

Computer-Mediated Social Networks and Environmental Behavior

Research-in-Progress

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Abstract

Research on environmental behavior highlights the role of information systems in the information acquisition and attitude formation process. Computer-mediated social networks (CMSNs) are forms of social structures that support social activity through computer-mediated communication and interactions. CMSNs can have an influential effect on social norms surrounding various issues, including environmental behavior. Further, CMSNs create a unique multi-nodal social environment within which individual behavior is virtually impacted, and eventually, physically modified. Extant research has not considered the social interactions that occur within a CMSN and how such interaction might further facilitate the adoption of environmental behaviors. This research aims to explore the influential role that CMSNs have on individuals through examination of specific attributes of a CMSN. More specifically, we examine CMSN Influencer, the message-giver within the CMSN, and CMSN Intensity, the user's engagement in and usage of the CMSN.

Keywords: Environmental sustainability, social networks, computer-mediated communication (CMC)

Introduction

Recent IS research has acknowledged the “adverse impact that human behavior has on the level of quality of the natural environment” (Elliot, 2011). We adopt the definition of environmental behavior as behavior that “consciously seek[s] to minimize the negative impact of one’s actions on the natural and built world” (Kollmuss, Agyeman 2002, p. 240). Individual environmental behavior includes actions such as energy conservation, waste avoidance, recycling, etc. (Kaiser, Wilson 2004; Kaiser, Oerke, Bogner 2007). Melville (2010) has called for IS research on this type of environmentally sustainable behavior, highlighting that information systems are critically involved in the “information acquisition and attitude formation” process (p. 10). Malhotra, Melville, and Watson (2010) highlighted the importance of research on IT that provides “information to encourage green choices” by individuals. Similarly, Elliot (2011) stated that technology can have an influential role in changing individual’s adoption of environmentally desirable behaviors. However, he did not provide an explanation of *how* information systems are involved in or can influence the behavior-changing process. Furthermore, research has shown that social interactions have a significant impact on the environmental behaviors of individuals (McKenzie-Mohr 2000). Extant research has not considered the social interactions that occur within a computer-mediated social network (CMSN) and how such interaction might further facilitate the adoption of environmental behaviors.

Social norms, characterized as perceived “beliefs, attitudes, feelings, and behaviors” of a particular group (Terry, Hogg, White, 1999, p. 228), play a significant role in promoting environmentally conscious behavior (Kollmuss et al. 2002; Goldstein, Cialdini, Griskevicius 2008). Social norms develop as individuals interact with each other and develop guidelines of acceptable behavior (Kollmuss et al. 2002). More frequently, people are interacting on a daily basis within CMSNs, making it an ideal setting to study how this form of an information system facilitates the adoption of environmental behavior. Further, social structures and processes play an important role in liberating individuals from their current state of environmentally naïve ignorance (Vlek, Steg 2007) through its social norms which are a “potentially powerful motivator of pro-social behavior” (Goldstein et al. 2008, p. 472). Research that aims to explain how society influences individual beliefs and actions towards environmental sustainability (Melville 2010), or more specifically how IT-enabled societal norms can achieve this intention, is a rich area for further IS research.

Recent IS research has highlighted the possible role of information systems in changing social norms surrounding environmental behavior (Watson, Boudreau, Chen 2010). CMSNs are social structures that can have an influential effect on social norms surrounding various issues (Butler 2001). Communications via CMSN are technology-facilitated human interactions that clearly exhibit the perpetual interplay between social aspects of human behavior and the technology-enabled behavior. Individuals view their participation in CMSN as an extension of their physical self, thus it is a blended representation of a physical person and a technology feature that is “intrinsic to everyday activities and relations” (Orlikowski, Scott 2008, p. 455). Boyd and Ellison (2006) state that connections on social network sites, also referred to as friends, “provide context by offering users an imagined audience to guide behavioral norms” (p. 9). This in-depth interaction can have a significant impact on how individuals behave when participating in an environmentally conscious environment. Additionally, this interaction can have a varied influence on an individual, the message-receiver, based on the perceived role of the message-giver, as well as the relationship between the two. CMSNs create a unique multi-nodal social environment within which individual behavior is virtually impacted, and eventually, physically modified. Given the importance of CMSNs and its impact on individual behavior, IS research has remained fairly silent on the role of CMSNs on environmental behavior. In this research, we address this gap in the IS literature. Thus, we raise the following research question: *How do computer-mediated social networks influence individual environmental behavior?*

