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The influence of personal character on information communication and activity effect

An examination of non-profit cultural activities

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Abstract

Purpose – The purpose of this paper is to explore information-processing in response to a specific promotional information campaign in a “social marketing” setting, and to devise a target audience segmentation strategy on the basis of the findings.

Design/methodology/approach – The case examples of on-campus cultural events and activities at three universities in Taiwan are the focus of data collected by questionnaire from 759 students in three personality-based clusters and subjected to analysis by structural equation modelling and MANOVA.

Findings – A model of the information-processing structure exhibited a good fit to the data. There were clear differences among the clusters with respect to the individual elements of the model.

Research limitations/implications – Restriction of the sampling frame to three universities in one country, chosen specifically for similarities in their on-campus cultural provision, limits the generalisability of the findings and conclusions to other social marketing situations.

Practical implications – Personal characteristics were the single most important influence on students’ processing of the information and participation in the events and activities. Conclusions are drawn for target audience segmentation in this specific case.

Originality/value – This study has developed an effective measurement index and structural model, which can serve as a point of reference for marketing planners in comparable situations.

Keywords Generation and dissemination of information, Marketing communications, Social marketing, Target audience, Market segmentation

Paper type Research paper

Introduction

A common strategy employed by businesses in their efforts to project a positive image is to participate in public service activities. They typically advertise and promote this involvement in a bid to raise their profile, generate sales and increase profit. Non-profit organizations are less focused on increasing revenue in their marketing and promotional activities, and more interested in raising awareness of themselves as an organization and of the cause they advocate or support. A key task for the planners of such image-related marketing initiatives is to choose the most effective and appropriate channels to capture their target market, which entails the planning of market segmentation and media selection strategies.

In recent years, universities in Taiwan have devoted significant effort to the provision of a wider variety of cultural events and activities for their students to experience on campus. The rationale is that participation will encourage a more holistic and



open-minded approach to student life, developing cultural interests beyond the classroom. This is a classic example of altruistically driven non-profit “social marketing”.

The Taiwan Council for Cultural Affairs classifies cultural activities into nine categories: art, music, theatre, dance, folk, film, lectures and research, all of which are available in Taiwanese universities, plus “others”. This study reported here defines on-campus cultural events and activities as public lectures, music, theatre, opera, dance and visual arts – typical of the “products” of non-profit organizations.

It is not at present known to what extent the students in the study sample have found the information they receive about cultural initiatives to be interesting, stimulating or motivating, nor how effective it has been in encouraging them to participate. Many universities devote considerable resources to offering on-campus cultural events and activities to their students, but seldom evaluate how effective those efforts have been. Since, the motive for the initiative is altruistic, and revenue and profit are therefore irrelevant as criteria of the effectiveness of the information campaign, this study set the level of participation as the principal measure.

An important task for the planners of such a social marketing campaign is therefore to understand the consumer behaviour of their students in this particular respect, and that was the aim of the study reported here. It treats universities as non-profit organizations, on-campus cultural events and activities as one of their services (or products), and their students as the target audience. The aim is to investigate the effect of key consumer behaviour variables on the processing of information about the events and activities. Personality is assumed to be key determinant of response to the promotional campaign, and hence a significant market segmentation variable. The methodology this involved studying groups of students with different personality types, and seeking to identify the relationship between responses to the available activities and personality. The outcome was a formal model of the processes and relationships measured, intended ultimately as the basis for both planning and evaluation of the information communication effort.

Review of the literature and formulation of hypotheses

Message reception

Reception of the information is the first step in the chain of events to be investigated. Unless the message is poorly designed, the outcome will be the development of understanding and interest. Successive exposures to messages and repeat analysis of the message content is expected to result in storage in the memory (Craik and Lockhart, 1972) and recipients’ ability to recall the information (Rethans *et al.*, 1986).

Lavidge and Steiner (1961) devised a commercial persuasion model, which separates the entire process into three stages – cognitive, affective and conative (CAC).

A cognition → attitude → intention variant has since been proposed by MacKenzie *et al.* (1986). In these schemas and other very similar to them, recipients of advertising information understand, memorize, and accept the message; this is the cognitive phase. Discussion of the affective and conative phases will be deferred until later sub-sections of this literature review.

In its full form, the Lavidge-Steiner model contains six hierarchical stages, expressed as steps in a sequence from information reception to eventual action: awareness → knowledge → liking → preference → conviction → action. The implicit assumption is that the action in question will be both positive and related to the

advertiser's intentions – that is, the advertising will have influenced the audience's purchasing behaviour (Edell and Burke, 1987).

Message reception, embracing not only the initial acquisition of the message but also subsequent cognitive processing and memorisation, is thus the crucial trigger for the affective responses that precede the final reaction.

Shimp (1981, 1986) elaborates this somewhat basic model by asserting that message recipients may in fact respond in two ways to information received. One is to perform the cognitive-level mental tasks just described; the other relates to the perceived quality of the information itself and to affective (that is, emotional) responses (Vakratsas and Ambler, 1999). Abelson *et al.* (1982) proposed that the difference between the cognitive and affective phases of such "hierarchical" models of advertising effect (and the effects of other elements of the promotional mix) is that cognition is a personal evaluation of external stimuli, which builds beliefs, whereas affects are personal inner feelings, which contribute to evaluation of the message. Research studies have shown that reception of the information in a message influences feelings and beliefs (Burke and Edell, 1989; Garbarino and Edell, 1997) and leads to information evaluation, which in turn influences purchasing intention (Baker and Lutz, 2000; Ko and Park, 2002).

Thus, the *reception* of information is an important antecedent of cognition, memory, beliefs, feelings, evaluation and action. Accordingly, the following hypotheses are proposed:

- H1. There is a significant relationship between information *reception* and *feelings* about the information.
- H2. There is a significant relationship between information *reception* and information *evaluation*.
- H3. There is a significant relationship between information *reception* and *beliefs* about the value of the activity.
- H4. There is a significant relationship between *feelings* about the information and information *evaluation*.

Affective processing

Rosenberg and Hovland (1960) posited that, to understand how attitudes are formed and changed, it is necessary to understand how associated information influences the recipients' beliefs. In the context of on-campus cultural events and activities, reception of the promotional messages should provoke the students to think about the propositions they convey, and prompt them to critically assess the various activities on offer as a prelude to crystallising their beliefs about the proposed course of action.

Burke and Edell (1989), building on Edell and Burke (1987), constructed a model of information processing, one element of which asserts that the degree to which an advertisement evokes an emotional response is dependent on how it is communicated. They also argued that emotions, evaluations and attitudes have an informal interrelationship that influences the affective response to the brands promoted in the messages. Among the interconnections, feelings evoked by coming into contact with the information they contain have an important effect on attitudes (Park and Mittal, 1985). Thus, the better a promotional message is at evoking feelings in recipients, the more positive their attitudes will be.

