the World Wide Web required a substantial level of technical expertise coupled with the need for costly equipment, which led to an overrepresentation of young, male users in online spaces. The privacy of the online realm also oftentimes proved elusive and easily compromised (White & Dorman, 2001).

The first popular platforms for providing social support in cyberspace, such as information and advice, were bulletin boards and mailing lists (White & Dorman, 2001). Online support groups and forums have also played an important role early on, especially those related to health issues (Coulson, Buchanan, & Aubeeluck, 2007). However, it was neither mailing lists, nor forums that were to become the dominant environment for exchanging social support online. For many years now, that role has decisively belonged to social networking sites (or SNS for short).

One of the most popular scientific definitions of a social networking site was put forth by boyd and Ellison (2007). According to them, an SNS is a web-based service that allows individuals to construct a public or semi-public profile within the service,

articulate connections with other users of the service, and “view and traverse their list of connections and those made by others within the system” (p. 221). Making people’s social networks visible and browsable online is a unique characteristic of SNS (boyd & Ellison, 2007). Parenthetically, this is also what distinguishes “social networks” and “social media,” the latter term often being used interchangeably with the former. Social media is an umbrella term for an enormous variety of online content platforms that allow user input. These platforms range from video hosting services (e.g., YouTube, Vimeo), forums, and dating applications to social networks (Aichner & Jacob, 2015); still, not all of them support the creation of personal networks or make them as prominent of a feature as social networks like Facebook do.

The first websites that could be considered as being tailored to the provision of social networking services appeared in the 1990s (famous examples include Classmates and PlanetAll), but their design and functionality did not match the modern conception of an online social network. The first “recognizable social network site” (p. 214) is thought to have been SixDegrees, which was launched in 1997 (boyd & Ellison, 2007). However, the first major incarnations of social networking sites in their modern form emerged only after the turn of the century. The two most prominent ones were MySpace and Friendster, but after a brief surge in popularity, they gradually faded into obscurity (Steel, 2011). Launched in 2003, LinkedIn, a website focused on professional networking, has become the earliest global social networking service to remain active and commercially successful into the present day (Lunden, 2016).

Today, the single largest social networking site with close to two and a half billion monthly active users as of the end of last year (Clement, 2020) is Facebook. It was created in 2004 to be used by Harvard students but was opened to the general public two years later. Instagram, which was launched in 2010 and is a Facebook subsidiary since 2012, boasts over one billion monthly active users, according to the most recent publicized data (Constine, 2018). Twitter is another globally popular social networking and microblogging service, which is used by more than three hundred million people monthly, according to the latest figures (Lin, 2019).

In our country, SNS have also been steadily strengthening their position in people's daily routines. According to a 2019 report by *PlusOne*, a local communications agency, most of the Ukrainian Internet audience is registered on Facebook (13 million out of 21,3 million). In major cities, such as Kyiv and Lviv, the penetration rate of the service has soared past eighty percent (PlusOne, 2019).

These staggering numbers are a testament to the level of significance that social networking sites have gained in the lives of Internet users, especially over the last decade. For example, according to Clement (2020), in the last ten years, Facebook's monthly user base has increased sevenfold. In the same timeframe, Instagram went from the launch to having over a billion active users and being the thirtieth most visited website in the world, according to Alexa Internet, a web analytics company.

All the major social networking services, including Facebook and Twitter, share certain fundamental aspects of their user experience. First of all, they all make use of "friend" or "follower" lists and foreground the information about mutual connections between users as part of the layout of the personal profile pages. Second, they allow the user to create and publish a wide range of different media, ranging from photos and videos to polls. Third, they facilitate assigning quick reactions to other people's postings, most commonly in the form of a "like" button. Fourth, they streamline the ability to share any content that is being published on their platform. Fifth, they include the functionality of private messaging, making possible both one-on-one and group conversations. All of these functions can serve as a mechanism for social support.

In all, the Internet, and particularly social networking websites, have gradually become a crucial medium for giving and receiving social support (Tang, Chen, Yang, Chung, & Lee, 2016). In the process, these services have been tightly integrated into people's everyday lives and have gained a major influence on their interpersonal communication as well as social behavior more broadly. A powerful indicator of this is that the phrase "social network" has arguably gained a new primary association in everyday conversation. Now it connotes social networking sites much more frequently than something related to the classic definition of the term that was mentioned earlier.

### **1.3. SOCIAL SUPPORT IN THE CONTEXT OF SNS: THE CHALLENGE OF DEFINITION**

Over the past dozen years, there has been no shortage of research dedicated to examining the relationship between the level of people's social support and their social networking sites' usage (Meng, Martinez, Holmstrom, Chung, & Cox, 2017). Unfortunately, when looking across many of these studies, one is inclined to conclude that the concept of social support in the cybercontext is treated quite differently from one publication to another. Moreover, it seems that the consensus is still lacking regarding the questions of what social support online and particularly on social networks consists of, which types of support can or cannot be adequately transmitted through the digital medium and does the efficacy of that transmission differ from one online service to the next. Hence, in this section, the different approaches to and versions of conceptualizing social support in the context of SNS are briefly discussed.

If one were attempting to formulate, based on the available literature, a definition of social support in the context of social networking sites, the first complication one would encounter would be that many SNS social support studies lack such definition altogether. As Meng and colleagues write in their meta-review of almost ninety studies that deal with SNS and social support, just over half the articles did provide a "clear conceptualization of social support" (p. 46). This meant that the other studies did not specify either the way they defined social support or the category of social support in question (Meng et al., 2017).

The next problem that emerges is that different researchers refer to SNS-based support in various ways. The concept is integrated under diverse names even among the studies that share the online network that they put under scrutiny. In the case of Facebook studies, the names include "online social support" (Chung et al., 2014), "computer-mediated social support" (Giota & Kleftaras, 2014), "Facebook social

support” (Indian & Grieve, 2014), and “Facebook-based social support” (Kim & Lee, 2011). The latter two may further increase ambiguity since they can simultaneously refer to the support received on Facebook as well as the support from Facebook friends that did not necessarily come through Facebook's website or application. However, some studies quite clearly frame online social support as support from SNS “friends” (Li, Chen, & Popiel, 2015) or SNS “contacts” (Krämer, Rösner, Eimler, Winter, & Neubaum, 2014) in their instruments, which attenuates the possible uncertainty.

Finally, some researchers do not terminologically separate online and offline support at all. For example, Carr and colleagues look at whether forms of phatic communication on social networking sites, such as Facebook and Instagram, are forms of simply “social support,” without classifying it as a subtype of social support that is only relevant to online contexts (Carr, Wohn, & Hayes, 2016). On the other extreme, Lee and coauthors use solely the phrase “social support” throughout their 2013 article on the loneliness of SNS users (there are no instances in which the term is qualified using words like “online” or “SNS”) while defining it as a “cognitive, perceptual, and transactional process of initiating, participating in, and developing online interactions or means of online interactions to seek beneficial outcomes” (Lee, Noh, & Ku, 2013). Such conceptualization undoubtedly narrows down the original meaning of the term “social support” (opting for using “online social support” would probably be more fitting) and it introduces possibilities for confusion when selectively quoting the findings.

Even though social support may have similar characteristics and effects in different life domains, it greatly benefits from being analyzed as a context-specific construct (Trepte, Dienlin, & Reinecke, 2015). Therefore, in the present study, the exchange of social support in the context of social networking sites is considered to be a manifestation of online social support, not just social support in general since, as this chapter argues extensively, there are a number of peculiarities to computer-mediated communication that influence the forms and dynamics of social support enabled by such communication (Lin, Zhang, & Li, 2016). Of course, online social support

remains an extension of general social support (Liu & Yu, 2013) Incidentally, the present study also treats the terms “online social support” and “SNS social support” as interchangeable out of two considerations: first, social networking sites are a part of the online infrastructure; second, nowadays, the adoption of social networks has reached such a prevalent level (as was detailed in the previous section) that to an average Internet user SNS are by far the chief source of getting and providing social support when online.

Returning to the literature review, there is another issue, in addition to incongruous naming, that currently prevents the development of a shared understating of the concept of online social support; specifically, the many discrepant breakdowns of the content of SNS social support that can be encountered in the academia. To begin with, there are studies, which are based on the premise that social support online has a similar functional structure to social support as defined in its original context of face-to-face interaction.

This stance is demonstrated either explicitly or implicitly. The former approach is used by Chung and collaborators, who describe “online social support” as consisting of instrumental, emotional, information, and appraisal support (pp. 198-199). This means essentially carrying over the categorization of “regular” social support by House (1981) into the online realm without adjusting it in any way. Interestingly, the conclusion that the authors come to in the article is that “online social support functions nearly the same as social support from conventional [sources]” (Chung et al., 2014, p. 209). The latter approach is implemented by using an adaptation of a classic measurement scale, such as the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988) (this topic is further discussed in the next section), for the concept of “online social support” (e.g., Frison & Eggermont, 2016). This can be considered as an implicit acknowledgment of the homogeneity of social support online and offline.

Many more studies are predicated on an alternative hypothesis, according to which social support in online contexts has some dimensions of offline social support

while lacking the others. In their own summary on the topic, Liu and Ma (2018) write that “generally” studies of SNS support cover “at least” three aspects: emotional, instrumental, and informational support. However, this short outline obscures a substantial degree of variability that can be found within the field. To begin, Myrick and colleagues in their study of the Twitter cancer community write that there are only two broad types of social support that apply to a “computer-mediated communication environment” (p. 597): informational and emotional (Myrick, Holton, Himelboim, & Love, 2016). Furthermore, Lin and coauthors do identify a third dimension in addition to the two differentiated by the previous authors, which they call “network maintenance.” According to the authors, each of the three represents a unique facet of “online social support over SNS” (p. 426); that said, they also acknowledge the possibility of the existence of other types (Lin et al., 2016). Finally, Tang and collaborators assert that Facebook can provide three types of social support, namely informational, affectionate (expressions of love and affection), and social companionship (spending time together in a recreational way) (Tang et al., 2016).

Despite Liu and Ma’s (2018) earlier mentioned observation, none of the three classifications cited above include instrumental (or tangible) social support. It appears that the validity of distinguishing this type of support in the context of SNS remains a matter of contention. For example, Oh and colleagues find instrumental support “irrelevant” (p. 73) to online social support studies (Oh et al., 2014). This point of view is shared by Roffeei and coauthors who explain that the “online nature” of SNS brings together people from dispersed geographical areas, which reduces the potential to exchange “anything tangible” (Roffeei, Abdullah, & Basar, 2015). The same reasoning is used by Kim (2014), who excluded items related to instrumental support from her measure of enacted social support on Facebook.

Nevertheless, there indeed are studies that discern a dimension of instrumental support within the concept of online social support. For instance, Manago and colleagues incorporate this dimension into their online social support measure (next to emotional support and companionship support) (Manago, Taylor, & Greenfield, 2012).



Likewise, Pornsakulvanich includes instrumental support (which is called “tangible” in the text) in her measure of online support frequency (Pornsakulvanich, 2017). The scale is an adaptation of the Social Support Questionnaire Short Form (Sarason, Sarason, Shearin, & Pierce, 1987) and besides tangible support also distinguishes emotional and informational online support. Curiously, the study found that among these three types instrumental support was the second most often received type of support on SNS, exceeding the informational kind, despite the earlier mentioned reports that informational and emotional support are the two most common classes of social support online (Chung et al., 2014; Myrick et al., 2016).

The work of Olson and colleagues provides some interesting context with regards to the question of getting instrumental support through the cyberspace. The authors of this study measured both “Facebook social support” (which meant, more specifically, support from Facebook friends) and face-to-face social support simultaneously in a sample of over two hundred American college students. In both offline and online support three dimensions were differentiated: emotional, instrumental, and informational. The study demonstrated that friends in face-to-face settings provided higher levels of social support across all of its three types. Meanwhile, spending more time on Facebook was correlated with perceived increases in all three types of online support (Olson, Liu, & Shultz, 2012).

