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# **Snack-media platform market segmentation based on user heterogeneity: A Q-methodology approach<sup>a</sup>**

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## **Abstract**

The entire media market competing for user attention is currently leaning toward snack-media, and it has become an undoubtedly important media industry sector. As its economic impacts grow, the snack-media market structure has become increasingly critical as a national concern. The near-monopolistic market, dominated by the global giant platforms, e.g. YouTube, should not be desirable for all the stakeholders in the local ICT and media industry. Given that network effects potentially reinforce the market dominance of the global giants, differentiation should be the most viable option for the local snack-media platforms. This study aims to segment the snack-media market based on user heterogeneity and to discuss corresponding strategies of the local platforms, adopting Q-methodology. The results revealed five user types, and they were located in a positioning map with two axes of the level of efficiency-pursuit and centered gratification. The local snack-media platforms' counter-strategies were suggested corresponding to the taxonomy.

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## **1. Introduction**

The economic and socio-cultural impacts of snack-media industry have been explosive in past years. The online video has been encroaching media usage time, and consequentially, not only advertising but every type of marketing resources have been transferred from the traditional media. Namely the entire media market competing for user attention is leaning toward snack-media, and, more importantly, it is quite sharper in the younger generations market. That is, snack-media now has become an undoubtedly important media industry sector, which had been merely a subculture not too long ago.

As its economic impacts grow, the snack-media market structure has become increasingly critical as a national concern. The snack-media market in Korea (and in many other countries) has become dominated by global incumbent platforms, e.g. YouTube. In Korea, market reports commonly indicate that YouTube's market share has been untouchable for local players, in terms of traffic and advertising revenue. For instance, its traffic occupancy in online video had reached 80% in 2014 until the launch of SMR (Smart Media Representative) brought a turbulence to the near-monopolistic market structure. SMR, which is an associative agent for online advertising sales of the Korean broadcasters, has refused to provide content to YouTube who did not agree with the revised contractual conditions. Although YouTube's traffic and advertising revenue currently account for about 40% of the online video market in 2017, due to the impacts of SMR, it still keeps far ahead of the other local players (Cho, 2018 Jan 5).

The near-monopolistic market structure will cause problems not only for the competitors but for all the stakeholders of the national ICT and media industry including the governments and users. For existing and emerging platform operators, snack-media content should be one of the most important sources of value creation, but they would not be able to have a chance to enjoy it if the market is firmly solidified. For the governments, which ought to maintain fair competition so that protect market integrity, a few foreign services' market dominance should not be pleasant, even when they do not have means for prohibiting the side effects. For instance, the current issues such as global platforms' avoidance of tax, reverse regulatory discrimination, and concerns for information sovereignty seem not to be easily solved, unless dependence on the giants is somewhat weakened.

Consequently, local platform operators' concern must be protecting a certain degree of market share, while the government also wants to improve the market structure to be healthier. Yet, taking into account the dominant players' positive loop derived from network effects, the local snack-media platforms seem hardly able to recover it. Therefore, this study aims to investigate the local snack-media platforms' counter-strategies against the ever-growing global giants, especially focusing on differentiation as the most feasible strategic option in the given conditions and properties of the snack-media market. Particularly, we suggest a market segmentation model based on user heterogeneity and discuss the local platforms' strategies corresponding to the taxonomy, adopting Q-methodology.

## **2. Literature review**

### **2.1. Snack-media**

The online video industry is known to have begun in earnest since YouTube's introduction of 'Partner Program' in 2007. Webcasting solutions, indeed, had been developed and businesses based on them had been attempted from the early stage of diffusion of the Internet around 1995 (Lee, 2000). Korea had its own online video platforms, such as PandoraTV and W (the former AfreecaTV), even before the launch of YouTube in 2005. Yet, such early webcasting services were not very sustainable at that time, because of the lack of proper business models. In particular, they did not offer sufficient incentives, other than enjoying by sharing, to drive individual content creators' full-scale participation (You & Kim, 2007). That is, it was socioculturally meaningful but not industrially mature.

In the meantime, YouTube began to systematically distribute its advertising revenue to individual content providers with the Partner Program. It brought online video content's qualitative as well as quantitative growth, as any type of video content makers' flock into the online competition (Kim, 2012). In other words, the 'market' has begun to be established, by encouraging individual content providers to participate in it as players.

The birth of MCN (multi-channel network) shows that a tangible market structure has been formed in the online video platform and content sector. The term MCN was first coined by YouTube, which means "third-party service providers that affiliate with

multiple YouTube channels to offer services that may include audience development, content programming, creator collaborations, digital rights management, monetization, and/or sales" (see YouTube's instruction on the official site, date not available). Considering their current position in the market, it is reasonable to state that the mission of MCN is making profit by assisting or using online-oriented content creators (Gardner & Lehnert, 2016). But, the fields of such type of services are not limited to YouTube or any specific online platforms, and their activities are not standardized. Nonetheless, MCN needs to be recognized as the catalyst as well as the outcome of individual content creators' inclusion in the media industry.

