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## Facebook Intensity Use Related to Gender Identity and Self-Esteem Among Female College Students

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FACEBOOK INTENSITY USE RELATED TO GENDER IDENTITY AND  
SELF-ESTEEM AMONG FEMALE COLLEGE STUDENTS

by

Li Zhang

A thesis submitted to the Graduate College  
in partial fulfillment of the requirements  
for the degree of Master of Arts  
Communication  
Western Michigan University  
August 2018

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## FACEBOOK INTENSITY USE RELATED TO GENDER IDENTITY AND SELF-ESTEEM AMONG FEMALE COLLEGE STUDENTS

Li Zhang, M.A.

Western Michigan University, 2018

As a popular social media platform, Facebook has already become a vital part of college students' social lives. The purpose of this study is to explore the relationships among Facebook use, gender identity and the level of self-esteem among young female college students (from age 18 to 23). Previous studies have argued that Facebook has the ability to enhance or reshape gender identity by providing control over online self-presentation. In addition, by using Facebook intensively and frequently, users gain popularity (a larger network of Facebook friends), which also increases users' self-esteem and the feeling of being connected with others. In the current study, an online survey was used to examine the relationship between Facebook use, female students' gender identity and the level of self-esteem. The study found a positive relationship between the level of self-esteem and gender identity. However, the result of this study could not explain whether there was a clear relationship between Facebook use and female students' attitudes towards gender identity. The current study encourages future study to examine different concept with Facebook use, such as "the sense of belonging" and "the gender gap", in order to have an integrated idea of how young females adopt social media.

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## CHAPTER 1

### INTRODUCTION

Previous studies have encouraged that future research should pay more attention to social consequences of SNSs (Social Networking Sites) in relation to the well-being of young adults. With this in mind, the current study explores the Facebook use in relation to the college-age female students' gender identity and the level of self-esteem. In this Chapter, background literature, purpose of study and justification of research topics will be discussed.

#### **Background: Facebook and Young Women**

Facebook, created in 2004, it originally began as a local online community for students at Harvard University. Unlike many earlier social networking tools (e.g., online forums or online chat rooms), Facebook already transformed the way we interact with the Internet - online social interactions no longer are anonymous. The idea of “share and connect” ([www.facebook.com](http://www.facebook.com)) expanded this social networking tool to an online community where individuals are allowed to manage their multidimensional “digital identities” by creating profile pages, sharing status, and showing attitudes with “likes”. As an original social networking choice for students, Facebook remains prevalent among younger generation - nowadays, 81 percent of 18 to 29 year old are using Facebook (Pew Research Center, 2018a). At the same time, Facebook is widely used by the majority of Americans across a wide range of demographic groups as compared with Snapchat and Instagram, where there are notable differences on users by age (Pew Research Center, 2018b). Globally, Facebook use and its impact has been studied as sociological, cultural elements, and defined as “places of belonging” (Kozinets, 2010, p.11). In discussions about Facebook, the notion of identity has always been connected with the significance of social media in changing people's



social lives and promoting the idea of virtual presence (Turkle, 1995) or “networked individualism” (Wellman, 2001).

For many years, social media have been a part of women’s daily routine. According to a new finding from the Pew Research Center, Facebook is the most widely used social media platform among female U.S. adults - 73 percent of U.S female adults who use Facebook platform, as compared with 39 percent of female adults on Instagram, 25 percent female adults on LinkedIn, and 24 percent female adults on Twitter (Pew Research Center, 2018a). It is also well known that women are the dominate users of various social media networking tools in the world, including Instagram and Twitter. As Facebook COO Sheryl Sandberg concludes, “the world is gone social and women are more social than men” (Goudreau, 2010). Given the richness of social media use among young females, several studies have particularly focused on the impact of SNSs on college female students (e.g., Sussman, Omar, Bolong, & Osman, 2011). More importantly, studies that are concerned with youth and Internet often demonstrated extensive concerns about the essential relationships between gender and technology, sexuality and popular culture. For instance, previous studies have examined gender and computer attitudes (e.g., Schumacher & Morahan-Martin, 2001; Vekiri & Chronaki, 2008), gender in relation to cyber interpersonal relationships (Lai & Gwung, 2013); gender and online language expression (Christofides, Islam, & Desmarais, 2009; Herring, 1992), gender and self-representation (Ramsey & Horan, 2016; Rose, Mackey-Kallis, Shyles, Barry, Biagini, Hart, & Jack, 2012), problematic Internet use in relation to loneliness, social anxiety, and self-esteem (e.g., Caplan, 2007; Joiner, Gavin, Duffield, Brosnan, Crook, Durndell, Maras, Miller, Scott, & Lovatt, 2005). In addition, there is a growing body of research focused on identity development associated with the discussion of Internet use among young females (e.g., AI-Saggaf & Nielsen, 2014; Paechter, 2013).

## **Purpose of the Study and Justification of Research Topic**

**Purpose of the study.** Gender differences between males and females on Facebook use and gender stereotypes on Facebook have been the focus of many previous studies (e.g., Dicstein-fischer, 2012). In addition, many studies have focused on the relationships among technology use and gender issues among adolescents (e.g., Frison & Eggermont, 2016). However, the relations between Facebook use, gender identity, and self-esteem among young college females has not yet been thoroughly addressed.

Hence, based on a review of the existing literature, the current study focused on the college-age female population, which may include both undergraduate and graduate students. Given that Facebook has already become a vital part of college students' social 'playground', it is important for the current study to understand how Facebook usage may affect students' gender identity and the level of self-esteem. It is also well known that self-presentation and control over impression management are main impetus for young adults to connect people on Facebook (Seidman, 2013; Zhao, Grasmuck, & Martin, 2008). Hence, by using Facebook frequently and intensively, Facebook users gain popularity (larger network of Facebook friends), which also increase users' self-esteem and the feeling of connected with others (e.g., Solomon, 2013). Past studies also argued that there is a relationship between Facebook popularity (e.g., the number of Facebook friends) and self-esteem. For instance, Dickstein (2013) found out that the social exchange such as peer acceptance and peer feedback on Facebook are fundamental in boosting self-esteem. Aligned with previous findings, the current study predicts that gender identity construction on Facebook among female students is largely associated with the level of self-esteem. Therefore, the current study asked the question: are there any relationships between female college-age students' gender identity constructions and Facebook usage? Are there any

relationships between female college-age students' gender identity construction and the level of self-esteem? Building on previous findings, the current study will specifically explore social identity theory and the level of self-esteem since these two concepts are related to the overall psychological well-being for young female adults.

