A Cross-Cultural Comparison of UCC usage in Korea and U.S.A.

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Abstract
Integrating the technology acceptance model (TAM) and the pleasure-arousal-dominance (PAD) mode, this study aims at identifying the determinants of the favorable user created contents (UCC) usage. This study further attempts a cross cultural comparison on collectivistic and individualistic cultures, Korea and the U.S.A., respectively.

The study shows the significant effects of usefulness and ease of use, which are critical variables in TAM, on UCC usage. Pleasure and arousal, which are very supportive constructs in PAD research, are considered to be positively related with UCC usage. Particularly in social influence constructs, the subjective norm was the only construct to be differentiated in the two countries. Subjective norm is shown to be significantly related with usefulness and UCC usage in Korea, a collectivistic culture, whereas proved insignificant in the United States, an individualistic culture. In addition, it was observed that image was positively related with usefulness in both countries.

1. Introduction

There is an increasing research interest in the UCC area where consumers can actively participate, as Web2.0 enables them to be easily armed with specialized knowledge and lower the entry barrier of the digital contents market. UCC is referred to a series of creative works, such as digital videos, blogs, podcasting, mobile phone pictures, multimedia and wikis, from individual media activity through the web, which is produced by web users not belonging to professionally developed media organizations [4].

From the consumer perspective, they are no longer passive subjects merely consuming contents distributed by service providers. The consumers are now transformed into active participants creating their own contents [47]. They also show potential influencing power to commercial corporations for business contents. The value of UCC has been increased by a variety of information sources as well as search engines under the circumstances of the paucity of web documents written in Korean. Portals have started to provide editing and uploading service for users' convenience along with managing personal contents like pictures or helping the production of blogs with text-based UCC. This sophisticated UCC development draws firms' attention to utilize UCC as a valuable marketing tool.

Along with practical benefits, academic efforts have been accumulated in the UCC area [e.g., 6, 14, 24, 28]. However, the level of current research findings is still at the basic stage, mostly regarding partial studies on virtual communities, mini-Homepages, or personal blogs. Such studies cannot explain the recently emerging phenomena, reason behind the phenomena, or cultural differences. Triandis [50] states that contextual issues can explain the motivational base behind personal behaviors as well as IT enabled effects on UCC. The culture in Korea is considered to be collectivistic, based on relationships [8]. In Western cultures, an individual is recognized as a unique solid entity that is a self-contained functioning unit. Therefore, it is necessary to understand the personal interest of UCC in the context of its own organization or culture.

The research questions in this study are as follows:
- Why do users try to produce and disseminate contents made through personal effort?
- Can the same patterns of creation and sharing emerge in every culture?

Focusing on these issues, we try to explicate user’s personal characteristics in participating UCC activities. In addition, cross-cultural comparison between Korea and U.S.A. will be conducted. We will determine whether cultural differences exist in UCC usage patterns.

2. Research model and hypotheses

Personal behaviors can be analyzed in either cognitive or emotional perspectives. TAM, which has
been broadly utilized in IT research, mainly deals with cognitive factors of personal behavior. Recent studies in TAM include emotional factors, which still include single-dimensional term. The only dimension recent TAM studies dealt with was ‘pleasure’. Russell [44] demonstrates two critical dimensions, pleasure and arousal in emotional spectrum. Mehrabian & Russell [33] introduces three emotional dimensions to describe personal reaction towards external environment - pleasure-arousal-dominance- which is called as PAD. Personal behavior is influenced by emotion, where emotional reaction occurs in response to environmental stimulus. Donovan & Rossiter [13] discovered that arousal and pleasure are positively related with interrelationship with a salesperson, while dominance is not in the empirical study on user behavior in a certain store environment by using PAD model. Integrating both TAM and PAD, we’ll demonstrate users’ personal characteristics to influence UCC usage. We also add two factors – usefulness and ease of use, two important cognitive factors in IT adoption studies by Davis [12] – as determinants of UCC usage in research models, while not included in the hypotheses.

