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ATTITUDES OF COLLEGE STUDENTS IN THE COUNTRYSIDE TOWARDS THE TRADITIONAL AND SOCIAL MEDIA

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Abstract

The aim of this field work based research is to study the attitudes of college students, living in the northeastern region of Japan far from the big cities, towards the traditional media - which hereafter means TV, radio, magazines, and the like - and social media - also referred to as networking service and SNS - contents. To accomplish this purpose, a survey study was carried out in a typical countryside city located relatively far from big cities. The survey was not only specifically targeted at female students aged 18-20, but also composed by two experiments done on two different occasions, in 2016 and 2017, with the data collected from two different samples of respondents. In the first experiment, we assessed the level of importance and credibility that the respondents feel towards both - the conventional and social media, whereas in the second experiment, which is an extended version of the former, we investigated the roles that these media play in the students' consuming behavior in regard particularly to the entertainment, fashion and lifestyle articles and contents marketed on them, and their interplay in this process. The collected data set, which comprised 154 valid answersheets for the first experiment and 153 for the second, was statistically processed using factor analysis and structural equations modeling in order to build a quantitative model that allowed us to study the regional college students' attitudes. The first experiment yielded a model with factors emphasizing aspects concerning the importance, security and reliability of the contents, whereas the second study provided a statistical model showing the triggering factors that attract the attention of the students and some of the conditions that may lead to the actual buying or consuming behavior. Finally, the findings here help understand how young people living in the countryside are accessing and narrowing down the huge amount of media contents available today, and conversely how they are influenced by them. Thus, the results may be of some use in the realm of information design and related fields.

***Keywords**:* College students' attitudes, Traditional media, Social media, Quantitative analysis, Social behaviour model.

Abstrak

Tujuan penyelidikan berasaskan kerja lapangan ini adalah untuk mengkaji sikap pelajar kolej yang tinggal di wilayah timur laut Jepun yang jauh dari bandar-bandar besar, ke arah media tradisional - yang selepas ini disebut sebagai TV, radio, majalah, dan sebagainya dan media sosial juga dirujuk sebagai perkhidmatan rangkaian dan SNS. Untuk mencapai tujuan ini, satu kajian kaji selidik telah dijalankan di bandar desa tipikal yang terletak agak jauh dari bandar-bandar besar. Kaji selidik ini bukan sahaja disasarkan khusus kepada pelajar perempuan berusia 18-20 tahun, tetapi juga terdiri daripada dua eksperimen yang dilakukan pada dua majlis yang berbeza, pada tahun 2016 dan 2017, dengan data yang dikumpulkan daripada dua sampel responden yang berbeza. Dalam eksperimen pertama, kami menilai tahap kepentingan dan kredibiliti yang dirasai oleh responden terhadap kedua-duanya - media konvensional dan sosial, manakala dalam eksperimen kedua, yang merupakan versi lanjutan, kami menyiasat peranan yang dimainkan oleh media ini dalam tingkah laku pelajar yang memfokuskan kepada hiburan, fesyen dan gaya hidup dan kandungan yang dipasarkan ke atas mereka, dan interplay mereka dalam proses ini. Set data yang dikumpul, yang terdiri daripada 154 jawapan yang sah untuk eksperimen pertama dan 153 untuk yang kedua, diproses secara statistik menggunakan analisis faktor dan persamaan struktur pemodelan untuk membina model kuantitatif yang membolehkan kita mengkaji sikap pelajar kolej serantau. Eksperimen pertama menghasilkan model dengan faktor-faktor yang menekankan aspek-aspek mengenai kepentingan, keselamatan dan kebolehpercayaan kandungan, manakala kajian kedua menyediakan model statistik yang menunjukkan faktor-faktor yang yang menarik perhatian pelajar dan beberapa keadaan yang boleh membawa kepada tingkah laku membeli atau mengguna sebenar. Akhirnya, penemuan di sini membantu memahami bagaimana anak-anak muda yang tinggal di kawasan luar bandar mengakses dan mengecilkan sejumlah besar kandungan media yang tersedia hari ini, dan sebaliknya bagaimana ia dipengaruhi oleh mereka. Oleh itu, hasilnya mungkin beberapa penggunaan dalam alam reka bentuk maklumat dan bidang yang berkaitan.

***Kata kunci**: Sikap pelajar kolej, media tradisional, media sosial, analisis kuantitatif, model tingkah laku sosial.*

INTRODUCTION

In the past two decades, the world has witnessed an explosive growth and widespread use of the internet, as a result of the tremendous development of www-based services as Facebook and twitter (Ellison & Boyd, 2013; Johnston & Pattie, 2011), which have hugely contributed to the kaleidoscopic social changes in the way humans interact with each other in their daily life by allowing not only folks to reconnect with old and new acquaintances, friends and relatives over the web, but

also by providing a ubiquitous environment for instant communication, as well as active and passive interactions regardless of factors as friendship status, gender, language, culture, and geographic gap between the online parties, whether these are humans, or a mix of human and web paraphernalia.

Yet, these systems coined social media have pervasively come to join the already traditional media represented by the TV, radio and magazines; thus, playing the central role as the sources and hubs of information streaming which has to a greater or lesser extent influence on the way people form and reshape their values, habits, customs, and social concepts; particularly among youths. In fact, these cyber societies have influenced the real society in many different ways, and in turn these virtual spaces have been extensively shaped by the social model of real societies in which we all belong to. As interesting as it may be, just as there is a wide variety of virtual communities for almost everyone's taste and preferences, there are also some gender-dependent characteristics in what concerns to the purpose of use of the social media (Kim & Sin, 2015).

In the Japanese society ambit, the conventional media had been until the turning of the century the fastest and most effective means of spreading information thoughout the country. Then, from that point on, the information technology environment and infrastructure were built and expanded to every corner of the country as part of the national development plan so that ten years later every single person from any part of Japan had access to the internet, which was also introduced in the school curriculum not only practical classes, but also literacy classes on security and IT related laws. Yet, in the last decade alone, the ever increasing cycle of demand for and supply of contents and new technologies gained such a momentum that still shows no signs of slowing down. So much so that a recent survey reported that teens and twenty somethings spend more time on the internet than TV compared to other generations, with daily averages of 112.2 for the former and 146.9 for the latter during the weekdays, and nearly doubling during the weekends with their figures marking 221.3 and 210.0 hours (Soumu, 2015). In addition, these groups distinctly showed gender patterns of internet service use: female teens and twenty somethings spent respectively 71.0 and 52.0 hours a day on average on social networking during weekdays, and 126.3 and 70.1 hours during weekends against daily 45.3 and 40.5 hours during weekdays, and 64.2 and 70.0 hours during weekends reported by their male peers.