**Justification of research topic.** It is widely acknowledged that emerging adulthood is a significant period during which young adults reinforce and shape their identity after adolescence. It is also worth noting that college students experience competitive social comparison on social media (e.g., Soloman, 2013). It is common to see that many students often experience the feeling of “excluded” or “left out” when they have constant access to other students' lives online. By knowing how happy, successful and engaging other students are, female students often reported to have negative mood and feeling, such as loneliness (Al-Saggaf & Nielsen, 2014; Caplan, 2007), Internet anxiety (Caplan, 2007; Joiner et al., 2012), and low self-esteem (Crocker, 1993; Major, Sciachitano, & Crocker, 1993). Additionally, self-portrayal and self-disclosure on SNSs lead female students to have self-objectification (De Vries & Peter, 2013), anti-social behaviors such as constant seeking social support and attentions (Carpenter, 2012), narcissism (Carpenter, 2012; Mehdizadeh, 2010) or higher self-esteem (Mehdizadeh, 2010). Overall, when young female students engage in social comparisons on Facebook, there is a tendency for them to develop or lose a sense of belonging of their social groups and a sense of satisfaction of being young females since they are in the stage of identity construction (Appel, Gerlach, & Crusius, 2016). With this in mind, the current study argues that the discussion of gender identity is vital in investigating the relationship between young women and technology adoption.

Furthermore, the current study focused on female Facebook users since young women are prolific users on many social networking platforms. Previous findings also indicated that female

users, unlike male users, highly value the interactive and social aspect of Internet - female are more likely to use social media (Ak, Koruklu, & Yılmaz, 2013; Brandtzaeg, 2012; Weiser, 2000) and emails (Weiser, 2000). Female users also have a collective tendency to choose anonymous communication more than males do (Young, 1998). Moreover, past findings indicated that females experience Internet and social media differently as compared with males. For instance, a recent 10-year, follow-up study of gender and Internet experience indicated that the difference between males and females on Internet adoption is still evident (Joiner, Gavin, Brosnan, Cromby, Gregory, Guiller, Maras, and Moon, 2012). Specifically, females still largely use the Internet for communication purpose and females are intense SNSs' users. Past study also found that almost all SNSs platforms that are popular among female users have some similar features: a customizable home page to show persona; a function that enables users to post messages on others' profiles; a function that enables users to stay in touch with others (Livingstone, 2008). Given that men and women use Internet differently and women appear to be the "social one", the current study will specifically focus on female Facebook users.

## **CHAPTER 2**

### **LITERATURE REVIEW**

Turkle (1995) believes that information technologies have the ability to erode the boundaries between reality and virtuality, the distinction between human and machine. She (1995) see the modern social networking community as essentially identity transforming since

“it make possible the creation of an identity so fluid and multiple that it strains the limits of the notion. Identity, after all, refers to the sameness between two qualities, in the case between a person and his or her persona. But in MUDs (Multi-User Dimension or Multi-User Domain), one can be many.” (p.12).

Goffman (1959) also argued that one’s identity is not equal to one’s true self; identity is rather a construction and performance that we seek and maintain for social approval. He (1959) also suggests that the main function of impression management is information control - we seek to display certain and partial information of ourselves in order to shape what other people think of us.

Personal homepages and virtual communities, which have been used in studying the concept of online gender performance and identity construction, offer controls for individuals to manage their impression in order to affect others’ opinions of them. In the study of late adolescent identity definition and intimate disclosure on Facebook, Jordán-Conde, Mennecke and Townsend (2014) found out that most users have actively managed their impression by showing deep concerns about the photos that other users have “tagged” them. Most users choose to “detag” photos from their posting walls in order to avoid potential negative impressions. Many users also pointed out that they had agreement with their friends on not to tag each other (Jordán-Conde et al., 2014). Facebook users appear to experienced high sensibility of negative public impressions.

In another study, Zhao, Grasmuck and Martin (2008) have found that Facebook users managed their public impression by posting emotionally cheerful and socially attractive photos of themselves. Most Facebook users also tried to control their profile pages on many levels, such as having the “right” and “clean” friend lists or deleting and filtering posts on their walls. Previous studies also suggested that women are more active and more intentional on managing impressions on Facebook (Acar, 2008; McAndrew, & Jeong, 2012; Park, Kee, & Valenzuela, 2009; Valenzuela, Park, & Kee, 2009).

### **Gender Identity**

Not only women are more active on Facebook and impression management, in a sense, Facebook can also be seen as a “playground” for gender performativity (Paasonen, 2002). Paasonen (2002) argued that being gendered is the precondition for thinking and living and there is no essential differences between online and offline communication, therefore, “doing gender” should also be differently performed on the Internet. Goffman (1976) argued that gender identity is constituted through social interaction - people tend to behave in ways that are predictable and acceptable in social norms and cultural rules. According to Rose and her colleagues (2012), “Gender display, as a continuous communication loop, is defined by society and expressed by individuals as they interact while shaping evolving societal expectations regarding gender.” (p. 589). As an online social platform, Facebook provides the possibility for people to present and identify themselves as males or females. Some argued that this self-presentation of identity and control over identity are the main motivation for young adults to connect people on Facebook (e.g., Seidman, 2013; Zhao, Grasmuck, & Martin, 2008).

