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MOTIVATION AND CONSEQUENCE OF INDIVIDUAL'S INVOLVEMENT IN SOCIAL NETWORK SITES: A STUDY OF SOCIAL COMPUTING OF INTER COLLECTIVIST-INDIVIDUALIST CULTURAL VALUE

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ABSTRACT

This research aims to examine the empirical model of social computing. Research model is developed upon the social influence factors, technology acceptance model, psycho-social wellbeing, and culture value. Research design employed online survey questionnaire. Data of 433 samples were analyzed using Partial Least Square (PLS) technique. Results suggest that proposed model has met criteria of goodness-of-fit model and indicated that Identification and Compliant are the motivation factors of desire to involve in social network sites (SNS) and involvement in SNS predicts depression and loneliness. This research also finds that motivation of individual to involve in SNS and its impact are different among collectivist and individualist. Implications for stakeholders and further research are discussed.

Keywords: social computing, social influence factors, psychosocial wellbeing, social network sites, individual culture values, and PLS.

INTRODUCTION

Empirical studies on information system (IS) has produced various disciplines of scientific core, analysis level and research mainstream, like a study on the utilization and impacts of information technology (IT) on the level of individual analysis, on observation of the acceptance level, motivation, IT-based innovations, satisfaction and usefulness of information system (IS) for individual in context of organization (Sidorova *et al.* 2008). Models of information system adoption, like *technology acceptance model* (TAM), *tech-*

nology planned behavior (TPB), TAM decomposition, and *unified theory of acceptance* and *utilization technology* (UTAUT) are empirical models, which are experimented quite a lot in the empirical study of IS while success model of DeLone & McClean (DeLone & McClean, 2002) is one of the many models, which is referred by researchers and practitioners to measure the impact of IT on individual level. Although the previous empirical studies have observed themes on the utilization and impacts of IT in context of organization, along with the advancement of IT in social context, the emergence of social computing behavior has changed the issues on motivation, behavior, and impact of IT utilization by individual and organization. Social computing has changed socio-economic motivation of an individual in utilizing IT into socio-psychological motivation (Barron *et al.* 2006). Social computing also has shifted issues on impact of productivity in IT utilization by individual into psychosocial issues (Kraut *et al.* 1998; Kim *et al.* 2009). Social computing even has shifted the level of utilization analysis and IT utilization impact from the level of individual and organization analysis to the level of social group and society (Bagozzi & Dholakia, 2002). The big change of themes on IT utilization and impacts of IT utilization in context of social computing has become an important issue that needs to be observed empirically because such a big change has large implication theoretically and practically.

Technically, social computing behavior has varieties of application forms, among others are blog, wiki, instant message, multiplayer gaming, open source, social network sites (SNS) and social bookmarking (Wang *et al.* 2007). SNS is a form of social computing behavior that has the highest level of growth of all other social computing medias (Parameswaran & Whinston, 2007). According to Boyd & Ellison (2008) there have been at least 202 kinds of SNS applications with the category of common mainstream group and exclusive group. Common mainstream group of SNS is SNS with all aspects or features, so it can be utilized by variety of users, like Facebook, Twitter, MySpace and Google+, while exclusive group of SNS only has one or several aspects or utilization features so it can be utilized by certain group of users, like Youtube, WAYN, SportsCast, MyChurch, Linkedln, Flickr, Soundpedia, Gigapedia, PlugIM, KidLinks, Family 2.0, OkCupid, BuddyMarks, and Virb. According to Dube (2011), SNS has five characteristic, namely user-based, interactive, community driven, relationship, and emotion over content so that although idiosyncratically, SNS has uniqueness that cannot be simply generalized, SNS variety has the same characteristic of utilization motivation and behavior, which enables the study of the SNS application variety in one perspective of utilization motivation and behavior.

Theoretically, the growth of social computing creates growth gaps among the models of empirical IS adoption (Malhotra & Galletta, 1999; Schepers *et al.* 2008; Vanoy & Palvia, 2010). Theories on IS adoption are only appropriately used to explain social behavior of IT adoption and utilization (Baron *et al.* 2006) so it is necessary to develop model of social computing behavior.

Empirical studies on social computing behavior has begun since the emergence of cellular technology and Web 2.0 Malhotra & Galletta (1999) and Bagozzi & Dholakia (2002, 2006) are researchers who have done observations on social computing behavior in the perspective of socio-technology involving social influence constructs, namely, internalization, identification and compliance (Kelman, 1958) as psychological commitment construct. Those researchers found out that TAM development model involving social constructs has better prediction variants than TAM model in explaining social computing behavior. However, the shortcomings of those studies are treating the social influence factor as one mul-

tidimensional construct of psychological commitment, which should have been three one-dimensional constructs, not yet having measured the correlation of social influence factors toward actual behavior, and only observing individual's involvement in context of certain online community so that the experimentation outcome does not entirely represent the social computing behavior.

Meanwhile, a specific study on the impacts of the involvement in online community is relatively limitedly disclosed in the empirical studies of IS, because the study on IT impacts discloses more on IS utilization impacts toward the work satisfaction, work productivity, and values on organization (Weill, 1990; Brynjolfsson, 1993). Some studies on the impact of the involvement in online community reveal that there is correlation between individual's involvement behavior in online community and the psychosocial prosperity, namely depression and loneliness (Morahan-Martin & Schumacher, 2003; Jackson *et al.* 2004; Kang, 2007; Leung, 2007; Schepers *et al.* 2008). Somehow, the previous empirical studies on the correlation between individual's involvement behavior in online community and the psychosocial prosperity are still not yet conclusive, merely measuring the negative impact of individual's involvement in online community, and not yet involving individual's cultural value. Whereas in fact, studies on individual's involvement in online community should have been able to measure the positive impact, like life satisfaction and happiness (McKenna & Bargh, 2000). Besides, individual's involvement in SNS creates a non-restricted and inter-nation communication process, so the study of the impact of individual's involvement in SNS also had better involve the factor of cultural value. Therefore, the development of social computing behavior model, especially the involvement in SNS that integrates motivation and consequences by involving social influence factor, IT acceptance factors, actual involvement behavior, impacts of psychosocial prosperity, and other cultural variables becomes important to carry out.

This study is aimed at developing and experimenting models of social computing behavior, especially the impacts of individual's involvement in SNS. This study uses socio-technology-psychology perspective, that is, integrating all aspects of attitude, behavior, and emotion in explaining motivation, actual behavior, and the impact of individual's involvement in SNS. This study focuses on the development and experimentation of empirical models with valid and reliable metrics by involving social influence constructs (compliance, identification, and internalization) and IT acceptance construct (the perceived ease-of-use, and the perceived usefulness) as the desire predictor and actual behavior of individual's involvement in SNS. This study chooses two major TAM constructs (namely: the perceived ease-of-use and the perceived usefulness) because those two constructs are the major tough and parsimonious constructs in explaining the IT acceptance perception of individual on the previous studies of IS adoption and utilization and TAM model is the toughest basic model of all other IS adoption and utilization model (Venkatesh & Davis, 2000; Venkatesh *et al.* 2003). This study also experiments the positive and negative impact of SNS involvement behavior toward the psychosocial prosperity (namely: depression, loneliness, and happiness construct), involving cultural value as moderating variable. This research subjects are users or members who joins the social network site (SNS) of Facebook, Twitter, MySpace and Google+. Simultaneous experiments on attitude construct as antecedent, actual behavior, and emotion as consequence of SNS involvement, are expected to give more comprehensive empirical explanation on social computing behavior, especially individual's involvement in SNS.

This study is important to carry out because the development and experimentation of

social computing behavior model, especially the impacts of individual's involvement in SNS involving aspects of attitude, behavior and emotion, can explain the individual's involvement in SNS better than the previous models of IS adoption. The development and experimentation on models of social computing behavior will add to the academic reference of IS adoption and utilization models, especially in context of SNS. The experimentation of individual's involvement in SNS models through online questionnaire survey, purposive sampling, and tough statistical experimentation, will produce empirical model with valid and reliable metrics, which can be replicated by the subsequent empirical studies. Simultaneous development and experimentation of empirical models that cover antecedent and consequence of individual's involvement in SNS behavior gives a more thorough and specific scientific perspective on social computing phenomenon. Besides, this study presents the scientific explanation about the correlation of attitude, behavior and emotion aspects in social computing that will become important information for organization, government institution, and common society related to social implication and management of social computing behavior especially in context of SNS.

THEORETICAL REVIEW AND HYPOTHESIS DEVELOPMENT

The Social Influence Factors on Desire

Kelman (1958) proposed Social Influence Theory. Such theory explains that individual's behavior is influenced by social influence factors. Social influence takes place when individual's thought and action are influenced consciously and unconsciously by other people as a result of the changing perception of some one that results from the relation with the influencer, with other people or common people in general (Kelman, 1961). Social Influence Theory explains three forms of social influence process, that is, internalization, identification and compliance.