Setting aside the controversy around the relevance of instrumental social support to the context of social networking sites, there also are researchers who suggest that SNS are ill-suited for providing emotional social support, too. According to Chung and collaborators, the asynchronous, text-heavy nature of online communication on SNS obstructs the provision of emotional support “which is best delivered by voices, facial expressions, and body language” (Chung et al., 2014, p. 209). They conclude this based on the results of a study in which they found that SNS users are more likely to receive informational and appraisal support than emotional support through social networks. Relatedly, Meng et al.’s meta-review summary, which states that informational support

is the most prevalent type of support that is sought and provided on SNS, conforms to these conclusions (Meng et al., 2017).

In addition to the perspectives that see online social support either as congruous with offline support or distinctive from it, there is also a third viewpoint, which posits that in a modern, hyperconnected world, where virtually every other person is an Internet user, it is not sensible to draw hard boundaries between online and offline social support. Instead, this concept is characterized by fluidity. Nowadays, social support is a resource that can be exchanged continuously through both online and offline peer networks (Mikal, Rice, Abeyta, & DeVilbiss, 2013).

As this look at the extant literature shows, the boundaries of online social support, as well as its content, are being actively explored. On the whole, the inconsistencies in the conceptualization of social support are a persistent problem for the sphere of SNS research. The discussion about the most accurate approaches to classifying social support in the context of social networking sites is still ongoing (Lin et al., 2016; Liu & Ma, 2018).

#### **1.4. MEASURING SOCIAL SUPPORT IN THE CONTEXT OF SNS: AN OVERVIEW**

The researchers have been undertaking many different avenues towards assessing social support in the context of online social networks, from questionnaires (Indian & Grieve, 2014; McCloskey, Iwanicki, Lauterbach, Giammittorio, & Maxwell, 2015; Lo, Guo, & Bradley, 2018) to deductive thematic analysis (Mustafa, Short, & Fan, 2015). Although by far and away the most popular social networking site to study has been Facebook (Meng et al., 2017), many other online networks, such as Twitter (Myrick et al., 2016), Instagram (Andalibi, Ozturk, & Forte, 2017), Reddit (De Choudhury & De,

2014), and Weibo (Han et al., 2019) have also received scholarly attention. This section briefly reviews the various methodologies that have been employed in research designs involving social networking sites and social support over the past decade.

The quantitative methodology appears to be the more prevalent choice in the sphere of online social support research. A self-reporting questionnaire is likely the single most popular research instrument in this field (Meng et al., 2017). The concept itself is most commonly measured by using a scale. Here, the majority of researchers select one of two routes. The first one is to adapt an existing social support scale (Indian & Grieve, 2014; Manago et al., 2012); the second approach is to start from scratch and devise a completely (or mostly) new scale (McCloskey et al., 2015; Carpenter, 2012). Besides, some researchers just apply the existing scales “as is” on the presumption that such instruments measure the total amount of offline and online social support combined (Wong, Amon, & Keep, 2019).

However, the issue that is created by the usage of existing social support measures is that most of them were developed before the advent of social networking sites in their current form (Frison, Bastin, Bijttebier, & Eggermont, 2019). Therefore, they are usually conceptually limited to the appraisal of social support in offline contexts only. The fact that the majority of popular social support instruments that have been tried and tested over many years do not take into account the peculiar and evolving nature of online human interactions is a challenge for researchers who have to introduce changes to the wording of scales’ items or combine questions from different measures to make their instrument more relevant to the new context in which it is being applied.

The Multidimensional Scale of Perceived Social Support by Zimet and colleagues (1988) is one of the most popular starting points for the development of an SNS social support instrument (Wohn, Carr, & Hayes, 2016; Frison & Eggermont, 2016; Frison et al., 2019). But, as expected, a number of other entrenched inventories besides the MSPSS have been repurposed for the needs of social networking sites research. For instance, the forty-item Inventory of Socially Supportive Behaviors (ISSB) by Barrera, Sandler, & Ramsay (1981) was used by Kim (2014) to measure enacted social support

received through Facebook. Also, Seo and collaborators adapted both the Interpersonal Support Evaluation List (ISEL), developed by Cohen and Hoberman (1983) and the Functional Social Support Scale (Broadhead et al., 1988) in order to measure perceived social support from Facebook friends (Seo, Kim, & Yang, 2016).

A popular way by which these mainstream scales are modified is to add a mention of a certain SNS to the text of the questions. For example, Liu and Yu (2013) used the ISEL to measure “online social support.” The authors replaced questions that read “When I feel lonely, there are several people I can talk to.” with statements, such as the following: “When I feel lonely, there are several people *on Facebook* I can talk to.” (Liu & Yu, 2013, p. 676). Much the same procedure was performed by Frison and Eggermont (2016). The researchers took the family subscale of the MSPSS (Zimet et al., 1988) and modified questions like this one: “I get the emotional help and support I need from my family.” with the following statement “I can find the emotional help and support that I need *on Facebook*.” (Frison & Eggermont, 2016).

It is noteworthy that, although the authors of both studies were focused on Facebook alone and formulated their social support questions accordingly, they linked their measure to the more broad concept of online social support and not merely “Facebook social support.” Meanwhile, Indian and Grieve (2014) who modified the ISEL appraisal subscale items in pretty much the same fashion as Liu and Yu (2013), chose to describe their scale as “Facebook social support items” instead (Indian & Grieve, 2014). Moreover, Kim and Lee (2011), who had reworded the same classic inventory to “specifically reflect the contexts of Facebook use,” introduced it as an operationalization of “perceived social support,” thus omitting any reference to the online realm (Kim & Lee, 2011).

Over the years there has also been an abundance of scales that were newly created expressly to measure social support in the context of social networking sites. In regards to this, the 2015 paper by McCloskey et al. deserves special attention, because, amid many original social support scales to have been constructed on an ad-hoc basis, this was a rare attempt to create a comprehensive measure of SNS social support (although

this particular effort was concerned exclusively with “Facebook-based” support) that could be applied universally by other studies that were dealing with social support and Facebook. The Facebook Measure of Social Support (FMSS) was elaborated using a five-person panel of researchers and exploratory factor analysis run on the survey data from over six hundred college students. The scale consists of four factors (perceived support, emotional support, negative support, and received informational/instrumental support) and it demonstrated sufficient convergent validity with the traditional social support measures, which allowed the authors to characterize it as “empirically sound” (McCloskey et al., 2015). So far, the measure has already been implemented in at least one other study, whose authors, interestingly, had adapted it for the use in “Chinese culture”; more specifically, by the WeChat and Weibo user base. This suggests that the FMSS potentially has a much wider range of applications that extend beyond Facebook, though, the scale is still in a need for more validation (Liu & Ma, 2018).

Of course, the FMSS was not the first scale of its kind. Chung and coauthors (2014) devised the Facebook Social Support Scale, or FSSS, “specifically” for use in their study of “online social support perceived by Facebook users.” This measure consists of eighteen items that are rated on a five-point Likert-type scale, with ranged from “Totally disagree” to “Totally agree.” Sadly, beyond that, the authors provided next to no information about their original scale in the article’s text. No statements from the scale and, crucially, details about the “principal component analysis followed by Varimax rotation” (Chung et al., 2014, p. 203) that led to its creation were disclosed in the paper making it difficult to appraise the level of the FSSS’ validity. The present study also was not able to identify any other research that had utilized the scale.

Krämer and colleagues also constructed their own measure of social support from Facebook contacts, which consisted of four items, each concerned with a separate kind of support. For example, the question “How many of your Facebook contacts provide you with information which could be important and interesting?” referred to informational support, the question “From how many of your Facebook contacts would you expect to receive concrete material (e.g., lending of technical devices) or non-

material help (e.g., helpers for moving)?” tapped into instrumental support, and so on. This approach stands out since it requires the survey participants to answer with a number of their Facebook contacts that they expect to receive each kind of support from (Krämer, et al., 2014).

In addition to dividing the scales aimed at measuring online social support into adapted and original, the multitude of such instruments can be differentiated one other way thus producing another two distinct categories: the measures that incorporate patterns of exchanging social support that are specific to social networking sites, such as posting “status updates” or accepting “friend requests,” and those who do not. For instance, the aforementioned FMSS scale by McCloskey and coauthors (2015) includes items like “I am happy when people «Like» my posts,” “I get excited when I get a Facebook notification,” and “It freaks me out if my friend number decreases.”

Such categories, as “likes,” “posts,” “friend requests” et cetera can be collectively termed “endemic”; meaning, they are relevant only to the environment of SNS. Using them might allow the researchers to capture more effectively what is special about the new medium on which they focus their efforts. Yet another illustration of the “endemic” strategy of measuring SNS-based social support is the work of Carpenter (2012). His scale of offered social support consists of statements like “I try to make people feel better by commenting on their Facebook status when I can tell they are having a bad day.” Seeking social support is gauged by items such as “Whenever I am upset I usually post a status update about what is bothering me.” and “If something made me sad, I usually post a comment about it on Facebook.” (Carpenter, 2012; McConnell, Clifford, Korpak, Phillips, & Birkett, 2017).

These scales can be contrasted with the earlier citation of Krämer and coauthors (2014) who use phrasing like “[providing] with information which could be important and interesting” without tapping into SNS-specific channels through which such information likely gets delivered to the respondent from their “Facebook contacts” most often. The scales from the studies like the one just mentioned might be considered a part of the other class of online social support instruments: those that do not make

use of endemic categories. They abound among the adapted social support inventories. Lin and collaborators (2016) who had built upon several scales from previous literature to produce their online social support instrument included in it mostly generic-sounding statements like “I have frequent communication with others on my SNS.” and “I spend a lot of time interacting with others on SNS.” (Lin et al., 2016).

For the sake of comprehensiveness, it is also important to mention some of the less conventional practices of measuring SNS-based social support. For example, Rozzell and colleagues do not target “online social support” per se; instead, they built their scale to assess the effectiveness of social support received from the comments under public status updates on Facebook. The measure is designed to assess each comment separately along six dimensions: “Not supportive – Supportive,” “Not helpful – Helpful,” “Hurtful – Not hurtful,” “Positive – Not positive,” “Encouraging – Not encouraging,” and “Not insulting – Insulting” (the last three items are reverse-scored). The higher the mean score, the greater perceived social support is obtained from a comment in question (Rozzell et al., 2014). Since being introduced in 2014 this approach has already influenced multiple other studies (Carr et al., 2016; Hayes, Carr, & Wohn, 2016a), although it has not yet been adopted broadly.

Continuing the discussion of the more unusual quantitative strategies, Blight and collaborators in their study of support-seeking on Facebook implemented something along the same lines as Rozzell and colleagues: they took individual Facebook status updates that solicited help and asked their authors to rate how satisfied they felt with the received help based on the responses under the updates (Blight, Jagiello, & Ruppel, 2015). The perceived supportiveness of Facebook comments was assessed using the Measurement of Enacted Social Support by Goldsmith, McDermott, and Alexander, (2000), which was compiled from the dimensions like “Helpful – Harmful,” “Ignorant – Knowledgeable,” and “Upsetting – Reassuring.”

Moving on from the topic of scales, content analysis is another research method that has been widely adopted in the sphere of SNS research. The World Wide Web is uniquely suited for gathering large amounts of data in a resource-efficient manner

thanks to techniques like web scraping and data mining (Han, Kamber, & Pei, 2012). Social networking sites can be a goldmine for researchers not only because they simplify the data gathering process, but also because the kinds of data they can provide are quite extraordinary. By virtue of being focused on interpersonal communication, the online services can quantify almost every aspect of such communication, from the speed of response to the intensity of interaction (Seo et al., 2016). While people's self-assessment of these sorts of parameters is famously associated with reliability challenges (Burke & Kraut, 2016), on social networking sites, such data is always objective, which makes SNS a potent research environment.

Consequently, there is a growing body of literature that is dedicated to analyzing SNS content in aggregate (De Choudhury & De, 2014; Roffeei et al., 2015; Davis, Anthony, & Pauls, 2015; Myrick et al., 2016; Andalibi et al., 2017). De Choudhury & De crawled the content of new posts in a few public communities on Reddit (an American service geared for news aggregation and federated discussion, comparable in size to Twitter), also known as subreddits. The data the researchers gathered was so granular that they were able to determine that, for example, at least ninety percent of the comments under the posts in the subreddits chosen for the study were made in the first three days since that post was submitted (De Choudhury & De, 2014). Myrick and coauthors leveraged the power of online data mining in order to extract over eighteen thousand Tweets (a Twitter vernacular for the default publication mode on the site) marked with a hashtag #stupidcancer. The posts were subsequently coded thus creating a typology of health-related social support on Twitter (Myrick et al., 2016). Even more impressive may be the application of content analysis in a study of sensitive self-disclosures and social support of Instagram by Andalibi and colleagues. The researchers initially collected a dataset of around one hundred thousand pictures (also filtered out by a specific hashtag), later narrowing it down to less than eight hundred for the analysis phase (Andalibi et al., 2017).