## **Social Identity Theory**

Social identity theory (SIT), originated from social comparison theory, was advanced by Tajfel and Turner (Tajfel, 1978; Tajfel & Turner, 1979). Briefly, social identity theory proposed that one's self-definition is a social process that is influenced by numerous factors from their social context and social groups (Edwards & Harwood, 2003). Social identity theory also pointed out that people tend to undermine the out-groups' images in order to strengthen and maintain their images of their in-group memberships and enhance their sense of togetherness (Tajfel & Turner, 1979). Tajfel (1978) argued that "we need to postulate that, at least in our kinds of societies, an individual strive to achieve a satisfactory concept or image of himself." (p. 5). In other words, it is inevitable for an individual to find and define himself if he seeks to insert into society. Tajfel (1978) introduced the concept of "group" in social identity theory from psychology perspective, which is distinguished from the meaning of an actual face-to-face group in other social psychological literatures. The "group" in SIT refers to a "cognitive entity that is meaningful to the subject at a particular point of time" (Tajfel, 1978, p. 5 ).

Tajfel and Turner (1979) defined three stages of mental processes on how individuals interpret and define themselves with social identities. According to Tajfel and Turner (1979), the first stage must be "self-categorization," which "considered as a system of orientation which creates and defines the individual's own place the society." (p. 6). In the process of categorization, individuals not only categorize themselves into different social groups, but also behave in certain ways that align with socialized symbols (e.g., career categories, social classes, race, or gender). This "role playing" process may enable individuals to obtain multiple identities and seek multiple group memberships (Paasonen, 2002; Tajfel & Turner, 1979). For instance, a police officer tends to behave as a police officer during the working time by showing professional and rigid attitudes,

whereas he could be an amicable father at home as well. Self-categorization also lead to the process of de-individualization which is known as the origin of prejudice and misunderstanding (Tajfel & Turner, 1979).

The second stage is “social identification.” After people find their categorization in the society, they tend to adopt the identity of the group that they have categorized themselves (Tajfel & Turner, 1979). For instance, if one has categorized herself as a good student, she will likely to adopt the identity of a good student and begin to follow the norm in the ways that she believes a qualified student would act. It is important to note that individuals tend to bond their emotion and self-esteem with the identification with a group membership (Tajfel & Turner, 1979). The relation between one’s social identity and self-esteem will be illustrated in details in the later text.

The final stage is “social comparison”. Once people have categorized themselves as part of the group and adopted the identity of the group, people tend to make comparison between their in-group and the out-group (Tajfel & Turner, 1979). This social comparison process was hypothesized by Festinger (1945) and he mainly argued that individuals evaluate themselves by comparing themselves with other individuals and others’ opinions. Tajfel and Turner (1979) also pointed out that individuals have the tendency to seek uniformity with in-group members and consciously compare and undermine out-group memberships in order to maintain their in-group identities.

**Three-factor model of social identity.** Regarding the measurement of identity, Cameron (2004) developed “the three-factor model of social identity” ( also known as “the multidimensional model of social identity”). Previous studies have found that Cameron’s multidimensional model of social identity scale was effective and valid in discussing race, gender and other group identities (e.g., Wilson & Leaper, 2016). More importantly, Cameron (2004) defined social identity into



three major components. These three components of social identity are mutually constructed. They are cognitive centrality, in-group affect, and in-group ties (Cameron, 2004).

*Centrality* concerns the importance of group identity to the individual (e.g., Cameron, 2004; Wilson & Leaper, 2016). In other words, different people may hold different degrees of attitudes towards particular identities that associated with their group memberships. For instance, past study have found that minority group members considered racial identities more important than majority group members (e.g., Hutnik & Sapru, 1996). In gender research, Turner and Brown (2007) found out that gender identity was more important for majority children than for minority children. In terms of measurement of centrality, Cameron (2004) suggested that centrality should be operationalized with regards to “the frequency with which the group comes to mind” and “the subjective importance of the group to self-definition.” (p. 242).

*In-group affect* refers to “the positivity of feelings associated with membership in the group” (Cameron, 2004, p. 241). *In-group affect* concerns the fact that the concept of identity not only cognitive presence, but also emotional valence (Cameron, 2004; Wilson & Leaper, 2016). It is common for any group member that they may hold different levels of feelings with their in-group memberships, either positive or negative. Many studies have evaluated social identity with concepts such as collective self-esteem, which contains four sub concepts: 1) membership esteem (whether one considers himself as a valuable group member); 2) private collective self-esteem (one’s subjective evaluation of the in-group); 3) public collective self-esteem (one’s evaluation of how other group members judge the in-group); 4) identity.

In an early study of Black Americans’ racial identity, Demo and Hughes (1990) have found that the meaning of being black and the perceived racial identity were different among different

group members. These differences were particularly constructed by many social and cultural factors, such as parental messages, influences from families, friends, and or communities.

*In-group ties* refers to individuals' perceived emotional closeness towards his or her in-group. The concept of *in-group ties* has been interpreted and measured in a number of ways (Cameron, 2004). Previous studies examined *In-group ties* by measuring "sense of belonging", the idea of "fit in" and "strong ties" with the in-group membership (Brown, Condor, Mathews, Wade, & Williams, 1986; Cameron & Lalonde, 2001; Hinkle, Taylor, Fox-Cardamone, & Crook, 1989; Phinney, 1992; ). It has been examined that many factors may affect group members' emotional closeness with their in-groups, such as the coherence between individuals' behaviors and group's expectations or the possibilities to connect with other in-group members (Oyserman, Brickman, Bybee & Celious, 2006; Postmes & Branscombe, 2002). In sum, the three-factor model of social identity provides a theoretical framework in assessing the dimensions of social identity, as Cameron(2004) concluded:

"the important issues concern not whether this three-factor model is the only 'true' model of social identity (it is not), but whether it serves to bring theoretical issues into greater focus, and whether it facilitates and generates research on the psychological concomitants and consequences of belonging to social groups." (p.258).