Our research focuses on the influential role that CMSNs have on individual environmental behavior. This research is critical since environmental sustainability initiatives cannot succeed without conscious and informed environmental behavior by individuals. Further, given the wide and extensive use of CMSNs in various aspects of our lives (Jacks, Salam 2009; Church, Salam 2010), how such environmentally friendly

behaviors can be encouraged or are at least influenced through CMSNs should be of significant interest to IS research and practitioner communities.

The remainder of this paper is organized as follows. We present our proposed research model and the theoretical framework, develop our hypotheses through an in-depth discussion of each construct and relationship, discuss the results from a pilot study, and provide a brief conclusion that highlights our future research plans and the contributions of this study.

Theoretical Background and Proposed Research Model

Midden, Kaiser, McCalley (2007) examined the role that technology plays in shaping individual conservation behavior through encouraging the individual to make specific intentions as well as providing suggestions of ideal conservation behavior. They highlight the possibility of technology acting as a persuasive agent in order to promote environmentally desirable behaviors. An individual's continual engagement in the CMSN further solidifies their changed behavior (Ellison, Steinfield, Lampe 2007). Melville (2010) provided an example of how an environmentally focused IT application that incorporates a social network site aimed towards a sustainability intention could be viewed as IT's involvement in the process of belief formation and sustainability actions. The continued use and engagement in the CMSN fostered changes in the employee's behaviors (Melville 2010). Our research aims to examine how CMSNs impact individual environmental belief formation and actions.

Personal values are partly shaped by the individual's interaction with society (Bandura 1986). This research aims to examine how the unique societal structure within a CMSN plays a role in shaping an individual's environmental behaviors. CMSNs can be viewed as social structures since individuals constantly interact in these virtual environments and take social cues on appropriate behavior (Boyd, Ellison 1997). In this study, we use social information-processing and social cognitive theory (Bandura 1986; Compeau, Higgins 1995; Fulk, Steinfield, Schmitz, Power 1987; Subramani, Rajagopalan 2003; Gallivan, Spitler, Koufalis 2005) to provide a foundation for examining how through the interactions in a CMSN, individuals are influenced by cues from others, which impact their beliefs and behaviors. Social information-processing theory has previously been applied to explain group influence, stemming from social networks on individual attitudes toward a health information system (Rice, Aydin 1991) and toward communication media and media usage (Fulk et al. 1987). Recent research has applied social information-processing theory to social network sites to examine the efficacy of viral marketing for specific products or services (Subramani et al. 2003). Social cognitive theory explains how individual behavior is inherently involved in a reciprocal relationship with the social environment within which the individual operates (Bandura 1986; Compeau et al. 1995). This theory explains the interconnection between the CMSN and the individual's behavior and is particularly useful in identifying how an individual's environmental behavior can be impacted by the CMSN. Our research differs in that it uses social information-processing and social cognitive theory to examine how CMSNs influence individual environmental beliefs and behaviors.

We build upon the literature on environmental behavior, social information-processing theory, and social cognitive theory for our theoretical foundation. The research model for this study is presented in Figure 1.