As well as being formed by feelings, attitudes are also determined by their beliefs and evaluations (Lu and Lin, 2002). Recipients of a persuasive message must agree with the main proposition it contains, if they are to be sympathetic towards its intention. Having developed an attitude to the information, they will evaluate it and form an opinion. The outcome of their evaluation will determine their attitude towards the advertisement. If that is positive, they are likely to move on to acquire the product or service in question, or at least become engaged with it. Lutz (1975) and Lutz *et al.* (1983) developed four models based on attitudes towards advertising, which have been widely applied in other studies (Batra and Ray, 1986; Lutz, 1985; Mizerski and White, 1986; Park and Young, 1986). Attitude thus binds understanding, expectation, and behavioural intention together (Cho, 2004), as the core mediating variable.

Thus, cognitive responses are succeeded by affective responses: the recipient has sympathy for the proposition and is ready to be convinced by it. If that in fact happens, then action results, the conative phase. At this crucial mid-point in the hierarchy of effects, the following further hypotheses are proposed:

- H5. There is a significant relationship between *attitude* to the activity and *feelings* about the information.
- H6. There is a significant relationship between *attitude* to the activity and *beliefs* about the value of the activity.
- H7. There is a significant relationship between and *attitude* to the activity and information *evaluation*.

Intentions

The two main criteria for assessing the effectiveness of an advertising campaign are the effect on sales (in the case of the present study, on uptake), and how effective it was at communicating the information. The former is more easily quantifiable, and consequently far more popular in practice; the higher the sales after the campaign, the more effective it was, cause-and-effect being assumed. Communication effectiveness has to be measured by more indirect indicators, such as audience ratings, product assessment and consumer endorsement (Lavidge and Steiner, 1961). In relation to the information campaign under study, the appropriate assessment criteria will be intention to participate, the actual participation rate, and whether or not the expectations of those who do participate have been met.

The magnitude of these effects will be based largely on the students' attitudes towards the activities, formed in the previous phase of the process. Mitchell and Olson (1981) argued that audiences' attitudes towards the advertising and the brand determined their intention to purchase (MacKenzie and Lutz, 1989). Both Mitchell and Olson (1981) and Shimp (1981) asserted that attitude to the advertisements is the key consideration in predicting attitude to the advertised brands, which in turn influences intention to purchase (Lutz *et al.*, 1983). Thus, the evaluation of the information and attitudes to it will be the main mediating variables that will influence intention to purchase (Govindarajulu *et al.*, 2000; Lu and Lin, 2002; Winter *et al.*, 1998) – or, in the context of this study, students' intentions to participate in the on-campus cultural events and activities.

Many researchers have used the familiar hierarchy of effects to assess the effectiveness of advertising (Bendixen, 1991, 1993; Leone, 1983; Rosen, 1989;

Vaughn, 1980, 1986; Wu, 2001). The underlying assumption is that the effectiveness of the information campaign directed at the students will depend on their understanding of the messages, their feelings about them and evaluation of them, the preferences and attitudes formed on that basis, and the consequent predisposition to participate in the events and activities or, of course, not to. It is furthermore generally held that experience of participation will form expectations about subsequent uptake of options on offer, an extra ingredient to be added to the conventional models.

Thus, it is further proposed that:

- H8. There is a significant relationship between participation *intention* and information *evaluation*.
- H9. There is a significant relationship between participation *intention* and *attitude* to the activity.
- H10. There is a significant relationship between participation *intention* and actual *participation*.
- H11. There is a significant relationship between actual *participation* and *assessment* of the experience.

Personality

An individual's personal characteristics have a large influence on behavioural intention and eventual behaviour. Many research studies have suggested strongly that consumers' behavioural intentions match their lifestyles and personalities (Ferrell and Gresham, 1985; Hunt and Vitell, 1986, 1992; Lastovicka and Joachimsthaler, 1988; Rallapalli *et al.*, 1994; Roslow *et al.*, 2000). The correlations among intentions, behaviour and personality or lifestyle traits is a major field of study within consumer behaviour research.

The study of personality as a distinguishing attribute has been one approach to the explanation of behavioural differences (Kucukemiroglu, 1999; Swinyard and Smith, 2003; Todd and Lawson, 2001). The make-up of personal character comprises many separate elements, such as personality and lifestyle (Mohasher *et al.*, 2000; Riecken, 2000), which are strongly related to decision-making style (Lu *et al.*, 2001; Plummer, 2000), and a combination of personality traits, personal anxieties and concerns, and background life stories (Baumgartner, 2002; McAdams, 1996, 2001).

Given the clear influence of personal characteristics on behavioural intentions, the research design provided for the collection of data relating to students' personal characteristics, for cluster analysis that could yield useful segmentation variable. A final set of hypotheses relates to the presumed variation among those clusters with respect to each of the eight elements of the hierarchical model already discussed:

- H12. Significant differences exist in information *reception* among different personal character clusters.
- H13. Significant differences exist in *feelings* about the information among different personal character clusters.
- H14. Significant differences exist in information *evaluation* among different personal character clusters.

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- H15.* Significant differences exist in *beliefs* about the value of the activity among different personal character clusters.
- H16.* Significant differences exist in *attitude* to the activity among different personal character clusters.
- H17.* Significant differences exist in participation *intention* among different personal character clusters.
- H18.* Significant differences exist in actual *participation* among different personal character clusters.
- H19.* Significant differences exist in *assessment* of the experience among different personal character clusters.

To summarise: *reception* of marketing communications information leads to formation of *feelings* about its content, *beliefs* about the value of activity promoted and *evaluation* of the information. These cognitions in turn generate *attitudes* to the activity that, if positive, result in *intention* to participate. This is converted into actual *participation*, provided there is no extraneous obstacle. The final phase of the process is *assessment* of the outcome by the recipient of the information that originated it. The whole system will be mediated by *personality* characteristics.

Whilst the hierarchical model of communication implicit in this sequential description is commonly applied in commercial marketing, it is less familiar among non-profit businesses and social marketing organisations. In particular, it has never been used to investigate the effects on university students of promotional messages regarding cultural events and activities available to them on campus. The study described in the next two sections therefore applied the nine italicised variables in the description above to the design of data collection by questionnaire. The results were to be used to build a model of student response to the promotion of on-campus cultural events and activities in a university, which it was hoped could be implemented in practice by the planners of the promotional campaigns at the three universities at which the research was conducted, and perhaps more generally.