Unsurprisingly, Facebook has also become a setting for a variety of content-analytic research designs. For example, Roffeei and colleagues tabulated nearly four



hundred postings and over three thousand comments left under those postings in two support groups for children with autism spectrum disorders. The researchers identified five types of social support being exchanged (“tangible assistance” was detected as well, although it constituted a tiny fraction of overall cases) and over twenty distinct themes within the support messages (Roffeei et al., 2015). Meanwhile, Davis and collaborators looked into the personal profiles of close to four thousand Facebook users and mined the text of over eight thousand postings and conversation threads below them. They were able to calculate both the average length of a post and the mean number of responses that followed it. The researchers also created two separate dictionaries of most frequently occurring terms and grouped them thematically; that way, they were able to determine that, for instance, using terminology related to family in a root publication resulted in over forty percent higher engagement (Davis et al., 2015). It is worth mentioning that when new taxonomies are not being developed deductively, based on web postings, old established inventories like the Social Support Behavioral Code (SSBC) by Cutrona and Suhr (1992) are usually used to supply coding categories (Coulson et al., 2007; Roffeei et al., 2015; Andalibi et al., 2017).

Lastly, the work of Hayes and collaborators (2016) serves as a rare example of the concept of online social support being studied through a purely qualitative research design (Hayes et al., 2016a). In this case, the researchers opted for focus groups and semi-structured interviews to study the perceptions of paralinguistic digital affordances (which are further discussed in the next section) on SNS and motivations for their use.

As this section aims to illustrate, there is a wide variety of research strategies that can be implemented in order to assess the concept of online social support in the context of social networking sites. It also shows that, much like with the conceptualization of SNS social support, multiple competing visions exist about its operationalization as well. Of course, the two problems are interrelated and mutually reinforcing. Nevertheless, the past ten years have seen a lot of progress towards a better understanding of online social support with, hopefully, even more to come.

## 1.5. THE IMPACT OF ONLINE SOCIAL SUPPORT AND ITS EFFECTIVENESS

This section is devoted to summarizing the effects of online social support as well as discussing the studies that highlight its effectiveness when compared with face-to-face social support and across different social networking services. The extant research into social support that is exchanged on social networking sites and by social networking sites' users has produced a substantial number of findings that indicate the existence of both positive and negative effects of SNS social support on other parameters of mental health.

Based on the existing publications, there are a number of ways in which using social networking sites can be beneficial to a person from a standpoint of promoting their social support. First of all, the amount of support people get from Facebook was found to increase with the frequency of its use (Oh et al., 2014). Since in the modern time social networking platforms are the place where one can expect to find the majority of one's friends and acquaintances, it also makes sense that people were shown to use social networking sites specifically to seek out social support (Carr et al., 2016). In another study, Nadkarni and Hofmann distilled the variety of popular motivations for using Facebook explored in the available literature as the search for two basic social needs: the need for self-presentation and the need to belong, which is directly related to social support (Nadkarni & Hofmann, 2012).

Not only can SNS like Facebook serve as additional venues (next to offline and face-to-face) for getting social support (McCloskey et al., 2015), it has also been demonstrated that they enhance real-world interpersonal relationships (Giota & Kleftras, 2014). In addition, SNS weaken the difference between social support from strong and weak ties; both categories can provide support of equitable quality through

the medium (Rozzell et al., 2014). Weak ties are also easier to activate in SNS contexts (Park et al., 2016) thanks to the reduced friction of online communication.

Other positive outcomes from online social support include increased life satisfaction and wellbeing, decreased depression and loneliness (Gilmour et al., 2019), increased health self-efficacy (Oh et al., 2013), and reduced level of stress (Meng et al., 2017) that is achieved by promoting resilience and stress coping (Chung et al., 2014). Online social support can have a particularly transformative effect on individuals with health-related problems. Thanks to the Internet adoption reaching nearly universal levels in some parts of the world, even people with the rarest conditions are able to connect with each other and share very specific types of support that accommodate their particular coping style (Wright, 2016). This is a case where online support is often more helpful than offline support.

A frequent concern with the environment of social networking sites (that was also voiced in the introduction to this study) is that it might breed negative social comparison in its users and thus dampen the perceptions of social support. Thanks to the open sharing and communication that SNS induce, its users are made aware of every major achievement in the lives of their friends, as well as the disparities in the amount of social support among their peers. The findings of Lee and Cho, which are based on over three hundred South Korean Facebook users from a national panel, appear to be concurrent with this view. The researchers found that perceived social support from friends was negatively correlated with social comparison among heavy Facebook users, but the relationship dissipated for light users (Lee & Cho, 2018). Nevertheless, Jang and collaborators did not detect a significant association between the propensity to engage in social comparison and the amount of perceived social support in a sample of more than three hundred and fifty South Korean college students (Jang, Park, & Song, 2016). The article's authors explain this by positing that the perceived differences in the measure of success and social support one's friends are enjoying online are probably not significant enough to impact one's subjective sense of social support availability.

However, there is still more countervailing evidence with regard to the effectiveness of social support online. In their survey of over five hundred American university students, Li and coauthors did not find a significant correlation between Facebook interaction and perceived general social support. Moreover, the data revealed that “giving social support online [did] not necessarily translate into a higher perception of being supported” (Li et al., 2015, p. 111), meaning that supportive interactions on SNS had limited consequences in the real world. In the same vein, Kim (2014) found that social support gained through Facebook had “no significant relationship” (p. 2214) with life satisfaction in an anonymous online survey of American undergraduate students (although using Facebook did statistically significantly increase the amount of social support in this sample). This conclusion, which seems to call into question the quality of online support versus traditional support was reached by directly comparing the amount of enacted social support received through friends on Facebook and the support gained from other means, such as face-to-face interactions and phone calls (Kim, 2014). Another study of American undergraduates, which also compared social support from the two channels, found that face-to-face support network satisfaction was more strongly correlated with reducing depression than the satisfaction with support from Facebook contacts (Wright, et al., 2012).

In addition, seeking and receiving online support through social networking sites was shown to be a predictor of SNS addiction in a survey of Chinese undergraduate student population (Liu & Ma, 2018). Furthermore, Tang and colleagues, whose 2016 paper was mentioned earlier, found that all three dimensions of online social support that they looked at (listed in the conceptualization section above) were strongly correlated with Facebook addiction in a sample of around eight hundred Taiwanese college students (Tang et al., 2016).

Sadly, the majority of social support research, including most of the studies that have been mentioned in this section so far, are based on convenience samples of various student populations (mostly in the US and East Asia), while randomized studies are few and far between. One such rare study was conducted by the Pew Research Center,

as part of the Pew Internet and the American Life Project. In late 2010, its researchers ran a first-ever telephone survey representative of the American population over the age of eighteen, which dealt with SNS usage. The sample included over two thousand respondents; only eighty percent of them were users of the Internet (Hampton, Goulet, Rainie, & Purcell, 2011).

Several interesting findings related to social support on social networking sites were found. The study concluded that active Facebook users had significantly more social support than non-Facebook users, including people who were users of the Internet in general (the data also showed that using the Internet by itself also gave a small boost in the average value of social support). The difference came from higher emotional support and companionship support, but not from instrumental support (although Internet users in general did enjoy a slightly higher level of tangible support, compared to non-Internet users). Additionally, active Facebook usage was correlated with a nine percent increase in the number of close ties when controlled for demographic factors (Hampton et al., 2011). Gender differences in online social support are also important to mention: in a recently published meta-analysis of thirty studies, Tifferet shows that women both give and receive more social support on SNS than men (Tifferet, 2020).

Making the big picture even more complex, Hayes and collaborators found that the effects of social support vary across different social networking sites (Hayes, Carr, & Wohn, 2016b), and not every SNS works the same for all categories of social support (Hayes et al., 2016a). Related to this, Chung and colleagues reported that usage of different services within a single SNS (Facebook, in their study), such as groups, events, and games, was correlated with differences in the amount of social support in a sample of Taiwanese college students (Chung et al., 2014). Of course, such conclusions are rather self-evident, given the existing landscape of social networking platforms. Even though, as was discussed earlier in this chapter, there is a list of certain hallmarks of an online social network, different SNS usually emphasize different patterns of social interaction, have a collection of distinguishing features and a

particular culture surrounding their use; taken altogether, these factors largely dictate the patterns of social support exchange on any given social website. Parenthetically, Hayes and colleagues also found that the Social Information Processing model could be applied in order to explain how social media users selected among different SNS based on their social support needs (Fulk, Steinfield, Schmitz, & Powell, 1987). Within the model, social influence and information from other users were the main factors in guiding these decisions (Hayes et al., 2016a).

A good illustration of the importance of inter-platform differences are the policies and norms that surround the sharing of personal information. On Facebook, users are generally expected to display their real identities, which includes using genuine profile pictures, names, and birth dates. Famously, the use of real names on the platform is strictly enforced by Facebook's terms of use, so people who prefer to use the SNS under alias are at risk of losing access to their accounts if somebody reports them (Drake, 2015). According to Kim, this might have repercussions for seeking social support on the site. One of the explanations she offered for her findings of lower efficacy of social support shared through Facebook was that "Facebook communication... is open to a wider social circle and often extended to public communication" (p. 2214). This openness hypothetically discourages people from discussing sensitive topics on the platform and seeking help from broad groups of people, since they do not want to reveal their real identities in association with certain kinds of problems (Kim, 2014).

Meanwhile, on Reddit users generally are not expected to display their real identities and the use of "throwaway" accounts is very common. This creates an environment where anonymity is much more widespread and as a result, users are significantly more inclined to practice sensitive self-disclosure, for example, more openly talk about their health issues. Furthermore, De Choudhury and De provide evidence that this anonymity does not influence the quality of social support users are able to get in a negative way. Their study found that posts on the subreddits related to mental health problems overall received comments of "surprisingly high quality" (p.

79), while anonymous posters enjoyed even higher than the usual number of comments, which offered not only actionable advice but also emotional support (De Choudhury & De, 2014).

All in all, the current studies provide both reasons to be enthusiastic about the potential of SNS social support and some reasons to be doubtful of it. Above all, they are a testament to the fact that the relationship between social networking sites usage, online social support, and other mental health parameters is rather complicated and calls for continued scholarly attention.

## **1.6 PARALINGUISTIC DIGITAL AFFORDANCES AS EVIDENCE OF THE DISTINCTIVENESS OF SNS SOCIAL SUPPORT FROM FACE-TO-FACE SOCIAL SUPPORT**

The question of whether the social support received or provided online is different in quality from the support exchanged in so-called “traditional” contexts has been a subject of a long-lasting debate (White & Dorman, 2001; Trepte et al., 2015; Liu & Ma, 2018). On the one hand, there is a view that social support sought and received in online and offline contexts is likely to be substantially similar (Blight et al., 2015). On the other hand, some researchers state that the support received over social networking sites is “unique [and] in many ways driven by their social and technical features” (Lin et al., 2016). There is arguably little doubt that technical details are what sets SNS apart from other social phenomena the most. Of these technological traits, paralinguistic digital affordances (sometimes abbreviated as PDAs) are arguably one of the most significant to the subject matter of this text.

As was mentioned earlier, a feature that is common for all major online social networking platforms is the ability for a user to engage with the publications from other

users without “commenting” on them or using language in any other way. For example, Facebook implemented a so-called “Like” button under each user-generated post on its site. The button gives the user a simple way to register how they are feeling about the content of a given post – do they find it funny, surprising, or just generally approve of it (like it)? – with a single click. These buttons, which are ubiquitous on other networking platforms as well, including LinkedIn and Instagram, are collectively called paralinguistic digital affordances in the literature (Carr et al., 2016; Wohn et al., 2016).