Internalization is a process of the formation of perception for the conformity of values on an individual with other people or his/her community. Social influence will be effectively formed within someone when the individual is easily influenced to agree with other's or community's attitude. An individual who undergo internalization will voluntarily act and behave consciously toward something that is in accordance with his intrinsic value.

In context of social computing behavior of SNS, internalization becomes a strong predictor for individual's intrinsic motivation to participate in SNS. Previous empirical studies on social computing interpret internalization construct with Group Norm construct. However, this study remain to use internalization construct to turn the terminology of internalization construct back to the domain of Social Computing Theory.

Individual who perceives the existence of conformity of his intrinsic value with values referred by online community will be motivated to get involved in the community. Empirical study by Malhotra & Galletta (1999) found out that inter internalization predicts the perceived usefulness, and the perceived ease-of-use and the individual's intention to behave in online community. Internalization has the highest variant in explaining the influence of social factor toward attitude variable and behavioral intention. Internalization also predicts the desire to get involved in SNS (Bagozzi, 2000), intention to get involved in their online community (Bagozzi & Dholakia, 2002) and preference of attitude toward online advertisement (Dholakia *et al.* 2004). Malhotra & Galetta (2003) also found out that internalization is better to predict IS volitional adoption than TAM constructs.

This study argues that individual who gets social influence of SNS and perceives the presence of conformity of SNS community

values and purposes with that of individual to get involved in SNS. Based on that explanation, a hypothesis can be constructed in this research as follows:

H1a: Internalization has positive influence toward the desire of involvement in SNS

The second dimension of Social Influence Theory is identification, that is the formation of individual's perception to behave along with the values referred by certain people, community, and common society that he/she looks up to. Identification forms individual's attitude and behavior in accordance with the community's attitude and behavior. Identification construct can be interpreted as social identity constructs (Bagozzi & Dholakia, 2006; Vanoy & Palvia, 2010). However, this study remains to use identification construct to turn the terminology of identification construct back to the domain of Social Influence Theory.

Social influence will effectively be formed in an individual when s/he acts and behaves along with someone that s/he looks up to or respects, like parents and celebrity. Individual who undergo identification will voluntarily act and behave consciously toward something s/he considers in line with his/her intrinsic value. However, identification can be mandatory when the individual's decision is driven to satisfy other people or an uneasy feeling or the individual's intention to maintain a good relationship and a social identity in a community.

In context of SNS social computing behavior, identification becomes a strong predictor of individual's intrinsic motivation to participate in SNS. Individual who perceives the community's attractiveness for himself, will be motivated to get involved in the community. Empirical study by Malhotra & Galetta (1999) found out that identification predict the perceived usefulness, the perceived ease-of-use and intention of behavior in online community. Identification predicts behavioral desire of online advertisement group (Bagozzi & Dholakia, 2006) and the behavioral desire to get involved in online community (Dholakia *et al.* 2004). Malhotra & Galletta (2003) also found out that identification is better to predict IS volitional adoption than TAM constructs.

This study argues that individual who get social influence of SNS and perceives the presence of community's attractiveness in the form of assumption that his/her involvement in SNS community can maintain good relationship with other people and gives him identity or existence in SNS community will encourage the individual's desire to get involved in SNS. Based on that explanation, hypothesis can be formulated in this research as the following:

H1b: Identification has positive influence toward desire to get involved in SNS

The third dimension of Social Influence Theory is compliance, namely, process of the formation of perception of individual acceptance toward the community social values to get certain appreciation or to avoid penalty (Kelman, 1958). Compliance forms individual's attitude and behavior to get reward to get involved in community. Social influence will be effectively formed in an individual when s/he feels that his/her behavior will result in benefits and will avoid her/him from penalty. Individual who undergoes compliance will behave along with the community attitude and behavior although he does not agree with the behavior.

In the studies of IS, Compliance construct is adapted into subjective norm construct. IS adoption models, like TRA, TAM, TPB, and UTAUT employ such construct as predictor of IS intention and behavior. Many empirical studies confirm the positive influence of the subjective norm toward attitude, intention and behavior of IS adoption in context of organization. However, Social Influence Theory explains that compliance does not fully influence positively toward attitude and intention because compliance contains two perceived

meanings, namely reward and penalty. Compliance social influence, which is perceived to produce reward will have positive influence on the attitude, intention, desire and behavior. In contrast, compliance social influence, which is perceived to produce penalty will have negative influence on the attitude, intention, desire and behavior.

In context of SNS social computing behavior, compliance role as predictor of motivation of SNS involvement is still debatable. Bagozzi & Dholakia (2002, 2006) concludes that compliance is not relevant as predictor of SNS social computing behavior because SNS voluntary characteristic is not suitable with the compliance characteristic. The study done by Sledgianowski and Kulviwat (2009) on online community using social pressure (normative pressure) as an alternative construct of compliance social influence, supports the statement of Bagozzi & Dholakia. However, the study done by Malhotra & Galetta (1999, 2003) found out that compliance has influence on the intention and behavior of SNS involvement. Malhotra argues that individual's involvement in SNS is encouraged by various motivations. Individual's behavior of SNS can be encouraged by motivation to share knowledge, to establish existence and social identity, even SNS can be used as media to earn financial benefits through electronic business.

This study argues that individual who gets SNS social influence and perceives that his/her involvement in SNS community can give him/her social benefits and or avoid him from social sanction, will encourage the individual to get involved in SNS. Based on the explanation above, a hypothesis can be constructed in this research as the following:

H1c: Compliance has influence on the desire to get involved in Social Network Sites.

The Perceived Ease-of-Use and Desire

Davis *et al.* (1989) defines the perceived ease-of-use as an individual level of belief that in adopting certain system, it is not necessary to do hard efforts. Although effort measurement is assumed to be different by everyone but to avoid the rejection from the system user to the system developed, a being developed IS should be easy for application by the users without having to do hard effort.

The perceived ease-of-use is one of the many factors in TAM model, which has been experimented in research by Davis *et al.* (1989). The outcome of that research shows that the perceived ease-of-use factor proves to be able to explain the reason why an individual adopts information system and explain how the new IS being developed can accepted by users.

The previous studies on IS adoption only experimented the correlation of the perceived ease-of-use with intention to behave, not with the desire to behave. The previous study on IS, differentiated desire from intention and attitude (Perugini & Bagozzi, 2001) and concluded that desire is less appropriately used to explain IS adoption behavior in context of organization. Desire is more appropriately used to explain the consumers' behavior (Belk *et al.* 2003). However, in context of social computing, a study done by Malhotra & Galetta (1999, 2003) and Dholakia *et al.* (2004) found out that the perceived ease-of-use predicts desire to get involved in online community. The perceived ease-of-use also predicts desire to get involved in online branded community (Bagozzi & Dholakia, 2006).

This study argues that individual who perceives ease to get involved in SNS, without having to do hard effort, and without struggling in the adoption, such perception will encourage an individual to get involved in SNS. Thus, a hypothesis can be constructed in this research as follows:

H2a: the perceived ease-of-use has positive influence toward the desire to get involved in SNS.

The Correlation of The Perceived Usefulness and Desire

The perceived usefulness is a level of individual's belief that using technology will promote their working performance (Davis *et al.* 1989). The perceived usefulness is a belief on the decision making process. If one is sure that the system is useful, s/he will use it. On the other hand, when one is sure that the information system is not useful, he will not use it.

Based on motivation theory revealed by Deci (1976), the technology acceptance by users is determined by two types of motivation, namely extrinsic and intrinsic. Intrinsic motivation arouses because of the expectation felt by an individual, resulting from the interaction with the application of information technology system. Extrinsic motivation arouses because of the expectation of adoption of certain technology system application he accepts from outside the individual's interaction with system. The definition of the perceived usefulness describes a form of extrinsic motivation, because the benefits obtained comes from outside, namely, appreciation/reward because of his better performance.

The previous research shows that the perceived usefulness construct has significant positive influence toward the adoption of information system (Davis *et al.* 1989; Igbaria *et al.* 1997). The perceived usefulness is the most significant and important construct in influencing attitude, intention and behavior in the adoption of technology of the other constructs.

The previous study on IS adoption only experimented the perceived of usefulness toward the intention to behave, not the desire to behave. In context of social computing, the study done by Malhotra & Galetta (1999; 2003) and Dholakia *et al.* (2004) found out that the perceived usefulness predicts the desire to get involved in online branded community (Bagozzi & Dholakia, 2006).

This study argues that individual who perceives the involvement in SNS will produce positive outcome and socio-psychological benefits, will have desire to get involved in SNS. Therefore, hypothesis that can be developed by this research is as follows:

H2b: The perceived usefulness has positive influence toward the desire to get involved in SNS.