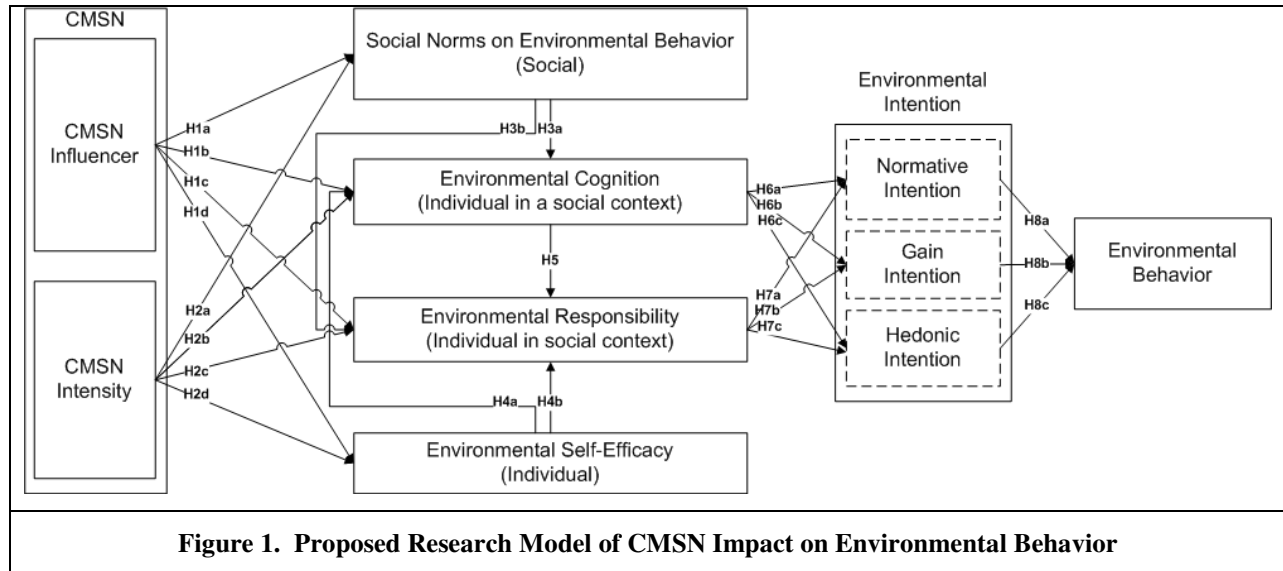


Figure 1. Proposed Research Model of CMSN Impact on Environmental Behavior

Social Information-Processing and Social Cognitive Theory in CMSNs

One's beliefs and behaviors are shaped by the social environment, within which one resides (Bandura 1986). Social networks were shown to be highly influential on individual adoption and usage of IT (Gallivan et al. 2005). Social systems have an influencing effect on individual environmentally conscious behaviors (Melville 2010). Social structures affect individual beliefs and desires, and these "psychic states affect individual action" (Melville 2010, p.4). CMSNs are forms of social structures as they support social activity through computer-mediated communication (Butler 2001). Elliot (2011) states that a role of IS in influencing individual environmentally desirable behaviors is mediating communications among human beings to become more environmentally sensitive and proactive. Understanding how the features of these types of computer-mediated information social structures, such as CMSNs, can influence individual environmental behavior is an important research focus (Watson et al. 2010).

CMSN Influencer

Social information-processing research has used network-based proximity mechanisms to identify and examine how networks affect the "social evaluation process" (Rice et al. 1991, p. 222). We define *CMSN Influencer* as the message-giver within a CMSN, analyzed through their *role* and *proximity*. These characteristics are evaluated using the self, the user of the CMSN, as the point of reference and is consistent with much of the social information-processing research (Shetzer 1993). The *role* of the message-giver refers to whether or not the influencer is actively or passively trying to influence the individual (Subramani et al. 2003), or in other words, whether the message is strong as in a formal message or weak as in an informal message (Shetzer 1993). The CMSN can be viewed as a positional network where *proximity* of the CMSN influencer refers to the extent that individuals occupy the same roles or positions (Rice et al. 1991) within the CMSN. These roles are defined by the connections among all the members of the social system (Rice et al. 1991). In other words, the relationships can be characterized based on the "distribution of power and decision making in particular dyadic interactions" (Shetzer 1993, p. 258). Further, individuals are connected to numerous people in a CMSN and may treat the information that they receive differently based on the role and proximity of the message-giver. For example, an individual may place greater value on information given from a friend or family member regarding ways to be more energy efficient rather than information given from a distant 3rd party organization that is promoting energy efficient behaviors.

Further, Watson et al. (2010) highlighted the importance of social norms in changing "citizens' behavior in an environmentally desirable direction" (p. 31). CMSNs are a particularly dynamic environment where

social norms are managed and directed through various features, such as newsfeeds and discussion forums, which are filled with statements from message-givers from various roles & differing proximity. These interactions can give the CMSN user a sense of the socially acceptable attitudes regarding environmental behavior, which in turn could influence that individual's beliefs and behaviors. Thus, we hypothesize that:

H1a: CMSN Influencer affects social norms on environmental behavior.