This field of the industry has currently been called the MCN industry, especially in Korea, but it is not clearly representative. MCNs' roles in the emerging video content industry are partially similar to agents, intermediaries, productions, and syndicates, of which identities were set in the traditional media industry (Kim, Lee, Choi, Kim, & Ku, 2017). Although their roles, played majorly in between production and distribution, have had significant importance, they were not recognized as the representing business in their media industry sectors. For instance, small organizations, who aim to make video content delivered mainly through online video platforms, neither are MCNs nor individuals.

This study, therefore, adopts the term 'snack-media' as the category that represents this emerging media industry sector. The term 'snack-culture' signifies the transition of behavioral patterns regarding media products from the traditional one-way consumption to shortened, multi-tasking, and participative usage (Newman, 2010). The current developments in media content production and distribution are consistent with such altering usage patterns.

The definition and the range of snack-media should be not only concrete but flexible enough to embrace the continuing variation. For this reason, snack-media should not be limited to a certain form of business or a category of product, such as movie, broadcasting, and newspaper.

The continuing variation is largely twofold. First, the bodies of content production in the media industry are decomposed and reassembled. The traditional content production had been conducted by firmly structured organizations, and its processes were quite standardized (Cunningham, Craig, & Silver, 2016). Surely there had been independent and unstandardized content producers, but they had not played central roles in the field

of the media industry. However, starting with individuals' economic activities based on the unstandardized production of content, a variety of organizations have emerged, whose structures and production processes are specified for their own target market including the online video platforms (Cunningham, et al., 2016; Morreale, 2014).

From the bottom, individuals' products target very specified end-users, and a part of them generate revenue stream mainly depending on the platform-mediated advertising. But, mostly their activities are not optimized in dealing with management issues, such as resource allocation, copyright protection, search engine/algorithm optimization, and business diversification, to name a few, which has led to needs for organized business or at least agents that serve for individual producers, such as MCNs (Vonderau, 2016).

In the meantime, from the top, the traditional content producers can innovate themselves by flexible specialization in order to respond to changing market conditions (Grihorn & Nylén, 2017). It is observed that many of the traditional content producers currently tend to revise their firmly standardized organizations and production process to respond to the transforming media market. Their nature should not be identical with the emerging organizations, grown from the bottom, but it is still worth noting that their products are intentionally modified for the online video platforms and the end-users' demands.

Second, the level of control on content distribution varies. The traditional ways of content distribution are walled-garden, in which production and distribution are vertically tied, or platform owners select, sort, and edit content. The provision of content is strongly controlled from the user-side, too, so that audiences experience it along with a planned stream. Whereas, control on content is completely weakened on Internet-originated video platforms (Gillespie, 2010). Online video platforms basically do not ban or discriminate certain content providers unless they are harmful. Although the platforms can perform a certain degree of content arrangement, by algorithms in many cases, in order to enhance user experience and to maximize their own profit, it does not mean that they play the role of gatekeepers as the traditional broadcasting systems do. For example, the Internet-based TV-like services, called OTT (over-the-top), show a higher level of control, compared to the ordinary online video platforms, considering that they select contents to be delivered on the platforms (Gonçalves, Evens, Alves, & Ballon, 2014), but end-users still have a choice in what they use.

In sum, the two significant axes that comprehend the continuing variation in the media industry are 1) the level of ‘de-systematization’ of organization and process of content production and 2) the level of ‘un-control’ of distribution platform. Combining the two axes, the range of snack-media should embrace the new mode of content production, within which content is produced by de-systematized organizations or individuals and distributed mainly through less-controlled platforms (Figure 1).