Research methodology

Research framework

The previous section described and discussed eight key variables in a hierarchical progression from initial reception of information to eventual action in response, plus one general mediating variable, summarised in its penultimate paragraph. A total of 19 research hypotheses proposed the interrelationships among them. The resultant conceptual framework is shown graphically in Figure 1. *H12-H19* are absent from the path diagram because they collectively propose differences among clusters of individuals dependent on personality characteristics.

Questionnaire design

The data collection instrument was a self-completion questionnaire. Questions relating to information reception, attitude and intention were adapted from the work of Burke and Edell (1986, 1989), Edell and Burke (1987) and Garbarino and Edell (1997). Others measuring the personal characteristics of respondents derived from studies by

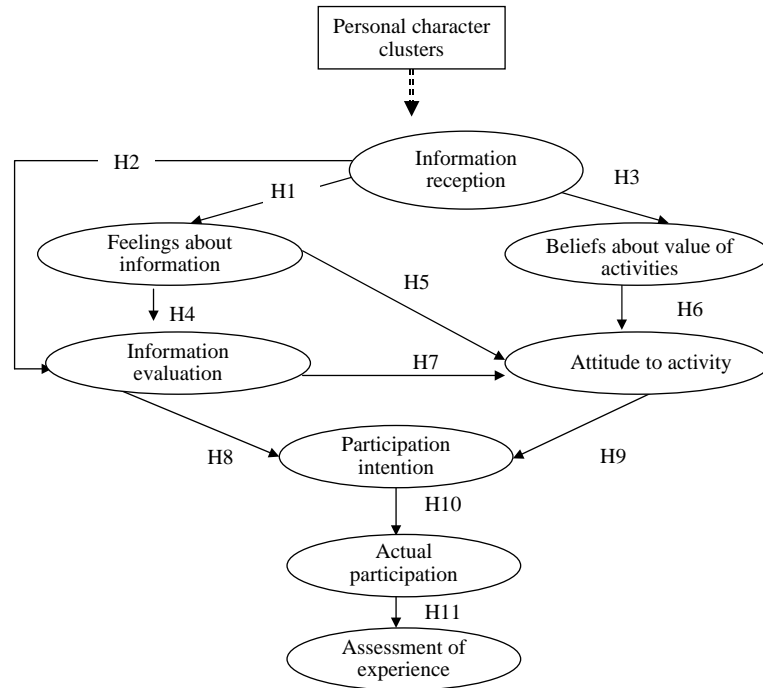


Figure 1.
Framework of the study

Kucukemiroglu (1999), Swinyard and Smith (2003) and Todd and Lawson (2001). The resulting draft questionnaire was tested and discussed in a focus group comprising ten university students, representing the eventual sampling frame.

All 49 answers took the form of a seven-point Likert scale of agreement with assertions in the form of short statements, except for two recording gender and year of study. The questions and answer formats are shown in the Appendix. The statements are translations from the Chinese, and may not have exactly the same connotations in English as they would have had for the local respondents (for instance, “an ablaze discussion”). For the same reason, the section headings in the questionnaire do not correspond exactly to the vocabulary of the hypotheses, which has been slightly modified to conform with standard English, in the interests of unambiguous communication (for instance, “assessment of the experience” in place of “activity effect evaluation”). The same general caveat applies to Tables I and II.

Sample

Taiwanese universities vary in the range of cultural events and activities on offer to their students, and in the manner of promoting them. Respondents for this study were drawn from three whose offerings had been similar over the previous two years.

A quota sample of 300 students was recruited on each of the three campuses. Of the 788 completed questionnaires returned, 759 were usable, for a response rate of 84 per cent. There is therefore no concern about the representativeness of the sample.

Factor	Item	Item-to-total correlation	Factor loading	Eigenvalue	Cumulative percentage of variance	Cronbach α
Information reception	Aware (A1)	0.637	0.821	1.347	67.336	0.4758
	Often (A2)	0.673	0.821			
Feelings about information	Attractive (B1)	0.7683	0.862	3.571	71.425	0.8996
	Interesting (B2)	0.7752	0.866			
	Discussion provoking (B3)	0.7428	0.840			
	Fascinating (B4)	0.7819	0.864			
	Visual impact (B5)	0.6821	0.791			
Information evaluation	Joyful (C1)	0.7218	0.832	3.357	67.133	0.8772
	Alive (C2)	0.7353	0.840			
Beliefs about the value of activities	Informative (C3)	0.7608	0.856			
	Promotional (C4)	0.6631	0.785			
	Cultural (C5)	0.6589	0.781			
	Promotes quality (D1)	0.7476	0.850	3.456	69.123	0.8879
	Influences unobtrusively (D2)	0.7465	0.849			
	Can develop one's spirit (D3)	0.7632	0.860			
	Relaxing (D4)	0.7231	0.822			
	Beneficial (D5)	0.6561	0.772			
	Important (E1)	0.7985	0.885			
	Positive (E2)	0.8080	0.889	3.563	71.260	0.8984
Attitude toward activities	Correct negative trends (E3)	0.7412	0.841			
	Information welcome (E4)	0.6580	0.771			
	Valuable overall (E5)	0.7353	0.830			
	Information collected (F1)	0.6495	0.839	2.261	75.380	0.8363
	Improves opinion (F2)	0.7477	0.897			
Actual participation	Increases intention (F3)	0.6901	0.868			
	Have participated (F4)	0.7509	0.892	2.365	78.843	0.8657
	Will invite friends (F5)	0.7691	0.901			
	Will continue (F6)	0.7142	0.871			
Assessment of experience	Better opinion (F7)	0.6374	0.905	1.637	81.871	0.7786
	Togetherness (F8)	0.6374	0.905			

Table I.
Reliability and validity

Table II.
Factor analysis: personal
characteristics

Factor dimension	Item	Factor loading	Eigenvalue	Cumulative percentage of variance	Cronbach α
Outgoing and optimistic	I can control my emotions	0.748	6.811	35.845	0.8452
	I like to seek out new things	0.701			
	I like social activities	0.648			
	I am always optimistic	0.628			
	I am a people person	0.581			
	I always try my best to do a good job	0.544			
	I usually smile and am friendly	0.463			
	I am a cautious	0.762			
	I am responsible	0.678			
	I am down to earth	0.670			
Serious and responsible	I am not a temperamental person	0.492	2.390	48.421	0.7898
	I like to be alone	0.708			
	I like to stay at home	0.687			
	I am shy and introvert	0.650			
	I am often calm	0.633			
Introverted and traditional	I am a traditional person	0.560	1.053	53.965	0.7282
	I catch up with the latest information	0.846			
	I am up-to-date	0.735			
	I am good at learning new information	0.512			
Looking for new information			1.001	59.234	0.7691

Reliability and validity

Cronbach's α coefficient and factor analysis were used to evaluate the reliability and validity of the questionnaire.