### **Self-esteem on Facebook**

Self-esteem, according to Kille and wood (2012), refers to "one's overall evaluation of oneself – the extent to which one values and prized the self." (p.321). It is acknowledged that one's self-esteem is jointly influenced by one's self-evaluation of her performance on certain activities and her evaluation of how others may react to her performances. Consequently, people participate in an impression management process in order to influence and interfere with others'

opinions on them. There is no doubt that Facebook creates an ideal platform for individuals to portray their preferred images or identities - one can present herself as a frequent traveler and social butterfly with flawless skin by posting the image of a cup of coffee with the location tag “Eiffel Tower, Paris,” and present a filtered selfie with numerous friends. Facebook self-presentation appears to be associated with the showing of the ‘facade self’ and the construction of the ‘front’ (Tseëlon, 1992). Markus and Nurius (1986) argued that individuals’ conception of self can be described into two ways: the ‘now self’ and the ‘possible self’. The ‘now self’ refers to the self-identity that is confirmed and established to others, whereas the ‘possible self’ refers the social identity that is unknown to others. On the Internet, users can easily create the ‘possible self’ by “withholding information, hiding undesirable physical features and role-playing” (Mehdizadeh, 2010, p. 358). Facebook, as a nonymous online site, promotes the ‘hoped-for possible self’, which refers to a socially desirable ‘possible self’ that is more realistic for an individual to display at certain environment (Mehdizadeh, 2010).

Schlenker (1980) argued that self-esteem is one essential need for humans and self-esteem is vital for general well-being. Previous literatures frequently assumed that individuals with lower self-esteem will be even more eager to raise self-esteem by participating in certain activities. However, Schlenker (1980) also suggested that the larger the size of audiences, the more uncovered and truthful the self that one can present. In other words, individuals with lower self-esteem may not want to present themselves in front of larger audiences in that the self-presentation can be risky. In this sense, individuals with lower self-esteem would not prefer higher self-disclosure activities on the Internet.

This assumption was supported by previous studies. For instance, Banczyk, Krämer, and Senokozlieva (2008) have found that people with lower self-esteem tend to use less words in

describing themselves on MySpace as compared with people with higher self-esteem. Some studies also found that there is no connection between self-presentation between low self-esteem users and high self-esteem users on personal homepages.

In fact, in terms of the relation between self-esteem and Facebook use, there has been no clear agreement among previous studies. Schwartz (2010) suggested that higher frequent usage of Facebook was found to be negatively related to self-esteem. Specifically, Schwartz (2010) asked 218 college students about their overall Facebook use, including time spent on Facebook, frequency and meaningfulness of Facebook posts and updates, and the social relationships condition on Facebook. In the study, researcher also asked participants to report their self-rated self-esteem, narcissism and loneliness level in order to measure the relation between Facebook use and the level of self-esteem, narcissism, and loneliness. Study findings suggest that Facebook users who have lower self-esteem tend to use Facebook more intensely than Facebook users who have higher self-esteem (Schwartz, 2010). By contrast, Krämer and Stephan (2008) have surveyed 58 users of the German site “StudiVZ.net” and conducted a content analysis of the respondents’ profiles, they found out that self-efficacy was strongly related to users’ numbers of friends, profile details, and the style of the profile pictures. However, the study also indicated that self-esteem is not related to how users present themselves on the site “StudiVZ.net”.

By using Facebook frequently and intensively, users gain popularity (larger network of Facebook friends), which also increases users’ self-esteem and the feeling of connected with others (e.g., Solomon, 2013). In addition to user popularity, self-esteem enhancement is also one major motivation of using Facebook, as Dickstein (2013) argued that social exchange such as peer acceptance and peer feedback on Facebook are fundamental in boosting self-esteem. Previous literatures indicated that the amount of Facebook friends individuals have has relation with how

the Facebook profile owner was evaluated by other users. Studies indicated that profile owners with more friends were considered more popular and more socially favorable than profile owners with fewer friends (Kleck, Reese, Behnken, & Sundar, 2007; Utz, 2010). Social comparison theory (Festinger, 1954) also suggests that people tend to compare themselves with others in order to evaluate their subjective selves. Hence, people could gain positive feelings or negative feelings of themselves by comparing themselves with better others or worse others (Greitemeyer, 2016). In the process of social comparison, one exposes herself to Facebook profile owners with many friends would experience an upward comparison, whereas one exposed to Facebook profile owners with fewer friends would experience a downward comparison (Greitemeyer, 2016). In this sense, if one exposed herself to a more popular Facebook profile owner, one would likely to experience a decrease in self-esteem (Greitemeyer, 2016; Morse & Gergen, 1970). Studies on social comparison process also suggested that people are likely to compare themselves with similar others who are viewed as more relevant to their identities (Lockwood & Kunda, 1997; Wood, 1989). It is also assumed that social comparison between same-sex individuals have more pronounced influence on individuals' self-esteem. For instance, Morse and Gergen (1970) found that people who encountered socially undesirable others tend to gain higher self-esteem, whereas people reported to have lower self-esteem level when they were in the presence of socially desirable others. The same results have also been supported by other previous studies (e.g. Crocker, 1993; Major, Sciachitano, & Crocker, 1993).

Empirical researches have shown different results regarding the above assumption.

Verduyn and colleagues (2015) have found that passive Facebook use such as viewing others' profile pages lead to subsequent declines in well-being due to the feeling of envy. The finding concluded that when comparison standards are high, individuals tend to experience higher levels

of envy, which was also associated with depression. In one recent study, Greitemeyer (2016) conducted two experimental studies which examined whether using Facebook influence people's state self-esteem. Participants were randomly exposed to either profiles with higher Facebook popularity (many Facebook friends or followers) or profiles with lower Facebook popularity (fewer Facebook friends or followers), results have shown that participants' self-esteem levels were not significantly influenced by the number of other's Facebook friends. In addition, no sufficient evidence was found to support the idea that same-sex Facebook profiles have significant impact on individuals' self-esteem than other-sex Facebook profiles.

Regardless of these conflicting results, it is clear that young people tend to engage in social comparison on the Internet since they are in the stage of identity development (Appel, Gerlach, & Crusius, 2016).