2.1 Social influence, usefulness, ease of use and UCC service usage in UCC service

An individual’s acceptance of technology is influenced in a complicated manner by various factors such as the characteristic of the technology, characteristic of the individual, one’s subjective judgment and social influences [15]. From this perspective, the social influence variables presented by Venkatesh & Davis [53] through TAM 2 are subjective norms and image.

Subjective norm is defined as “an individual’s recognition of the views and opinions of others or a group considered to be important and that one identifies oneself with, regarding their behavior” [1]. It is the recognition that a person in a workplace with close relationships and a fair amount of trust would have in regards to the results of their behavior [57]. It is also the recognition of how friends and peers considered significant would perceive that individual. Ultimately, it is the important individuals with a significant influence over the actor of the behavior which influences the behavior or cognition of the individual.

Wellman [55], in his explanation of today’s individual Internet participation phenomenon, stated that the phenomenon of an individual’s capacity being revealed and of the individual becoming the focus of a network in relating with others is an individualism that is networked. Therefore, in the process of an individual making contents according to interests and taste and the sharing of it, the individual does not remain as an individual, but forms a network with the individual in the center.

![Figure 1. Research model](image)

Social scientists state that the network of social relationships defines every practice. Technology historian Mitcham [35] stated that an individual’s style and usage patterns are “unintended intention” (symbolic acceptance). This perspective refers to the fact that an individual’s belief is social made through the mutual relationships with other individuals [56]. Among previous researches on social influence and usefulness, the TAM2 research [53] showed that a statistically significant relationship existed between subjective norm and usefulness. Thus, the process of incorporating the belief of important groups, or the trust in the usefulness of information systems, into one’s personal belief system, or through the internalizing process, the perception of usefulness is strengthened.

Social influence regarding the motivation to receive social acceptance through improvement of social image in the process of internalization also exists. If internalization is the change of behavior or beliefs due to useful outside information, image is the personal psychological reflection to maintain a favorable image within the important group. Moore & Benbasat [37] defined image as “the improving of one’s status within social system by accepting the innovation.” This is related to the raising of an individual’s social status [5]. Kelman [26] described such social influence as the process of identification. Identification is related to the power within the important group. This is because the rise of one’s status within a group means that one’s influence within the group grows. One group or a behavior of adopting new technology implemented is the strengthening of one’s image within the group. If an individual recognizes the benefits of the rise in such image, the perception of usage regarding the new technology changes positively. This is because the strengthening of image through the use of technology
brings with it rewarding benefits such as power, raise of status, and enhancement of influentiality [39]. Accordingly, individuals use the power of image to improve self image within the group and work to maintain that image [53].

This phenomenon is expected to be the same in UCC service activities. Individuals are influenced by the UCC activities of not only people in the network, but by peers, friends, and family. Thus, the use of UCC activity of people one considers important is believed to be done so because it has been judged to be useful. Accordingly, the use of UCC of people of influence will influence the judgment of the individual in viewing UCC activity as useful. Also, if the individual believes that the use of UCC service will increase personal image, the UCC activity is perceived to be very useful. Thus subjective norm and image is expected to have a positive influence on the perception of the usefulness of oneself in regards to UCC service activity.

Social influence has a positive effect on UCC usage and usefulness. Subjective norm in UCC service has a positive effect on UCC usage. Subjective norm in UCC service has a positive effect on usefulness. Image in UCC service has a positive effect on usefulness.