Table I lists the α coefficients for data collected by 30 questions addressing the eight factors found in *H1-H11*. The descriptions of the items are key words from the full form of each related question. All α values but one are greater than 0.7, satisfying the reliability criterion advocated by Nunnally (1978). The result for "information reception" is 0.5, well above the 0.35 cut-off for deletion.

Factor analysis and calculation of the item-to-total correlation coefficient found that the variables in each category could be classified to one factor, indicating only one factor with an eigenvalue greater than one present. The factor loading of each variable is greater than 0.6, the cumulative percentage of variance is greater than 60 per cent and the item-to-total correlation coefficient in each variable is greater than 0.6. Convergent validity is therefore demonstrated.

Findings

Segmentation by personal characteristics

This study is original in its use of "personal character" as a category in factor analysis, and therefore the first to learn its factor dimensions. Table II shows that principal component factor analysis extracted those within the 19 personal character questions, retaining the four with an eigenvalue greater than one. The cumulative percentage of variance is 59.2 per cent. Varimax rotation was used to derive categories whose factor loading absolute value was greater than 0.4, thereby extracting and naming the factors (Kaiser, 1958). They are:

- outgoing and optimistic,
- serious and responsible,
- introverted and traditional; and
- looking for new information.

Cronbach's α coefficient of each is greater than 0.7, which shows that each factor is valid and reliable (Guieford, 1965).

The factor score of the four personal character dimensions was used as the basis of cluster analysis, following the *k*-mean method (Afifi and Clark, 1990). After several iterations, the analysis showed that dividing the respondents into three clusters generated the greatest diversity; these contained 293, 237, and 229 students, respectively. To test the stability of the analysis, and to determine if there was significant differentiation on any factor among the three clusters, analysis of variance was performed according to the four personal characters factors. The results, shown in Table III, indicate that the three clusters contain significant differences within each factor dimension. Dividing the clusters produced excellent results.

To further ensure the stability of dividing clusters, discriminant analysis was performed on all samples from the three clusters, using the four personal character types. The results produced two discrete functions. Wilk's λ and the χ^2 value indicate that they are significant ($p < 0.05$), and that the ratio of correct classification was 98.8 per cent. These results confirm that the segmentation was effective.

Table III.
Analysis of variance:
character clusters

Factor	Cluster name			F	P	Scheffe test
	Introverted and information seeking (n = 293)	Outgoing and optimistic (n = 237)	Neutral (n = 229)			
Outgoing and optimistic	0.1138	0.8305	- 10.0293	430.656	0.000*	(1,2) (1,3) (2,3)
Serious and responsible	0.2562	- 0.1387	- 0.1912	16.599	0.000*	(1,2) (1,3)
Introverted and traditional	0.6478	- 0.3223	- 0.5138	141.675	0.000*	(1,2) (1,3)
Looking for new information	0.5745	- 0.6483	- 0.0719	132.949	0.000*	(1,2) (1,3) (2,3)

Note: (1,2) – significant difference between clusters 1 and 2, etc.; **p* < 0.05

The effect of cluster analysis is thus very stable. The personal character traits of each segmental cluster were:

- (1) *Cluster 1: introverted and information seeking.* Factors = serious and responsible + introverted and traditional + looking for new information.
- (2) *Cluster 2: outgoing and optimistic.* Factor = outgoing and optimistic.
- (3) *Cluster 3: neutral cluster.* No special characteristics.

Relationship structure of the activity effect

AMOS software was used to establish the structure of relationships, as shown in Figure 2. Because of the three different personal character clusters, triple modelling was carried out.

Analysis adhered strictly to the widely-held opinion that the GFI, AGFI, NFI, IFI and CFI indices of fit should exceed 0.9 (Bentler, 1986, 1990; Chau, 1997; Danes, 1984; Gefen *et al.*, 2000; Jøreskog, 1989; Jøreskog and Sörbom, 1982;), and that the RMSEA error should be lower than 0.08 (Jaccard and Wan, 1996). It furthermore applied both the χ^2 and χ^2/df tests as an index, following the suggestion of Carmines and McIver (1981) that the value of the latter should not be greater than three.

Model 1: the introverted and information seeking cluster

Tables IV and V show that: the χ^2 fitness index for this model is 511.04; the *p*-value is 0.00; χ^2/df is well below 4; the RMSEA error is just less than 0.05; the GFI, AGFI, NFI, IFI and CFI indices all exceed 0.9. Table VI further shows significant relationships between the measured variables and the latent factors in the measurement model. Though these results show that the relationship structure of model 1 is not a most optimistic model, the sound statistics indicate a reasonable fit to the data, and it is therefore judged to be acceptable (Bagozzi and Yi, 1988; Hoxmeier *et al.*, 2000; Matsuno *et al.*, 2002).

Path analysis of model 1 therefore demonstrates a lack of clear linkages between information *evaluation* and: information *reception* (H2); *feelings* about the information (H4); and *attitude* to the activity (H7). All other relationship paths have significant, positive influences on one other.