## **Summary**

Building on the existing literatures, the current study focused on female undergraduate and graduate students. Given that Facebook has already become a vital part of college students' social "playground", it is important to understand how Facebook usages may affect students' gender identity and self-esteem. Therefore, the current study asked the research questions:

*RQ1: Are there any relations between female college-age students' gender identity construction and Facebook usage?*

Based on the previous arguments about three component of social identity (Cameron, 2004). The current study also hypothesized:

*H1: High frequent Facebook use is associated with gender centrality.*

*H2: High frequent Facebook use is associated with gender in-group ties.*

*H3: High frequent Facebook use is associated with gender in-group affect.*

Previous research have discussed the relation between self-esteem and social media use (e.g., Greitemeyer, 2016). The current study assumed that self-esteem is part of the motivation for identity construction on Facebook among young female students. Therefore, the study asked the following research question:

*RQ2: Are there any relations between female college-age students' gender identity construction and the level of self-esteem?*

## CHAPTER 3

### METHOD

#### Participants

Participants were recruited from snowball sampling approach. 256 responses were collected from an online survey distribution. The valid sample was composed of 240 young female students (from 18 to 23 years) whom enrolled in universities and have active Facebook accounts. A majority (53%,  $n = 126$ ) identified as Asian, followed by White/ Caucasian (30%,  $n = 71$ ), Black/ African-American (16%,  $n = 39$ ), and multiple races (2%,  $n = 4$ ). Their ages ranged from 18 to 23 years, with a mean of 20 ( $SD = 1.38$ ) and a median of 20 years.

#### Procedures

The online survey was launched on May 29, 2018 using online survey tool “Qualtrics” (<https://www.qualtrics.com/>). Informed consent (Appendix B) was obtained prior to implementation. The survey included demographic questions (Appendix C) at the beginning of the survey. Only female participants who are 18 to 23 years and enrolled in universities were allowed to complete the survey. Student investigator distributed the survey links to friends on Facebook with the “Requesting Participation Script” (Appendix A) informing participants that the survey will be taken anonymously with no participants’ identifiable information stored. Participants then will be encouraged to share survey links by themselves with no obligations. The online survey link stopped collecting data at July 12, 2018.

#### Instruments

***Multidimensional Measures of Identity.*** Cameron’s (2004) three-factor model was used in examining identity from three aspects that illustrated in the literature review chapter. Cameron (2004) argued that this scale is adaptable to various social categories. The scale has been used in



studying “gender-derived social identification” and “assessing gender-related attitudes and a number of personality variables” (Cameron, 2004, p. 245).

Specifically, *centrality* concerns the importance of group identity to the individual (e.g., Cameron, 2004; Wilson & Leaper, 2016). *In-group ties* refers to individuals perceived emotional closeness towards his or her in-group. *In-group affect* refers to “the positivity of feelings associated with membership in the group” (Cameron, 2004, p. 241). The multidimensional social identity scale contains 5-point Likert scale ranging from 1= strongly disagree to 5 = strongly agree, as can be seen from Appendix E. In the present study, Cronbach’s alpha was computed, *in-group ties* ( $M = 22.81$ ,  $SD = 4.5$ ) has internal reliability coefficients of .83; *Centrality* ( $M = 27.88$ ,  $SD = 4.02$ ) has internal reliability coefficients of .73; *in-group affect* ( $M = 20.55$ ,  $SD = 3.59$ ) has internal reliability coefficients of .83.

***Self-esteem.*** Self-esteem was measured by using seven items from the original Rosenberg self-esteem scale (Rosenberg, 1989). Previous studies have examined that this shortened version of Rosenberg self-esteem scale (Appendix F) demonstrated high effectiveness and reliability with internal reliability coefficients of .87 (Ellison, Steinfield, & Lampe, 2007). The scale is generally believed to be effective in self-report instrument for evaluating individual self-esteem (Settles, 2004). The scale contains 5-point Likert scale ranging from 1= strongly disagree to 5 = strongly agree. In the present study ( $M = 29.77$ ,  $SD = 3.08$ ), Cronbach’s alpha was .71.

***Facebook intensity.*** The Facebook intensity scale (Ellison, Steinfield, & Lampe, 2007) was used in measuring Facebook use frequency and duration. The measurement primarily concerns multiple dimensions of Facebook activities, including the number of Facebook friends, the amount of time spent on Facebook, and Likert-scale questions that measure the extent to which participants feel connected and emotionally involved with Facebook usage. The scale contains 5-

piont Likert scale ranging from 1= strongly disagree to 5 = strongly agree. In order to better understand the intensity of Facebook use among participants, the survey also added two questions in the beginning of this scale: “about how many total Facebook friends do you have? Do you satisfy with this number?” However, the two questions were not computed with the original questions in the scale for assessing the degree of Facebook intensity. Investigator of the current study did not modify the original scale that developed by Ellison, Steinfield and Lampe (2007). In the present study ( $M = 24.63$ ,  $SD = 5.52$ ), Cronbach’s alpha was .88. The full scale can be seen from Appendix D.

## CHAPTER 4

### RESULTS

#### Facebook Intensity

The current study tested the Facebook intensity scale (Ellison, Steinfield, & Lampe, 2007) in order to measuring a general condition of how participants use Facebook, the frequency and duration of the Facebook use. The scale was computed with the three-factor model of identity scale (Ellison, Steinfield, & Lampe, 2007) for correlation analysis, as can be seen from the following text. In addition, the present study also asked participants about their number of Facebook friends and whether they were satisfied with this number. Two Pearson Product Moment Correlations (Pearson's  $r$ ) were conducted for the number of friends and the score of overall Facebook intensity, result indicated that there was a significant positive relationship between a person's number of Facebook friends and the overall Facebook intensity use,  $r(230) = .464, p < .01$ . This relationship was moderate, with number of Facebook friends accounting for almost 21% of the variance in the overall Facebook intensity use.

We also asked students if they were satisfied with their number of friends, a majority of students reported that they were satisfied with the number (93%,  $n = 224$ ), only few (7%,  $n = 16$ ) reported dissatisfaction, as can be seen from *Table 1*.

Table 1

*Question "Do you satisfy with this number?"*

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	224	93.3	93.3	93.3
No	16	6.7	6.7	100.0
Total	240	100.0	100.0	

In terms of the average time students spend on Facebook every day (Table 2), 51% (n = 123) of students reported that they only spend less than 10 minutes on Facebook every day, around 37% (n = 88) students reported to spend “10 to 30 minutes per day” on Facebook, around 10% (n = 23) of students reported to spend “31 to 60 minutes per day” on Facebook, nearly 2% (n = 5) of students reported to spend “1 to 2 hours per day” on Facebook and only less than 1% (n = 1) of students reported to spend “more than 3 hours per day” on Facebook.