2.2 Self-efficacy and ease of use in UCC service

The main controlling mechanism in active relationships affecting human behavior is self efficacy, or “the belief in the possibility of successfully completing a given task and the belief in one’s ability.” Salomon [45] proved that people with high efficacy deliberately chose difficult tasks other avoid and put much effort into it in order to obtain a high performance. Also, Bandura [2] stated that challenge to do any task was helpful in obtaining knowledge and skill. Self-efficacy is also related to the setting of goals regarding a certain object. Those with high self-efficacy set goals higher than others and invest much more effort, and when an obstacle occurs, they work continuously harder in order to meet the goal [2]. Accordingly, those who judge themselves to successfully perform an activity were able to perform that act and put in much effort [45], therefore, is expected to perceive the performance of that activity as useful. In Igbaria & Iivary [21]’s research, the direct influence of self-efficacy on usage and ease of use was proven.

In UCC service activities, UCC users with high self-efficacy is expected to invest much metal effort in increasing the quantity by studying usage methods and creation methods in order to use the UCC service [45]. Also it is expected that such users’ desire to use the UCC service for work and motivation will increase. Such UCC service is a lesson, and the effort to enhance evaluation of one’s UCC service will ultimately lead to the convenient perception of the UCC service usage.

Self-efficacy in UCC service has a positive effect on ease of use.

2.3 UCC service’s pleasure, arousal, self-efficacy, ease of use, and UCC service usage

Russell & Pratt [43] stated that whether in a natural environment or manmade environment, two basic emotions can be triggered: pleasure/displeasure and arousal. People desire to stay longer in an environment that is more pleasurable and consume more money in such an environment [13]. Also, in researches on online [34, 41] showed that the increase of pleasure on the Internet influenced the behavior of approach.

The use of new technology can be facilitated by psychological factors existing internally, and pleasure and such factors refer to the internal motivation to use new technology. Those experiencing direct pleasure through the use of new technology have a higher tendency in trying to use new technology, than those who have not [31]. Therefore, if one receives a greater pleasure through the use of UCC service, use will be strengthened, and to increase pleasure, the motivation to continually use UCC service is strengthened. Especially, UCC not only reads and views the contents uploaded by others, but the user is able to more actively participate in creating contents and upload it onto the site to share the contents with others, which is a behavior that is highly influenced by pleasure. When a positive emotional state continues in a person, the level of understanding is increased and can take in more complex thoughts [32], therefore, those experiencing positive emotional experience are able to produce new and creative association. From such a perspective, the greater the pleasure in the experience of UCC users, the more likely for them to continue new UCC creation and sharing.

Also, such pleasure will have an effect on the ease of use of UCC service. In previous TAM researches, intrinsic motivation factors of users such as pleasure drives users to voluntarily use information technology, and those with high pleasure have perceived the ease in the technology [11, 54]. Venkatesh [54] presented results showing that in technology usage training of users, the pleasure factor was crucial to the effects of the training and that the users perceived a sense of ease when using the technology. This is because, as stated...
in Mayer et al. [32]’s study, people have a higher understanding and ability to process complex thoughts when the state of happiness or pleasure continues. Accordingly, if the conditions are the same, the person feeling greater pleasure is more likely to perceive the same UCC service as being easy.

**H3** Pleasure in UCC service has a positive effect on ease of use and UCC usage.

**H3a** Pleasure in UCC service has a positive effect on UCC usage.

**H3b** Pleasure in UCC service has a positive effect on ease of use.

In researches on emotion [40, 42], the concept of arousal proved to be important. This concept of arousal is different from the general meaning when regarding emotion. Mehranian & Russell [33] defined the concept of arousal as the degree of activation from the state of drowsiness of arousal, while James [22] stated that arousal played the core role in emotion.

In the self-perception theory on emotion, presents that in the state of arousal the probability of a cognitive label that others can definitely identify, such as pleasure or anger, is greater, than when not in that state. Therefore, arousal is the antecedent variable of pleasure [46]. Also, in a demonstrative analysis done by Donovan & Rossiter [19] on the relationship between store environment and user behavior using the PAD model, arousal (interest triggered by the store) extracts pleasure to extend the time being spent at the store as well as increases the mutual interaction with the salespeople. According to Jung [25], pursuit of the interests and pursuit of thrill were all related to positive emotion, and those pursuing such states of arousal are active and have a greater possibility of experiencing positive emotion in an adventurous activity. UCC is a space that can be used to express personal thoughts and inclinations. Users can directly create content, and not be limited to certain formats, and can deliver their emotions, all of which can be seen as active and creative activities. Therefore, arousal that is stimulated by UCC service can bring out the pleasure, such pleasure will increase UCC service usage.