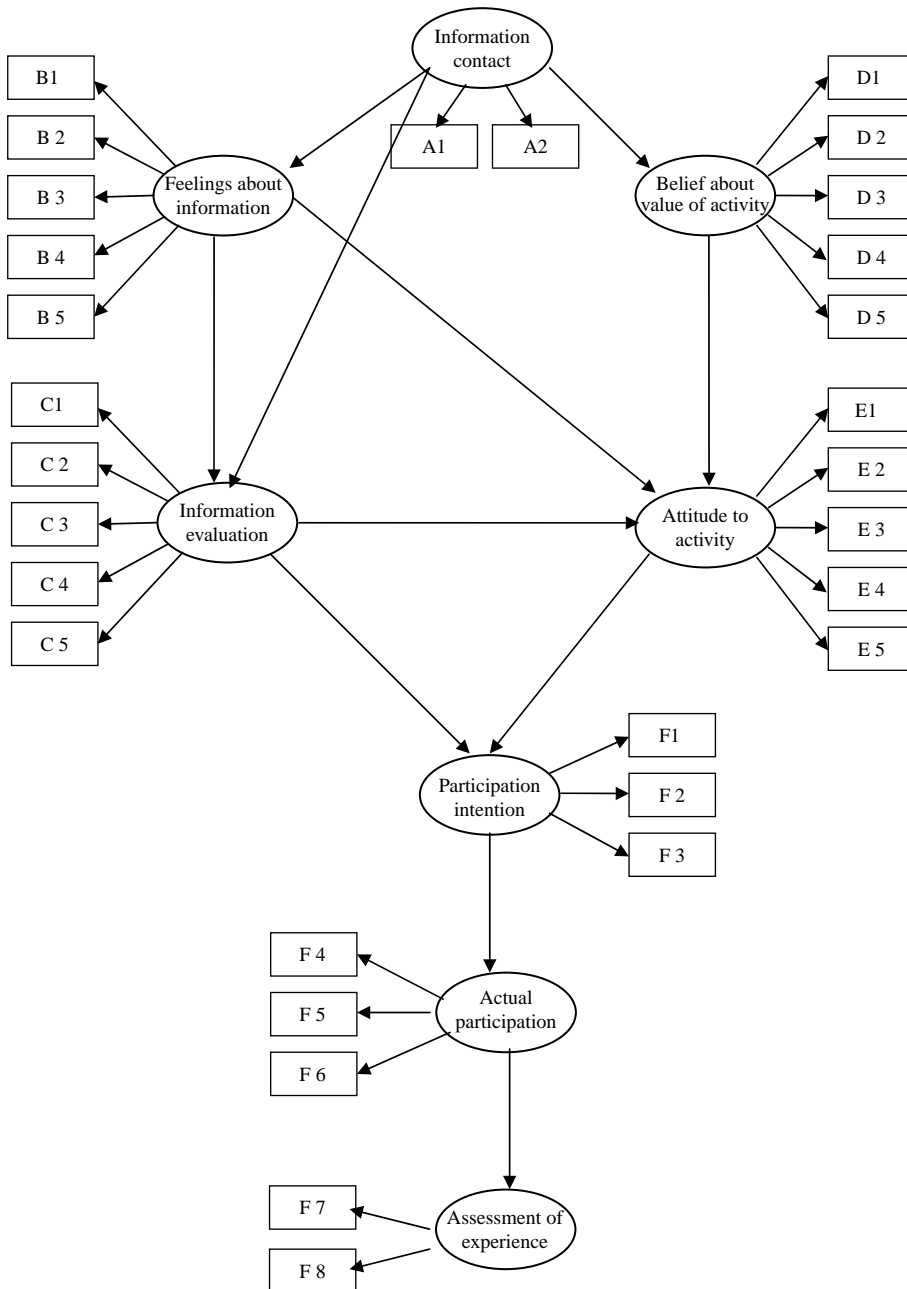


Figure 2. Relationship structure of communication effect

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Table IV.
SEM analysis

Fit index	Introverted and information seeking cluster (model 1)	Outgoing and optimistic cluster (model 2)	Neutral cluster (model 3)
χ^2	511.04	561.67	592.73
χ^2/df	1.494	1.642	1.733
<i>P</i> value	0.000	0.000	0.000
GFI	0.877	0.890	0.847
AGFI	0.832	0.851	0.800
NFI	0.886	0.906	0.876
IFI	0.959	0.961	0.944
CFI	0.958	0.961	0.943
RMSEA	0.046	0.047	0.058

Table V.
Coefficients of path relationship

Path relationship	Introverted and information seeking cluster (1)	Outgoing and optimistic cluster (2)	Neutral cluster (3)
<i>H1</i> : (feelings about information) ← (information reception)	0.980	0.531	0.742
<i>H2</i> : (information evaluation) ← (information reception)	0.082 (ns)	0.208	0.517
<i>H3</i> : (belief about value of activity) ← (information reception)	0.575	0.937	0.911
<i>H4</i> : (information evaluation) ← (feelings about information)	-0.038 (ns)	0.606	0.456
<i>H5</i> : (attitude to activity) ← (feelings about information)	0.240	-0.055 (ns)	0.120 (ns)
<i>H6</i> : (attitude toward activity) ← (belief about value of activity)	0.581	0.746	0.707
<i>H7</i> : (attitude to activity) ← (information evaluation)	-0.107 (ns)	0.126 (ns)	-0.026 (ns)
<i>H8</i> : (participation intention) ← (information evaluation)	0.688	0.551	0.438
<i>H9</i> : (participation intention) ← (attitude to activity)	0.330	0.338	0.494
<i>H10</i> : (actual participation) ← (participation intention)	0.717	0.873	0.866
<i>H11</i> : (assessment of experience) ← (actual participation)	0.293	0.078 (ns)	0.513

Note: (ns) – not significant

The path coefficient between information *reception* and *feelings* about the information is particularly strong, at 0.980 ($p < 0.01$). The inference is that, as the number of times the message is received increases, positive feelings also increase. *H1* is thereby supported. There is also a less strong but still clear link between information *reception* and *belief* about the value of the activity, the coefficient of that relationship is 0.575 ($p < 0.01$), and *H3* is therefore accepted.

Relationship between measure variables and latent factors	Introverted and information seeking cluster (model 1)	Outgoing and optimistic cluster (model 2)	Neutral cluster (model 3)
(A1) ← information reception	0.421	0.460	0.454
(A2) ← information reception	0.495	0.430	0.432
(B1) ← feelings about information	0.596	0.679	0.527
(B2) ← feelings about information	0.773	0.744	0.583
(B3) ← feelings about information	0.771	0.667	0.631
(B4) ← feelings about information	0.847	0.879	0.882
(B5) ← feelings about information	0.831	0.901	0.897
(C1) ← information evaluation	0.699	0.715	0.791
(C2) ← information evaluation	0.513	0.692	0.610
(C3) ← information evaluation	0.714	0.845	0.737
(C4) ← information evaluation	0.707	0.788	0.653
(C5) ← information evaluation	0.722	0.730	0.698
(D1) ← belief about value of activity	0.763	0.825	0.821
(D2) ← belief about value of activity	0.775	0.797	0.739
(D3) ← belief about value of activity	0.771	0.840	0.783
(D4) ← belief about value of activity	0.698	0.792	0.749
(D5) ← belief about value of activity	0.577	0.711	0.694
(E1) ← attitude to activity	0.851	0.783	0.879
(E2) ← attitude to activity	0.765	0.759	0.873
(E3) ← attitude to activity	0.687	0.728	0.846
(E4) ← attitude to activity	0.685	0.692	0.647
(E5) ← attitude to activity	0.747	0.802	0.744
(F1) ← participation intention	0.810	0.857	0.791
(F2) ← participation intention	0.729	0.850	0.795
(F3) ← participation intention	0.520	0.693	0.679
(F4) ← actual participation	0.742	0.781	0.914
(F5) ← actual participation	0.818	0.762	0.817
(F6) ← actual participation	0.863	0.774	0.720
(F7) ← assessment of the experience	0.973	0.855	0.795
(F8) ← assessment of the experience	0.957	0.728	0.741

Note: All relationship between measure variables and latent factors are significant at $p < 0.01$

Table VI.
Measurement model
analysis

The weaker but nevertheless positive links between both *feelings* about the information and *beliefs* about the value of the activity to *attitude* to the activity provide evidence for the support of *H5* and *H6* in the second group, to offset the rejection of *H4*.