The Influence of Desire toward The Involvement Behavior in SNS

The studies of IS adoption and utilization is restricted to using desire construct to predict behavior. Desire construct is mostly used in researches on consumers' behavior in marketing management. Bagozzi & Dholakia (2002) stated that desire encourages motivation to act and along with attitude constructs and social influence construct, desire influences behavior to get involved. Outraging desire will encourage behavior if it is influenced by high commitment to act (internalization, identification, and compliance). Davis (1984) mentioned it with "connected condition" to explain the process in which desire is connected to certain intention and behavior. One will act upon his consciousness and acceptance to act. Consciousness and acceptance toward desire is a catalyst to relieve reserved desire and generally have something to do with biological need; food, sexual intercourse and security.

The previous IS studies differentiated desire from intention and attitude (Perugini & Bagozzi, 2001). Desire plays an important role in various kinds of consumers' behavior (Belk *et al.* 2003). The study carried out by Dholakia *et al.* (2004) found that desire has positive influence toward involvement behavior in online community. Desire also predicts strongly the individual's involvement in online branded community (Bagozzi & Dholakia, 2006). Meanwhile, the study done by Shen *et al.* (2009) found out that desire predicts the

involvement behavior in short message technology.

This research does not employ intention but desire as predictor of involvement behavior in SNS because of its nature of compulsiveness and enjoyment, so desire is accurately representative to explain IS adoption behavior applied to organization or IS in general. Desire construct gives stronger stress on motivational drive to do something bigger than intention. Thus, desire that is formed by social influence will encourage individual to get involved in SNS. Hypothesis that can be developed out of this research is as the following:

H3: The bigger desire to get involved in SNS, the higher the level of involvement in SNS

The Influence of Individual's Involvement in SNS toward Psycho-social Prosperity

The study on the impact of IT, mainly internet and interactive media started when a researcher of Carnegie-Mellon University in 1998 found out proof that they call with the term internet paradox (Kraut *et al.* 1998). The study found out that internet utilization is closely related to the decrease of psycho-social prosperity and social involvement. The finding assumes that social interaction facility and psycho-social benefits have correlation with internet utilization.

The impact of individual's involvement in online community is in the form of negative and positive outcome (Kang, 2007). Such impact can be seen in the perspective of life quality concept. Ventegodt *et al.* (2003) elaborates life quality integrative theory, which consists of objective and subjective dimension. The impact of involvement in SNS can be measured toward the objective and subjective dimension of life quality, somehow the objective dimension measurement (for example: the level of income, the amount of asset, and the amount of necessity fulfilled) is less relevant to carry out in context of involvement behavior in SNS. Therefore, the study of the impact of the involvement in SNS should be measured through the subjective dimension of life quality for positive aspect (namely: happiness) and negative aspect (namely: depression and loneliness).

Some studies on the impact of SNS and internet involvement toward psycho-social prosperity are inclined to observe the negative impact. Jackson *et al.* (2004) conducted a survey on the activity of the utilization of SNS HomeNet Too in America. The study found out that utilization frequency, participation intensity and the amount of sites opened influences depression and loneliness. The research result of Jackson *et al.* (2004) also found out the correlation among demographic characteristic (race and age) and personality trait with the social dysfunction.

The correlation between SNS adoption and psycho-social prosperity is also revealed in the empirical study of Kang (2007). The study argues that the main factor that encourages social dysfunction as a consequence of SNS adoption is disembodiment[1] (Morahan-Martin & Schumacher, 2000). Meanwhile, the study of Schepers *et al.* (2008) found out the negative influence of the types of SNS activities toward the psycho-social prosperity. Users who download and see videos or songs online have the tendency to have lower level of social dysfunction than those who make online communication.

This study argues that the individual's involvement in SNS is potential to cause problems of psycho-social prosperity, like depression and loneliness. The impacts of psycho-social prosperity problem is seen more clearly when the adoption (frequency, intensity, the amount of messages sent, and the amount of domain accessed) is compulsive. Compulsive-

[1] Disembodiment is a transcendent process of human body from real condition to virtual condition, in which human body experiences limit constraints of motoric and sensory function so that psychological and physiological function of human being does not work optimally.

ness of SNS involvement can create disembodiment and reduce the quality and quantity of real social interaction done by an individual to other people. The impact of high involvement in online community can also cause an individual to experience depression and loneliness when an individual perceives depression and loneliness as part of negative outcome of SNS involvement (Kim *et al.* 2009) (for example: the problem of social interaction toward family, the problem that s/he gets in the workplace, or the problem s/he gets from school). Based on the above explanation, a hypothesis can be developed in this research as the following:

H4a: The level of individual's involvement in SNS has positive influence toward depression.

H4b: The level of individual's involvement in SNS has positive influence toward loneliness.

Other than the negative impact, the involvement in SNS also can give positive influence toward the psycho-social prosperity, namely happiness. The study of Jackson *et al.* (2004) on the 117 adult individuals who were the members of HomeNet found out that frequency and intensity of involvement in HomeNet influenced depression and happiness, with the variety level of happiness change higher than depression. Happiness was found in community participants because the online community provided facility of communication and various information that gave opportunity to individuals to communicate to and interact with each other. The facility of communication fulfilled the participants' expectation to communicate and interact so that it, in turn, gave the participants happiness.

The study of Chou & Lin (2010) on the users of Facebook and MySpace found out that the involvement in SNS is able to predict the happiness. Individuals who are involved in SNS feel happy out of the fulfillment of online social interaction. Such happiness is defined as a collective phenomenon, that is, the fulfillment of individual's expectation and intention through collective interaction process (Fowler & Christakis, 2008). An individual cannot fulfill his/her needs individually but an individual needs other people to have online social interaction. The involvement in SNS becomes media for an individual to obtain collective happiness.

This study argues that involvement in SNS is a media for an individual to fulfill various needs, especially the need to communicate and do social interaction with other people. The need to communicate and do interaction will give positive impact, namely, happiness when an individual involved in SNS thinks of obtaining positive outcomes out of his involvement. The positive outcomes are among others, getting relations with other people, having freedom in SNS, accepting the current life condition, having ability to manage life, having goals and the fulfillment of that goals through the involvement in SNS, and undergoing process of learning through the involvement of SNS. Based on the explanation above, a hypothesis can be developed from this research is as the following:

H4c: The level of involvement of in SNS has positive influence toward happiness.

The Influence of Collectivist's Cultural Value Moderation versus Individualist's

The study of culture and IT can be observed through the variety level of analysis and culture level (Leidner and Kayworth, 2006). Culture can be seen through the level of cultural substance, values, and artifacts. This research employs the level of cultural value because it is easier to measure and reflect the cultural substance. Culture can also be observed on the level of analysis of country, organization, subunit, and individual. This research measures culture on individual level, because of some reasons that show biased measurement of culture on country level, although the studies on culture and IT generally

use analysis on the level of country or organization.

Cultural value has many concepts, one of the popular concept is cultural dimension, which was asserted by Hofstede (1983), namely collectivist-individualist, avoidance of uncertainty, gaps of lower-high authority, masculinism-feminism and Confucianism. This research uses cultural value concept of collectivist-individualists because such concept can explain correlations of culture, social involvement and psycho-social prosperity. However, this research does not use analysis level of country like proposed by Hofstede because the measurement on the country level is static, cultural value on individual has changed as a result of globalization and internet, a country cultural value does not reflect cultural value on individual level, and the measurement on country level results in the interpretation stereotype and ecological fallacy in measuring cultural value on individual level (Straub *et al.* 2002).

This research measures cultural value on the analysis level of individual using ideocentrism-allocentrism concept of cultural value, namely, collectivist-individualist cultural value can be measured through cultural value referred by every individual (Triandis & Singelis, 1998). Ideocentrism reflects individualist's cultural value with characteristic of autonomy, self-interest, self-determination, and freedom. Allocentrism reflects collectivist's cultural value with characteristics of sharing value, common goals, and maintaining relation with other people in harmony.