Unfortunately, this and some others reports available on the internet and elsewhere don't give us enough details to figure out how youth in regional areas compare to their peers living in big cities in terms of the types of contents browsed and the purpose of use of neither the convential nor the social media. The point is that these kinds of info would allow us to gain a clearer understanding of the differences in their life styles and social behaviors.

Taken into account these social transformations that the information technology brought to our society in the last decades and the difference of youths' ways of living in the countryside and big cities, we aim in this paper to study the attitudes of students in the countryside, which throughout this work refers exclusively to a city far from the big cities and located in the northeastern region of

Japan, towards the traditional and social media. It is basically a two-part survey research investigation, which was carried out in two different periods of time and with non-overlapping samples of respondents. The second experiment is an extended version of the former and both focused on the contents credibility and importance, and the importance and influence on their daily life, behavior, and ways of thinking exerted by the constant exposure to their related contents. The goal of this field work is to pursue statistical models to analyze quantitatively the attitudes of students towards both the old and new media.

Finally, this paper is organized as follows. In the section 'literature review' we present the reports related to our work; and in the section 'Methodology', we describe the experimental procedure. The section 'Results' is split into two sub-sections, each describing the results of one experiment. Finally, the final discussion is presented in the last section.

LITERATURE REVIEW

The literature regarding the study of the interactions of humans with virtual world as well as the influence of the traditional and social media on the users is very abundant and covers a large range of many different fields. In what follows, only the main reports are listed, but one should be aware that the references therein are also related to our frame of reference.

For example, the mutual interaction between the real world and the world of news media for the purpose of reaching a broad audience has been intensively investigated (Griessner, 2012; Creative Commons, 2016), so that the influences and importance of this fusion in our society are now an ever growing research field (Pfeffer & Carley, 2012; Beheshti-Kashi & Makki, 2013; Kumple, Karnowski & Keyling, 2015, Lee, Ma, & Goh, 2011).

On the other hand, of the many theoretical frameworks available to discuss the experimental results, the social cognitive theory (Bandura, 1986) is considered in the sequel. Briefly, this theory claims the existence of a model composed by a triad, namely personal determinants comprising cognitive, biological and affective factors; behavioral determinants; and environmental determinants. These determinants mutually interact pair-wisely to govern the individual's behavioral pattern which is formed through the processes of observation, learning, and reshaping, and directed to fit the individuals to their social environments. As a matter of fact, these theoretical concepts are later further developed in the scope of mass communication in order to explain the social patterns seen in the interactions between human and mass communication (Bandura, 2001).

The social cognitive theory is of interest here because it was adopted by Stefanone, Lackaff, & Rosen (2010) to investigate the influences of TV reality shows on viewers' social networking behavior, from which it was shown that there is a positive correlation between TV consumption and time spent on these web sites.

From a little different framework but deserving a reference here is the report by Urista (2009), who carried out an exploratory work taking for granted the uses and gratification theoretical formalism in order to claim that young adults

basically make use of the social networking sites and contents for the purpose of either entertainment or data collection.

Nevertheless we are mentioning some theoretical formalisms, we keep in mind that they handle the issues concerning the effects of social networking on youths from a quite specific perspective only and they lack, in many cases, of empirical investigations underpinning their claims as pointed out in a survey report (Ahn, 2011)

Another facet of our work is that the respondents are all female. This is so, because there are reports showing that there are gender-dependent characteristics as pursued by Klein (2013) who analyzed the potential impacts that the social media have on women's behavior toward their body image; calling our attention that women are perhaps somehow more vulnerable to contents referring to female beauty and surrounding themes as diet, clothing, fashion, style, looks, appearance, physique, and so on.

Lastly, the data processing framework used in this investigation is the statistical modeling (Ihaka and Gentleman, 1996); with the factor analysis and structural equations modeling (Hox, & Bechger, 1998; Revelle, 2017) being the main tools utilized here.

METHODOLOGY

a) Sampling Data and Survey

The study took place in a countryside city with a population of approximately 85,000 people. The city is characterized by its economy based on the high tech electronics industry and farming; and it is located about 50 km far from the nearest relatively big city of 240,000 inhabitants, which is the capital of its prefecture, and about 130 km from the biggest city in the northeastern region - Sendai city with its one million residents. The city is also a college town serving the local region with its several higher education institutions. This survey research performed during some classes of a local women's junior college under the permission of the teachers in charge of them. All female students were from the region with ages ranging from 18 to 20 years old at the time when the data was collected.

Apart from the questions relative to their personal info as hometown, age, and average number of hours spent on each media; the survey consisted of two experiments: part one being an assessment of the level of importance and credibility that the respondents feel towards both media- the conventional and social media; and part two being an analysis of the roles that these media play in the students' consuming behavior in regard particularly to the entertainment, fashion and lifestyle articles and contents marketed on them, and their interplay in this process.

All the students answered voluntarily the questionnaires, after they were given sufficient explanation about the task. The details of questions and the number of respondents will be described in the sequel in their respective sections.

b) Data Processing

The collected data set went through thorough inspection to make sure that only valid answersheets processed. Leaving out the sheets with unanswered questions, multiple answers for the same questions, and other flaws, 154 anwers of the experiment 1 and 153 of experiment 2 were further processed on a personal computer running on the OS Microsoft Windows 10. The answeres to questions were all tabbed with the computer application Microsoft Excel 2016. Then, the files were subsequently processed with the statistical freeware R 3.5.1 (R Core Team, 2018) which had the package 'psych' (Revelle, 2018) and 'lavaan' (Rosseel, 2018) installed in order to accomplish the factor analysis and structural equation modeling.

Figure 1. Questionnaire sheet of experiment 1.

Answer the following questions. For each question mark the option that best express our view.
Mark only one option for each question, and please do not leave any question unanswered .