Table 2

*Question “In the past week, on average, approximately how many minutes per day have you spent on Facebook?”*

		Frequency	Percent	Valid Percent	Cumulative Percent
Time	Less than 10	123	51.2	51.2	51.2
	10–30	88	36.7	36.7	87.9
	31–60	23	9.6	9.6	97.5
	1–2 hours	5	2.1	2.1	99.6
	More than 3 hours	1	.4	.4	100.0
	Total	240	100.0	100.0	

### **Gender Identity and Facebook Use**

*RQ1: Are there any relations between female college-age students’ gender identity construction and Facebook usage?*

The first research question was examined by using three-factor model of identity scale (Cameron’s, 2004) and the Facebook intensity scale (Ellison, Steinfield, & Lampe, 2007). In order to determine whether there were relationships between female college-age students’ gender identity and Facebook intensity use, two Pearson Product Moment Correlations (Pearson’s  $r$ ) were performed. Using the Bonferroni approach to control for Type I error across the two correlations, a  $p$  value of less than .025 ( $.05 / 2 = .025$ ) was required for significance. Results indicated that there was a significant positive relationship between gender identity and Facebook intensity use,  $r$  (238)

= .158,  $p < .01$ . The relationship was weak, with gender identity accounting for approximately 2% of the variance in the Facebook intensity use.

### **Facebook Intensity and Three Factors of Gender Identity**

*H1: High frequent Facebook use is associated with gender centrality.*

*H2: High frequent Facebook use is associated with gender in-group ties.*

*H3: High frequent Facebook use is associated with gender in-group affect.*

In order to test hypothesis 1, two Pearson Product Moment Correlations (Pearson's  $r$ ) were performed. Result shows that there is no significant relationship between Facebook use and gender centrality,  $r(238) = .107$ ,  $r^2 = .011$ ,  $p > .05$ . The same test was computed for both hypothesis 2 and hypothesis 3, results show that there is no significant relationship between Facebook use and in-group ties,  $r(238) = .088$ ,  $r^2 = .008$ ,  $p > .05$ . Additionally, there is no significant relationship between Facebook use and gender centrality,  $r(238) = -.086$ ,  $r^2 = -.007$ ,  $p > .05$ .

### **Gender Identity and Self-esteem**

*RQ2: Are there any relations between female college-age students' gender identity construction and the level of self-esteem?*

The seven items Rosenberg self-esteem scale (Rosenberg, 1989) was used in assessing female students' self-esteem. In order to test the second research question, two Pearson Product Moment Correlations (Pearson's  $r$ ) were performed. Using the Bonferroni approach to control for Type I error across the two correlations, a  $p$  value of less than .025 ( $.05 / 2 = .025$ ) was required for significance. Results indicated that there was a significant positive relationship between gender identity and Facebook intensity use,  $r(238) = .235$ ,  $p < .01$ . The relationship was weak, with gender identity accounting for approximately 5% of the variance in the self-esteem.

In addition, correlations between self-esteem and three factors of gender identity were examined separately. Result indicated that there was a significant positive relationship between the level of self-esteem and gender centrality,  $r(238) = .147, p < .02$ . The relationship was weak, with self-esteem accounting for almost 2% of the variance in the gender centrality. In terms of self-esteem and in-group affect, result from Pearson's  $r$  indicated that there is no significant relationship between the level of self-esteem and gender in-group affect,  $r(238) = .132, p > .025$ . Finally, we tested the relationship between self-esteem and gender in-group ties, result indicated that there is a significant relationship between the two factors,  $r(238) = .176, p < .01$ . The relationship was also weak, with self-esteem accounting for approximately 3% of the variance in the gender in-group ties.

## CHAPTER 5

### DISCUSSION

#### Summary of Findings

The study revealed that a large number of Facebook friends and the high intensity of Facebook use had a positive association. From this, we could infer that the larger the amount of Facebook friends may indicate the more active Facebook use. However, the present study did not further examine whether the larger number of Facebook friends could bring happiness for female students. In terms of satisfaction of Facebook popularity, almost all students (93%) reported that they were satisfied with their number of Facebook friends. In addition to that, 51% of students reported that they only spend less than 10 minutes on Facebook every day. It is assumable that most students use Facebook casually as a communication platform. However, this does not mean that Facebook is unpopular among all participants. Hence, the influence of Facebook on students' gender identity construction and level of self-esteem could be obscure and minor. As discussed in the previous literature, peer acceptance and peer feedback on Facebook are essential in boosting self-esteem (Dickstein, 2013). Facebook popularity is also one major motivation of encouraging people to use Facebook frequently since Facebook popularity provides the feeling of being connected with others (Solomon, 2013). The current study validated this previous argument. However half of the participants reported to spend less than 10 minutes on Facebook every day, it seems that Facebook popularity and high self-esteem did not make participants the intense users of Facebook. The current finding also brought about a new question: is there a relationship between Facebook use and students' sense of belonging to Facebook?

When we discuss self-presentation and how SNSs may affect young women and their social nature, we should also consider the sense of belonging as one of the vital parts of the identity construct. As Erikson (1994) argued that the sense of belonging to social groups is particularly important to college students. Additionally, social belonging is the fundamental motivation to maintain social relationships and an important component of mental health (Seidman, 2013). Failed to fulfill one's desire of belonging to his or her social group may lead to depression, anxiety, or loneliness (Hagerty, Williams, Coyne & Early, 1996). It is also important to note that women tend to develop the greater sense of belonging by engaging with their social groups than men do (Hagerty et al., 1996). Involving in virtual communities is the major way of developing the sense of belonging and related group memberships for young adults nowadays (Konstam, 2007). Seidman (2013) also argued that the need to belong is a major motivation of Facebook use and Facebook fulfills the sense of belonging by allowing communication and social learning from others.