The study on culture and IT in context of SNS is very relatively limitedly exposed in empirical research, especially the one that observes explicitly the correlation between the SNS involvement behavior and psycho-social prosperity. However, the study of Talukder & Yeow (2007) stated that cultural value of individualism-collectivism (I-C) has been identified as an important dimension of culture that influences the level of social tie, especially in context of online community. Individualist's cultural value is prone to having many friends but a few amounts of long-termed intimate friendship relation. On the other hand, collectivist's cultural value tends to have a few friends but enjoys long-termed intimate friendship relation (Hofstede, 1998). Meanwhile, the study of Allik & Realo (2004) in 42 countries found a strong correlation between high individualism and high social model. The study concludes that in a community where individuals feel free and freed from any social restrictions, will have a high voluntary relation and trustworthiness among hem and have a certain public spirit, while an individual who lives in individualist community tend to build voluntary relation and trustworthiness to each other. Interestingly, Chinese who are considered to have collectivist's culture, even have a high level of trustworthiness among them. If individualist tends to change relation and easily trust other people, individualist will have more social relations than collectivists and easily gets involved in SNS community. Somehow, the study on social ties in North American culture even found out that individualists tend to maintain relation in SNS community and a few of them make a new friendship to other people they have not met (Boyd & Ellison, 2007). Hence, it can be concluded that intercultural social ties I-C implies the ability of each individual with his/her cultural value in facing the impact of involvement in SNS.

Gudykunst (1998) explained that individualist feels more comfortable to interact with foreigners and is more expressive than collectivists. The ability to interact with foreigners and maintain their shallow virtual social relation is an indicator of the ability to face the impacts of SNS involvement toward the psycho-social prosperity. Meanwhile, the research done by Cardon *et al.* (2009) on seven ethics in Los Angeles, found out that the impact of psycho-social can take place in any cultural value, that is measured through the ability to make online meeting or to build online social

capital. Individual with high ability to make online meeting tend to have high social capital so that the impact of SNS involvement toward psycho-social prosperity is less likely to happen because their social capital becomes the measurement of the ability to develop a real social relation outside their online social relation.

This research argues that both I-C cultural value have a different adoption behavior as they have potential for different social capital, so that the impact of SNS involvement behavior toward the psycho-social prosperity will also be different. Collectivists' cultural value has a high real social capital so the ability to make a new friendship relation in online community is easier. Many online –community friendships can encourage an individual to behave compulsively so that it triggers the presence of psycho-social prosperity problem, but real social capital and the ability to maintain offline social relation reduces the potential of psycho-social prosperity problem and at the same time remains to obtain happiness through media of online social interaction and communication. Meanwhile, individualist' cultural value has less real social capital but has the ability to make a new friendship with foreigners in long term, the impact of SNS involvement does not influence the psycho-social prosperity problem and at the same time obtain happiness through the process of online social communication and interaction. However, friendship with foreigner is prone to be a shallow relation, which in large quantity, will become a potential cause of psycho-social prosperity problem. Based on such explanation, a hypothesis can be proposed in this research as the following:

H5a: The positive influence of individual's involvement in SNS with stronger depression will happen to individuals with individualist cultural value than those with collectivist cultural values.

H5b: The positive influence of individual's involvement in SNS with stronger loneliness will happen to individuals with individualist cultural value than those with collectivist cultural values.

H5c: The positive influence of individual's involvement in SNS with stronger happiness will happen to individuals with collectivist cultural values than those with individualist cultural values.

RESEARCH METHOD

This research is a confirmatory study, namely, the study which is aimed at examining theory through the development of social computing model of individual's involvement in SNS. This research uses questionnaire survey design. Figure 1 presents empirical model examined in this research.

The measurement of internalization, identification, and compliance constructs each uses three items of metrics, which are adapted from Malhotra & Galletta (2003). The measurement of the perceived ease-of-use and usefulness construct each uses six items of metrics, which are adapted from Davis *et al.* (1989). The measurement of desire construct uses three items of metrics, which are adapted from Bagozzi & Dholakia (2006). The measurement of SNS involvement behavior uses four items of metrics, which are adapted from Jackson *et al.* (2004). The measurement of depression construct uses twenty items of metrics from *Center for Epidemilogic Studies Depression Scale*, which are adapted from (1977) and Kraut *et al.* (1998). The measurement of loneliness construct uses twenty items of metrics from UCLA Loneliness Scale (version 3), which are adapted from de Jong-Gierveld (1987). The measurement of happiness construct uses twenty four items of metrics, which are adapted from Ryff (1989). All indicators (except the indicator of involvement behavior) uses five response scales, 1 for disagreement and 5 for agreement.

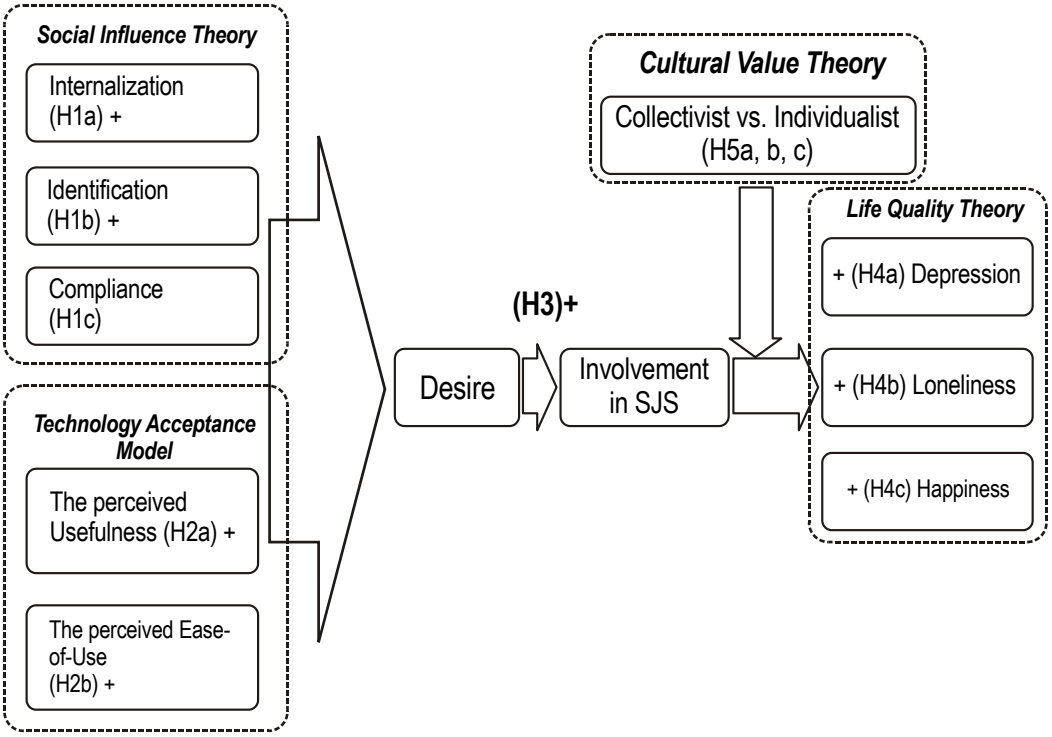

Figure 1. Model of Social Computing Behavior of Individual's Involvement in SNS

This research population is the members of users of SNS application of general category with characteristic, i.e. user-based, interactive, community-driven, relationship, and emotion over the content. The sampling procedure uses non-probability procedure with purposive sampling with sample criteria: (1) subject or respondent are SNS members who have joined for the last one year to obtain the description of experience of the respondent's involvement well, (2) variety of types of SNS, (3) about the age of respondent, young age categorized as generation C or Generation Content.[2] Data collecting is done cross-sectionally using online questionnaire survey technique with the help of opensource lime-survey software, which is uploaded at http://quizhosting.co.cc. meanwhile the test of validity, reliability and hypothesis is done statistically using partial least square (PLS) method with the help of software appication of SmartPLS ver. 2.0

Other than the experimentation of main effect, this research also examines the moderation effect of cultural value using sub-group analysis with mathematical equation as such;

$$t = (\beta k(1) - \beta k\ (2))/(\sqrt{(SSE(1) + SSE\ (2)\ [\beta k(1)(df(1)) + (\beta k(2))\ \uparrow 2\ (df(2))]) / (df(1) + df(2)(t(1)\ \uparrow 2\ (SSE\ (1)\ (t(2)\ \uparrow 2\ (SSE\ (2)))$$

Figure 2. The Equation of Sub-group Analysis of Moderation Effect

Source: Hartono (2004)
Note:
βk (1) = beta coefficient of sample group 1
βk (2) = beta coefficient of sample group 2
SSE (1) = sum of squared error of regression of sample group 1

[2] Generation C is generation who lives in a period when technology and science forms a life attitude, personality trait, and behavioral pattern (Kompas.com, 2010).

SSE (2) = sum of squared error of regression of sample group 2
df = degree of freedom
t = value of t-statistics

ANALYSIS AND DISCUSSION

This research process covers two stages, that is, pilot study and major survey. This research process is started from the process of questionnaire development through back translation to BCC Faculty of Economics and Business, Gadjah Mada University, three-times pretest toward a small group of students of S3, S1, and D3 Faculty of Economics and Business, Gadjah Mada University, and consultation to experts. The result of pretest and pilot study shows questionnaire items that are developed to fulfill the criteria of appearance validity, content validity, construct validity and reliability.