1: very negative; 2: fairly negative; 3: somewhat negative; 4: have no knowledge
5: somewhat positive; 6: fairly positive; 7: very positive

Q1. How important is the traditional media to get information about entertainment, fashion and daily life

Q2. How indispensable is the traditional media to get information about entertainment, fashion and daily life

Q3. How concerned are you about credibility and biases of traditional media when it comes to information about entertainment, fashion and daily life

Q4. Do you think that traditional media intentionally engineers the situation and information related to entertainment, fashion and daily life

Q5. How much does the traditional media influence your life with information about entertainment, fashion and daily life

Q6. How important is the social media to get information about entertainment, fashion and daily life

Q7. How indispensable is the social media to get information about entertainment, fashion and daily life

Q8. How concerned are you about credibility and biases of social media when it comes to information about entertainment, fashion and daily life

Q9. Do you think that social media intentionally engineers the situation and information related to entertainment, fashion and daily life

Q10. How much does the social media influence your life with information about entertainment, fashion and daily life

Q11. How interested are you in other users' comments when you see contents about entertainment, fashion and daily life on the social media

Q12. How much influence does the other users' comments have on you when you see them in contents about entertainment, fashion and daily life on the social media

Q13. Compared to traditional media, how superior is the influence of SNS on you in terms of contents about entertainment, fashion and daily life

Q14. How frequent do you check on SNS information about entertainment, fashion and daily life that you saw on traditional media

Q15. How frequent do you check on traditional media information about entertainment, fashion and daily life that you saw on social media

EXPERIMENT 1

a) Survey

Experiment 1 consisted of the assessment of the questions shown in Fig. 1. It was performed in 2016 and its questions are basically evaluating the students' stances that they take on the importance, reliability, need, influence and security of the

media. There were in total 15 questions that the respondents evaluated according to the affinity to their views. The ratings were based on a seven point scale, with the number 1 standing for 'very negative' and the number 7 for 'very positive'.

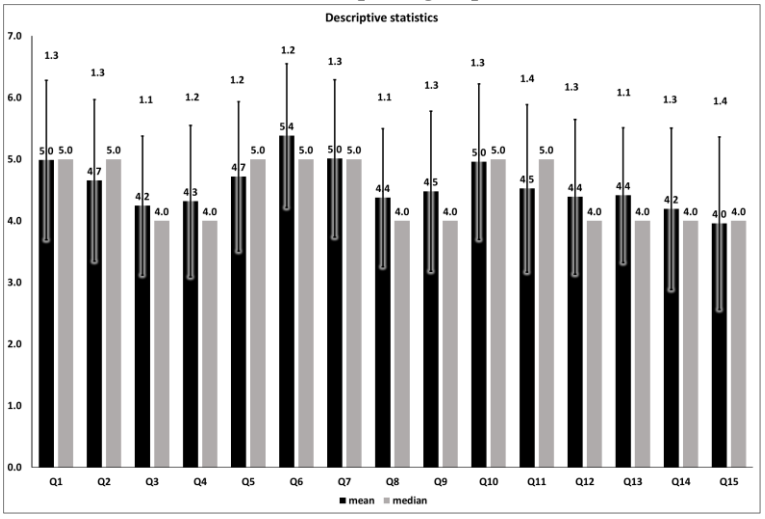
The questions are concerned specifically with contents related to entertainment, fashion and daily life; and they are roughly divided into three groups. Questions 1 through 6 are related to the traditional media, whereas questions 7 through 12 to the social media. The rest of the questions probe the relationships between the old and new media.

It is worth noting here that in this paper we also write 'measured variables' referring to the questions. The reason for this is that when making up the statistical modeling they turn out to be the variables of the mathematical equations.

b) Descriptive Statistics

The tabulation result of the ratings of 154 valid responses are shown in Fig. 2. The black bars stand for the average values and the vertical error lines on the top mean the standard deviations; and the gray bars are the medians of the factors.

Figure 2. Descriptive statistics data - mean values, standard deviations and medians - of the measured variables composing experiment 1. N=154.



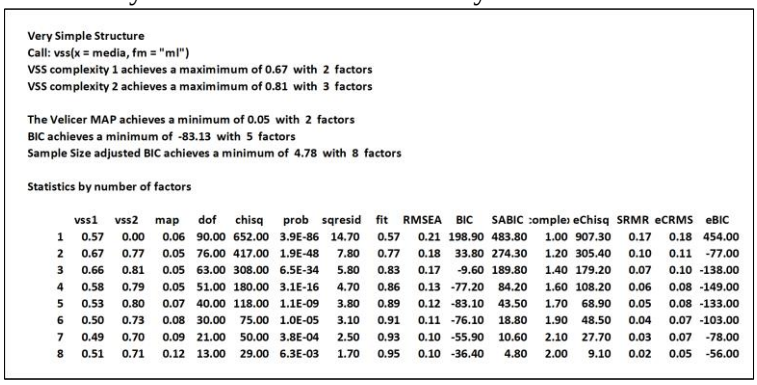
The measured variable <Q6 How important is the social media to get information about entertainment, fashion and daily life> scored highest, marking 5.4 out of 7. At the other end of the scale, the average 4.0 was scored by variables Q3, Q4, Q8, Q9, and Q12 through Q15, which are related to the credibility and engineering of contents, and the interrelationship between the conventional and social media.

c) Factor Analysis Model

In order to build exploratorily the factor analysis model, we used the function 'vss' (Revelle, & Rocklin, 1979), which is embedded in the package 'psych', to estimate the the number of factors necessary to achieve it. Figure 3 depicts the output of the processing for factoring method (ml) set to be maximum likelihood (ml).

VSS complexity 1 suggests 2 factor, whereas VSS complexity 2 recommeds 3 factors. Furthermore, unlike the index BIC, which yields 5 factors, the index Vellicer map also indicates 2.

Figure 3. Factor analysis of experiment 1. Analysis of the number of factors necessary to determine the factor analysis model. N=154.