PDA's are conceptualized as “cues in social media that facilitate communication and interaction without specific language associated with their messages” (Hayes et al., 2016a). Paralinguistic digital affordances are considered a form of phatic communication. Since such communication carries “limited, or no, real information” (ibid, p. 173), it usually serves a facilitating role in an interaction, without being viewed as inherently meaningful by the communicating parties. PDA's are a “relatively unique affordance of social media” (Carr et al., 2016).

There has already been some research carried out into paralinguistic digital affordances. In their 2016 study, Hayes and colleagues interviewed around fifty respondents, mostly young adults, about PDA's in several social networking services, including Twitter and now-defunct Google+, and found that receiving “likes” was seen as a form of social support by multiple focus group respondents. “Likes” were also reported to be used as a form of relationship maintenance and relationship development. However, the researchers also discovered that the meanings ascribed to the same paralinguistic digital affordances were usually quite diverse, often highly idiosyncratic and they changed from one service to the other. To illustrate the last point: some services (Twitter, for instance) let users view the list of posts that they had “liked,” thus adding to the social function of “liking” the utilitarian function of filing publications for later viewing. Consequently, a receiver of a PDA on one of such services cannot always be certain of its message, since, as was explained previously,



PDAAs by their design do not carry with themselves any auxiliary information that could indicate the motivation for their use (Hayes et al., 2016a).

There has been, however, more evidence presented in favor of the “PDAAs as a form of social support” hypothesis, including from quantitative studies. Wohn and colleagues surveyed a sample of over three hundred people that was reflective of the US social media audience and found that receiving PDAAs was associated with perceived social support, especially for users who were highly self-conscious and had high self-esteem (Wohn et al., 2016). Carr and collaborators, who used a dedicated scale to measure the effectiveness of social support from PDAAs, also concluded that PDAAs can be perceived as social support, based on an online survey of around three hundred American adults that is “comparable to national demographics of social media users in the United States” (Carr et al., 2016, p. 388). When the uniqueness and pervasiveness of paralinguistic digital affordances on social networking sites are taken into account together with their demonstrated ability to convey social support, it is safe to assume that PDAAs are a large part of what makes SNS a unique environment for exchanging social support. In light of this, it seems appropriate to suggest that studies should incorporate the measurement of PDAAs into their strategies of gauging SNS social support.

Indeed, many studies of social support in the context of social networking sites already seem to be influenced by the aforementioned assumption; meaning, they either focus on people’s perception of PDAAs within a given social network or consider the quantity of PDAAs people receive. As was already mentioned in the previous section, McCloskey et al.’s measure of Facebook support included a statement “I am happy when people «Like» my posts.” (McCloskey et al., 2015). Additionally, De Choudhury and De deem Reddit “karma” (which is a criterion of net approval for the publications on the service, derived from the difference between the number of “upvotes” and “downvotes” they receive) a measure of social support in their study of Reddit health discussions (De Choudhury & De, 2014). Andalibi and collaborators gathered data about the number of “likes” under the posts that they pulled from Instagram and found

that some types of pictures were correlated with a significantly greater number of “likes” (Andalibi et al., 2017).

To summarize, this section provides a more detailed exploration of the discourse around the distinctiveness of SNS-based social support when compared to offline social support. It is done mainly through the lens of paralinguistic digital affordances, which are unique to SNS and have been shown to convey social support. This condition may be interpreted as particularly strong evidence in favor of the idea of online social support being qualitatively different from social support in face-to-face settings. Regardless of which side of the debate is correct in this case, social networking sites have certainly proved to be a powerful setting for the purpose of exchanging social support. This is the reason why there definitely is significant merit in focusing academic attention on the support that manifests itself directly on SNS and exploring it by using SNS-specific terms.

Summing up the entirety of this chapter, there is unquestionable evidence that access to social support and in particular the perception that such support is available fundamentally influence a person’s quality of life and their life chances. For their part, social networking sites have become indispensable to the life of a modern human being and figure heavily into the mechanisms by which he or she receives and provides social support, especially of the informational and emotional kind. Based on the recent findings concerning the paralinguistic digital affordances (or PDAs for short) of SNS, it seems highly likely that these mechanisms are meaningfully different from the mechanisms that are relevant to the offline exchange of social support. However, this matter needs to be carefully studied in order to avoid drawing erroneous conclusions.

So far, the burgeoning field of SNS-based social support research seems to be ambivalent about the nature of social support online, its structure, and the level of similarity with face-to-face social support. This has led to a pronounced lack of consensus about the way in which SNS-based social support should be properly conceptualized and operationalized, which is especially apparent among quantitative studies. This is troublesome since, as Meng and coauthors put it, “without clear

conceptualization of social support, it is unclear how it is connected theoretically and pragmatically to SNS usage” (Meng et al., 2017, p. 48). In addition, the absence of robust measures creates a barrier for appraising the impact of online social support interventions in health-related communities (Weiss et al., 2013) and other vulnerable segments of the population, such as LGBTQ youth (McConnell et al., 2017).

Considering the situation outlined above, the next chapter of this study aims to bring more clarity to the subject of SNS-based social support by describing the results of a study that was conducted in order to compare and contrast an endemic and a non-endemic measure of SNS social support, which embody the two highly prevalent quantitative approaches to assessing the construct. Hopefully, this work will encourage further progress in the field and bring the SNS research community closer to obtaining a more accurate picture of social support in online contexts as well as its interrelationship with other mental health factors.

## **CHAPTER 2. A COMPARATIVE STUDY OF TWO MAJOR APPROACHES TO MEASURING SOCIAL SUPPORT IN THE CONTEXT OF SNS**

### **2.1. STUDY DESIGN AND SAMPLE**

A self-report questionnaire was chosen as the sole method of data collection for this study (a Ukrainian-language original text of the questionnaire can be seen in Appendix A). It contained three scales taken from existing literature, all of which have already been discussed at some length earlier in the text. The first of these scales was the fourteen-item Facebook Measure of Social Support (FMSS) by McCloskey and collaborators (2015), which exemplified the endemic approach to measuring social support on SNS. It consisted of four factors: perceived social support (PSS, three items), emotional social support (ESS, four items), negative social support (NSS, four items), and informational/instrumental support (ISS, three items).

The non-endemic approach was epitomized by the three-component scale of “online social support on SNS,” which was compiled by Lin and colleagues (2016) through adapting a number of previously published scales. In their work, Lin et al. relied both on the literature that predated online social networks (Davis, 1989) and on modern studies of online communities (Phang, Kankanhalli, & Sabherwal, 2009; Chai, Das, & Rao, 2011). Out of a total of eleven items in the scale, the informational support (INFOS) subscale included three items, the emotional support (EMS) subscale consisted of four, as did the network management one (NETM). The instrument’s authors considered these three subscales only separately for their study and so they did not use some kind of a single abbreviated reference to all three in the text. However, in this study, in the interest of simplicity, these three measures will be collectively

referred to as the Online Social Support Scale (OSSS). Finally, the Multidimensional Scale of Perceived Social Support (MSPSS) by Zimet and coauthors (1988) was added as one of the most widely used inventories for measuring this type of social support. In each of the three scales chosen for this survey, every item was measured using a 7-point Likert scale with “Strongly disagree/Strongly agree” anchors.

The FMSS was selected as an especially illustrative example of an original online social support scale that utilizes endemic categories of SNS usage, such as “likes,” comments, and “friend” requests (McCloskey et al., 2015). The online social support scale by Lin and coauthors was chosen as an example of a scale that describes human interaction on SNS in more abstract and general terms, such as “I have frequent communication with others on my SNS.” (Lin et al., 2016) As none of the two scales have been sufficiently validated yet, the MSPSS was included for the purpose of comparison as the scale that proved to be one of the most reliable and extensively tested measures of social support (Hannan, Alce, & Astros, 2016). By analyzing the existing publications, it was discovered that there were no openly available Ukrainian translations of any of the aforementioned scales, so the scales were translated from English by the author of the study. The Facebook Measure of Social Support was the only scale to be slightly altered in the process: references to Facebook were replaced with references to “social networking sites.”

In the survey, the three scales were preceded by a short list of questions that gauged the intensity of SNS usage; namely, the frequency with which the respondent accessed the sites, how much time they spent on SNS per day, how many people they interacted with on SNS on an average day, and how frequently did they create postings on their personal SNS pages. Besides, the surveyed were asked in what range did their Facebook «friend» count fall into (if they were a user of Facebook). Finally, four sociodemographic questions were provided at the end of the questionnaire, namely, age, gender, relationship status, and the number of close friends. All the questions in the survey, save for the one about age, were multiple choice.

The survey questions, together with an introduction containing information on the respondent confidentiality and method of feedback, were entered into a Google form and the link to the form was circulated among the people who were students at Kyiv Mohyla Academy at the time when this study was conducted. This choice of an audience for this study makes sense since college students have been identified as one of the primary demographics who seek out social support on SNS, such as Facebook (Carpenter, 2012). The majority of the students who filled out the survey were reached through the mailing lists of their department cohorts, and a smaller portion was contacted via social networking sites directly by the researcher. No reward was offered by the researcher for the completion of the questionnaire. The data collection phase lasted from March 16<sup>th</sup> to March 29<sup>th</sup>, 2020. In all, 112 responses that were deemed valid had been received and processed. Afterward, the data was imported into version 23 of the SPSS statistical software package, and all the analyses cited below have been performed using this program.

Since the sample was not built in a systematic way (and also is not large enough), it cannot be considered as an accurate representation of the Kyiv Mohyla Academy's student community or any other demographic. This circumstance also denies the possibility to calculate a conventional sampling error. Additionally, due to the mechanics of disseminating online forms via mailing lists, it is not feasible to accurately estimate the response rate for this survey.

## **2.2. DESCRIPTIVE STATISTICS OF THE SAMPLE AND RELIABILITY TESTING OF THE SCORES**

The resulting sample is heavily female-biased (only a fifth of the respondents are male). The age of the people who completed the survey ranges from 17 to 25 ( $M = 20,07$ ,  $SD = 2,41$ ), with a skew towards younger students (the majority, or 62 out of 112,

are 20 years or younger), which is to be expected since people under 21 currently outnumber all the older age categories within the student body of Kyiv Mohyla Academy. The majority (about 6 out of 10) also indicated having no romantic partner. However, social support from friends usually was not lacking since the majority of 62 respondents reported having four or more close friends. Only 5 people out of 112 reported having a single close friend and mere 3 indicated having no close friends.

Since this study was aimed at active SNS users, the questionnaire was set up to prevent people who initially reported using social networking sites less than daily from completing the survey in full. All 112 cases that are considered for analysis in this text represent people who visit SNS at least once per day. However, of those almost no one reported “logging in” just once a day; the vast majority (around 80 %) declared using SNS more than five times per day. Also, a persuasive majority of the surveyed (slightly above two thirds) indicated spending on SNS upwards of two hours per day on average (out of those, roughly a quarter spent more than four hours), so the dataset is reasonably saturated with heavy social networks’ users. That said, the surveyed turned out to not be particularly active in terms of posting their content to SNS; during the three months leading up to the participation in the study, a little more than half of the respondents posted on their personal profiles no more than once per month, if at all.

To test the reliability of the multi-item measures used in the study, Cronbach’s alpha coefficients were calculated for all the scales and subscales that were included in the questionnaire. This procedure produced quite a wide range of results. The coefficient for the FMSS overall was 0,682, which is indicative of a “questionable” level of reliability but approaching “acceptable,” according to the guidelines provided by George and Mallery (2003). On the flip side, the FMSS subscales performed mostly better than their combination. Among them, the highest value of the coefficient was reached by the perceived social support items: 0,774 (“acceptable”); both emotional social support and instrumental social support subscales received a coefficient of 0,692. Negative social support subscale turned out to be the least internally consistent; its Cronbach’s alpha was only 0,618, slightly above the “questionable” threshold.

The OSSS performed considerably better, both overall and on the level of subscales. The informational support subscale was by far the most reliable, with an “excellent” Cronbach’s alpha of 0,975. The other two subscales also proved to have a high degree of internal consistency. The emotional support subscale received a coefficient of 0,809, and the network maintenance subscale received a coefficient of 0,840. Both figures are within the “good” range. The scale as a whole reached a Cronbach’s alpha of 0,875. Finally, the 12-item MSPSS once again proved to be highly reliable with a Cronbach’s alpha of 0,933.