The survey which was conducted for three months, the first month distribution of questionnaire was given to 570 respondents and as many as 147 questionnaires were returned or as much as 27%. Meanwhile, the following two months the data collecting was followed by message reminder to the previous respondents, resulting in as much as 53% or 347 questionnaires were returned so the total response level is 80 percent.

Based on the description of the research sample, there are age variance, marital status, nationality, and SNS involvement behavior on the research samples. In perspective of age, at the average, respondents are young people of 22 years of age categorized as generation C or Generation *Content* . In perspective of gender, female group is a few more in quantity than male but both two groups are proportionally in balance so that the two groups of genders can still be compared. In perspective of marital status, most respondents are still single. In perspective of nationality, most respondents are Indonesian (WNI) but 10 percent of whom are from foreign countries, i.e. Pakistan, India and Arab Emirate.

Based on the outcome of PLS measurement model on Table 2, empirical model tested in this research has fulfilled the criteria of validity and reliability test and the criteria of quite good model, namely value of GoF $\geq$ 0,25 (Schepers *et al.* 2008).

This research refers to two kinds of hypotheses, that is, hypotheses of main effect and subgroup moderation effect. The hypothesis test uses PLS structural method model, that is evaluated through coefficient value parameter of beta path (β) independent variable and significance of t-value each path. The result of hypothesis shows seven out of twelve hypotheses is statistically supported. Figure 3 presents the summary of the empirical test outcome of social computing behavior model in this research.

In general, this research results in three major findings. The first, this study finds out a correlation between motivation and consequence of individual's involvement in SNS. Motivation of involvement consists of intrinsic motivation (namely internalization) and extrinsic motivation (namely identification and compliance). This research only found extrinsic motivation as predictor of individual's desire to get involved in SNS. This finding indi-

Table 1. Description of Characteristic of the Research Samples

	N	Minimum	Maximum	Mean/Median	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Gender	433	1	2	2	,514	,160	,117	-,838	,234
Age	433	17	52	22,57	6,286	2,089	,117	3,826	,234
Marital Status	433	1	3	1	,368	2,268	,117	4,055	,234
Nationality	433	1	3	1	,143	9,905	,117	108,871	,234

cates that SNS users in Indonesia who are in general inclined to get involved in SNS are encouraged by extrinsic motivation, that is, being interested in SNS application features, invitation of a friend or colleague, agent's appeal (public figure, or idols in society), and the reason to avoid social sanction or obtaining social-economic benefits from SNS involvement, like following trends of involvement in online social media (contagious adoption). Extrinsic motivations are superficial, non-philosophically-based and non-intrinsic motivations to get involved in SNS so that depression, and unattained happiness is a consequence that most possibly will occur.

Table 2. The Test Outcome of Partial Least Square (PLS) Method of Measurement Model

Var	AVE	R Square	Communality	Redundancy	GOF
DR	0,380872	0,057318	0,380872	0,010716	
HS	0,675636	0,227441	0,675636	0,095666	
ID	0,615510		0,615510		
IT	0,589114		0,589114		
KB	0,412592	0,012611	0,412592	0,002109	
KP	0,525454		0,525454		
KS	0,605134	0,035072	0,605134	0,017702	
PE	0,517724		0,517724		
PU	0,528780		0,528780		
USE	0,371168	0,029046	0,371168	0,010841	
∑		0,072298	0,522198		0,297248

Note: DR (depression), HS (desire), ID (identification), IT (internalization), KB (happiness), KP (compliance), KS (loneliness), PE (the perceived ease-of-use), PU (the perceived usefulness), USE (involvement behavior in SNS).

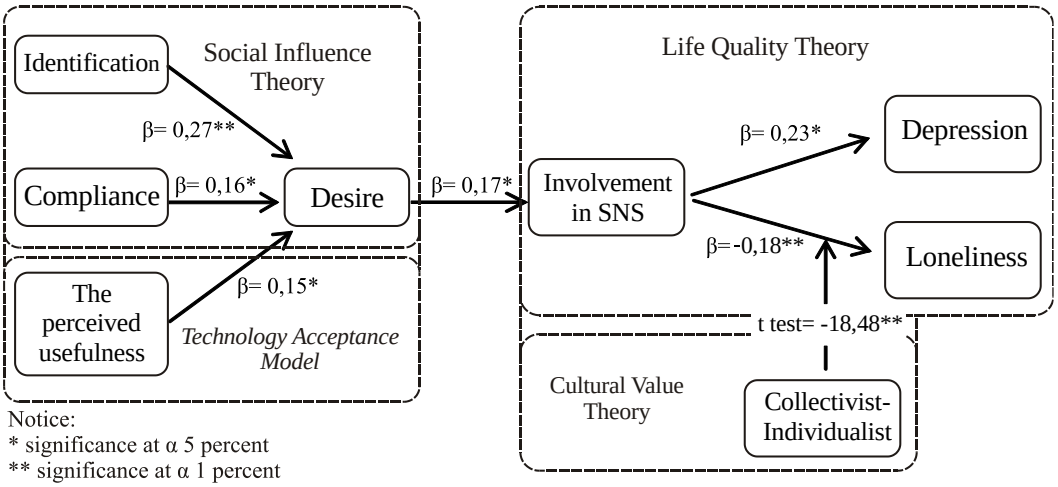

Figure 3. The Outcome of Empirical Test of SNS Computing Behavior Model

Secondly, this research finds out the positive and negative impacts of individual's involvement in SNS. The positive impact attained in this research is the decrease of loneliness while the negative impact is potential for depression to occur. This finding indicates that SNS users in Indonesia obtain benefits from the involvement in SNS in a form of the decrease of loneliness or it can be concluded that SNS is entertainment media and a way of keeping away from loneliness for SNS users in Indonesia. In the other perspective, the involvement is also potential for elevating depression syndrome to SNS users in Indonesia when the involvement is perceived to have negative outcome, like the decrease of direct contact to other people and engaging in problem at school or at home or at the workplace because of the compulsive involvement in SNS.

Besides the positive impact of the decreasing loneliness, this study also observe the positive impact of SNS involvement toward happiness. But this research does not find any correlation between the SNS involvement and happiness. This finding indicates that SNS users in Indonesia do not attain happiness from the involvement in SNS because the intrinsic expectations to reach happiness collectively is not attained through the involvement in SNS. Such expectations are among others the freedom in SNS, the acceptance of one self's condition by other persons and himself, the ability to manage one self, the fulfillment of life goals, and to earn learning process by involving in SNS. The third finding of the three types of impacts of involvement in SNS is consistent to the finding of correlation between the involvement in SNS and happiness. Extrinsic motivation, which is found, predicts individual's desire to get involved in SNS, determining the consequence of such involvement, namely, depression and loneliness. An extrinsically-motivated individual to get involved in SNS is only able to fulfill the extrinsic expectations, as well, like an intention to interact online with public figure or respected public idol, fulfilling other's invitation to get involved in SNS, following the trend of online social media and being entertained by SNS application features. While, intrinsic motivation, which is not found to predict desire to get involved in SNS, is not able to predict happiness as positive consequence that contains intrinsic expectation.

The third, this research finds out indication of cultural value shift on the level of individual analysis. Indonesian society which is nationally considered as collectivist society turns out that not a few of them hold individualist cultural value. This research also finds out the difference of the impact of SNS involvement between the two types of cultural value. Individualists group tends to enjoy the benefit of SNS in the form of the decreasing loneliness and depression on a certain level of involvement more than the collectivists group. Theoretically, this finding leads to the following questions regarding the research whether SNS is only appropriate to individualist society and whether SNS or social computing in general has shifted the society's cultural value. Furthermore, this finding leads to the subsequent research to measure the comparison between cultural value on the level of individual and the level of country to measure the existence of cultural value shift so that the measurement of cultural value does not bias on both level of analysis.

The practical implication of this research finding for the interest owner is how to arrange and manage the behavior of SNS individual's healthy and productive involvement through the awareness of individual for the purpose and motivation of the involvement in SNS and through the creation of conducive working atmosphere, like the development of social-computing-based knowledge management, of social control and formal regulations that can lead to the productive behavior of SNS individual involvement, collectively. Other than that, the interest owner necessarily

understands the shift of Indonesian society's cultural value nowadays, especially in relevance with the behavior of SNS involvement so that cultural and working management are arranged appropriately to suit the cultural values referred by individuals in the organization.

THE RESEARCH LIMIT AND IMPLICATION

This research has several limitiations. First, this research is not yet able to differentiate the types of loneliness. Second, the non-probability sampling procedure requires alertness in generalizing the research outcome. Third, this research has not yet elaborated the metrics of clinical psychology. Fourth, this research has not yet designed comprehensively the procedure of measuring and checking the potential for social intention bias.