As individuals process the information cues that they receive from their environment, they assess their ability to conform to the implied social norms surrounding those information cues (Thomas 1983; Bandura 1986). This *environmental cognition* can be described as an individual's personal attitudes (Blake 1999) regarding environmentally sustainable behavior. CMSNs provide a general IT-enabled social setting that is not exclusively focused on environmentally friendly attitudes. Thus, interactions and communications in this environment may have broader impacts on an individual's behavior due to the variety of relationships present at any particular time. For example, CMSNs that are primarily filled with an individual's close friends (Jacks et al. 2009) and family, as opposed to acquaintances, may have more influencing power on the user's environmental behavior. The above justifies the hypothesis that:

H1b: CMSN Influencer affects an individual's environmental cognition.

The decision that one makes to engage in environmentally friendly behavior is partly reliant upon their *environmental responsibility*, which is the way social or external factors influence an individual's view of the ramifications of their environmental behavior (Blake 1999). However, social pressures and individual behavior are "reciprocally determined" (Compeau et al. 1995; Gallivan et al. 2005). The proximity and role of the message-giver may influence the CMSN user's attitudes and beliefs (Rice et al. 1991). An individual may feel more responsible for impacting the environment if the message-giver is positionally proximate and states a belief that everyone has a responsibility to be environmentally proactive. For example, an individual's close friend who directly states that each person should be energy efficient may have more impact on the individual than just generally stating that the environment is deteriorating. Therefore, we hypothesize that:

H1c: CMSN Influencer affects an individual's environmental responsibility.

Further, as these attitudes on environmental behavior are formed, individuals determine whether they have the necessary skills and abilities (Bandura 1986) to behave in an environmentally conscious way. However, merely having the skills is not enough; one must be able to judge what they can do with those skills (Bandura 1986). There is an important distinction between having the necessary skills to complete an action and the ability to organize and execute an action (Compeau et al. 1995). With regards to environmental behavior, this capability can be described as an individual's *environmental self-efficacy*. These concepts are particularly relevant to environmentally sustainable behaviors because these behaviors are uniquely difficult to continuously engage in. Though many people have the necessary skills to behave in an environmentally conscious way (ie. placing cans in recycle bins, using recyclable bags while shopping, etc.), they may be unable to transfer those skills into conscious actions (ie., actively reducing environmentally damaging behaviors on a regular basis). As the CMSN user interacts with message-givers in the CMSN, the role and proximity of the message-giver may affect the individual's understanding of what behaviors are achievable. For example, a statement made by a friend that they only use reusable water bottles may impact the CMSN user's view of what they can do to reduce their own plastic water bottle usage. Thus, we hypothesize that:

H1d: CMSN Influencer affects an individual's environmental self-efficacy.

CMSN Intensity

To further understand the influential impact that CMSNs have on an individual's behavior, we examine *CMSN Intensity*, which we define as the user's engagement in and usage of the CMSN. This conceptualization is adapted from Ellison et al.'s (2007) Facebook intensity scale, which provides a more

comprehensive view of usage behaviors. Defining CMSN Intensity in this manner allows for a more accurate measurement of an individual's emotional attachment to the CMSN, as well as their frequency of usage. The individual's engagement would determine whether or not the messages or cues that they receive from the CMSN would have the opportunity to have an influencing effect. The frequency of their usage would indicate how often the messages are received and whether or not the messages are able to impact the individual. As the intensity of the participation of an individual in a CMSN increases, they become more aware of the various environmental views of those within the CMSN (Ellison et al. 2007). This refined understanding of the social norms within the CMSN can impact the individual's attitudes and beliefs on environmentally sustainable behavior. The above justifies the hypothesis that:

H2a: CMSN Intensity affects social norms on environmental behavior.