In order to proceed with further analyses, the scores for all the scales mentioned above were calculated. Since the questions in all of them had common response sets, the procedure was pretty much identical in each case. The answers were recoded as follows: “Very Strongly Disagree” was replaced with “1,” “Strongly Disagree” with “2,” “Mildly Disagree” with “3,” “Neither Agree Nor Disagree” with “4,” “Mildly Agree” with “5,” “Strongly Agree” with “6,” and “Very Strongly Agree” with “7.” The only exception was the first item in the PSS subscale of the FMSS, which was reverse-scored as per the instructions in McCloskey and coauthors (2015). Afterward, the numbers were summed up for each subscale, as well as for the MSPSS, the OSSS, and the FMSS (excluding negative social support).

The scores obtained for the MSPSS revealed that the respondents in this particular sample enjoy, on average, quite a high level of subjective social support. With 84 being the highest possible score, the average stood at 72,75 (with a standard deviation of 12,49), and the median at 76. Only a quarter scored less than 70, while an impressive 19 out of 112 people received a perfect score. The distribution of the online social support scores is also offset towards the high end of the spectrum. The average OSSS score is 56,56 out of 77 (with a standard deviation of 12,56). The results of cumulatively scoring the three positive social support subscales of the FMSS also gravitate somewhat to the right on the distribution graph, with an average of 47,77 (with a standard deviation equaling 9,11). The distribution diagrams of all the three scores are included in Appendix B.



In addition to calculating these additive indexes, another preparatory stage was needed before proceeding with further analyses. It entailed testing the distribution of these indexes for normality. This needed to be done in order to determine, which of the tests should be used for assessing the correlation between the measures: a so-called “parametric” one like the Pearson correlation, which assumes a certain distribution of the data, or a non-parametric one like the Spearman rank-order correlation, which makes no distributional assumptions. To determine normality, the one-sample Kolmogorov-Smirnov and the Shapiro-Wilk tests (which are the SPSS defaults for testing this kind of assumption) were conducted for all the generated scores with a 95 percent confidence interval. The results are displayed in Table 2.1.

*Table 2.1.* Values for the distribution parameters of the scores used in the study.

	Kolmogorov-Smirnov test		Shapiro-Wilk test		Skewness	Kurtosis
	Statistic	Significance	Statistic	Significance		
Score						
FMSS	0,043	0,200	0,994	0,889	-0,038	-0,111
PSS	0,110	0,002	0,935	0,000	-0,810	0,395
ESS	0,058	0,200	0,988	0,416	-0,185	0,148
ISS	0,109	0,002	0,970	0,012	-0,394	-0,338
NSS	0,148	0,000	0,903	0,000	0,911	0,234
OSSS	0,072	0,200	0,975	0,032	-0,356	-0,479
EMS	0,090	0,027	0,966	0,006	-0,514	-0,161
INFOS	0,154	0,000	0,879	0,000	-0,837	-0,219
NETM	0,109	0,002	0,925	0,000	-0,891	0,501
MSPSS	0,184	0,000	0,811	0,000	-1,847	4,258

The null hypothesis of both of these tests is that the variable being tested has normally distributed values. The significance of the test, also known as p-value, is the probability of rejecting a null hypothesis even though it is true in the statistical population (also known as making a type I error). Since the statistics for all ten variables were calculated with a 95 percent confidence interval, only a p-value lower than 0,05 can warrant the rejection of the null hypothesis regarding the normal distribution in a variable.

Skewness and kurtosis are the two more ways that can be used to judge how close a variable's distribution is to the normal distribution. Skewness measures the degree of asymmetry between the parts of the distribution to the left and to the right relative to its mean. The normal distribution has a skewness of zero; positive skewness indicates that the majority of the observations are concentrated on the left side of the distribution, while negative skewness means the opposite. According to Table 2.1, The MSPSS score has the largest skewness among the scores being analyzed, which is no surprise considering the earlier comments about its conspicuously large share of high values.

Kurtosis measures how long the distribution's "tails" are, thus also revealing how much is the weight of outliers in a distribution. The normal distribution has a kurtosis of three; kurtosis of less than three indicates that the variable's distribution has fewer outliers than normal distribution does and vice versa. Based on the numbers in Table 2.1, the distribution of the MSPSS scores is the closest to normal out of all the scores when it comes to the number of outliers and their extremity.

However, regardless of its kurtosis, the MSPSS scores' distribution was conclusively shown to not exhibit normality, as was the case with most other indexes. On the whole, the results of the normality tests have indicated that in the present study there are only two social support scores whose distribution unambiguously resembles normal: the FMSS and its emotional support subscale. The OSSS score proved to be normally distributed according to the results of just the Kolmogorov-Smirnov test, but this is probably not a sufficient sign of normal distribution in the variable since this test was not devised specifically to test normality, and there is evidence that it is conservatively biased, meaning, its p-value often skews towards overestimating the strength of null hypothesis (Steinskog, Tjøstheim, & Kvamstø, 2007). Since there is little merit in correlating a score of a scale with one of the subinventories of that scale, all correlation analyses in this study will be done using the non-parametric Spearman rank correlation test. An additional benefit of using this test instead of the Spearman's is that its results are less sensitive to outliers in the data, which are present for some variables in this sample (notably, the MSPSS score), primarily due to its small size.

### **2.3. RESULTS OF CORRELATING THE SNS SUPPORT SCORES WITH THE MSPSS SCORE**

Running the Spearman correlation test in SPSS produces two values that are important to this study: first, the correlation coefficient, also known in this context as Spearman's rho, which ranges from -1 to 1; second, the two-tailed significance of this coefficient (which ranges from 0 to 1). The coefficient itself measures the degree of linear association between two variables, crucially, without implying a causal relationship. The coefficient's significance, as in the case of the normality tests, is the probability of making a type I error. For this test, the null hypothesis is that Spearman's rho is zero, meaning, the two variables are not correlated. Therefore, a low significance value will usually indicate that the evaluated variables are indeed correlated. For all the correlation testing, a 95-percent confidence band will be used once again. Thus, the two-tailed significance will have to dip below 0,05 in order to constitute sufficient reason to reject the null hypothesis. Since this procedure tests simultaneously for both the positive and the inverse correlation scenarios, the significance value is called two-tailed. It is generally considered that in behavioral sciences a correlation coefficient (also referred to as the effect size) of 0,5 or higher indicates a strong correlation, while an effect size for correlation of 0,1 or lower is a sign of weak correlation (Cohen, 1992).

To begin with, the strength of the relationship between the online social support scales and the MSPSS is tested. The existence of a correlation between SNS social support and perceived social support in general, irrespective of the medium, is a reasonable assumption to make not only due to the character of the association between the two concepts but also because a statistical connection of this manner between them was revealed in earlier studies (Indian & Grieve, 2014). What follows is the analysis of the composite score of the three positive social support factors from the FMSS, as well as the FMSS subscales individually. Here, one should a priori assume a positive

linear relationship between the MSPSS and all four subscales except for one, which, appropriately, is called “negative social support” (it, in turn, is expected to be inversely correlated with the “global” social support).

As Table 2.2 shows, the results produced by the test indicate that the two scales are for the most part moderately correlated. The biggest effect size with the widest confidence interval was found for the score of informational and instrumental social support on SNS; the perceived SNS social support score, encouragingly, has also shown a high degree of positive correlation with the global measure. Negative social support turned out to be inversely correlated, as hypothesized. However, the test indicated with very high confidence that there is no linear relationship between the MSPSS and the emotional SNS support subscale of the FMSS. Finally, a modest but statistically significant amount of correlation was also found between the MSPSS score and the composite score for the three positive types of support within the FMSS scale.

*Table 2.2.* Results of the Spearman correlation test with the MSPSS for the FMSS and its subscales (N = 112).

<b>Score</b>	<b>Spearman's rho</b>	<b>Significance (two-tailed)</b>
FMSS (three positive scores)	0,218	0,021
PSS	0,241	0,011
ESS	-0,001	0,992
ISS	0,311	0,001
NSS	-0,196	0,039

Next up is the appraisal of the MSPSS vis-à-vis the OSSS, a non-endemic SNS social support measure. Here, all of the scores were expected to exhibit a positive relationship with the classic measure. As the figures provided in Table 2.3 show, the effect sizes were generally in the same ballpark as in the case of the FMSS, but the detailed results are different. Here, unlike in the previous test, the emotional SNS support measure has demonstrated its correlation with the MSPSS with a very high degree of confidence. Meanwhile, informational SNS support was shown to lack a linear relationship with the MSPSS with very little margin for error. The scale as a

whole proved to be correlated with the validated inventory at about the same level, as the FMSS, which is to say, moderate, but statistically significant. Although, when directly comparing the coefficients for the two SNS support scores, the OSSS has a slight edge over the FMSS.

*Table 2.3.* Results of the Spearman correlation test with the MSPSS for the OSSS and its subscales (N = 112).

<b>Score</b>	<b>Spearman's rho</b>	<b>Significance (two-tailed)</b>
OSSS	0,230	0,015
EMS	0,317	0,001
NETM	0,232	0,014
INFOS	-0,037	0,702

Turning the attention briefly to some inter-SNS support correlations, there are two pairs of subscales in both SNS social support inventories that share the aspect of online social support, which they are intended to measure. First, both comprehensive measures of online social support have an informational support subscale; second, both scales contain a dimension of emotional support. The emotional support subscores are moderately but significantly correlated ( $\rho = 0,347$ ,  $p$  approaches zero), while the informational support subscales do not seem to be correlated ( $\rho = 0,114$ ,  $p = 0,23$ ). Finally, the OSSS and the positive dimensions of the FMSS show quite a strong linear relationship between each other ( $\rho = 0,627$ , at near-zero significance level).

#### **2.4. RESULTS OF THE ONE-WAY ANOVA TESTS FOR SNS SUPPORT SCORES AND SNS USAGE PARAMETERS**

Another useful way to compare the validity of our two SNS social support scales, as well as their reliability, is to look at how their scores change with regards to some

common SNS usage measures (also frequently referred to as the “SNS intensity” variables in SNS literature) that were included in the survey, such as daily time spent on SNS or the level of SNS activity in terms of making postings. So far, there have been several studies published that had looked at the relationship between SNS use parameters and online social support. Thanks to this, some a priori assumptions can be developed about the character of the relationship to be found between the data in this survey. For example, the number of Facebook friends was found to positively correlate with SNS social support (Nabi et al., 2013). Additionally, self-presentation has been linked to increases in online social support as well (Gilmour et al., 2019). In light of this, a positive relationship between the reported frequency of posting to SNS or the number of Facebook friends and SNS support scores should be expected. That the time spent on SNS as well as the number of people interacted with on SNS will both be associated with increases in SNS social support also seems like a plausible hypothesis given the previously mentioned evidence (Oh et al., 2014).

To test these assumptions, the procedures like a one-way analysis of variance (ANOVA) or an independent-samples t-test can be utilized. However, since all the relevant SNS intensity measures in this study make use of ordinal scales with four to six categories, the ANOVA test will be used exclusively (while some categories inside independent variables will have to be collapsed together due to their small size). The linear regression method had to be ruled out since this study does not measure any SNS usage parameters at a continuous level.

Before beginning the analysis, all the SNS usage variables were recoded in some way to achieve more uniformly filled categories and to eliminate poorly saturated ones. In general, two of the following rules were followed: keep the category’s size above 25 but below 50. The SNS usage frequency was the only SNS intensity variable that had to be omitted from the analysis entirely. This was caused by its distribution being highly skewed: approximately 80 percent of cases fell into a single category.

The other four variables were recoded as follows: in the “daily SNS usage time” variable (*SNStime*), categories “less than 1 hour” ( $n = 3$ ) and “1-2 hours” ( $n = 32$ ) were

merged into the “up to 2 hours” category; in the “daily number of people interacted with on SNS” variable (*SNSpeople*), options “10-12” (n = 18), “13-15” (n = 5), and “15 and more” (n = 11) were merged into the “10 and more” category; in the “SNS posts frequency” variable (*SNSposts*), categories “multiple times daily” (n = 1), “daily” (n = 1) and “multiple times per week but less than daily” (n=11) were collapsed into the “multiple times weekly” category; finally, in the “Facebook friend count” variable (*FBfriends*), answers “101-200” (n = 18) and “201-400” (n = 23) were integrated into the “101-400” category, while options “401-600” (n = 8) and “more than 600” (n = 20) were recoded into the “more than 400” category; the 13 respondents that reported having no Facebook account were identified as system-missing.