In the third group of hypotheses, related to participation in the activities, the analysis furnishes good evidence in support of all four: *H8* (evaluation → intention) *H9* (attitude → intention), *H10* (intention → participation) and *H11* (participation → assessment). The last two relationships are, of course, to be expected intuitively.

The results indicate that students in the introverted and information seeking cluster were positively disposed to the events and activities as a result of *reception* of the information, and that *feelings* about the messages and *beliefs* about the value of the activities mediated their intention to participate.

Model 2: the outgoing and optimistic cluster

Tables IV and V show that: the χ^2 fitness index for this model is 561.67; the p -value is 0.00; χ^2/df is well below 3; the RMSEA value is just under; the GFI and AGFI indices are very close to 0.9, while NFI, IFI and CFI all exceed that cut-off. Table VI further shows significant correlations between all the measured variables and the latent factors within the measurement model. These results demonstrate that the relationship structure of model 2 is a reasonable fit to the data (Hoxmeier *et al.*, 2000; Matsuno *et al.*, 2002).

Path analysis of model 2 found that three of the relationship are not positive: the effects on *attitude* to an activity of both *feelings* about the information (*H5*) and information *evaluation* (*H7*), and the effect of actual *participation* on activity *assessment* (*H11*). All other relationship paths represent significant links.

The very strong path coefficient of 0.937 between information *reception* and *belief* about the value of the activity supports *H3* for this cluster. The moderately strong correlation shown in Table V between information *reception* and *feelings* about the information is evidence for the acceptance of *H1*. As in the case of cluster 1, as frequency of exposure to the information increases, so does the positive attitude to the event or activity. The path coefficient for the link between *feelings* about the information and *evaluation* of it offers moderately strong support for *H4*. The much lower but still positive correlation between information *reception* and information *evaluation* offers some support for *H2*, suggesting that the more students are informed about activities, the more straightforward their decision-making becomes.

Within the second group of hypotheses, relating to attitudes to the events and activities on offer, two of the three hypotheses have to be rejected, but support for the third (*H6*) was provided by a strong correlation between *beliefs* about the value of those events and activities and *attitudes* towards them. *H8* (evaluation \rightarrow intention) and *H9* (attitude \rightarrow intention) are both moderately strongly supported.

These results indicate that, within the outgoing and optimistic cluster, information *reception* influenced students' *feelings* towards the information, their *evaluation* of it, and – particularly strongly – their *beliefs* about the value of the events and activities on offer. They also suggest that those three variables will have an indirect effect on *intention* to participate via *attitudes* to the events and activities.

Model 3: neutral cluster

Tables IV and V show that the (χ^2) fitness index for this model is 592.73; the p -value is 0.00; χ^2/df is well below 3; the RMSEA error is almost exactly 0.05; the GFI, AGFI and NFI indices are all between 0.8 and 0.9, and IFI and GFI are over 0.9.

Table VI shows significant links between the measured variables and latent factors. The conclusion is that this model is also a reasonably good fit to the data (Hoxmeier *et al.*, 2000; Matsuno *et al.*, 2002). The results indicate the relation structure of model 3 is acceptable.

Path analysis found that two of the relationship paths in this model exhibit no significant relationship: those linking attitude to the activity with feelings about the information (*H5*) and information evaluation (*H7*).

The path coefficient between information *reception* and *beliefs* about the value of the activity is particularly strong, at 0.911 ($p < 0.01$). The inference is, again, that the more often a students are informed about an activity, the more positively they will rate its

value (relaxing, inclusive, and so on). *H3* is therefore accepted. Information *reception* is also strongly correlated with feelings about the information (0.742; $p < 0.01$). *H1* can also be accepted for this cluster, indicating for the third time that the more often a student is made aware of an activity, the more positive his or her opinion of it will be. Information *reception* is also fairly strongly associated with information *evaluation*, in support of *H2*, suggesting that the more often messages are received the more positive expectations become.

Within the trio of hypotheses concerned with the effects on attitudes to the events and activities, the only significant correlation is between *belief* about the value of the activity and *attitude* to it. The coefficient of 0.707 ($p < 0.01$) offers moderate support to *H6*. All four hypotheses in the group relating to participation were found to have moderately high or high correlation coefficients, as Table V shows. Thus, the effects of both information *evaluation* (*H8*) and *attitude* to the activity (*H9*) on *intention* to participate are confirmed by moderately strong correlation coefficients. Unsurprisingly, the link between that *intention* and actual *participation* is found to be very strong, for the third time. In this cluster, the path onward to assessment of the experience was also found to have a high correlation coefficient, an intuitively reasonable assumption now supported by data collected from the first or second clusters.

These results for the neutral cluster show in particular that the *feelings* of these students about the information received had an impact on their *evaluation* of it, and directly influenced both their *attitude* to the activities and events available and their *intention* to participate in them. The influence of information *reception* on *beliefs* about their value is particularly evident. Thus, the stronger the *intention* of students in the neutral cluster was to participate in on-campus cultural activities, the more likely it was that they would not be swayed by any prior prejudices and expectations about the activity, and would actually take part.

Variation across personal character clusters

Table VII presents the results of MANOVA analysis of the data for the three clusters, which show that there are significant differences among them with respect to the eight stages of the information-processing sequence.

The average scale score for information reception is the only one below 4.0 in all three clusters, indicating slight to moderate disagreement with the two statements concerning awareness of the information and familiarity with the on-campus cultural events and activities on offer (see Appendix: questions A1 and A2). With that proviso regarding the initial impetus for all other steps in the sequence towards eventual participation, the results suggest that all respondents felt positive with respect to their *feelings* about the information (B1-B5), their *evaluation* of it (C1-C5) their *beliefs* about the on-campus cultural events and activities (D1-D4) and their *attitudes* to them, leading to a positive *intention* to participate and moderate to strong eventual *participation*. In short, students responded to the information campaign in the classic way proposed by the hierarchy-of-effects family of models of advertising effect. However, there are significant differences among the cluster with respect to eight factors.