Further, the constant engagement and usage of CMSNs can increase an individual's awareness of various issues, leading to revised attitudes and beliefs on environmental behavior. For example, a link to a news article on a current environmental issue may be posted and commented on, exposing the CMSN user to various views on the issue. Recurrent exposure to these information cues can affect the CMSN user's assessment of whether or not they can conform to social norms (Thomas 1983) on environmental behavior. Therefore, we hypothesize that:

H2b: CMSN Intensity affects an individual's environmental cognition.

Continued engagement in a social environment has an effect on how individuals process information (Gallivan et al. 2005). CMSN intensity can impact whether or not an individual feels as though they are personally responsible for the environmental issues in the world. Individuals who are heavily engaged within the CMSN may have interactions surrounding environmental behavior, which may lead to the individual to feeling more environmentally responsible and then deciding to behave in an environmentally conscious way. Thus, we hypothesize that:

H2c: CMSN Intensity affects an individual's environmental responsibility.

As a CMSN user continually interacts with others, there are numerous opportunities for modifications to the individual's perception (Ellison et al. 2007) of what environmental behaviors they can engage in. For example, viewing numerous posts by family members on their day-to-day actions to reduce their environmental impact through recycling, energy conservation, and waste reduction can impact the user's view of their own capabilities. The above justifies the hypothesis that:

H2d: CMSN Intensity affects an individual's environmental self-efficacy.

Social Norms on Environmental Behavior

Social norms on environmental behavior can develop through the interactions within the CMSN, thus providing guidelines for acceptable behavior (Kollmuss et al. 2002). However, environmental concerns may be overshadowed by contradictory attitudes, such as being uninterested in environmental issues or feeling it is too difficult to be environmentally aware. These views are highly susceptible to influence by social pressures (Kollmuss et al. 2002). For example, the CMSN user may become more aware due to the increased interest in environmental issues shown by other users they interact with in the CMSN. Therefore, we hypothesize that:

H3a: Social norms on environmental behavior affect an individual's environmental cognition.

Further, individuals may be less likely to engage in environmental behaviors due to their tendency to shirk the responsibility of solving existing environmental problems. Social norms on can influence an individual's view of their personal responsibility (Butler 2001), especially on environmental issues. For example, interactions within a CMSN that highlight each person's duty to reduce litter in their community may affect whether or not the CMSN user feels responsible for environmental issues within their community. Thus, we hypothesize that:

H3b: Social norms on environmental behavior affect an individual's environmental responsibility.

Environmental Self-Efficacy

Individuals assess their own capabilities as they receive information on various issues (Bandura 1986), such as how others engage in environmental behavior. Certain environmental behaviors may seem unattainable to the individual, thus reducing their need to form opinions on environmentally sustainable behaviors. For example, a CMSN user may feel as though their actions will not impact the environment causing them to minimize the importance of environmental issues. The above leads to the hypothesis that:

H4a: An individual's environmental self-efficacy affects their environmental cognition.

Further, an individual may extend this assessment of their personal abilities (Bandura 1986) to whether or not they should be responsible to the greater environment. If one cannot actually engage in environmentally sensitive behaviors, the individual may not feel as though there is a reason to bother feeling responsible to the greater environment. Thus, we hypothesize that:

H4b: An individual's environmental self-efficacy affects their environmental responsibility.

As was stated earlier, an individual's environmental cognition is partly formed through interactions with the CMSN environment and the individual's assessment of expected behavior within the environment (Compeau et al. 1995; Subramani et al. 2003). For example, individuals are constantly subjected to statements that are made by others in a CMSN, which can influence their beliefs of what expected behavior entails and influence whether or not they feel responsible for the environment. The above justifies the hypothesis that:

H5: Environmental cognition affects an individual's environmental responsibility.

Environmental Intention

As was stated earlier, environmental behavior is an individual's conscious effort to reduce the negative impact they have on the world. Environmental behaviors can be categorized into three frames of goals or intentions: normative, gain, and hedonic intentions (Lindenberg, Stegg 2007). This framework is useful for analyzing environmental behavior since individual intentions can be 'activated' by knowledge. Extant research has shown a strong link between one's intentions and actual behavior, such as studies using the theory of planned behavior (Ajzen 1991; Terry et al. 1999).