Very Simple Structure
Call: vss(x = media, fm = "ml")
VSS complexity 1 achieves a maximimum of 0.67 with 2 factors
VSS complexity 2 achieves a maximimum of 0.81 with 3 factors

The Velicer MAP achieves a minimum of 0.05 with 2 factors
BIC achieves a minimum of -83.13 with 5 factors
Sample Size adjusted BIC achieves a minimum of 4.78 with 8 factors

Statistics by number of factors

	vss1	vss2	map	dof	chisq	prob	sqresid	fit	RMSEA	BIC	SABIC	complex	eChisq	SRMR	eCRMS	eBIC
1	0.57	0.00	0.06	90.00	652.00	3.9E-86	14.70	0.57	0.21	198.90	483.80	1.00	907.30	0.17	0.18	454.00
2	0.67	0.77	0.05	76.00	417.00	1.9E-48	7.80	0.77	0.18	33.80	274.30	1.20	305.40	0.10	0.11	-77.00
3	0.66	0.81	0.05	63.00	308.00	6.5E-34	5.80	0.83	0.17	-9.60	189.80	1.40	179.20	0.07	0.10	-138.00
4	0.58	0.79	0.05	51.00	180.00	3.1E-16	4.70	0.86	0.13	-77.20	84.20	1.60	108.20	0.06	0.08	-149.00
5	0.53	0.80	0.07	40.00	118.00	1.1E-09	3.80	0.89	0.12	-83.10	43.50	1.70	68.90	0.05	0.08	-133.00
6	0.50	0.73	0.08	30.00	75.00	1.0E-05	3.10	0.91	0.11	-76.10	18.80	1.90	48.50	0.04	0.07	-103.00
7	0.49	0.70	0.09	21.00	50.00	3.8E-04	2.50	0.93	0.10	-55.90	10.60	2.10	27.70	0.03	0.07	-78.00
8	0.51	0.71	0.12	13.00	29.00	6.3E-03	1.70	0.95	0.10	-36.40	4.80	2.00	9.10	0.02	0.05	-56.00

In this work we built the 3-factor model as illustrated in Fig. 4, because the evaluation indices of the model generated by the function 'fa' did not improve prominently even when the factors were set to 5. It is worth noting that, although not included in this paper, the widely used scree plot also gives a 5-factor model.

Focusing on the factor analysis model, the factor (latent variable) ML2 comes out of <Q6. How important is the social media to get information about entertainment, fashion and daily life > with loading value displaying 0.61, <Q7. How indispensable is the social media to get information about entertainment, fashion and daily life> (0.64), <Q10. How much does the social media influence your life with information about entertainment, fashion and daily life> (0.65), <Q11. How interested are you in other users' comments when you see contents about entertainment, fashion and daily life on the social media> (0.82), <Q12. How much influence does the other users' comments have on you when you see them in contents about entertainment, fashion and daily life on the social media> (0.81), and <Q14. How frequent do you check on SNS information about entertainment, fashion and daily life that you saw on traditional media> (0.51), wheras ML3 comes out of <Q1. How important is the traditional media to get information about entertainment, fashion and daily life> (0.79), <Q2. How indispensable is the traditional media to get information about entertainment, fashion and daily life> (0.74), <Q3. How concerned are you about credibility and biases of traditional

media when it comes to information about entertainment, fashion and daily life> (0.53), <Q4. Do you think that traditional media intentionally engineers the situation and information related to entertainment, fashion and daily life> (0.56), and <Q5. How much does the traditional media influence your life with information about entertainment, fashion and daily life> (0.67); and ML1 out of <Q8. How concerned are you about credibility and biases of social media when it comes to information about entertainment, fashion and daily life> (0.63), and <Q9. Do you think that social media intentionally engineers the situation and information related to entertainment, fashion and daily life> (0.97). Thus, ML1 is essentially related to the credibility and reliability of the contents of the social media; ML2, on the other hand, to the importance and influence that these have on the users; and ML3 is chielfly regarded to the traditional media.

As for the indices evaluationg the model, 'the root mean square of the residuals (RMSR)' is 0.05; 'Tucker Lewis Index of factoring reliability' reads 0.577; and 'Fit based upon off diagonal values' is 0.94.

Figure 4. Factor analysis of experiment 1- model. N=154.

Factor Analysis using method = ml
Call: fa(r = Data, nfactors = 3, rotate = "varimax", fm = "ml")
Standardized loadings (pattern matrix) based upon correlation matrix

	ML2	ML3	ML1	h2	u2	com
Q11	0.82	-0.10	0.09	0.69	0.31	1.10
Q12	0.81	-0.09	0.17	0.69	0.31	1.10
Q10	0.65	0.17	0.27	0.53	0.47	1.50
Q7	0.64	0.14	0.09	0.43	0.57	1.10
Q6	0.61	0.22	0.08	0.43	0.57	1.30
Q14	0.51	0.15	0.03	0.28	0.72	1.20
Q1	0.14	0.79	0.06	0.65	0.35	1.10
Q2	0.17	0.74	-0.02	0.58	0.42	1.10
Q5	0.17	0.67	0.01	0.48	0.52	1.10
Q4	-0.12	0.56	0.35	0.45	0.55	1.80
Q3	-0.04	0.53	0.08	0.29	0.71	1.10
Q9	0.23	0.10	0.97	1.00	0.01	1.10
Q8	0.22	0.07	0.63	0.45	0.55	1.30
Q13	0.30	0.28	0.16	0.20	0.80	2.50
Q15	0.26	0.32	0.00	0.17	0.83	1.90

		ML2	ML3	ML1
SS	loadings	3.14	2.55	1.62
Proportion	Var	0.21	0.17	0.11
Cumulative	Var	0.21	0.38	0.49
Proportion	Explained	0.43	0.35	0.22
Cumulative	Proportion	0.43	0.78	1.00

Mean item complexity = 1.4
Test of the hypothesis that 3 factors are sufficient.

The degrees of freedom for the null model are 105 and the objective function was 7.36 with Chi Square of 1083.55
The degrees of freedom for the model are 63 and the objective function was 2.12

The root mean square of the residuals (RMSR) is 0.07
The df corrected root mean square of the residuals is 0.1

The harmonic number of observations is 154 with the empirical chi square 179.21 with prob < 4.4e-13
The total number of observations was 154 with Likelihood Chi Square = 307.72 with prob < 6.5e-34

Tucker Lewis Index of factoring reliability = 0.577
RMSEA index = 0.165 and the 90 % confidence intervals are 0.142 0.177
BIC = -9.61
Fit based upon off diagonal values = 0.94
Measures of factor score adequacy

						ML2	ML3	ML1
Correlat of	(regression)	scores	with	factors		0.93	0.92	0.99
Multiple R	square of	scores	with	factors		0.87	0.84	0.99
Minimu correlat of	possible	factor	scores			0.74	0.68	0.97

d) Structural Equations Modeling

The 3-factor model generated by the factor analysis was used to produce a model on the grounds of the structural equations modeling analysis as portrayed in Fig. 5.