Members of cluster 1, the “introverted and information seeking” students were more likely, on average, to find the promotional information captivating and interesting,

Mean	Introverted and information seeking cluster (1)	Outgoing and optimistic cluster (2)	Neutral cluster (3)	<i>F</i>	<i>P</i>	Scheffe test
Factors and (items)						
Information reception	3.220	3.234	2.858			
Pillai's trace = 0.060				11.517	0.000	
Wilk's $\lambda = 0.940$				11.658	0.000	
(A1)	3.399	3.468	2.946	18.100	0.000	(1,3) (2,3)
(A2)	3.041	3.000	2.770	12.393	0.000	(1,3) (2,3)
Feelings about information	4.745	4.250	3.916			
Pillai's trace = 0.140				11.161	0.000	
Wilk's $\lambda = 0.863$				11.389	0.000	(1,2) (1,3)
(B1)	4.918	4.476	3.946	45.338	0.000	(2,3)
(B2)	4.874	4.562	4.122	27.750	0.000	(1,2) (1,3)
(B3)	4.522	4.009	3.725	27.349	0.000	(2,3)
(B4)	4.522	3.923	3.752	29.456	0.000	(1,2) (1,3)
(B5)	4.891	4.281	4.036	31.037	0.000	(1,2) (1,3)
Information evaluation	5.147	4.919	4.345			
Pillai's trace = 0.118				9.331	0.000	
Wilk's $\lambda = 0.883$				9.534	0.000	(1,2) (1,3)
(C1)	4.884	4.528	4.000	33.104	0.000	(2,3)
(C2)	4.966	4.626	4.126	31.257	0.000	(1,2) (1,3)
(C3)	5.341	5.230	4.559	30.049	0.000	(2,3)
(C4)	5.300	5.213	4.590	24.778	0.000	(1,3) (2,3)
(C5)	5.242	5.000	4.450	28.337	0.000	(1,3) (2,3)
Belief about value of activity	5.316	5.162	4.555			
Pillai's trace = 0.129				10.237	0.000	
Wilk's $\lambda = 0.873$				10.442	0.000	(1,2) (1,3)
(D1)	5.427	5.123	4.491	41.627	0.000	(2,3)
(D2)	5.157	4.877	4.392	29.625	0.000	(1,2) (1,3)
(D3)	5.143	4.987	4.396	27.590	0.000	(2,3)
(D4)	5.362	5.298	4.617	29.807	0.000	(1,3) (2,3)
(D5)	5.440	5.523	4.878	17.899	0.000	(1,3) (2,3)

Table VII.
Difference analysis
among clusters

(continued)

Mean	Introverted and information seeking cluster (1)	Outgoing and optimistic cluster (2)	Neutral cluster (3)	F	P	Scheffe test
Attitude to activity Pillai's trace = 0.160 Wilk's $\lambda = 0.843$	5.644	5.625	4.826	12.958	0.000	
(E1)	5.782	5.843	4.878	48.065	0.000	(1,3) (2,3)
(E2)	5.482	5.936	5.072	43.332	0.000	(1,3) (2,3)
(E3)	5.683	5.677	4.892	37.671	0.000	(1,3) (2,3) (1,2) (1,3)
(E4)	5.273	5.000	4.392	34.389	0.000	(2,3)
(E5)	5.700	5.668	4.896	37.991	0.000	(1,3) (2,3)
Participation intention Pillai's trace = 0.101 Wilk's $\lambda = 0.900$	4.734	4.542	3.985	13.231	0.000	
(F1)	4.597	4.230	3.761	27.468	0.000	(1,2) (1,3) (2,3)
(F2)	4.778	4.634	4.027	32.202	0.000	(1,3) (2,3)
(F3)	4.826	4.762	4.167	22.355	0.000	(1,3) (2,3)
Actual participation Pillai's trace = 0.084 Wilk's $\lambda = 0.916$	4.982	5.004	4.197	10.965	0.000	
(F4)	4.986	5.094	4.198	25.599	0.000	(1,3) (2,3)
(F5)	4.904	4.923	4.140	24.340	0.000	(1,3) (2,3)
(F6)	5.055	4.996	4.252	26.728	0.000	(1,3) (2,3)
Assessment of the experience Pillai's trace = 0.101 Wilk's $\lambda = 0.899$	5.396	5.273	4.584	19.818	0.000	
(F7)	5.481	5.396	4.685	34.307	0.000	(1,3) (2,3)
(F8)	5.311	5.149	4.482	32.304	0.000	(1,3) (2,3)

Note: (1, 2) – significant difference between Clusters 1 and 2, etc

Table VII.

supporting *H13*. They were also more likely on average to view the marketing campaign as (if it were a person) agreeable, helpful and communicative, providing evidence for the acceptance of *H14*. Results for this same cluster support *H15*, in showing that its members were more likely to regard on-campus cultural events and activities as a place of refuge from the pressures of university life, and a source of relaxation. This group was on average more likely to say that receiving the

information about the events and activities had engendered an intention to try them out, lending support to *H17*. Finally, it was the group of students most likely to expect that their expectations of university life would be improved if they involved themselves in on-campus cultural life, thus supporting the proposition of *H19*, that there would be differences in the assessment of the experience among the clusters.

Members of cluster 2, the “outgoing and optimistic” students, were most aware of the activities on offer and familiar with what they were, supporting *H12*. They also took part in them in the largest numbers, were most likely to invite their friends to accompany them, and were typically more ready to participate in other events and activities in future. These findings confirm *H18*.

Members of both clusters 1 and 2 were on average more likely to agree with the statements suggesting that the on-campus cultural events and activities were important, upbeat and integral to their student lives on campus, providing support for *H16*.

Conclusions

Although universities are non-profit organizations, it would be beneficial for the planners of their on-campus marketing efforts to have access to the same kinds of market segmentation schemes and tests of campaign effectiveness as their commercial counterparts.

The study reported here successfully grouped 759 students at three Taiwanese universities (running broadly similar campaigns to promote on-campus cultural events and activities) into three market segments on the basis of their personal characteristics: “introverted and information seeking” “outgoing and optimistic” and “neutral”. It then combined measured the behaviour of all three clusters with respect to eight steps from reception of the information to eventual action, derived from a popular generic model of the effect of marketing communications campaigns: reception of the information disseminated by the universities, reactions to the messages, opinions about the events and activities, beliefs about their intrinsic value, intention to try them, actual participation, and post-hoc assessment of the benefits of the experience. Structural equation modelling found that, while all three segments were generally positive and supportive, there were significant differences among them in the strength of their responses on a seven-point scale of agreement to hypothetical statements related to each of the eight factors. Thus, personality does affect the way in which information is received, processes and used. This finding is consistent with related studies conducted by other researchers between 1985 and 2000.

To summarise the full results drastically, the “introverted and information seeking” segment wanted to be kept informed, tended to have stronger emotional response to the campaigns, tended to deliberate about the information, expected to be motivated by it, were generally interested, saw the value of the events and activities, and had a strong predisposition to participate. However, despite this positive thumbnail sketch of the segment, its actual participation rate was in fact lower than in the “outgoing and optimistic” segment. The respective descriptions are perhaps the clue to the reason. The inference is that information campaigns will be effective in reaching students of this type, and that they are necessary, to overcome natural inertia.