Researchers have identified how various factors can either motivate or inhibit individuals from behaving in an environmentally sustainable way (Kollmuss et al. 2002; Blake 1999). Social and situational factors can influence an individual's understanding of issues (Bandura 1986; Compeau et al. 1995), such as the individual's evaluation of the consequences of particular environmental actions. As individuals interact with others in the CMSN, their environmental cognition is affected by information cues (Thomas et al. 1983), such as posts and comments in a newsfeed on environmental issues. As the individual forms personal attitudes on environmental issues, they assess whether or not they will continually behave in an environmentally friendly way. Therefore, we hypothesize that:

H6a: Environmental cognition affects an individual's normative environmental intention.

The awareness that individuals have on environmental issues can impact whether or not they will engage in environmentally conscious behavior due to incentives. For example, individuals may not value a financial incentive to reduce their carbon footprint due to their lack of knowledge on what a carbon footprint is or how it can be reduced. Thus, we hypothesize that:

H6b: Environmental cognition affects an individual's gain environmental intention.

Also, an individual's awareness of environmental issues can impact whether or not they will engage in environmentally sensitive ways due to personal satisfaction or enjoyment. For example, a person may not

experience enjoyment from reducing litter in their community due to their ignorance on the effects of littering on the environment. The above leads to the hypothesis that:

H6c: Environmental cognition affects an individual's hedonic environmental intention.

Environmental Responsibility

The social interactions within the CMSN provide individuals with information which they then process into their own beliefs and attitudes (Fulk et al. 1987; Subramani et al. 2003). As the individual assesses what entails socially acceptable environmental behavior, they also begin to develop their own understanding of whether or not they are responsible to a larger social environment. This sense of environmental responsibility can affect whether or not the individual intends to behave in environmental behavior. For example, the more responsible an individual feels to the greater environment, the higher the likelihood they will engage in environmentally responsible behavior. Conversely, if an individual only feels responsible for their immediate environment, they may be less likely to behave in an environmentally responsible way. This type of behavior can be long-lasting since the individual is continually involved in their immediate environment, thus reemphasizing its importance over the larger environment. Therefore, we hypothesize that:

H7a: Environmental responsibility affects an individual's normative environmental intention.

Further, an individual's sense of environmental responsibility can impact whether or not they will engage in environmentally conscious behavior due to incentives. For example, individuals who do not feel responsible for the greater environment may not be swayed by financial incentives to reduce their energy consumption. Thus, we hypothesize that:

H7b: Environmental responsibility affects an individual's gain environmental intention.

Also, an individual's sense of environmental responsibility can impact whether or not they will engage in environmentally sensitive behavior due to personal enjoyment or satisfaction. For example, a person who does not feel responsible for the environment may not receive any personal satisfaction from reducing their waste, thus they would continue to use plastic water bottles. The above leads to the hypothesis that:

H7c: Environmental responsibility affects an individual's hedonic environmental intention.

Environmental Behavior

In more detail, normative intentions refer to an individual engaging in environmentally sensitive behavior without prompting from temporary incentives such as receiving financial benefits or gaining personal satisfaction (Blake 1999; Lindenberg et al. 2007). Normative intentions lead to longer lasting behaviors as they maintain through dynamic situations and are not engaged in due to temporary incentives (Lindenberg et al. 2007). Therefore, we hypothesize that:

H8a: Normative environmental intentions affect an individual's environmental behavior.

Additionally, gain intentions are described as being very sensitive to information about incentives for environmental behavior (Lindenberg et al. 2007). Gain intentions are focused on incentives and financial gain from engaging in environmentally friendly behavior. For example, a gain intention could be described as receiving a discount on one's energy bill for reducing energy consumption. This type of intention leads to environmental behavior, but only during a period of time when there is a financial gain. Thus, we hypothesize that:

H8b: Gain environmental intentions affect an individual's environmental behavior.

Lastly, hedonic intentions are described as a focus to engage in environmental behavior when an individual derives pleasure or satisfaction from it (Lindenberg et al. 2007). This type of intention-framed behavior is more focused on an individual's emotional state. Since these intentions are reliant upon emotions, they lead to behaviors that are just as effective as other intentions, but not as stable. The above leads to the hypothesis that:

H8c: Hedonic environmental intentions affect an individual's environmental behavior.