**H4** Arousal in UCC service has a positive effect on pleasure.

Bandura [2] stated that physical and emotional states influence an individual’s self-efficacy and judgment in a given task. Miura [36] states that users with low anxiety have a tendency of feeling greater ability. Thus, like self-efficacy regarding computers, computer anxiety is related to the general perception of users of computers. Whereas computer self-efficacy is related with skill or ability, computer anxiety is a negative emotion regarding the use of computers. Zhang & Espinoza [58] has proven that an individual’s attitude, such as comfortableness or anxiety, is the preceding variable of self-efficacy. According to the self-efficacy theory, the emotion of anxiety towards computers and such negative emotions work to lower the expectations of capability. Oppositely, positive emotional states, such as pleasure and arousal, a more positive judgment of one’s ability can be expected. Thus, if users participate in UCC service activities, such as creating personal contents, or sharing unique contents created by many users reaches a state of pleasure or arousal, they can more positively evaluate their ability to create UCC or participate in UCC sharing activities.

**H5** Pleasure in UCC service has a positive effect on self-efficacy.

**H6** Arousal in UCC service has a positive effect on self-efficacy.

### 2.4 Difference of UCC service usage in Korea and U.S.A.

Cultural values differ in every country and cultural values differently influence responses to technological environments. Cultural values may describe the diverse behaviors of individuals as well as influence the usage of technology [38]. To investigate the cultural differences affecting UCC, this study adopted the types (individualism and collectivism) presented by Hofstede [19].

Until now researches on culture has categorized collectivist cultures to include Korea and other Eastern countries, and individualistic cultures to refer to Western countries [20, 51]. Individualistic cultures, in most cases, stress an individual’s autonomy, interests, and independence, while collectivist cultures put importance on the social norms of one’s group, for example, family, relatives, friends, school, and work. Therefore, in individualistic cultures, an individual emphasizes one’s uniqueness and is independent from others, as well as puts more importance on individual goals rather than group goals. Due to this tendency, competition, desire for accomplishment, self satisfaction, independence, and personal pleasure are emphasized. Oppositely, in collectivistic cultures, cooperation between members of a group is highly regarded and close ties with members of a group proves to be beneficial, and at times more importance is put on a group’s goals than an individual’s goal. Accordingly, mutual existence, agreement with group member, social status, stability of a family, and cooperation are stressed [17].
Therefore, it is expected that Korean UCC users of a collectivistic culture are more influenced by other’s judgment of one’s UCC (a group’s judgment on UCC) than self judgment (personal judgment of a UCC) in the decision of UCC usage, rather than users in the U.S.A., an individualistic culture.

\textit{<H7a>} The influence of subjective norm on UCC service usage is greater in Korea, a collectivistic culture, than the U.S.A., an individualistic culture.

Especially in Koreans, subjective norm has a greater influence on decision making than the attitude towards technology or products [29]. According to Triandis [51], the public self and collective self is more developed than the private self in collectivistic people, in comparison to individualistic people, and the degree of importance put on this type of self is stronger. Therefore, when an individual approaches the collective self at a certain point, this self incorporates the relatedness and adaptability of the group, thus leading to the voluntary acceptance of the rules of the group and the group assimilation tendency to become similar to the group members is revealed. Thus, opinions of others which is UCC is useful will have a more positive influence on the judgment of UCC usefulness in collectivistic cultures.