Besides the limitation, this research finding presents further details on internet paradox issue through the correlation of motivation and the impact of SNS involvement between collectivist's and individualist's cultural value. Practically, this research finding gives implication on the interest owner in social context, like individual, family, common society and the interest owner in organizational context like private sector organization especially Multinational Corporation (MNC), electronic business advertisers, the SNS application developers, public figure, political party and regulator. For an individual, this research outcome gives such information on the consequence of SNS involvement that an individual will be more rational in determining the motivation to get involved in SNS and in adjusting the level of involvement in SNS that can result in positive outcome for him/herself. If the user is an individual who upholds the collectivist's cultural value, internalization will be a better exposure as intrinsic motivation to get involved in SNS in order to produce a positive outcome, like happiness. For family, this research gives information in general on how to lead the family member to adopting internet and to get involved in SNS specifically, healthily and productively. If the family consists of individuals who uphold individualist's cultural value, the SNS involvement, which is motivated by identification and compliance can produce positive outcome in the form of the decrease of loneliness and potential for depression on certain level of involvement. For society, this finding gives important information about the positive and negative consequences of SNS involvement so that the society will be more careful in accepting new social computing technology, especially the variety of SNS application. The society should understand better about the more rational consequence and motivation to get involved in SNS so that a certain level of SNS involvement can result in positive outcome for them.

Therefore, in context of social, individual, family and society, it is recommended to have a deep awareness about the meaning and purposes of the involvement in SNS. The lack of knowledge and awareness of the purpose and meaning of the involvement in SNS will only lead to the unhealthy and compulsive behavior of SNS adoption so it will result in contra-productive outcome. However, it is undeniable that SNS has characteristic of emotional, and cognitive appeal that leads the users to a compulsive and addictive. That is why self-awareness control that is based on knowledge and understanding of meaning and purpose of SNS adoption can lead the users to the healthy and productive behavior of adoption.

In organizational context, for the social computing organization management, it has become a new trend that cannot be avoided by organization. Variety of software application and the support of IT hard ware industry, like computer and IT mobile device encourage the growth of social computing to all levels of social strata and go beyond place and time. Organization as a subject of social computing can hinder the growth of social computing variety but should make a good use of it as a media for enhancing individual's and organi-

zation productivity. This research finding becomes an important information for organization in planning and directing them to the productive behavior of SNS adoption. Especially for organization that wants to encourage new social computing-based IT adoption, compliance exposures can effectively encourage individuals in organization to get involved in short term. Somehow, the approach can only result in positive outcome in short time. Organization should employ exposures of more intrinsic motivations like empowerment, persuasive communication, and the a continuous guidance to direct a behavior of new social computing-based IT adoption that can result in positive outcome in long term. The real form of organizational support for human resource in social computing utilization is giving employees trust to use social computing in different fields of knowledge into or outside the organization by persistently reminding the human resource to be careful in sharing various information.

This research result's important implication for organization is the influence of individual's involvement in SNS and social computing toward the working atmosphere. If so far cultures and values has been able to influence the working atmosphere, nowadays, social computing indirectly contributes to influencing the working atmosphere in the form of dynamic, flexible, free interaction and communication pattern. Organization should create conducive working atmosphere through social computing by understanding the characteristic of the adopter on the contagious stage, which is easily influenced by social influence factors so that it is necessary to direct a pattern of communication and interactions by appreciating human resource's transparent behavior when sharing knowledge online to the organization and appreciating the freedom of responsible communication. Meanwhile, organization is also required to understand generally the potential of negative impact of SNS and social computing involvement (namely: depression and loneliness) so to encourage the behavior of social computing adoption, it is necessary to lead it to productive behavior, like the adjustment of SNS access during certain time of the working hours. Besides, organization needs the approach of adjustment and behavioral management for individuals' productive and healthy SNS involvement, ranging from making an individual aware of the purpose and motivation to get involved in SNS to creating a conducive working atmosphere, like the development of social control and formal regulations that can direct collectively to a productive behavior of individual's involvement in SNS.

Especially for MNC (Multinational Company), human resources tend to have multicultural value background, this research finding can give information on understanding motivation and consequences of individual's involvement in SNS and on the cultural value shift of current Indonesian society so the strategy of directing IT adoption behavior, especially social computing can be adjusted to the cultural value of the organization or the cultural values referred by individuals of human resource. The adjustment of strategy in directing the behavior of IT adoption is expected to have positive outcome for individuals and organization. Although this research does not directly examine the correlation of motivation and the impact of SNS involvement between the individual level and the organizational level, the previous studies indicate the correlation between individual benefit and the organizational benefit from IT adoption (DeLone and McLean, 2002).

For electronic business advertiser and the developer of SNS applications, this research will be an important information in designing the strategy of marketing communication and customer relationship management (CRM). If the electronic business advertisers and the developer of SNS application think of a long-termed relation with their customers, they will consider the impact of their customers'

involvement in SNS. This finding indicates that individual's motivation to get involved in SNS does not any longer consider the ease-of-use aspect of adoption because the individual considers the SNS application in general user-friendly in the form of navigation system that guides individual to adopt SNS application more easily. Somehow, the SNS appeal can direct them to compulsive behavior, that in turn will give a negative outcome. Therefore, the electronic business advertisers and the developers of SNS applications should communicate well their marketing communication message contents that empower the customers to be more rational in the involvement in SNS and develop SNS application features that enforce aspects of learning, knowledge, and information aside from communication and entertainment aspects. The efforts of involvement of electronic business advertisers and the developer of SNS application in empowering customers with basis of healthy and productive social computing not only will give benefits to customers but also to the organization of the electronic business makers in the form of trust from the interests owner in long term.

For public figure and political party, SNS nowadays becomes an important part of strategy. Public Relationship (PR) to develop self-popularity and party, and to nurture a long-term relation with the constituents. This research finding can be an important information that public figure individual and party are effective exposures to social influence identification to encourage an individual to get involved in the SNS-based political campaign. However, other than resulting in negative income for individual, the political campaign is prone to be ineffective in the long run, if it only relies on the identification exposure. Public figure and political party necessarily need to make efforts of internalization-exposure-based communication to build commitment and intrinsic motivation of the constituent in the form of delivering vision, mission, and values of public figure and political party. It is expected to suit the values referred by the constituents. The efforts of encouraging the constituent's involvement in political campaign and self-imaging with SNS base are expected to result in positive outcome for public figure, political party and its constituent, if the process of communication and motivation has the nature of internalization.

On the country level, this research finding gives important information on how a Country regulates the rule of healthy and productive social computing. This research found out that appeal (identification) and compliance are predictors of SNS involvement that potentially results in the impact of the decreasing loneliness but the increasing potential for depression. This finding can be the government's consideration when it wants to lead to the healthy and productive behavior of social computing, compliance motivation does not produce positive outcome in long term (happiness), but even negative outcome in short term so that the approach of direction done by the government should not use the approach of compliance as it is only effective to encourage behavior and short-termed outcome. Persuasive approach, empowerment, and a continuous education can lead to the healthy and productive behavior of social computing, and empowering society with IS base, as well.