Methodology

The proposed research model was tested using a pilot study of 73 usable responses collected from 92 individuals that use Facebook. Survey participants were recruited from undergraduate classes at a large, regional university and had the option to receive extra credit, though participation was completely voluntary. Survey measures were adapted from journals across a variety of disciplines including, but not limited to, sociology, information systems, and environmental research. The survey included a mix of questions including those with a five-point agreement Likert scale, as well as several open-ended questions. Structural Equation Modeling techniques using SmartPLS were used to analyze the data.

Initial Results Based on Pilot Study

Of the 73 people that completed the pilot survey, 34% participate on Facebook 2-3 times a day and 39% have 400 or more friends on Facebook. All respondents were over 18 years of age, with 75% reporting ages between 18 and 25. Preliminary analysis of the data shows initial support for many of the hypotheses in the model. Though the sample size is too small to draw any conclusions, the initial analysis has been included to encourage discussion for improvements to the research.

Our analysis shows the results for H1a ($T=3.943$, $\beta=0.453$), H1b ($T=0.559$, $\beta=-0.047$), H1c ($T=2.614$, $\beta=0.348$), and H1d ($T=1.246$, $\beta=-0.148$). This shows that CMSN Influencer affects Social Norms and Environmental Responsibility, but not Environmental Cognition and Environmental Self-Efficacy. Further analysis with a larger data set is needed to see if this holds true in a larger sample. The analysis also shows results for H2a ($T=1.755$, $\beta=0.247$), H2b ($T=1.428$, $\beta=0.211$), H2c ($T=1.090$, $\beta=-0.114$), and H2d ($T=2.012$, $\beta=0.294$). These results imply that CMSN Intensity affects Environmental Cognition and Environmental Self-Efficacy but not Social Norms or Environmental Responsibility. This demonstrates in this small study that CMSN Influencer and CMSN Intensity have differential effects, where one possibly compensates for the other. Further investigation is needed for this interesting result. The analysis shows results for H3a ($T=0.222$, $\beta=0.023$) and H3b ($T=1.811$, $\beta=0.267$) are both non-significant. The analysis also shows results for H4a ($T=2.364$, $\beta=0.436$) and H4b ($T=0.048$, $\beta=0.006$). These results imply that Environmental Self-Efficacy affects Environmental Cognition, but not Environmental Responsibility. The analysis also shows results for H5 ($T=1.362$, $\beta=-0.192$), H6a ($T=2.065$, $\beta=-0.342$), H6b ($T=0.666$, $\beta=-0.093$), and H6c ($T=0.847$, $\beta=-0.104$). These results show that Environmental Cognition only affects Normative Intention and has no influence on Gain Intention or Hedonic Intention or on Environmental Responsibility. This is contrary to our hypotheses and needs further investigation. One explanation might be that Environmental Cognition, or awareness, is so low that its perceptive terms have no effect. The analysis also shows results for H7a ($T=2.189$, $\beta=0.314$), H7b ($T=2.412$, $\beta=0.350$), and H7c ($T=2.632$, $\beta=0.428$). These results show that Environmental Responsibility plays a critical role in determining Normative Intention, Gain Intention, and Hedonic Intention. Lastly, the analysis shows results for H8a ($T=1.203$, $\beta=0.156$), H8b ($T=2.573$, $\beta=0.360$), and H8c ($T=1.315$, $\beta=0.207$). These results show that Environmental Behavior is affected by Gain Intention and not by the other two types of Intention. These are all very preliminary results from a small pilot study.

Conclusion

Future research plans for this research-in-progress study include instrument refinement, large scale data collection, and additional data analysis. Collecting data from a more diverse sample will allow for further testing of the research model. The target survey respondents will include individuals who use CMSNs, including student and non-student populations. Additionally, we will use also employ a qualitative approach to further validate the research model that we have presented. This methodological approach will enable us to explore the limits and details of environmentally conscious behavioral changes in CMSNs through discussions with individuals that have experience with the phenomenon of interest. In addition to this study, our future research endeavors include expanding the examination of CMSN attributes and how those attributes influence individual environmental behaviors.

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