If an individual performs a behavior that is judged to be one that must be done by the important group, the image of the actor of the behavior is strengthened. The effects of image on the judgment of usefulness are stronger in collectivistic cultures. Image is a highly important factor in social life for Koreans. When a behavior is revealing ability and superiority in daily life, Koreans describe the behavior as “gaining prestige” or “making one’s reputation.” Reputation is based in the desire of completing the self by maturing or raising one’s morality and ability, as well as in the social achievement desire to receive approval and recognition from others. However, reputation developed in Koreans is reputation based in the approval and recognition from others rather than the desire to complete oneself, thus reputation in Korea has developed with a strong desire for social achievement [7]. Therefore, in a collectivistic culture, the degree in the belief that one’s social image is improved through the usage of UCC will have a more positive influence on usefulness.

\textit{<H7b>} The influence of subjective norm and image on usefulness is greater in Korea, a collectivistic culture, than the U.S.A., an individualistic culture.

3. Research method

3.1 Operationalization of constructs

The eight variables are operationalized to identify causal relationships. The 7-point Likert scale, measuring from 1 very unlikely to 7 very likely, is used.

Usefulness in UCC service is defined as ‘the degree to which a person believes that using UCC would enhance his or her job performance’ [12]. Ease of use in UCC service is defined as ‘the degree to which a person believes that using UCC would be free from effort’ [12]. The scales are based on the recommendations of Venkatesh & Davis [52] with four items for ease of use and usefulness. Subjective norm is defined as ‘individual’s perception of whether people important to the individual think the behavior should or shouldn’t be performed’ [1]. Image is defined as ‘the degree to which use of an innovation is perceived to enhance one’s image or status in one’s social system’ [37]. Subjective norm and image are measured by two and four items, respectively, based on the study of Venkatesh & Davis [53]. Pleasure is defined as ‘the degree of activation ranging from extreme happiness or ecstasy at one end to extreme pain or unhappiness at the other end by using UCC’. Arousal is defined as ‘the degree of activation ranging from frenzied excitement at one end to drowsiness at the other end by using UCC’. Based on the study of Havlena & Holbrook [18], which modified Mehrbien & Russell [33]’s work, we measure three items for pleasure and four items for arousal. As for self-efficacy, we take Bandura [2]’s definition which states that ‘people’s beliefs about their capabilities to produce designated levels of UCC that exercise influence over events that affect their lives’. We propose six items for self-efficacy measurement based on the study of Compeau & Higgins [9]. As a dependent variable, we define UCC usage as ‘the degree to which users utilize UCC practically’, measured by three items using the study of Davis [12].

Table 1. Measurement items

<table>
<thead>
<tr>
<th>Subjective Norm</th>
<th>1. People who influence my behavior would think that I should use UCC&lt;br&gt;2. People who are important to me think that I should use UCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image</td>
<td>1. People in my organization who use UCC have a higher capability than those who do not.&lt;br&gt;2. Using UCC is an indicator of an advanced level in the computer capability.&lt;br&gt;3. Because of my use of UCC, others in my organization see me as a more valuable man than those.</td>
</tr>
<tr>
<td>Pleasure</td>
<td>The overall feeling I get from using UCC is&lt;br&gt;1. unhappy/happy&lt;br&gt;2. annoyed/pleased&lt;br&gt;3. bored/entertained&lt;br&gt;4. disappointed/delighted&lt;br&gt;5. despairing/hopeful&lt;br&gt;6. contented/melancholic</td>
</tr>
<tr>
<td>Arousal</td>
<td>The overall feeling I get from using UCC is&lt;br&gt;1. calm/excited&lt;br&gt;2. indifferent/surprised&lt;br&gt;3. sleepy/wide awake&lt;br&gt;4. relaxed/simulated&lt;br&gt;5. controlled/controlling&lt;br&gt;6. influenced/influential</td>
</tr>
<tr>
<td>Self Efficacy</td>
<td>I could complete the work using the UCC tools&lt;br&gt;1. if there was no one around to tell me what to do as I go.&lt;br&gt;2. if I had never used a UCC tool on the Internet before.&lt;br&gt;3. if I had only the manuals for the reference.</td>
</tr>
</tbody>
</table>
4.1 Construct validity and reliability of instruments

Prior to hypothesis testing, the reliability and validity of the measurement instrument were tested. The reliability of the measurement items shows that the Chronbach's $a$ for all eight constructs both in Korea and U.S.A. are higher than 0.7 indicating high internal consistency.