A One-Way ANOVA test in SPSS is used to detect any statistically significant differences between the means of a variable within categories of another variable (the latter is also known as a factor). Its default hypothesis is that all the means of a dependent variable are equal within all the categories of an independent variable. Consequently, the alternative hypothesis is that out of all the categories of a factor at least two have different mean values of a dependent variable.

One of the assumptions of the One-Way ANOVA test is the homogeneity (or equality) of variances in the groups of an independent variable. Therefore, along with the means test, Levene’s homogeneity test will be performed, which allows to control for this assumption. The test’s null hypothesis is that all groups of a factor have equal variance (the alternative hypothesis is that at least two of them do not). The outcome of this test determines which procedure should be used to actually check the equality of intra-factor means (the F-test, if the homogeneity of variance condition is satisfied, the Welch’s ANOVA test if it is not), and, in case differences are found, which post-hoc test to use to describe their direction (the Tukey test if the data meets the homogeneity of variance assumption, the Games-Howell test if it does not). Hereafter, all the tests will be performed with a confidence level of 95 percent.

First, the One-Way ANOVA was used to analyze the FMSS scores. The results of Levene’s homogeneity test indicated that these SNS support scores had equal

variances in the categories of three SNS intensity variables out of four (the variable *SNSposts* violated this condition). This provided an opportunity to proceed with the rest of the One-Way ANOVA test and calculate the F-test statistic and its significance. However, as the data from Table 2.4 shows, the F-test indicated sufficient evidence for rejecting the null hypothesis only in the case of the *SNSpeople* variable. Since *SNSposts* turned out to be the one variable that violated the homogeneity of variances assumption, it was analyzed for equality of means using the Welch test. The results of Welch's ANOVA for *SNSposts* also warranted the assumption that there is a statistically significant difference between the means of the FMSS score in the categories of *SNSposts* ( $p = 0,005$ ). The detailed results of the relevant post-hoc tests for *SNSpeople* and *SNSposts* are provided in Appendix C.

*Table 2.4.* Results of the One-Way ANOVA tests with the three-dimension FMSS score as the dependent variable (N = 112).

SNS usage variables	Levene's Homogeneity Test		One-Way ANOVA	
	Statistic	Significance	F-test Statistic	Significance
<i>SNStime</i>	0,024	0,977	3,059	0,051
<i>SNSpeople</i>	0,24	0,787	5,892	0,004
<i>SNSposts</i>	4,043	0,009	5,104	0,002
<i>FBfriends</i>	2,173	0,119	2,254	0,111

Next, the One-Way ANOVA test was performed with the OSSS score as a dependent variable. Again, as Table 2.5 shows, all variables except for *SNSposts* were found to exhibit homogeneity of variances among their subcategories. The F-test results indicated that there were two variables, *SNStime* and *SNSpeople*, in which the mean of the OSSS scores differed between at least two subcategories. However, after being analyzed using Welch's ANOVA, the *SNSposts* variable was also able to join this list ( $p = 0,009$ ). The detailed results of the relevant post-hoc tests for *SNStime*, *SNSpeople*, and *SNSposts* are provided in Appendix D.



Table 2.5. Results of the One-Way ANOVA tests with the OSSS score as the dependent variable (N = 112).

SNS usage variables	Levene's Homogeneity Test		One-Way ANOVA	
	Statistic	Significance	F-test Statistic	Significance
<i>SNStime</i>	0,331	0,719	3,672	0,029
<i>SNSpeople</i>	1,451	0,239	11,671	0,000
<i>SNSposts</i>	3,033	0,032	4,859	0,003
<i>FBfriends</i>	1,594	0,209	1,572	0,213

Overall, the statistically significant differences of means in both scores have confirmed the hypothesized relationships between most SNS intensity variables. The growth in the average amount of time a respondent spends on social networking sites was accompanied by an increase in their OSSS score. The mean support difference between the two *SNStime* categories furthest from each other (“Up to 2 hours” and “More than 4 hours”) was 7,73 points, with a significance of 0,036). Also, the means of both online support scores rose in conjunction with increases in the average number of people interacted with in the context of SNS. The difference in support between the furthest two *SNSpeople* categories (“Up to 5” and “10 and more”) was 6,84 points in the case of the FMSS ( $p = 0,003$ ) and almost exactly 13 points in the case of the OSSS, with the significance value approaching zero.

The assumption that the amount of self-presentation on social platforms (a more technical way to describe making publications on behalf of one's personal SNS page) is positively related to the level of social support was also borne out by both SNS support measures. The difference in support scores between the respondents in the last and the first category of the *SNSposts* variable's response set (“Did not post at all” and “Multiple times per week”) was 9,76 points for the FMSS ( $p = 0,028$ ) and 12,8 points for the OSSS ( $p = 0,007$ ). The number of friends on Facebook was the only variable tested whose categories did not have a statistically significant difference in either online social support score.

## 2.5. DISCUSSION OF THE RESULTS

The results of the correlation and variance tests described in the previous sections offer a great deal of insight into the reliability and validity of the two online social support measures – the Facebook Measure of Social Support (FMSS) and the Online Social Support Scale (OSSS) – that have been investigated throughout this study. Although these results do not engender some extremely clear-cut conclusions about the superiority of one measure over the other, they nevertheless offer a basis for some preliminary judgments about the merits of the endemic versus the non-endemic approach to measuring SNS-based social support.

The results of correlation tests are slightly more favorable to the Online Social Support Scale. First of all, it showed a somewhat higher level of convergent validity relative to the MSPSS, a standard perceived social support measure. The three subscales of the OSSS were also marginally better correlated with the MSPSS, in comparison to the four factors comprising the Facebook Measure of Social Support. That said, neither scale and none of the subscales demonstrated a level of correlation with the MSPSS that could be recognized as “strong.” The values for the effect size detected during the analysis reached slightly above 0,3 at most, which is considered “moderate,” according to authoritative recommendations (Cohen, 1992).

The worst-performing subscale of the OSSS correlation-wise was the informational support ( $\rho = -0,037$ ,  $p = 0,702$ ), although, with one caveat. This subscale had the highest homogeneity of scores out of all the measures employed in this survey, probably since the three items it contained all posited essentially the same statement (the items, as presented in the original article by Lin and colleagues, read “I *frequently* use SNS to seek information I need.”, “I *regularly* use SNS to seek information I need.”, and “I *often* use SNS to seek information I need.”). This arrangement was inherently limiting the amplitude of correlation that could be detected between the

INFOS and other scores. Incidentally, this circumstance was also the cause behind the unusually high internal consistency indicator that was reported for this subscale in the second section of this chapter and it probably contributed to the lack of significant correlation between the INFOS and the sub-inventory of the FMSS, the ISS, which was also responsible for the dimension of informational social support.

In the case of the FMSS, the score with the poorest correlation values to the MSPSS was based on the emotional support subscale ( $\rho = -0,001$ ,  $p = 0,992$ ). Potentially, such a finding is especially detrimental to the validity of the “endemic” approach to measuring SNS-based social support, since, among all the FMSS factors, the EMS made the most use of the categories that center on SNS usage, such as “likes,” comments and notifications. Also, the measure demonstrated noticeably poorer internal consistency metrics. The negative social support subscale stood out with a Cronbach’s alpha of 0,618, which is close to being unsatisfactory.

When it comes to the results of the one-way variance tests, the Online Social Support Scale again seems to be a better, more reliable instrument than the Facebook Measure of Social Support. For starters, the OSSS scores were meaningfully different among more SNS intensity variables: three instead of two, as in the case of the FMSS. Both measures detected significant differences in the level of support for respondents with different numbers of people they interacted with on SNS per day (the more interactions, the higher was the support) and for respondents with different rate of posting updates to their personal SNS pages (the higher the frequency, the higher was the support). However, a statistically significant difference in social support for people that spend different amounts of time on SNS was detected only among the OSSS scores (the amount of support rose with the amount of time dedicated to SNS).

Moreover, the confidence intervals for the differences in scores were wider on average for the OSSS, compared to the FMSS. Plus, standardizing the two scores to account for a slight difference in the size of the two inventories (the FMSS without the negative social support factor consists of ten items, while the OSSS contains eleven items in total) revealed that the gap in mean OSSS scores between the edge categories

of the *SNSpeople* factor was considerably larger than in the case of FMSS (about 38 percent larger, to be exact). At the same time, the difference in mean scores for maxima and minima of the *SNSposts* variable was similar between the two inventories (standardizing the scores produced a difference that was below 3 percent).

There was just one highly visible discrepancy with the OSSS scores' data, where in the case of the *SNSposts* variable (which gauged the frequency of making publications on SNS) the scores did not follow a consistent growth trajectory. While an overall trend was the more frequently a respondent category posted, the greater their average amount of SNS support was, a "monthly or less" group turned out to have more support than the "multiple times monthly" group (the FMSS scores did not exhibit this dissonance). However, the detected difference was highly insignificant statistically (the likelihood of type I error exceeded 0,8), so it was probably just an artifact of the small number of cases. What is more, the raw number of statistically significant inter-category differences was found to be equal for the two online social support scores, so it is entirely possible that having more data to work with would tip the balance in favor of the FMSS instead of the OSSS.

The number of Facebook friends was the only variable out of the group of four SNS usage variables that has not pointed to any substantial differences in online social support among the different clusters of the respondents of this study. One possible explanation for this is that the surveyed population was, as stated in the second section of this chapter, quite young, and therefore a substantial portion of them likely have not been active users of Facebook, relying more heavily on messengers and other social networking sites for satisfying their support needs instead. Even though they were registered on the platform, they probably rarely visited it and were not actively pursuing the expansion of their friend lists; hence, their low Facebook friend numbers did not actually reflect the extent of their social networks being limited. If true, this assumption means that the reliability of Facebook friend data gathered for this survey could have been negatively impacted.

However, there is another possibility; that these two parameters are simply correlated in a non-linear way. Kim and Lee hypothesize that while having too few Facebook friends will lead to a shortage of social support, having too many of them, say, a few hundreds or even thousands (the current limit for the social network is five thousand) will not necessarily translate into a commensurate increase in support since most of these “friendships” will be superficial or dormant. At the end of the day, maintaining a friendly relationship requires a considerable investment of time and effort (Kim & Lee, 2011).

Summing up the results of the statistical tests, the “non-endemic” three-factor online social support inventory developed by Lin and colleagues (2016), which in this study for brevity was also referred to as the Online Social Support Scale, has a somewhat higher level of validity and reliability than the “endemic” Facebook Measure of Social Support by McCloskey and coauthors (2015). It is important to stress once again that the findings produced by this study are far from definitive due to its limited scope and some compromises in data gathering that needed to be made due to external circumstances. More details about the limitations of this study are provided below.

## CONCLUSION

This study aims to enhance the effectiveness of the tools for measuring social support in the context of social networking sites (or SNS). It draws on a sample of 112 young active SNS users, the data for which were gathered via an online form. It uses the Facebook Measure of Social Support by McCloskey and collaborators (2015), also known as the FMSS, and a collection of inventories from Lin and coauthors (2016), here also referred to as the OSSS, as representations of the two major approaches to measuring online social support that are used in academia today: the so-called “endemic” approach and the “non-endemic” approach. The results of the two scales and their subscales are compared with the cross-culturally validated Multidimensional Scale of Perceived Social Support by Zimet and colleagues (1988), as well as a short list of SNS usage parameters, namely the amount of time spent on SNS daily, the number of people directly interacted with on SNS per day, the frequency of posting updates to SNS, and the number of Facebook friends.

The results of comparison tests and analysis of variance for the two scales indicate that both instruments can be effective in measuring online social support. The two inventories have demonstrated similar convergent validity with the classic MSPSS measure. The scores of the two scales also followed hypothetically suggested patterns of relationship between the level of SNS support and some of the SNS usage (sometimes also referred to as SNS intensity) parameters. The amount of support as measured by at least one of the two scales grew in unison with more time spent on SNS, more people interacted with on SNS, and more frequent posting to SNS.