Members of the “outgoing and optimistic” segment also like to be kept informed about activities. Compared with the first segment, they are less contemplative but rate

information more highly, hold the same general opinions and beliefs about the events and activities. Despite a slightly lower predisposition to try them out, their actual participation rate is higher, again paradoxically. The inference is that an information campaign is also the appropriate way to reach students of this type, but that the execution may need to take account of the different way they process information. It can at least start from the assumption that they are fairly likely to be converted if the content and style are appropriate.

Members of the “neutral” cluster were least likely to think they had received adequate information. The average of their scores on the seven-point scale is the lowest amongst the three clusters, though still above the half-way point with respect to evaluation of the information, beliefs about the events and activities, attitudes to them, actual participation, and assessment of the experience. To put it bluntly, students of this type are unlikely to be attracted by on-campus cultural events and activities. If members of that cluster did participate, however, the experience affected their expectations more strongly. In other words, the experience can be expected to exceed expectations, for students of this type. Thus, the planning implication is not necessarily that such segments should be ignored, but that a special effort is needed to overcome their apathy and convert them by experience. To achieve that, the tenor of the campaign will have to be more educative than persuasive.

This study has shown that personal characteristics are the single most important factor affecting participation in cultural events and activities on campus. It has also suggested a set of parameters for measurement of the effectiveness of promotional campaigns: the eight “factors” corresponding to information-processing steps on the way from reception to action. The test questions should be framed in such terms as:

... how effectively did our campaign deliver the information, encourage active evaluation of the message, affect beliefs about the benefits to be gained by doing what it suggests, create the willingness to contemplate positive action,

rather than simply asking what happened after the event, attributing cause and effect, and being none the wiser about the intervening variables.

Two methodological limitations need to be acknowledged. The survey took place at three universities that were chosen specifically because they ran comparable programmes of on-campus cultural events in similar ways. The findings should therefore be generalised to other universities in Taiwan only with caution, let alone to the university sector elsewhere or to other categories of “social marketing”. The quota-based sampling method could have introduced some selection bias to be offset against the undoubted statistical accuracy of the analysis. Future studies should choose more rigorous selection procedures.

With these caveats, the findings presented and discussed here offer a template for the planning of an effective segmentation strategy and communications strategy, in this particular context.

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Appendix. Questionnaire

Section I

1. Information reception

	Strongly agree				Strongly disagree		
Aware of activity information (A1)	7	6	5	4	3	2	1
Often get in touch with information (A2)	7	6	5	4	3	2	1

2. Feeling toward information

	Strongly agree				Strongly disagree		
Is attractive (B1)	7	6	5	4	3	2	1
Is interesting (B2)	7	6	5	4	3	2	1
Will cause an ablaze discussion (B3)	7	6	5	4	3	2	1
Is fascinating (B4)	7	6	5	4	3	2	1
Has a profound visual effect (B5)	7	6	5	4	3	2	1

3. Information evaluation

	Strongly agree				Strongly disagree		
Is joyful (C1)	7	6	5	4	3	2	1
Is alive (C2)	7	6	5	4	3	2	1
Has a information communication effect (C3)	7	6	5	4	3	2	1
Is a promotion tool (C4)	7	6	5	4	3	2	1
Has a cultural spirit (C5)	7	6	5	4	3	2	1

4. Belief about value of activity

	Strongly agree				Strongly disagree		
Is a symbol of promoting quality (D1)	7	6	5	4	3	2	1
Has the effect of influence unobtrusively and imperceptibly (D2)	7	6	5	4	3	2	1
Is something that can develop one's spirit (D3)	7	6	5	4	3	2	1
Is relaxing and can release pressure (D4)	7	6	5	4	3	2	1
Is beneficial to students (D5)	7	6	5	4	3	2	1

5. *Attitude toward activity*

	Strongly agree				Strongly disagree			
Campus cultural activities are important (E1)	7	6	5	4	3	2	1	
Campus cultural activities are positive (E2)	7	6	5	4	3	2	1	
Campus cultural activities correct negative trends on campus (E3)	7	6	5	4	3	2	1	
I like to have campus cultural activity information (E4)	7	6	5	4	3	2	1	
Overall, I think Campus cultural activities are valuable (E5)	7	6	5	4	3	2	1	

6. *Participation intention*

	Strongly agree				Strongly disagree			
I collect campus cultural activity information (F1)	7	6	5	4	3	2	1	
After reading the advertisement, I should like cultural activities more (F2)	7	6	5	4	3	2	1	
After reading the advertisement, I would have the desire to participate activity (F3)	7	6	5	4	3	2	1	

7. *Actual participation*

	Strongly agree				Strongly disagree			
I have participated campus cultural activities (F4)	7	6	5	4	3	2	1	
I will invite friends to go to campus cultural activities (F5)	7	6	5	4	3	2	1	
I will continue participating same kind of campus cultural activities (F6)	7	6	5	4	3	2	1	

8. *Assessment of experience*

	Strongly agree				Strongly disagree			
After participating activities, I have higher evaluation to the university (F7)	7	6	5	4	3	2	1	
Holding activities on campus will pull students together (F8)	7	6	5	4	3	2	1	

Section II

Lifestyle and personality

	Strongly agree				Strongly disagree			
I can control my emotion	7	6	5	4	3	2	1	
I like to seek out new things	7	6	5	4	3	2	1	
I am a cautious	7	6	5	4	3	2	1	
I am responsible	7	6	5	4	3	2	1	
I like social activities	7	6	5	4	3	2	1	
I am always optimistic	7	6	5	4	3	2	1	
I like to be alone	7	6	5	4	3	2	1	
I like to stay at home	7	6	5	4	3	2	1	
I catch up with the latest information	7	6	5	4	3	2	1	
I am shy and introvert	7	6	5	4	3	2	1	
I am a people person	7	6	5	4	3	2	1	
I always try my best to do a good job	7	6	5	4	3	2	1	
I am good at learning new information	7	6	5	4	3	2	1	
I usually smile and am friendly	7	6	5	4	3	2	1	
I am down to earth	7	6	5	4	3	2	1	
I am not a temperamental person	7	6	5	4	3	2	1	
I am often calm	7	6	5	4	3	2	1	

I am a traditional person 7 6 5 4 3 2 1
I am up-to-date 7 6 5 4 3 2 1

The influence
of personal
character

Section III

Demographic:

- (1) Gender: Male Female
(2) Grade: First Second Third Fourth

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