To evaluate the construct validity, we ran an exploratory factor analysis (EFA) using the principal component analysis with varimax rotation for the 8 constructs (subject norm, image, pleasure, arousal, self-efficacy, usefulness, ease of use, and UCC usage). Two items of arousal and another two items of self-efficacy were deleted from the both data because the factor loadings were less than 0.4 [16].

For a discriminant validity of all the items, we eliminated items with irrelevant factor loadings through exploratory factor analysis. We verified additional discriminant validity after conducting the exploratory factor analysis. The results of the discriminant validity analysis show that the square of the average variance extracted from each concept is greater than the correlation coefficient between each concept in the model. Thus the results of these provide support for the discriminant validity of all the measurement items. Table 2 shows the descriptive statistics, correlations of variables, and discriminant validity result.

### Table 2. Correlation table for constructs and discriminant validity

<table>
<thead>
<tr>
<th>Construct</th>
<th>Mean</th>
<th>SD</th>
<th>Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Korea</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subj. Norm</td>
<td>3.053</td>
<td>1.562</td>
<td>0.893</td>
</tr>
<tr>
<td>Image</td>
<td>3.398</td>
<td>1.357</td>
<td>0.540***</td>
</tr>
<tr>
<td>Pleasure</td>
<td>4.677</td>
<td>0.997</td>
<td>0.402***</td>
</tr>
<tr>
<td>Arousal</td>
<td>3.994</td>
<td>0.894</td>
<td>0.228***</td>
</tr>
<tr>
<td>Self Efficacy</td>
<td>4.277</td>
<td>1.539</td>
<td>0.346***</td>
</tr>
<tr>
<td>Usefulness</td>
<td>4.286</td>
<td>1.491</td>
<td>0.470***</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>4.316</td>
<td>1.685</td>
<td>0.350***</td>
</tr>
<tr>
<td>UCC Usage</td>
<td>2.339</td>
<td>1.099</td>
<td>0.469***</td>
</tr>
<tr>
<td><strong>U.S.A.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subj. Norm</td>
<td>3.156</td>
<td>1.685</td>
<td>0.945</td>
</tr>
<tr>
<td>Image</td>
<td>3.285</td>
<td>1.482</td>
<td>0.583(***</td>
</tr>
<tr>
<td>Pleasure</td>
<td>4.085</td>
<td>1.104</td>
<td>0.418(***</td>
</tr>
<tr>
<td>Arousal</td>
<td>3.933</td>
<td>0.989</td>
<td>0.267(***</td>
</tr>
<tr>
<td>Self Efficacy</td>
<td>4.064</td>
<td>1.645</td>
<td>0.427(***</td>
</tr>
<tr>
<td>Usefulness</td>
<td>3.622</td>
<td>1.629</td>
<td>0.504(***</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>4.031</td>
<td>1.725</td>
<td>0.623(***</td>
</tr>
<tr>
<td>UCC Usage</td>
<td>2.667</td>
<td>1.433</td>
<td>0.448(***</td>
</tr>
</tbody>
</table>

* Diagonals: (average variance extracted from the observed variables by the latent variables) $^{1/2}$ = (Σλ/ q)

** Off-diagonals: construct-level correlation = (shared variance) $^{1/2}$ = (Σλ/ q) $^{1/2}$

We checked collinearity statistics, since some correlation coefficients are greater than 0.5. The result shows that VIF statistics are less than 10 and Tolerance statistics are greater than 0.5 in both data. It suggests that the possibility of multicollinearity is excluded.