As to which of the scales is better suited for its purpose, the results of this study offer tentative evidence in favor of the non-endemic measure, the OSSS. First, the OSSS has demonstrated although still moderate, a slightly stronger positive correlation with the MSPSS, compared to FMSS. Also, one of the FMSS’ factors (emotional

support), which heavily featured endemic SNS categories in the wording of its items, showed almost no correlation with the established measure, possibly casting doubt not only on the viability of the scale but also on the approach it represents. Second, the additive score based on the OSSS showed statistically meaningful differences in support for the subgroups of three SNS intensity variables: the amount of time spent on SNS, the number of people interacted with on SNS, and the frequency of posting. Meanwhile, in the case of the FMSS, statistically significant differences in the mean score were detected only for two SNS usage variables: the number of people interacted with on SNS and the frequency of posting. That being said, the differences that reached the threshold of 95 percent statistical significance were usually detected only between the two most extreme values of each factor included in the variance analysis.

It is difficult to say how much stock can be put in this data due to heavy limitations that impacted its collection. However, granted that the mild differences between the scales have been detected reliably, one possible explanation for the underperformance of the FMSS compared to the OSSS is that the new affordances of social networking sites for expressing social support, such as “like” buttons, are not able to deliver social support as effectively as the more conventional mediums of oral and verbal communication. This is also evidenced by a 2016 study by Burke and Kraut, which found that “lightweight” methods of SNS engagement, such as Facebook “likes” and “pokes” did not result in an increased perception of social support in their recipients. If this is the case, it motivates the following takeaway: focusing on measuring phatic, one-click communication patterns of SNS is probably not justified empirically, despite their ubiquity. Instead, researchers should conceptualize SNS-based social support using categories similar to offline support and pay greater attention to traditional formats of human interaction that are also accommodated by social platforms. Also, even if this hypothetical model is correct, other popular forms of user engagement on social networking sites, like posts and comments, should not be discounted.

As was alluded to previously, the highly cautious conclusions of the present study are the consequence of its lengthy list of limitations. Among them first and foremost is

a small sample size. It is likely that the low number of respondents is the primary factor that prevented this study from producing more definitive results. Also, the sample is not sufficiently diverse. It is predominantly female and is limited to a specific demographic category, namely, college students. There is a certain likelihood that expanding the diversity of the study participants would significantly alter its results.

Another important limitation is that the 112 cases for this study were gathered in a non-systematic way. Therefore, the obtained results are not generalizable and represent only the people that participated in the survey. Moreover, due to the inability to distribute the survey in face-to-face settings, it was delivered to respondents electronically. This meant that its completion could not be controlled by the researcher. Sometimes the link to the questionnaire was simultaneously targeted at a large group of potential recipients, likely resulting in a certain degree of self-selection bias. Additionally, in an effort to shorten the completion time and thus alleviate the generally low response rates observed among the student population for online surveys, the number of items in the questionnaire was kept purposefully low, leaving only the most essential variables and limiting nearly all of them to ordinal measurement type (even though some variables, such as Facebook friend count, could have substantially benefited from being measured on a metric scale).

Plus, a cultural factor could have played a role. Since the study relied on translated questionnaires, which were originally developed for the American population, they probably bore some regional context, which was not adapted to the Ukrainian culture and could have created space for some misunderstanding and misperception. A compounding problem is that there is evidence of different cultures using social networking sites in different ways and ascribing disparate levels of importance to the same functionality on the sites (Vasalou, Joinson, & Courvoisier, 2010).

Future studies of this variety should consider diversifying and scaling up their respondent bases, striving for the generalizability of the data (in particular, by improving gender parity). Increasing the set of variables that are used to operationalize



SNS behavior is also recommended. For example, it would be beneficial to investigate self-presentation more in-depth, taking into account not just posts, but also comments and profile pictures. Also, where possible, social media usage data can be gathered via content-analytic strategies, which greatly improves its reliability and cuts down on the amount of resources. This also can be one of the avenues to procuring more granular, continuous data on various metrics of SNS experience, which would pave the road to using regression and other more sophisticated statistical techniques on the SNS data. Conducting studies focused on a single SNS, such as Instagram, instead of social networking sites as a whole is also worthwhile, since, as some research has already indicated, different social networks can have quite different user dynamics and encourage different patterns of exchanging social support. Furthermore, accounting for a regional context should be seriously considered; consulting cultural experts when adapting instruments from other countries is preferable.

Lastly, more of the different scales should be tested together and compared. This study singled out just two measures of the dozens that were found in the literature. Importantly, the progress in this regard could be greatly improved by a more open sharing of the measurement tools used in a given research. Too often social support researchers do not provide enough details about the instruments they create or choose for their projects. The process of selecting SNS social support inventories to be used in the present study was significantly complicated by the fact that a significant portion of the existing publications provided either incomplete or even next to no information about the content of their survey instruments in the article's text.

The present study should be considered as just the first step in an inquiry into the methodological underpinnings of SNS-based social support research. Hopefully, it also makes a contribution to the broader discussion about the advantages and disadvantages of using endemic SNS categories to explicate concepts relevant to SNS experience. The fast-changing nature of social networking sites as well as the current lack of consensus about the ways to conceptualize and operationalize SNS-based social support, also described in this text, necessitate further attention to this study's subject.

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## APPENDIXES

### Appendix A

Вітання!

Мене звати Роман Любенко, і я проводжу збір даних для свого дипломного проєкту.

Я звертаюся до Вас із проханням приділити 5-7 хвилин свого часу, щоб заповнити нижченаведену анкету. Надана Вами інформація допоможе мені в дослідженні явища соціальної підтримки на сайтах соціальних мереж.

Вашим відповідям гарантується конфіденційність; до індивідуальних анкет матиме доступ тільки дослідник, а всі результати опитування будуть подані лише в узагальненому вигляді. Якщо у Вас виникли запитання щодо анкети, Ви можете зв'язатися зі мною через імейл: [rlyubenko@gmail.com](mailto:rlyubenko@gmail.com).

Дуже дякую за Вашу допомогу в дослідженні!



<b>7. Будь ласка, вкажіть, наскільки Ви згодні з нижченаведеними твердженнями (або якою мірою вони відображають Вашу ситуацію).</b>	Зовсім не погоджуюсь	Здебільшого не погоджуюсь	Частково не погоджуюсь	Ані погоджуюсь, ані не погоджуюсь	Частково погоджуюсь	Здебільшого погоджуюсь	Повністю погоджуюсь
7.1. Соціальні мережі не надають жодної справжньої допомоги чи підтримки для мене	1	2	3	4	5	6	7
7.2. Підтримка, яку я отримую в соцмережах, корисна мені на практиці	1	2	3	4	5	6	7
7.3. Підтримка, яку я отримую в соцмережах, покращує моє самопочуття	1	2	3	4	5	6	7
7.4. Я радію, коли люди коментують мої публікації в соцмережах	1	2	3	4	5	6	7
7.5. Я радію, коли люди «лайкають» мої публікації в соцмережах	1	2	3	4	5	6	7
7.6. Мені подобається отримувати нове	1	2	3	4	5	6	7



сповіщення (“notification”) від соцмережевого сервісу							
7.7. Якщо я заходжу в соцмережі, а там немає нових сповіщень, мене це засмучує	1	2	3	4	5	6	7
7.8. Я отримую багато негативних реакцій у соцмережах	1	2	3	4	5	6	7
7.9. Коли число моїх «друзів»/підписників у соцмережах зменшується, мене це непокоїть	1	2	3	4	5	6	7
7.10. Я засмучуюсь, якщо хтось не приймає мій запит на «дружбу» в соцмережах	1	2	3	4	5	6	7
7.11. Соціальні мережі насправді змушують мене почуватися менш близьким/-ою до інших людей	1	2	3	4	5	6	7
7.12. Якщо мені потрібна якась допомога, я можу зробити публікацію в соцмережах і отримати необхідну мені поміч	1	2	3	4	5	6	7

7.13. Якщо мені потрібна інформація про щось, я можу зробити публікацію в соцмережах та отримати цю інформацію	1	2	3	4	5	6	7
7.14. Я задоволений/-на тим, наскільки інші люди взаємодіють зі мною в соцмережах	1	2	3	4	5	6	7

<b>8. Будь ласка, вкажіть, наскільки Ви згодні з нижченаведеними твердженнями (або якою мірою вони відображають Вашу ситуацію)<sup>1</sup>.</b>	Зовсім не погоджуюсь	Здебільшого не погоджуюсь	Частково не погоджуюсь	Ані погоджуюсь, ані не погоджуюсь	Частково погоджуюсь	Здебільшого погоджуюсь	Повністю погоджуюсь
8.1. Коли я стикаюся з проблемами, є люди в соцмережах, які підтримують мене	1	2	3	4	5	6	7
8.2. Я часто використовую	1	2	3	4	5	6	7

<sup>1</sup> Під «людьми в соцмережах» у запитаннях цього блоку маються на увазі всі люди, з якими Ви взаємодієте через соцмережі в повсякденному житті: знайомі й незнайомі Вам, Ваші близькі, друзі та колеги.

соцмережі, щоб шукати інформацію, яка мені потрібна							
8.3. Коли я стикався/-лась із проблемами, в соцмережах знайшлися люди, які втішили й підбадьорили мене	1	2	3	4	5	6	7
8.4. Я підтримую близькі соціальні зв'язки з іншими людьми в соцмережах	1	2	3	4	5	6	7
8.5. Я проводжу багато часу взаємодіючи з іншими людьми в соцмережах	1	2	3	4	5	6	7
8.6. Коли я стикався/-лась із проблемами, то я міг/могла обговорити свої почуття приватно з людьми в соцмережах	1	2	3	4	5	6	7
8.7. Я регулярно використовую соцмережі, щоб знайти інформацію, яка мені потрібна	1	2	3	4	5	6	7
8.8. Коли я стикався/-лась із проблемами, то деякі люди в соцмережах	1	2	3	4	5	6	7

висловлювали інтерес та стурбованість моїм становищем							
8.9. Я знаю деяких інших людей у соцмережах на близькому рівні	1	2	3	4	5	6	7
8.10. Я часто спілкуюся з іншими людьми в соцмережах	1	2	3	4	5	6	7
8.11. Я часто користуюся соцмережами, щоб знайти необхідну мені інформацію	1	2	3	4	5	6	7

<b>9. Будь ласка, вкажіть, наскільки Ви погоджуєтесь із нижченаведеними твердженнями.</b>	Цілковито не погоджуюсь	Здебільшого не погоджуюсь	Частково не погоджуюсь	Ані погоджуюсь, ані не погоджуюсь	Частково погоджуюсь	Здебільшого погоджуюсь	Цілковито погоджуюсь
9.1. У моєму житті є хтось, хто поруч, коли я в біді	1	2	3	4	5	6	7
9.2. У мене є хтось, із ким я можу розділити свої радощі й біди	1	2	3	4	5	6	7

9.3. Моя сім'я справді намагається мені допомогти	1	2	3	4	5	6	7
9.4. Я отримую емоційну допомогу й підтримку, які мені потрібні, від своєї сім'ї	1	2	3	4	5	6	7
9.5. У моєму житті є людина, яка служить джерелом розради для мене	1	2	3	4	5	6	7
9.6. Мої друзі справді намагаються мені допомогти	1	2	3	4	5	6	7
9.7. Я можу покластися на своїх друзів, коли в мене щось негаразд	1	2	3	4	5	6	7
9.8. Я можу обговорити свої проблеми з сім'єю	1	2	3	4	5	6	7
9.9. Я маю друзів, із якими можу ділитися своїми радощами і бідами	1	2	3	4	5	6	7
9.10. У мене є хтось, хто дбайливо ставиться до моїх почуттів	1	2	3	4	5	6	7
9.11. Моя сім'я готова допомогти мені в прийнятті рішень	1	2	3	4	5	6	7

9.12. Я можу обговорити свої проблеми зі своїми друзями	1	2	3	4	5	6	7
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10. Вкажіть Вашу стать:

- 1) Чоловік
- 2) Жінка

11. Скільки Вам повних років?