The figure shows that the 'p-values' of both 'model test user model' and 'model test baseline model' are infinitely close to nill; 'comparative fit index (CFI)' reads 0.705; 'Tucker -Lewis index (TLI)' marks 0.629; 'RMSEA' is 0.171; and 'SRMR' points at 0.095.

Fig. 6 delineates the path model, which was synthesized taking the factor model as the starting point. As clearly seen, the structural organization itself has not changed, but the loading values were recalculated to fit the model. The paths between the latent variables start from ML3, which is a traditional media oriented factor, towards ML2 and ML1 with correlation coefficients of 0.26 and 0.22, respectively. The link between ML1 and ML2 indicates the existence of mutual correlation between them with correlation coefficient of 0.43.

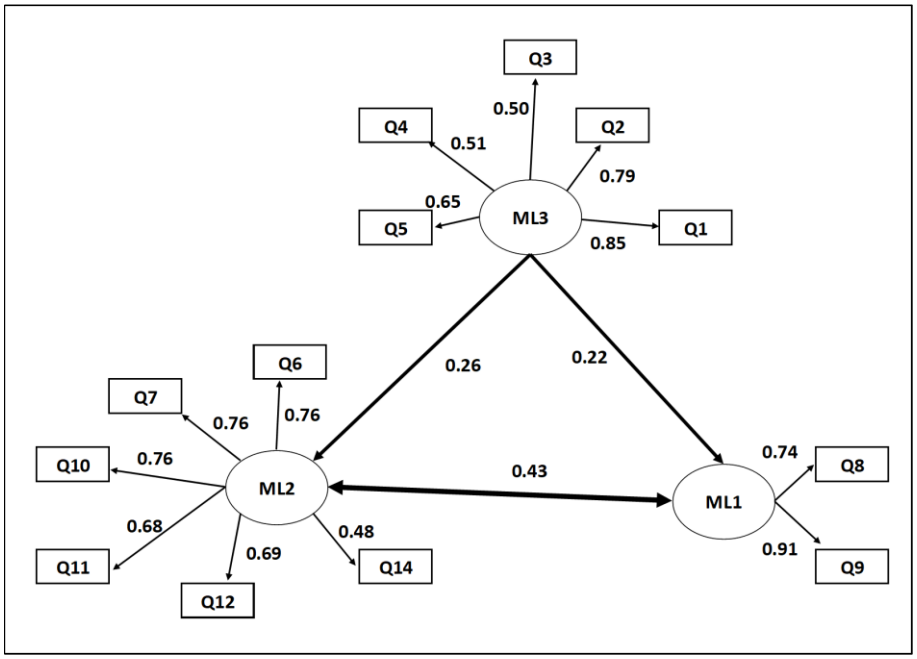
Figure 5. Structural equations modelling of experiment 1. Index parameters of the model.

lavaan 0.6-5 ended normally after 35 iterations

Estimator	ML
Optimization method	NLMINB
Number of free parameters	29
Number of observations	154
Model Test User Model:	
Test statistic	342.655
Degrees of freedom	62
P-value (Chi-square)	0.000
Model Test Baseline Model:	
Test statistic	1028.874
Degrees of freedom	78
P-value	0.000
User Model versus Baseline Model:	
Comparative Fit Index (CFI)	0.705
Tucker-Lewis Index (TLI)	0.629

Loglikelihood and Information Criteria:	
Loglikelihood user model (H0)	-2931.325
Loglikelihood unrestricted model (H1)	-2759.998
Akaike (AIC)	5920.651
Bayesian (BIC)	6008.722
Sample-size adjusted Bayesian (BIC)	5916.933
Root Mean Square Error of Approximation:	
RMSEA	0.171
90 Percent confidence interval - lower	0.154
90 Percent confidence interval - upper	0.189
P-value RMSEA <= 0.05	0.000
Standardized Root Mean Square Residual:	
SRMR	0.095
Parameter Estimates:	
Information	Expected
Information saturated (h1) model	Structured
Standard errors	Standard

Figure 6. Structural equations modelling of experiment 1. Path diagram of the model with the values of loadings between the measured and latent variables, and correlation coefficients between the latent variables.



e) Discussion

Nevertheless the indices evaluating the 'goodness' of the models fell a bit short of the ideal values, they seem to explain reasonably well the behaviour of the students as observed in their daily life.

Now, the questions of the survey sheet focused on the traditional and social media in regard to the importance, influence and credibility of their contents. However these combined lead to six aspects being evaluated, the factor analysis showed that a model with three factors can express the students' attitudes towards these media. In fact, ML3 associated with Q1, Q2, Q3, Q4, and Q5 says that all those three topics related to the traditional media melt down into one single factor, whereas ML2 packing up Q6, Q7, Q10, Q11, Q12 and Q14 along with ML1 which bunches up Q8 and Q9 imply that their attitude towards social media has two distinct aspects, one bundling up issues concerned with importance and influence, and another bearing upon credibility of the contents that the viewers access.

These attitudes regarding in particular to the social media can be partially understood in the scope of social cognitive theory (Bandura, 2001). For this purpose, we should first keep in mind that, in the scope of the Japanese society, young generations are intensively instructed and trained in schools and homes to be watchful when it comes to the internet and its storms of pernicious as well as beneficial contents, so that people are in general always concerned with some potential cyber trouble that can outbreak anytime and anywhere. Thus recalling the self-regulatory capability - which according to this theory means proactively managing discrepancy production and discrepancy reduction - users react

sensitively more to the credibility of social media related contents than to traditional media as though they were abiding by the social norms and internal standards. Moreover, from the self-reflective and vicarious capabilities, it is likely that the viewers experience - whether empathetically or not - through others' experiences and comments on the contents to then decide whether or not the contents fit in their social environment.

Interestingly, nevertheless the respondents reported spending a great amount of long hours on the social media rather than old media, ML3 is an independent variable for the equations having ML1 and ML2 as dependent variables according to the model obtained out of the structural equations modelling analysis. A possible interpretation is that people tend to see the traditional media as a commodity and their contents as something socially acceptable, as well as carefully screened and approved for broadcasting; so that the importance, influence and credibility blend altogether into a single factor.