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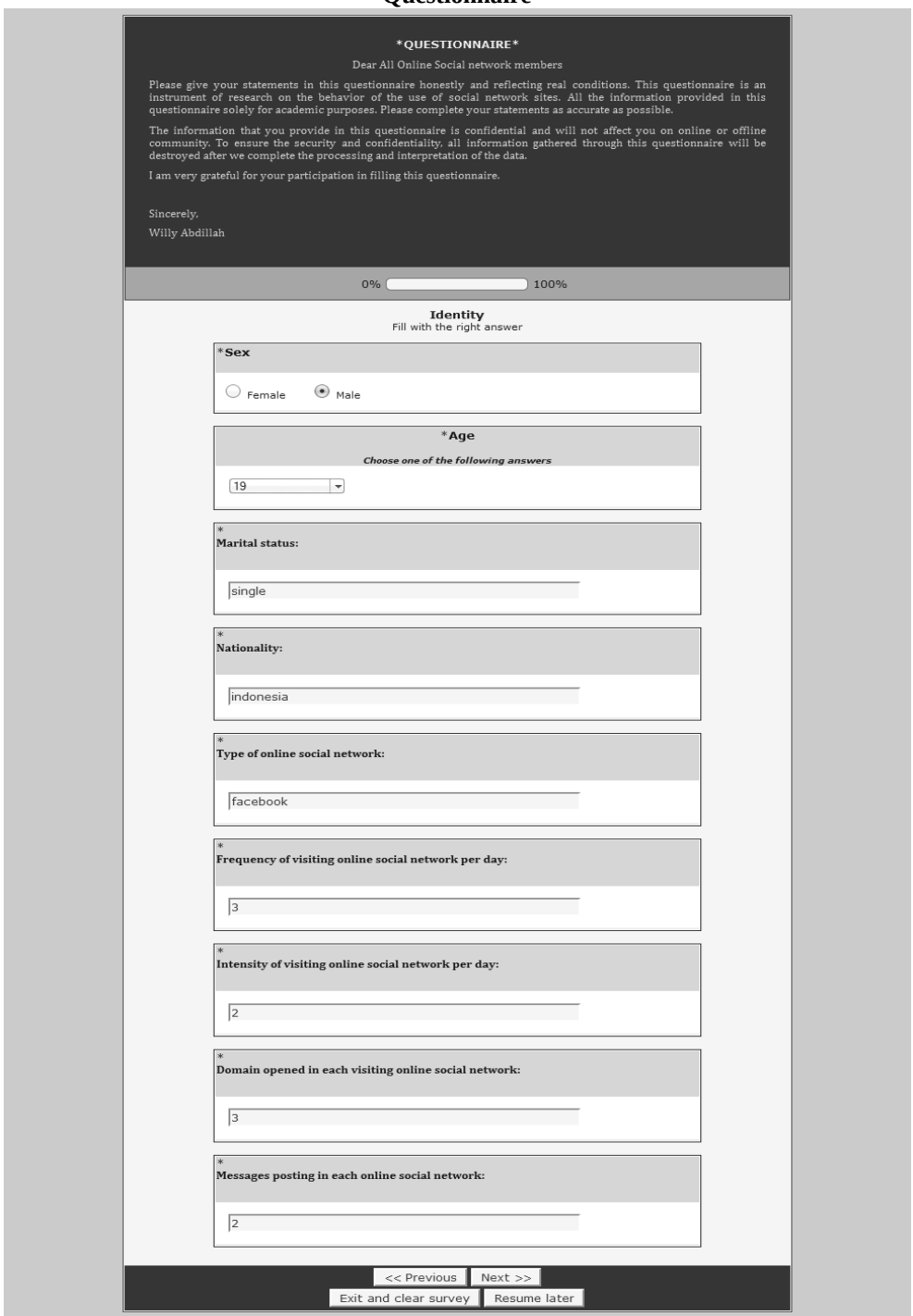
Enclosure 1. Online Questionnaire



QUESTIONNAIRE

Dear All Online Social network members

Please give your statements in this questionnaire honestly and reflecting real conditions. This questionnaire is an instrument of research on the behavior of the use of social network sites. All the information provided in this questionnaire solely for academic purposes. Please complete your statements as accurate as possible.

The information that you provide in this questionnaire is confidential and will not affect you on online or offline community. To ensure the security and confidentiality, all information gathered through this questionnaire will be destroyed after we complete the processing and interpretation of the data.

I am very grateful for your participation in filling this questionnaire.

Sincerely,

Willy Abdillah

0% 100%

Identity

Fill with the right answer

***Sex**

Female Male

***Age**

Choose one of the following answers

19

* **Marital status:**

single

* **Nationality:**

indonesia

* **Type of online social network:**

facebook

* **Frequency of visiting online social network per day:**

3

* **Intensity of visiting online social network per day:**

2

* **Domain opened in each visiting online social network:**

3

* **Messages posting in each online social network:**

2

<< Previous Next >>

Exit and clear survey Resume later

Enclosure 2

The Outcome of Convergent Validity Test Based on *Outer Loading*

Indicator	DR	HS	ID	IT	KB	KP	KS	PE	PU	USE
DOMAIN										0.63
DR10	0.53									
DR11	0.74									
DR13	0.57									
DR14	0.70									
DR15	0.64									
DR17	0.58									
DR18	0.66									
DR19	0.71									
DR20	0.60									
DR5	0.67									
DR6	0.53									
DR7	0.53									
DR9	0.52									
FREQUENSY										0.51
HS1		0.84								
HS2		0.81								
ID1			0.82							
ID2			0.79							
ID3			0.75							
INTENSITY										0.60
IT1				0.51						
IT2				0.80						
IT3				0.93						
KB10					0.62					
KB14					0.56					
KB15					0.66					
KB16					0.67					
KB17					0.83					
KB18					0.68					
KB19					0.78					
KB20					0.60					
KB22					0.53					
KB3					0.55					
KB4					0.55					

Indicator	DR	HS	ID	IT	KB	KP	KS	PE	PU	USE
KB5					0.65					
KB6					0.60					
KP1						0.75				
KP2						0.62				
KP3						0.79				
KP4						0.73				
KS11							0.87			
KS12							0.87			
KS13							0.52			
KS14							0.89			
KS17							0.88			
KS18							0.60			
KS2							0.87			
KS3							0.60			
KS7							0.86			
KS8							0.71			
PE1								0.77		
PE2								0.77		
PE3								0.70		
PE4								0.77		
PE5								0.71		
PE6								0.59		
MESSAGE										0.73
PU1									0.75	
PU2									0.79	
PU3									0.52	
PU4									0.80	
PU5									0.75	
PU6									0.70	
SJS										0.56

Enclosure 3

The Outcome of Convergent Validity Test Based on *Cross Loading*

INDICATOR	DR	HS	ID	IT	KB	KP	KS	PE	PU	USE
DOMAIN	0,14	0,15	0,23	0,16	-0,06	0,22	-0,04	0,17	0,27	0,63
DR10	0,53	0,18	0,03	-0,08	-0,26	0,09	0,13	-0,06	0,08	0,02
DR11	0,74	0,10	0,13	-0,01	-0,37	0,17	-0,01	0,06	0,31	0,30
DR13	0,57	0,23	0,14	-0,15	-0,34	0,13	0,11	0,03	0,23	0,06
DR14	0,70	0,17	0,14	-0,10	-0,34	0,21	0,03	0,07	0,21	0,09
DR15	0,64	0,07	0,08	-0,12	-0,32	0,16	0,22	-0,03	0,13	0,06
DR17	0,58	0,10	0,06	-0,01	-0,32	0,06	0,07	-0,04	0,11	0,10
DR18	0,66	0,08	0,16	0,01	-0,30	0,10	0,10	-0,05	0,13	0,13
DR19	0,71	0,08	0,04	-0,10	-0,38	0,14	0,10	-0,06	0,12	0,10
DR20	0,60	0,08	0,04	-0,03	-0,40	0,13	0,19	-0,07	0,10	0,06
DR5	0,67	0,02	0,04	-0,11	-0,22	0,04	-0,07	-0,08	0,19	0,17
DR6	0,53	0,10	-0,04	-0,04	-0,25	0,21	-0,01	-0,02	0,18	0,11
DR7	0,53	0,12	0,13	-0,12	-0,41	0,06	-0,07	-0,11	0,19	0,16
DR9	0,52	0,10	-0,05	-0,17	-0,26	0,01	0,06	-0,12	0,03	0,02
FREQUENSY	0,14	0,04	0,10	0,07	-0,09	0,06	0,00	0,08	0,12	0,51
HS1	0,08	0,84	0,33	0,14	-0,07	0,24	0,06	0,24	0,31	0,20
HS2	0,18	0,81	0,32	0,11	-0,23	0,32	0,28	0,18	0,29	0,07
ID1	0,21	0,35	0,82	0,35	-0,14	0,30	0,02	0,31	0,45	0,26
ID2	0,15	0,28	0,79	0,40	-0,08	0,31	0,14	0,24	0,29	0,17
ID3	-0,05	0,30	0,75	0,27	0,10	0,27	0,09	0,27	0,26	0,15
INTENSITY	0,12	0,13	0,04	0,12	-0,05	0,20	-0,16	0,08	0,18	0,60
IT1	-0,27	-0,01	0,20	0,51	0,22	-0,02	0,05	0,27	0,01	-0,04
IT2	-0,16	0,09	0,27	0,80	0,08	0,08	0,09	0,25	0,07	0,08
IT3	-0,05	0,15	0,44	0,93	0,04	0,21	-0,05	0,34	0,26	0,19
KB10	-0,37	-0,16	-0,07	0,02	0,62	-0,19	0,09	0,12	-0,21	-0,04
KB14	-0,32	-0,12	-0,14	0,06	0,56	-0,04	-0,01	0,10	-0,16	-0,01
KB15	-0,41	-0,18	-0,10	0,13	0,66	-0,19	-0,01	0,08	-0,18	-0,07
KB16	-0,29	0,02	0,04	0,15	0,67	-0,09	0,12	0,22	-0,02	-0,04
KB17	-0,42	-0,13	-0,12	-0,02	0,83	-0,11	0,02	0,08	-0,18	-0,11
KB18	-0,43	-0,13	-0,02	0,12	0,68	-0,13	-0,01	0,15	-0,14	-0,04
KB19	-0,41	-0,15	-0,03	0,10	0,78	-0,08	0,03	0,14	-0,14	-0,10
KB20	-0,30	-0,12	0,01	0,07	0,60	0,01	0,01	0,15	-0,06	-0,01
KB22	-0,31	-0,08	0,08	0,12	0,53	-0,03	0,03	0,13	-0,07	0,03
KB3	-0,21	-0,08	-0,10	-0,10	0,55	-0,09	0,06	-0,01	-0,05	-0,06