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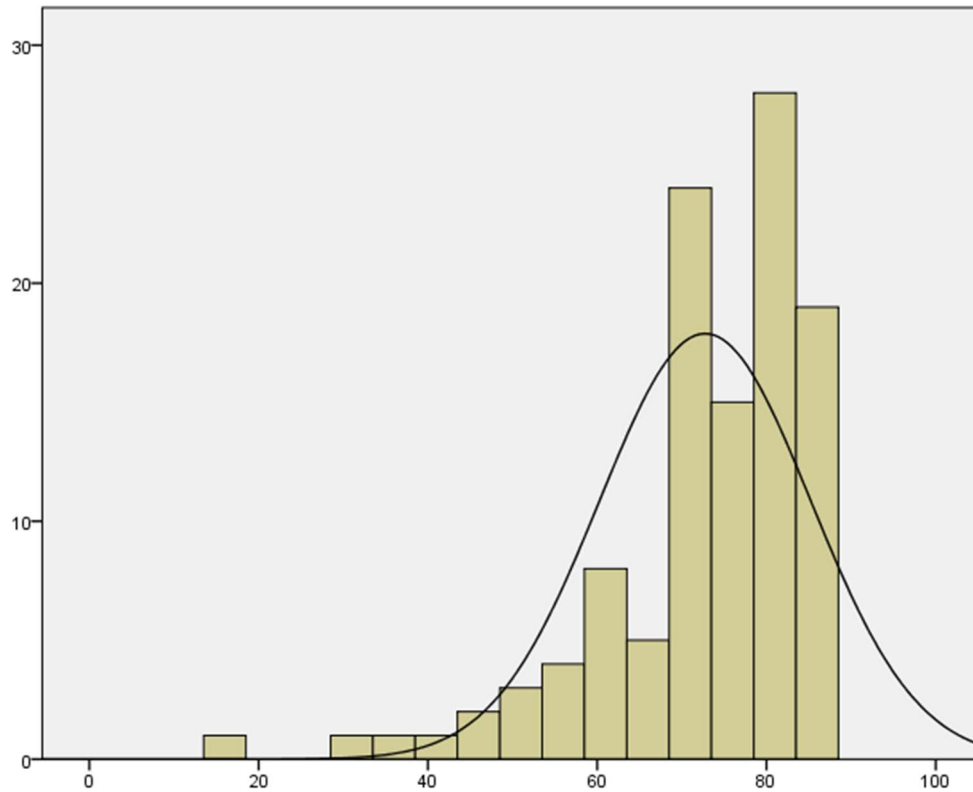
12. Зі скількома людьми (за винятком членів родини) Ви маєте тісні дружні взаємини?

- 1) З жодною
- 2) З однією
- 3) З двома-трьома
- 4) З чотирма-шістьма
- 5) З сімома чи більше

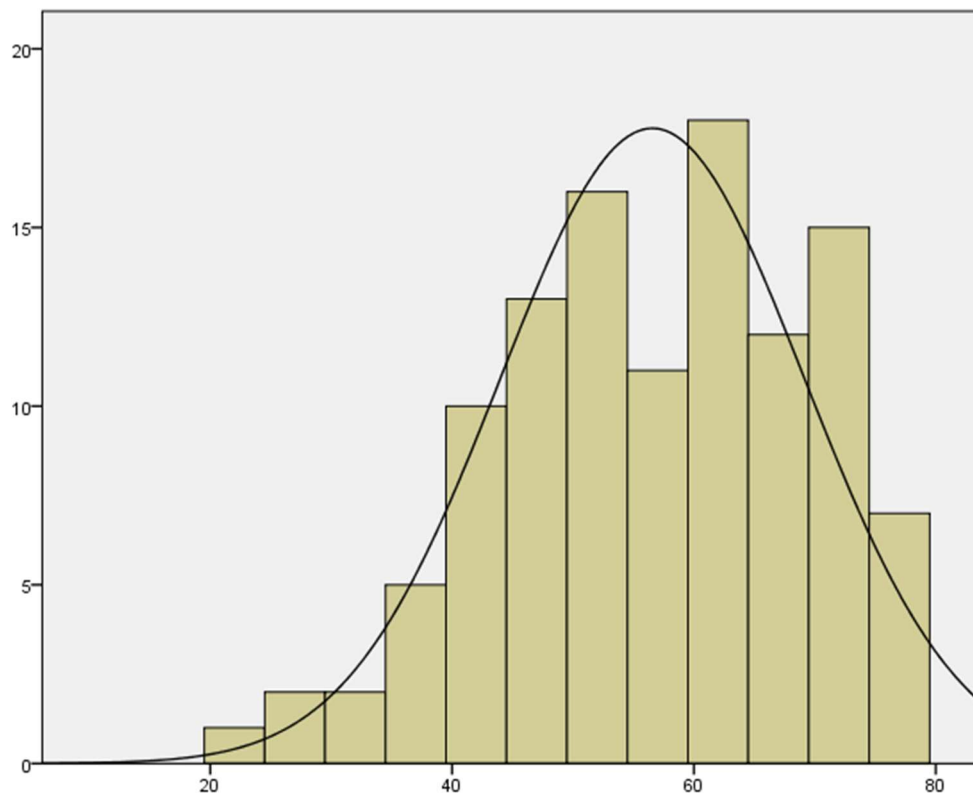
13. Чи Ви зараз перебуваєте у романтичних стосунках?

- 1) Ні
- 2) Так

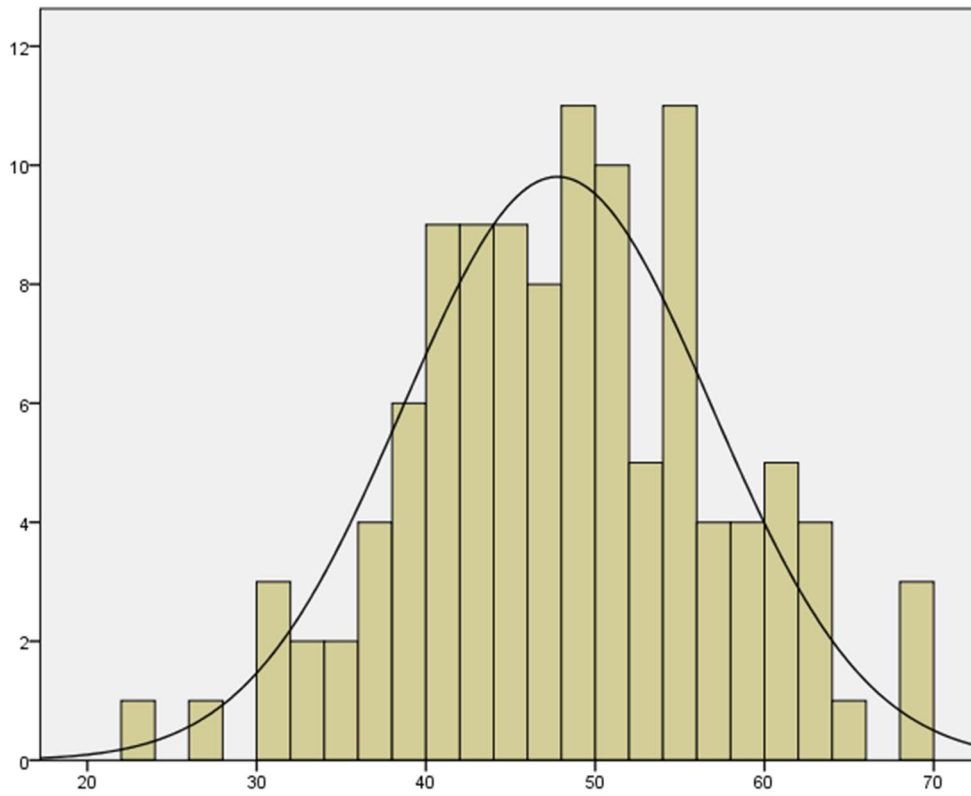
## Appendix B



*Figure 1.* Frequency distribution chart for the MSPSS score variable



*Figure 2.* Frequency distribution chart for the OSSS score variable



*Figure 3.* Frequency distribution chart for the FMSS score variable



## Appendix C

<i>SNSpeople</i> categories	N	Mean	Standard Deviation	Standard Error
“Up to 5” (1)	39	45,08	8,984	1,439
“6-9” (2)	39	46,85	9,413	1,507
“10 and more” (3)	34	51,91	7,557	1,296
<i>Total</i>	112	47,77	9,113	0,861
Multiple Comparisons (Tukey HSD)				
A	B	Mean difference (A-B)	Standard Error	Significance
1	2	-1,769	1,978	0,645
	3	-6,835*	2,050	0,003
2	1	1,769	1,978	0,645
	3	-5,066*	2,050	0,040
3	1	6,835*	2,050	0,003
	2	5,066*	2,050	0,040

\* Mean difference significant at the 0,05 level.

<i>SNSposts</i> categories	N	Mean	Standard Deviation	Standard Error
“Mult. times weekly” (1)	13	53,00	10,083	2,797
“Mult. times monthly” (2)	41	49,34	6,319	0,987
“Monthly or less” (3)	25	48,44	11,121	2,224
“Did not post at all” (4)	33	43,24	8,456	1,472
<i>Total</i>	112	47,77	9,113	0,861
Multiple Comparisons (Games-Howell)				
A	B	Mean difference (A-B)	Standard Error	Significance
1	2	3,659	2,966	0,616
	3	4,560	3,573	0,586
	4	9,758*	3,160	0,028
2	1	-3,659	2,966	0,616
	3	0,901	2,433	0,982
	4	6,099*	1,772	0,006
3	1	-4,560	3,573	0,586
	2	-0,901	2,433	0,982
	4	5,198	2,667	0,223
4	1	-9,758*	3,160	0,028
	2	-6,099*	1,772	0,006
	3	-5,198	2,667	0,223

\* Mean difference significant at the 0,05 level.

## Appendix D

<i>SNS</i> time categories	N	Mean	Standard Deviation	Standard Error
“Up to 2 hours” (1)	35	52,03	12,692	2,145
“2-4 hours” (2)	48	57,94	11,683	1,686
“More than 4 hours” (3)	29	59,76	12,721	2,362
<i>Total</i>	112	56,56	12,567	1,187
Multiple Comparisons (Tukey HSD)				
A	B	Mean difference (A-B)	Standard Error	Significance
1	2	-5,909	2,728	0,082
	3	-7,730*	3,082	0,036
2	1	5,909	2,728	0,082
	3	-1,821	2,887	0,804
3	1	7,730*	3,082	0,036
	2	1,821	2,887	0,804

\* Mean difference significant at the 0,05 level,

<i>SNS</i> people categories	N	Mean	Standard Deviation	Standard Error
“Up to 5” (1)	39	50,82	11,943	1,912
“6-9” (2)	39	55,97	12,383	1,983
“10 and more” (3)	34	63,82	9,833	1,686
<i>Total</i>	112	56,56	12,567	1,187
Multiple Comparisons (Tukey HSD)				
A	B	Mean difference (A-B)	Standard Error	Significance
1	2	-5,154	2,606	0,123
	3	-13,003*	2,700	0,000
2	1	5,154	2,606	0,123
	3	-7,849*	2,700	0,012
3	1	13,003*	2,700	0,000
	2	7,849*	2,700	0,012

\* Mean difference significant at the 0,05 level.

<b><i>SNSposts</i> categories</b>		<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Standard Error</b>
“Mult. times weekly” (1)		13	63,38	9,887	2,742
“Mult. times monthly” (2)		41	57,17	8,952	1,398
“Monthly or less” (3)		25	59,92	14,571	2,914
“Did not post at all” (4)		33	50,58	13,659	2,378
<i>Total</i>		112	56,56	12,567	1,187
<b>Multiple Comparisons (Games-Howell)</b>					
<b>A</b>	<b>B</b>	<b>Mean difference (A-B)</b>		<b>Standard Error</b>	<b>Significance</b>
1	2	6,214		3,078	0,217
	3	3,465		4,002	0,822
	4	12,809*		3,629	0,007
2	1	-6,214		3,078	0,217
	3	-2,749		3,232	0,830
	4	6,595		2,758	0,091
3	1	-3,465		4,002	0,822
	2	2,749		3,232	0,830
	4	9,344		3,761	0,075
4	1	-12,809*		3,629	0,007
	2	-6,595		2,758	0,091
	3	-9,344		3,761	0,075

\* Mean difference significant at the 0,05 level.