EXPERIMENT 2

Hereafter we present paralleling the previous section the results of experiment 2. Actually, for the sake of clarity of the exposition and focus solely on the model, the chart of the descriptive statistics is left out.

a) Survey

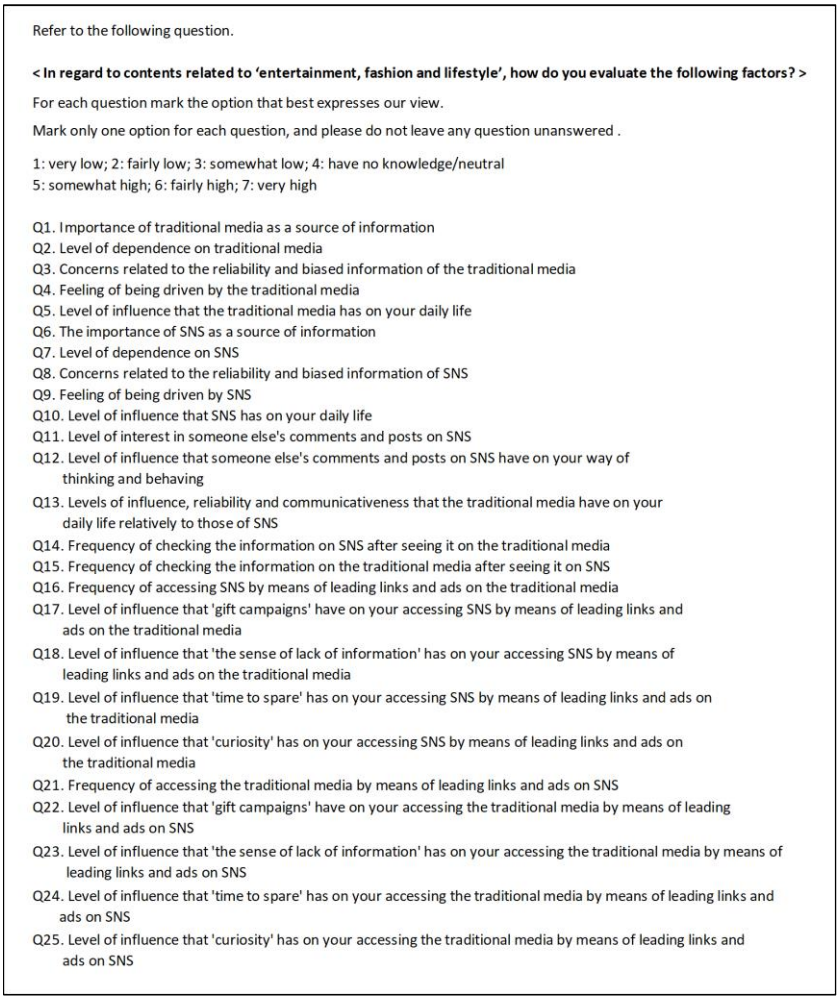
The questionnaire sheet used in Experiment 2, which was performed in 2017, one year after the experiment 1 and with a different sample of 153 valid respondents, is as given in Fig. 7. Clearly, the questionnaire sheet is an extended version of the previous year in the sense that questions Q16 through Q25 were added to the original sheet and, even though the assessment of the questions is still based on the 7 point markings, the options were slightly modified to accommodate the additional new questions. Finally, the objective here is to study factors that attract the attention of the students and some of the conditions that may lead to the actual buying or consuming behavior.

b) Factor Analysis

As in the previous experiment, analysis of the best number of factors composing the model was done with 'vss' and scree plot, which were used as the initial reference data to build the factor analysis model.

Figure 8 outlines the output of the model, hereafter called model 2, adopted after some trial and error modeling procedures. That is to say, this 6-factor model was chosen because it achieved the best values for 'The root mean square of the residuals (RMSR)', 0.05; '… empirical chi square' and 'Likelihood Chi Square' with probability less than 0.05; 'Tucker Lewis Index of factoring reliability', 0.7; 'RMSEA index', 0.115; 'BIC', -377.37; 'Fit based upon off diagonal values', 0.97; and 'cumulative var', 0.56.

Figure 7. Questionnaire sheet of experiment 2.



Refer to the following question.

< In regard to contents related to 'entertainment, fashion and lifestyle', how do you evaluate the following factors? >

For each question mark the option that best expresses our view.

Mark only one option for each question, and please do not leave any question unanswered .

1: very low; 2: fairly low; 3: somewhat low; 4: have no knowledge/neutral
5: somewhat high; 6: fairly high; 7: very high

Q1. Importance of traditional media as a source of information
Q2. Level of dependence on traditional media
Q3. Concerns related to the reliability and biased information of the traditional media
Q4. Feeling of being driven by the traditional media
Q5. Level of influence that the traditional media has on your daily life
Q6. The importance of SNS as a source of information
Q7. Level of dependence on SNS
Q8. Concerns related to the reliability and biased information of SNS
Q9. Feeling of being driven by SNS
Q10. Level of influence that SNS has on your daily life
Q11. Level of interest in someone else's comments and posts on SNS
Q12. Level of influence that someone else's comments and posts on SNS have on your way of thinking and behaving
Q13. Levels of influence, reliability and communicativeness that the traditional media have on your daily life relatively to those of SNS
Q14. Frequency of checking the information on SNS after seeing it on the traditional media
Q15. Frequency of checking the information on the traditional media after seeing it on SNS
Q16. Frequency of accessing SNS by means of leading links and ads on the traditional media
Q17. Level of influence that 'gift campaigns' have on your accessing SNS by means of leading links and ads on the traditional media
Q18. Level of influence that 'the sense of lack of information' has on your accessing SNS by means of leading links and ads on the traditional media
Q19. Level of influence that 'time to spare' has on your accessing SNS by means of leading links and ads on the traditional media
Q20. Level of influence that 'curiosity' has on your accessing SNS by means of leading links and ads on the traditional media
Q21. Frequency of accessing the traditional media by means of leading links and ads on SNS
Q22. Level of influence that 'gift campaigns' have on your accessing the traditional media by means of leading links and ads on SNS
Q23. Level of influence that 'the sense of lack of information' has on your accessing the traditional media by means of leading links and ads on SNS
Q24. Level of influence that 'time to spare' has on your accessing the traditional media by means of leading links and ads on SNS
Q25. Level of influence that 'curiosity' has on your accessing the traditional media by means of leading links and ads on SNS

As for the latent variables, ML4 in this model 2 corresponds to ML3 of experiment 1; and ML2 to ML1. In addition, ML5 and ML1 together resembles ML1 of experiment 1, as if this ML1 split into several factors in experiment 2.