The study has found a positive relationship between the level of self-esteem and gender identity. We could infer that higher self-esteem might be associated with positive feelings of gender identity and group memberships among female students. As discussed in the previous text, self-esteem is associated with emotional positivity. However, it is not confirmed that whether there is causation between self-esteem and gender identity.

The study also revealed a weak and direct correlation between gender identity and high intense Facebook use. However, when we examined the relationship among three components of gender identity (gender centrality, gender in-group ties, gender in-group affect) individually with the Facebook intensity scale (Ellison, Steinfield, & Lampe, 2007), we did not find any significant relationships among all three components of gender identity with Facebook intensity use. In other



words, the present study could not explain whether Facebook use can influence female students' attitudes towards gender identity. It is possible that Facebook is no longer a platform for gender-related self-presentation, as can be seen from one comment at the open question in the survey: "Facebook is a regular communication tool for me." Another comment also indicated the similar attitude: "I think being women has nothing to do with how I use FB. But I do think women are likely to share on all social media." Although the current study cannot explain the connection between gender identity and Facebook use, those heavy users of Facebook may still experience envy and depression due to perceived social competence (Tandoc, Ferrucci, & Duffy, 2015). Although the current study did not explain the relationship between gender identity and Facebook use, the concept of gender is still worth discussing under social media context. The current study encourages future research to discuss how and why women and men use social media differently. Perhaps when we compare the two gender groups and ask the question "how Facebook influence their gender construction" and "how Facebook influence their behaviors of being men or women." In fact, the discussion of the gender gap is not new. In an earlier research, Jackson (2001) argued that the adoption of the Internet has "motivational, affective and cognitive consequences" between males and females (p. 364). In other words, there is a "gender gap" regarding the Internet use - "women communicating and men searching."

Despite the fact that some recent studies have tried to argue that this "gender gap" and the gender differences in computer attitudes are narrowing (e.g., Odell, Korgen, Schumacher, & Delucchi, 2000), it is still generally believed that the concept of "gender gap" on Internet and technology adoption is worth discussing (e.g., boyd, 2014). In fact, the growing trend of discussing "gender gap" on Internet adoption is crucial (Colley & Maltby, 2008). This is because this "gender gap" has the ability to indicates the motivations behind social media users' gender identity

construction. For instance, previous research has argued that men see the Internet as a source of entertainment or “toys”, whereas women tend to use the Internet as “tools” (Tsai & Lin, 2004). When considering young women’s motivations or desires behind the Internet use, some argued that the concept of social roles is vital in developing numerous gendered behaviors across different social settings, which includes online communication (Lin, Feathermanb, & Sarker, 2017). Men and women behave in different ways to fulfill their expected culture expectations. Over time, females developed the characteristic of communal, which highlights the quality of friendly, unselfish, emotional, dependent and caring, whereas males developed the quality of agentic, which emphasizes independence, individuality, masterful and competent (e.g. Bakan, 1966; Eagly, Wood, & Diekmann, 2000). It is possible that the discussion of the gender gap could help future studies to understand gender identity since women and men are different in nature and women and men indeed have different social expectations.

### **Limitations and Future Research**

The current study has few limitations. First, although the sample size was not large enough to develop a precise result, it is possible that a larger sample size may reveal stronger correlations between gender identity and Facebook use. Secondly, the current study only focused on Facebook in discussing gender identity and self-esteem. However, nowadays most students tend to use multiple social media services. The discussion of the Internet phenomenon is always changing. Future study may include Snap Chat and Instagram as comparison groups. In fact, some previous studies also explored the issue of gender identity associated with Internet use under Instagram context (e.g. Shumaker, Loranger, & Dorie, 2017).

In terms of the design of the survey, it is also recommended that future research could recruit non-Facebook users as a control group to have the clear result of whether gender identity

and self-esteem are influenced by Facebook use. It is highly possible that there are some other factors that beyond social media could potentially shape female students' attitudes about gender identity and self-esteem. More importantly, the awareness of gender identity may be unconscious for students. Different research method may be more suitable for understanding the abstract concept. It is worth noting that other feelings, such as the feeling of "envy" when one female student compares herself with another, maybe more obvious under Facebook context. In terms of the population of the sample, the future study could include younger generations (e.g. high school students) since younger generations may have varied experience and attitudes towards gender identity when encountering social media.

The principal concern that guided the current study is to understand how young women use social media today. The current study explored the issue of identity and self-esteem related to Facebook use. There are diversified factors that affect students' social media use. In addition, future research could explore the influence of different social media on students' lives in order to better understand how young women use social media.

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## Appendix A

### Requesting Participation Script

I am writing to ask if you are interested in participating in a research study on Facebook use and gender identity among female college students. I am a master student at Western Michigan University. This is part of the requirements for a master's degree in Communication.

I'm looking for **female college students between 18 to 23 years who have active Facebook** accounts, so participating in this study may cost you approximately 10 to 15 minutes and you can take the survey simply by clicking the link. It is completely voluntary! I also I also request that you pass along the survey link to friends and/or family members who may also be interested in learning about this research study. However, you are under no obligation to share this information.

Sincerely,

Li Zhang

## Appendix B

### Informed Consent

#### Western Michigan University School of Communication

**Principal Investigators:** Joseph M Kayany, Ph.D.

**Student Investigators:** Li Zhang

**Title of Study:** *Facebook intensity in relation to gender identity and self-esteem among female college students.*

***Please read this consent information before you begin the survey.***

You are invited to participate in a research project entitled "*Facebook intensity in relation to gender identity and self-esteem among female college students*" designed to investigate the how Facebook influence female students' gender identity and self-esteem. The study is being conducted by Joseph M Kayany (principal investigator) and Li Zhang (student investigator) from Western Michigan University, Department of Communication. This research is being conducted as part of the thesis requirements for Li Zhang.

Only female students between ages 18 to 23, who are enrolled in colleges, have an active Facebook account and have the ability to read English can participate in this study. This survey is comprised of 33 multiple choice questions and will take approximately 10 to 15 minutes to complete. Your replies will be completely anonymous. There are minimal risks to participating, including feeling of discomfort regarding certain topic. You will not receive any benefits associated with participation in this study. However, after beginning the survey, if you decide that you do not wish to continue, you may stop at any time. If you do not agree to participate in this research project you may simply exit now. You may choose to not answer any question for any reason.