The confirmatory factor analysis (CFA) was conducted to assess the validity of the measurement

3.2 Data collection and procedure

This study performed a survey targeting UCC service users from Korea and the USA during March of 2008 to May, 2008. Prior to delivery of survey to participating individuals, we explained the purpose of the study to each person and requested participation in the survey. Those agreeing to participate in the survey personally received or emailed a survey. A total of 700 surveys were sent out in Korea and the US. Up until now a total of 452 surveys were collected, however, 24 incomplete surveys were omitted due to incompletion and leaving 154 collected surveys, from which 21 were omitted due to incompleteness and leaving 154 surveys as a sample for the research. For an accurate analysis, 200 or more surveys are needed, thus surveys are still in process in the US, which is expected to be reflected in later analysis.

4. Results
model, verifying unidimensionality of items. As a result of CFA, measurement model satisfies the relevant fit level, showing the significant level over 0.6 in 0.001 of p-value for all the standardized coefficients. Thus we generally find support for the convergent validity for all the constructs.

4.2 Hypotheses testing

The hypotheses are tested using structural equation modeling in AMOS 16.0 in which all the causal relationships of constructs can be simultaneously considered. Most of the fit indices (Figure 2 and Figure 3) are greater than their respective threshold and thus the model generally has a good fit with the data.

As for a cross-cultural comparison, the results in Korea show that every hypothesis is supported excluding the relationship between arousal and self-efficacy, H6. More hypotheses are not supported in U.S.A; H6 is not supported, in which arousal is not positively related with self-efficacy; H1 is not supported, in which subjective norm is not positively related with UCC usage (H1a) and with usefulness (H1b); H3b is not supported, in which pleasure is not positively associated with ease of use. Subjective norm as one of social influence factors is proved to be influential both to usefulness and UCC usage in Korea, while not in U.S.A. In hypotheses setting, we expected that subjective norm would be more significant determinants in Korea, a collectivistic culture, than in U.S.A., an individualistic culture, where H7 depicts the relationship of social influence factors with usefulness and UCC usage. Image is positively related with usefulness in both Korea and U.S.A, which presents image to be a significant factor both in collectivistic and individualistic cultures.

Table 3. Hypotheses testing results comparing Korea and U.S.A

<table>
<thead>
<tr>
<th>Path</th>
<th>Std. Coefficient</th>
<th>C.R.</th>
<th>Std. Coefficient</th>
<th>C.R.</th>
<th>ADF</th>
<th>ADF Diff</th>
<th>Diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub.No. &amp; Usage</td>
<td>.23*** 4.28</td>
<td>-1.31</td>
<td>.15*** 4.09</td>
<td>.26** 4.75</td>
<td>1</td>
<td>1.02</td>
<td>Y</td>
</tr>
<tr>
<td>Sub.No. &amp; Usefulness</td>
<td>.12* 1.97</td>
<td>.04</td>
<td>.39 1</td>
<td>.05</td>
<td>1</td>
<td>5.02</td>
<td>Y</td>
</tr>
<tr>
<td>Image &amp; Usefulness</td>
<td>.41*** 6.56</td>
<td>.49** 4.15</td>
<td>.40** 4.15</td>
<td>.25</td>
<td>1</td>
<td>1.02</td>
<td>Y</td>
</tr>
</tbody>
</table>

* p < 0.05; ** p < 0.01; *** p < 0.001. Diff. means Difference
5. Discussion and conclusion

5.1 General discussion

The results of this study represent the usefulness and ease of use considered as critical constructs in TAM to be important determinants to UCC usage. Along with it, pleasure and arousal supported in PAD and other emotion related research field significantly influence on UCC usage. Arousal is positively related with pleasure, while not with self-efficacy, similarly in two countries. As for pleasure, the results show different responses in the two countries. It shows significant effects on UCC usage through the positive relationship with self-efficacy and ease of use in U.S.A, while it is not positively related with ease of use in Korea. Particularly, only the subjective norm out of social influence factors shows a significant difference in the two cultures. It is positively related with usefulness and UCC usage in Korea, a collectivistic culture, while it shows no significant relationship in U.S.A. However, image, one of the social influence factors, is revealed to be a significant determinant in both cultures.