Thus, model 2 has basically two new factors, which are defined by ML3 and ML6. The former composed by <Q19. Level of influence that 'time to spare' has on your accessing SNS by means of leading links and ads on the traditional media>, <Q20. Level of influence that 'curiosity' has on your accessing SNS by means of leading links and ads on the traditional media>, <Q21. Frequency of accessing the traditional media by means of leading links and ads on SNS>, <Q22. Level of influence that 'gift campaigns' have on your accessing the traditional media by means of leading links and ads on SNS>, <Q23. Level of influence that 'the sense of lack of information' has on your accessing the traditional media by means of leading links and ads on SNS>, <Q24. Level of influence that 'time to spare' has on your

accessing the traditional media by means of leading links and ads on SNS>, and <Q25. Level of influence that 'curiosity' has on your accessing the traditional media by means of leading links and ads on SNS>; whereas ML6 is composed only by < Q17. Level of influence that 'gift campaigns' have on your accessing SNS by means of leading links and ads on the traditional media> and Q22.

Figure 8. Factor analysis of experiment 2- model. N=153.

Factor Analysis using method = ml
Call: fa(r = Data, nfactors = 6, rotate = "varimax", scores = "regression", fm = "ml")

Standardized loadings (pattern matrix) based upon correlation matrix

	ML3	ML4	ML5	ML1	ML2	ML6	h2	u2	com
Q25	0.86	0.07	0.09	0.03	0.12	0.01	0.77	0.23	1.10
Q24	0.85	0.07	0.14	0.21	0.06	0.03	0.79	0.21	1.20
Q21	0.71	-0.04	0.13	0.18	0.04	0.29	0.64	0.36	1.60
Q20	0.61	0.21	0.13	0.06	0.16	0.24	0.52	0.48	1.90
Q19	0.57	0.26	0.24	0.16	0.05	0.15	0.50	0.50	2.20
Q22	0.52	-0.17	0.12	0.00	0.18	0.63	0.74	0.26	2.40
Q23	0.48	0.08	0.08	-0.04	0.12	0.12	0.27	0.73	1.40
Q16	0.47	0.22	0.25	0.12	0.00	0.30	0.44	0.56	3.00
Q1	0.11	0.77	0.01	0.11	0.05	0.12	0.63	0.37	1.10
Q2	0.05	0.75	0.12	0.00	-0.02	0.09	0.59	0.41	1.10
Q5	0.09	0.68	0.01	0.24	0.01	0.00	0.53	0.48	1.30
Q4	0.01	0.58	-0.08	-0.08	0.34	-0.12	0.48	0.52	1.80
Q3	0.04	0.52	-0.06	0.04	0.06	-0.10	0.29	0.71	1.20
Q11	0.21	-0.05	0.84	0.19	0.08	0.13	0.82	0.19	1.30
Q12	0.23	-0.03	0.78	0.23	0.17	0.08	0.75	0.25	1.50
Q10	0.14	0.17	0.43	0.47	0.28	0.05	0.55	0.46	3.20
Q14	0.27	0.16	0.40	0.21	0.02	0.08	0.30	0.70	2.90
Q6	0.13	0.15	0.19	0.95	0.09	-0.02	1.00	0.01	1.20
Q7	0.13	0.09	0.29	0.70	0.11	0.07	0.63	0.38	1.50
Q9	0.17	0.11	0.16	0.09	0.96	0.02	1.00	0.01	1.20
Q8	0.17	0.05	0.10	0.16	0.63	0.09	0.47	0.53	1.40
Q17	0.34	0.02	0.12	0.06	0.03	0.67	0.58	0.42	1.60
Q18	0.17	0.21	0.10	-0.06	-0.07	0.13	0.11	0.89	3.70
Q15	0.20	0.35	0.20	0.08	-0.02	-0.02	0.21	0.79	2.40
Q13	0.33	0.29	0.20	0.07	0.14	-0.17	0.29	0.71	3.80

		ML3	ML4	ML5	ML1	ML2	ML6
SS	loadings	3.98	2.77	2.17	2.02	1.69	1.25
Proportion	Var	0.16	0.11	0.09	0.08	0.07	0.05
Cumulative	Var	0.16	0.27	0.36	0.44	0.51	0.56
Proportion	Explained	0.29	0.20	0.16	0.15	0.12	0.09
Cumulative	Proportion	0.29	0.49	0.64	0.79	0.91	1.00

Mean item complexity = 1.9
Test of the hypothesis that 6 factors are sufficient.

The degrees of freedom for the null model are 300 and the objective function was 14.7 with Chi Square of 2100
The degrees of freedom for the model are 165 and the objective function was 3.26

The root mean square of the residuals (RMSR) is 0.05
The df corrected root mean square of the residuals is 0.07

The harmonic number of observations is 153 with the empirical chi square 243.47 with prob < 6.8e-05
The total number of observations was 153 with Likelihood Chi Square = 452.65 with prob < 1.2e-28

Tucker Lewis Index of factoring reliability = 0.7
RMSEA index = 0.115 and the 90 % confidence intervals are 0.095 0.119
BIC = -377.37
Fit based upon off diagonal values = 0.97
Measures of factor score adequacy

						ML3	ML4	ML5	ML1	ML2	ML6
Correlat of	(regress	scores	with	factors		0.94	0.92	0.92	0.99	0.99	0.84
Multiple R	square	of	scores	with	factors	0.89	0.84	0.85	0.98	0.99	0.71
Minimu correlat of	possible	factor	scores			0.77	0.69	0.69	0.97	0.98	0.42

Thus, from these correlations, ML3 can be defined as a factor expressing ‘Spare time and curiosity leading to check links’; ML4 as ‘driven by traditional media and

dependency', ML5 as 'influence of posts on SNS', ML1 as 'SNS dependency', ML2 as 'driven by SNS', and ML6 as 'influence of gift campaigns'.

c) Structural Equations Modeling

Figure 9 reports the results of the structural equations modeling analysis.The model indicates that ML6 (influence of gift campaigns) as well as ML4 (driven by traditional media and dependency) trigger ML3 (Spare time and curiosity leading to check links) and ML2 (driven by SNS). ML2, in turn influences ML1 (SNS dependency) whereas ML3 influences ML5 (influence of posts on SNS), which is also influenced by ML1.