**Questions:**

If you have any questions prior to or during the study, you may contact Joseph M Kayany at 269-387-5369, Li Zhang at 734-747-0493, *Western Michigan University Department of Communication*, the Human Subjects Institutional Review Board (269-387-8293) or the vice president for research (269-387-8298).

## Appendix C

### Demographic Questions

**1. How do you identify?**

Male (Participants who choose Male cannot continue the survey)

Female

**2. Age**

18

19

20

21

22

23

(Participants who cannot meet this age range cannot continue the survey)

**3. Are you currently enrolled in college**

YES

NO (Participants who choose NO cannot continue the survey)

**4. Ethnicity:**

White

Hispanic/Latino

Asian

Black/African American

Native American/ American Indian

Multiple races

## Appendix D

### The Facebook Intensity Scale (Ellison, Steinfield, & Lampe, 2007)

There are no wrong or right responses. We simply would like to learn your honest reactions. This survey is anonymous and your answers will in no way be linked to you.

**1. About how many total Facebook friends do you have?**

Type the number here ( \_\_\_\_\_ )

Do you satisfy with this number? Yes No

**2. In the past week, on average, approximately how many minutes per day have you spent on Facebook?**

0 = less than 10,

1 = 10–30,

2 = 31–60,

3 = 1–2 hours,

4 = 2–3 hours,

5 = more than 3 hours

**3. Facebook is part of my everyday activity**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**4. I am proud to tell people I'm on Facebook**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**5. Facebook has become part of my daily routine**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**6. I feel out of touch when I haven't logged onto Facebook for a while**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**7. I feel I am part of the Facebook community**

1= Strongly disagree



2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**8. I would be sorry if Facebook shut down**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

## Appendix E

### Cameron's (2004) Three-factor Model

#### *Ingroup Ties*

**1. I have a lot in common with other female students.**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**2. I feel strong ties to other female students.**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**3. I find it difficult to form a bond with other female students**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**4. I don't feel a sense of being "connected" with other female students.**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**5. I really "fit in" with other female students**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**6. In a group of female students at our university, I really feel that I belong.**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

#### *Centrality*

**7. I often think about the fact that I am female.**

1= Strongly disagree

- 2= Disagree
- 3= Neither agree nor disagree
- 4= Agree
- 5= Strongly agree

**8. Overall, being a female students has very little to do with how I feel about myself.**

- 1= Strongly disagree
- 2= Disagree
- 3= Neither agree nor disagree
- 4= Agree
- 5= Strongly agree

**9. In general, being a female is an important part of my self-image.**

- 1= Strongly disagree
- 2= Disagree
- 3= Neither agree nor disagree
- 4= Agree
- 5= Strongly agree

**10. The fact that I am a female student rarely enters my mind.**

- 1= Strongly disagree
- 2= Disagree
- 3= Neither agree nor disagree
- 4= Agree
- 5= Strongly agree

**11. I am not usually conscious of the fact that I am a female student.**

- 1= Strongly disagree
- 2= Disagree
- 3= Neither agree nor disagree
- 4= Agree
- 5= Strongly agree

**12. Being a female student is an important reflection of who I am.**

- 1= Strongly disagree
- 2= Disagree
- 3= Neither agree nor disagree
- 4= Agree
- 5= Strongly agree

**13. In my everyday life, I often think about what it means to be a female student.**

- 1= Strongly disagree
- 2= Disagree
- 3= Neither agree nor disagree
- 4= Agree
- 5= Strongly agree

***Ingroup affect***

**14. In general, I'm glad to be a female student.**

- 1= Strongly disagree
- 2= Disagree
- 3= Neither agree nor disagree

4= Agree

5= Strongly agree

**15. I often regret that I am a female.**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**16. I don't feel good about being a female student.**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**17. Generally, I feel good when I think about myself as a female students.**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**18. Just thinking about the fact that I am a female student sometimes gives me bad feelings.**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

Open question (optional): How is your Facebook use in relation to being women?

## Appendix F

### Rosenberg (1989) Self-Esteem Scale

**1. I feel that I'm a person of worth, at least on an equal plane with others.**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**2. I feel that I have a number of good qualities.**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**3. All in all, I am inclined to feel that I am a failure. (R)**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**4. I am able to do things as well as most other people.**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**5. I feel I do not have much to be proud of. (R)**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**6. I take a positive attitude toward myself.**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree

4= Agree

5= Strongly agree

**7. On the whole, I am satisfied with myself.**

1= Strongly disagree

2= Disagree

3= Neither agree nor disagree  
4= Agree  
5= Strongly agree

## Appendix G

### Human Subjects Institutional Review Board Approval letter



Date: May 1, 2018

To: Joseph Kayany, Principal Investigator  
Li Zhang, Student Investigator for thesis

From: Amy Naugle, Ph.D., Chair 

Re: HSIRB Project Number 18-04-29

This letter will serve as confirmation that your research project titled “Facebook Intensity in Relation to Gender Identity and Self-Esteem Among Female College Students” has been **approved** under the **exempt** category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note: This research may **only** be conducted exactly in the form it was approved. You must seek specific board approval for any changes in this project (e.g., ***you must request a post approval change to enroll subjects beyond the number stated in your application under “Number of subjects you want to complete the study.”*** Failure to obtain approval for changes will result in a protocol deviation. In addition, if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

**Reapproval of the project is required if it extends beyond the termination date stated below.**

The Board wishes you success in the pursuit of your research goals.

**Approval Termination:**

**April 30, 2019**

Office of the Vice President for Research  
Research Compliance Office  
1903 W. Michigan Ave., Kalamazoo, MI 49008-5456  
PHONE: (269) 387-8293 FAX: (269) 387-8276  
WEBSITE: [wmich.edu/research/compliance/hsirb](http://wmich.edu/research/compliance/hsirb)

CAMPUS SITE: 251 W. Walwood Hall