INDICATOR	DR	HS	ID	IT	KB	KP	KS	PE	PU	USE
KB4	-0,25	-0,12	0,00	0,05	0,55	-0,07	0,09	0,07	-0,06	-0,01
KB5	-0,38	-0,18	0,03	0,04	0,65	-0,16	0,03	0,03	-0,12	-0,07
KB6	-0,25	-0,03	0,10	0,00	0,60	-0,08	0,22	0,15	-0,07	-0,08
KP1	0,05	0,25	0,28	0,17	-0,04	0,75	0,08	0,21	0,23	0,19
KP2	0,00	0,13	0,26	0,18	0,01	0,62	-0,07	0,19	0,28	0,13
KP3	0,10	0,27	0,24	0,12	-0,10	0,79	-0,07	0,20	0,34	0,24
KP4	0,33	0,28	0,30	0,10	-0,30	0,73	-0,19	0,13	0,45	0,21
KS11	0,07	0,19	0,10	0,02	0,07	-0,15	0,87	0,09	-0,19	-0,18
KS12	0,03	0,14	0,09	0,01	0,07	-0,01	0,87	0,11	-0,14	-0,17
KS13	0,03	0,32	0,23	0,08	0,12	0,20	0,52	0,25	0,08	-0,01
KS14	0,06	0,19	0,06	0,00	0,01	-0,03	0,89	0,15	-0,14	-0,14
KS17	0,00	0,17	0,03	-0,03	0,05	-0,14	0,88	0,08	-0,21	-0,18
KS18	-0,18	-0,11	-0,08	-0,02	0,30	-0,12	0,60	0,00	-0,28	-0,16
KS2	0,15	0,24	0,09	-0,01	0,02	-0,02	0,87	0,07	-0,07	-0,13
KS3	0,08	0,34	0,29	0,11	-0,08	0,21	0,60	0,19	0,13	-0,04
KS7	0,10	0,21	0,13	-0,01	0,05	-0,11	0,86	0,07	-0,14	-0,17
KS8	0,12	0,22	0,19	0,06	-0,01	-0,05	0,71	0,09	-0,08	-0,11
PE1	0,01	0,22	0,29	0,26	0,09	0,12	0,01	0,77	0,41	0,19
PE2	-0,05	0,20	0,19	0,20	0,17	0,22	0,17	0,77	0,34	0,12
PE3	-0,05	0,23	0,29	0,30	0,08	0,20	0,04	0,70	0,38	0,17
PE4	-0,01	0,17	0,25	0,30	0,05	0,22	0,06	0,77	0,34	0,16
PE5	-0,09	0,11	0,28	0,25	0,15	0,16	0,11	0,71	0,28	0,13
PE6	-0,09	0,13	0,22	0,14	0,13	0,12	0,11	0,59	0,18	0,03
MESSAGE	0,22	0,07	0,17	0,06	-0,11	0,11	-0,17	0,13	0,29	0,73
PU1	0,20	0,35	0,42	0,23	-0,18	0,40	-0,15	0,30	0,75	0,33
PU2	0,27	0,25	0,29	0,14	-0,16	0,35	-0,23	0,36	0,79	0,32
PU3	0,10	0,14	0,16	0,06	-0,05	0,10	0,00	0,28	0,52	0,12
PU4	0,31	0,30	0,29	0,14	-0,20	0,38	-0,21	0,30	0,80	0,34
PU5	0,23	0,27	0,33	0,11	-0,15	0,37	-0,08	0,37	0,75	0,22
PU6	0,15	0,23	0,33	0,20	-0,01	0,26	-0,09	0,47	0,70	0,28
SJS	0,09	0,13	0,23	0,13	-0,03	0,24	-0,14	0,14	0,29	0,56

Enclosure 4

The Outcome of Reliability Validity Test *Cronbach's Alpha* Method

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PU1	41,29	28,322	,503	,357	,842
PU2	41,38	27,291	,602	,491	,833
PU3	40,96	30,624	,419	,246	,846
PU4	41,27	28,001	,558	,468	,837
PU5	41,29	28,777	,571	,437	,836
PU6	41,06	28,471	,615	,448	,832
PE1	40,90	29,696	,573	,416	,837
PE2	40,87	29,622	,540	,425	,838
PE3	41,17	29,796	,488	,326	,841
PE4	41,04	29,593	,548	,472	,838
PE5	40,86	30,304	,503	,490	,841
PE6	41,00	30,824	,363	,340	,850
IT1	30,20	20,223	,257	,326	,756
IT2	30,45	19,674	,358	,376	,743
IT3	30,54	18,179	,523	,432	,721
ID1	30,87	18,468	,482	,325	,727
ID2	30,90	17,837	,546	,376	,716
ID3	30,68	18,806	,423	,232	,735
KP1	30,50	18,764	,439	,311	,733
KP2	30,55	18,701	,421	,299	,735
KP3	30,69	19,071	,392	,307	,739
KP4	30,72	18,803	,342	,257	,748
HS1	7,05	1,044	,443	,196	,077
HS2	7,17	,954	,253	,127	,442
HS3	6,97	1,426	,180	,085	,508
DR1	39,29	81,057	,374	,294	,868
DR2	39,62	81,255	,373	,297	,868
DR3	39,55	82,869	,221	,379	,874
DR4	39,52	86,310	,092	,133	,875
DR5	39,32	77,047	,536	,423	,862
DR6	39,71	79,210	,488	,429	,864
DR7	39,85	82,722	,391	,294	,867
DR8	40,19	83,922	,316	,258	,869
DR9	40,04	79,573	,540	,424	,862
DR10	39,79	78,082	,537	,426	,862
DR11	39,42	75,679	,515	,360	,864
DR12	39,91	82,720	,387	,293	,867

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
DR13	39,45	78,734	,508	,336	,863
DR14	39,64	76,792	,655	,503	,858
DR15	39,74	76,140	,631	,566	,858
DR16	40,03	83,557	,351	,343	,868
DR17	39,82	77,804	,515	,479	,863
DR18	39,79	78,186	,571	,546	,861
DR19	39,77	76,468	,658	,491	,857
DR20	39,79	76,503	,611	,519	,859
KS1	63,76	120,192	,238	,407	,879
KS2	64,95	103,245	,736	,738	,862
KS3	64,50	110,209	,494	,552	,872
KS4	63,59	121,178	,178	,318	,880
KS5	63,71	120,050	,254	,521	,878
KS6	64,01	118,840	,287	,426	,878
KS7	65,04	104,079	,693	,738	,864
KS8	65,01	110,393	,558	,527	,870
KS9	63,97	119,423	,212	,378	,880
KS10	63,67	120,077	,257	,421	,878
KS11	65,18	104,080	,713	,778	,863
KS12	65,10	102,533	,768	,757	,861
KS13	64,66	111,520	,442	,468	,874
KS14	65,03	102,404	,760	,783	,861
KS15	63,87	119,926	,243	,484	,879
KS16	63,72	118,620	,356	,302	,876
KS17	65,16	103,194	,715	,740	,863
KS18	64,63	107,557	,583	,530	,869
KS19	63,71	119,439	,288	,472	,878
KS20	63,71	118,547	,338	,434	,877
KB1	90,32	87,925	,380	,490	,893
KB2	90,25	87,761	,416	,534	,892
KB3	89,85	88,830	,396	,355	,892
KB4	89,97	86,277	,486	,540	,890
KB5	89,99	85,898	,526	,564	,889
KB6	89,94	87,093	,468	,443	,891
KB7	90,35	91,472	,113	,175	,900
KB8	90,19	89,347	,291	,310	,895
KB9	89,96	86,308	,507	,403	,890
KB10	89,84	85,451	,602	,479	,888
KB11	90,39	91,446	,076	,403	,904

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
KB12	90,12	85,743	,575	,484	,888
KB13	90,13	84,903	,544	,452	,889
KB14	90,04	84,846	,566	,452	,888
KB15	90,04	84,973	,559	,440	,888
KB16	89,97	86,145	,627	,550	,888
KB17	89,80	85,061	,634	,609	,887
KB18	89,79	85,590	,610	,523	,888
KB19	89,74	84,920	,687	,644	,886
KB20	89,67	86,104	,613	,523	,888
KB21	89,85	85,777	,578	,533	,888
KB22	89,70	85,981	,579	,591	,888
KB23	89,70	86,306	,592	,704	,888
KB24	89,65	87,556	,538	,602	,890