There has been an argument on whether social influence directly affects IT usage in the Western studies. Taylor & Todd [49] empirically proved the subjective norm to be an influential factor of IT usage. Davis et al. [11] and Mathieson [31], however, illustrate that subjective norm is not quite related to IT usage. The results of this study also reveals that the subjective norm is not positively related with UCC usage, which is interpreted as individual decision in terms of usefulness and ease of use in using UCC to be more important than the viewpoint of others' in an individualistic culture. In contrast, image, as one of the social influence constructs, is unexpectedly revealed to be positively related with usefulness in the two cultures. We interpret that there is no cultural difference in the recognition of UCC usage as an important tool to their prestigious positions in groups.

Comparing to other IT usage, UCC usage seems to be differentiated in terms of ease of use based on the findings of the very significant relationship with UCC usage and usefulness via ease of use. Particularly, the results of U.S.A. show that the effect of ease of use is represented as a more influencing factor than usefulness on UCC usage. In fact, the importance of ease of use has been ignored in many studies [11, 12, 31, 49]. However, Davis et al. [11] and Szajma [48] demonstrate that the direct effect of ease of use is strong in lack of prior knowledge of IT. Lu & Gustafson [30] also describe its significant relationship with the adoption and stabilized utilization. The findings of this study focus on the importance of ease of use under the circumstances of the initial stage of UCC with users' little experience. The ease of use in UCC is also enabled by the recent development of high-speed Internet networks and the popularization of digital instruments such as digital camcorder and phone cameras. Users can easily create their own mini-Homepage as well as multimedia products with strong self-expressions and dissemination power tools [27]. Totally, ease of use can be considered as an important factor in UCC usage.

Pleasure is another critical factor significantly influencing UCC usage. The retrieval or creation in UCC is motivated by intrinsic incentives like pleasure and joy when generating their own digital products. Jensen [23] states that we are now living in an industrialized society in which human strengths should be put on fun rather than needs, while machines satisfies to the needs. The creative generation pays its attention on pleasure and joy in creating digital products. Pleasure of showing off and sharing their creation reinforces the cycle of UCC activities – creating and sharing.

5.2 Implications and limitations
The findings of this study investigating UCC usage have implications to provide the specific explanation in the rarity of the UCC empirical research field. Also, this study is the first step of the integrative approach that explains UCC usage. Intrinsic characteristics of UCC usage could be indicated through the integration of traditional TAM and PAD models. Additionally, the findings indicate that there is a difference between the adoption of UCC and information technology. In UCC usage, ease of use is a more influential factor than social influences or usefulness. It also is revealed that personal emotion factors such as pleasure and arousal are very critical determinants in UCC. That is, this study shows ease of use through a digitalized network, a facilitating factor reminding the utilization of UCC. Practitioners should comprehend such characteristics of the creative generation who live in a digital society, getting most of their information through the Internet, and furthermore creating and sharing their created contents of pictures, music and multimedia products. They must reinforce the connection of digital instruments and networks which provide the environment of excitement, pleasure, ease and comfort in UCC usage. This study also identifies cross-cultural differences in collectivistic and individualistic cultures, and explains their variation to UCC usage across Korea and U.S.A. Practitioners can take consideration into this cultural difference in UCC usage to establish and utilize differentiated strategies.

**Limitations.** This study is based on the initial stage of UCC activities, ignoring the chronological development in which the determinants to UCC activities evolve. More sophisticated analysis of UCC usage by the developmental stage such as that of retrieval, modification, recreation and generation can only be established by further study. Studies of growth or a stabilized stage will show different phenomena for the further studies.

**References**


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