As for the standardized correlation values between the paths, the value for ML6 and ML3 is 0.67; 0.34 between ML3 and ML5; and 0.36 between ML6 and ML2; 0.26 between ML4 and ML3; 0.25 between ML4 and ML2; 0.37 between ML2 and ML1; 0.43 between ML1 and ML5.

Even though not depicted in the figure, the standardized correlation coefficients between the latent variables and measured variables were as follows. ML1 with Q6 and Q7 were 0.90 and 0.85, respectively. ML2 related to Q8 and Q9, 0.78 and 0.85; correlation values of ML3 to Q19, Q20, Q21, Q24, Q25 were 0.68, 0.71, 0.79, 0.85, and 0.83; ML4 to Q1, Q2, Q3, Q4, Q5 were 0.84, 0.78, 0.51, 0.53, and 0.65; ML5 to Q11 and Q12 were 0.87 and 0.89; ML6 to Q17 and Q22 were 0.67 and 0.67, respectively.

Note that in this model, nevertheless the measured variable Q22 was correlated to ML6 and ML3 in the factor analysis model, here it is correlated only to ML6. The model thus defined led to the correlation coefficient valued 0.67 between ML6 and ML3, and this was the best combination among the tested ones on the basis of trial and error procedures. Also, considering that Q17 (level of influence that 'gift campaigns' have on your accessing SNS by means of leading links and ads on the traditional media) is measuring the influence of 'gift campaigns', it is reasonable to pair it up with Q22 and let them make up the factor ML6.

d) Discussion

The model in figure 9 suggests that as far as 'entertainment, fashion, and daily life issues' are concerned, students are in fact influenced by both media, but it all starts if there are in their contents some kinds of gift campaign to be benefitted from as the path with maximum correlation value between the factors ML6 (influence of gift campaigns) and ML3 (spare time and curiosity leading to check links) indicates.

Thus, these gift campaigns on social media trigger the users' curiosity as long as they have spare time to watch other links either added or displayed to the contents. The watching of contents on the links in turn leads to the checking of other users' posts and comments, which in turn influence the users' behavior.

Figure 9. Structural modeling analysis N=153.

lavaan 0.6-5 ended normally after 42 iterations

Estimator	ML
Optimization method	NLMINB
Number of free parameters	44
Number of observations	153

Model Test User Model:

Test statistic	384.164
Degrees of freedom	127
P-value (Chi-square)	0.000

Model Test Baseline Model:

Test statistic	1605.117
Degrees of freedom	153
P-value	0.000

User Model versus Baseline Model:

Comparative Fit Index (CFI)	0.823
Tucker-Lewis Index (TLI)	0.787

Loglikelihood and Information Criteria:

Loglikelihood user model (H0)	-4136.526
Loglikelihood unrestricted model (H1)	-3944.444
Akaike (AIC)	8361.052
Bayesian (BIC)	8494.391
Sample-size adjusted Bayesian (BIC)	8355.128

Root Mean Square Error of Approximation:

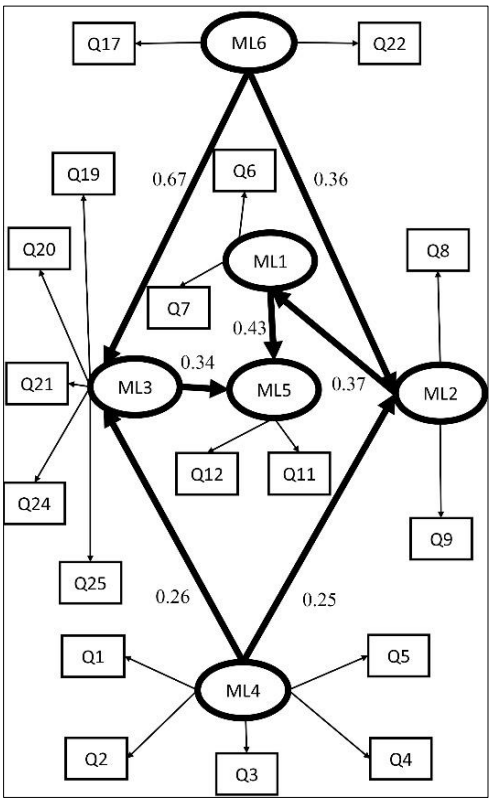
RMSEA	0.115
90 Percent confidence interval - lower	0.102
90 Percent confidence interval - upper	0.128
P-value RMSEA <= 0.05	0.000

Standardized Root Mean Square Residual:

SRMR	0.091

Parameter Estimates:

Information	Expected
Information saturated (h1) model	Structured
Standard errors	Standard



Furhtermore, the path to ML5 is from ML4 (driven by traditional media and dependency) by the way of ML3, indicating the possibility that students' actions are prompted by the contents seen on the traditional media. However, since the correlation coefficient between latent variables ML6 and ML3 is higher than that of between ML4 and ML3, the model suggests that the factor ML3 is more likely to have influence on the users.

Now focusing on the path through the latent variables ML6, ML2 (driven by SNS), ML1 (SNS dependency) and ML5, we see that the social media did influence the respondents' life styles, but the triggering factor is still the latent variable ML6 (influence of gift campaigns). In addition, if we compare this path with the one consisting of factors ML4 (driven by traditional media and dependency), ML2, ML1, and ML5, we realize that the former is apparently more conspicuous than the latter.

CONCLUSIONS

Experiment 1 showed that the interaction of students with the social media may partially be discussed in term of the social cognitive theory. However, when the interaction with the conventional media is also included in this model, we are left with issues concerning the most influential media and why this is the way it is. In the Japanese context, a hint comes from the fact that many students are always watchful when using the internet, which is seen as the fundamental technology that supports the modern society, but at the same time as something that can harm the user any time because of the anonymous malicious users.

Experiment 2 suggests that nevertheless local college students do spend a lot of time on the social media, their buying or consuming behavior are influenced by marketing practices as present campaigns. This attitude probably comes from the fact that, living in regional areas, the students do not have access to every product they are interested in; and they don't want to buy them without checking first, either.

Finally, despite the fact that the modeling indices were not of ideal values, the models for these experiments, which were performed one year apart from each other and with the cooperation of two distinct groups of students, described quite well some of the well known characteristics, and provided some insight into the subject of study by making it explicit the correlation between the factors.

LIMITATION OF THE STUDY

Care should be taken when interpreting the findings here, because the models and factors were generated by using only a data set collected from only female students from the northeastern region, whose ages ranged from 18 to 20.

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