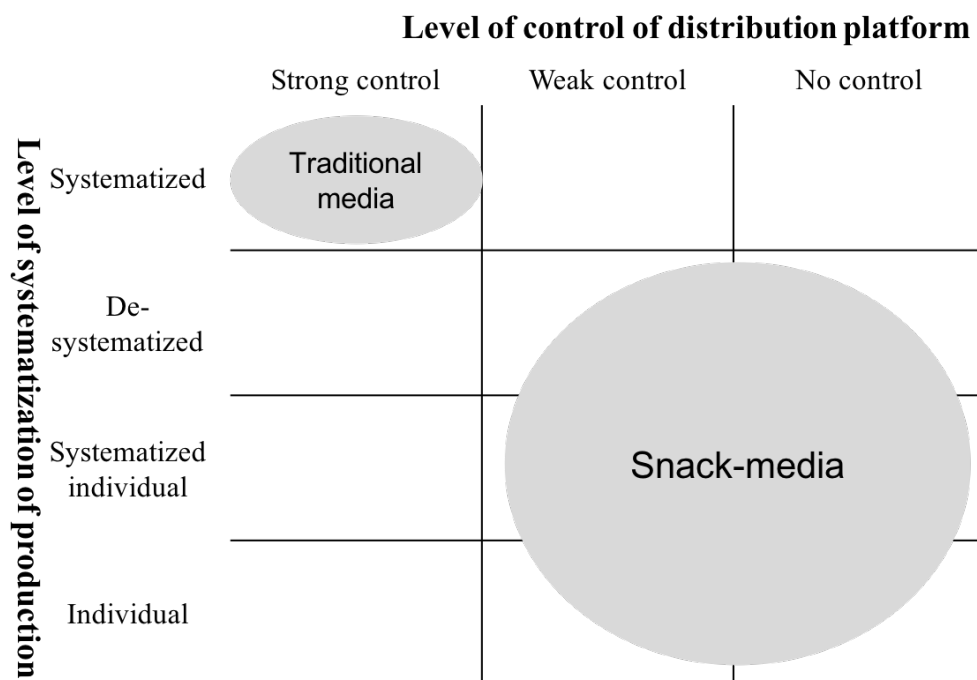


Figure 1. The range of snack-media

## 2.2. Network externalities and snack-media market segmentation

Snack-media platforms' business models are greatly different from those of the traditional platforms, especially in terms of the level of control over the value stream, but still not free from network effects. Network effects, or network externalities, are one of the most critical mechanisms that explain how a certain platform extends its dominance in a market (Sheremata, 1997). As such, it may explain how YouTube could have such overwhelming market power worldwide including in Korea.

Network effects are defined to exist when the utility of users of a product or service is dependent on the number of other users of the same or a compatible product or service (Katz & Shapiro, 1985). There are largely two types of network effects, which are direct and indirect network effects. Direct network effects occur when users' utility increases along with the number of users in the same side of a product or service, while indirect

network effects occur, particularly in two or multi-sided markets, when users' utility increase along with the number of users in the other side (Gawer & Cusumano, 2014).

In the snack-media platform market, both direct and indirect network effects potentially exist. A typical example of direct network effects should be a telephone service, of which value increases along with the number of people who can be connected with its subscribers. Given that the number of the subscribers is determined by the value of the service, a dominant telephone service's market dominance is continuously strengthened, if telephone service users are not allowed to be connected to the users of other services or have to pay too expensive access fees. In order to prevent the monopolization by direct network effects, the interconnection regulation has been justified in the telecommunications market (Bourreau & Doğan, 2001).

If a sort of utility stems from the number of end-users of a snack-media platform or its content, direct network effects can be assumed to exist in the snack-media platform market. For instance, the value of conversation about content in common is suggested to have positive effects on consumer surplus (Boardman & Hargreaves-Heap, 1999; Haridakis & Hanson, 2009). However, unlike the key telecommunication services, which are subject to strong regulatory supervision by national authorities, the government's intervention concerning direct network effects in the snack-media market has no room for discussion under the Korean telecommunication regulation system.

More to the point, indirect network effects can be greater in the snack-media platform market than expected. Indirect network effects are, again, a quantitative increase in a side of users, in two or multi-sided markets, leads to an increase in the utility of users in the other side(s), which forms a positive loop. The computer or mobile OS (operating system) market might be a typical example. The more end-users use an OS, the greater incentives are given to software developers. It leads to the quality as well as the quantity of available applications in the OS, then to increase in the number of end-users willing to use the OS.

In the snack-media platform market, content providers, as complementors, are the most important source of value found in the platform. Thus, the quality and quantity of content provider should be directly associated with the value of a platform and eventually with usage, from the perspective of end-user. Likewise, more importantly, content providers will find higher incentives to join a platform that promises a greater reach rate to end-users.



It explains that, without additional conditions, such direct and indirect network effects lead to reinforcing a first-mover or a dominant player's market dominance, then even to confinement of competitors to a trivial market share (Hwang & Oh, 2009). It does not mean that network effects are the one and only reason for YouTube's market dominance worldwide, but their impacts on the market structure should not be neglected, considering the observed positive loop between the increasing content providers and users in YouTube.

More importantly, it should be noted that the snack-media platform market meets the conditions of multi-homing (Armstrong, 2006; Evans, 2003). Switching costs of snack-media platforms, including sunken, learning, and continuity costs, should not be significant enough to hinder frequent switchover (Patterson & Smith, 2003). Furthermore, there is no reason to assume that using multiple snack-media platforms causes any remarkable additional costs. Therefore, end-users, in most cases, can swap snack-media platforms from one to another, whichever they find the most proper for accessing a certain content.

Content providers also are not hindered from multi-homing. Snack-media platforms, in general, do not have control over activities of a certain content provider, except in the cases that a platform operator intentionally invites or makes original content in pursuit of strategic content archiving. Assuming that joining multiple platforms is not restricted and additional costs for providing the same content to the platforms are low, content providers are likely to use multiple platforms to maximize reach rate, in turn, to maximize profit, within a plain advertising revenue sharing model (Evans, 2003; Hogendorn & Yuen, 2009). In sum, in the snack-media platform market, where both sides of users can actively multi-home, platforms are naturally incapable of lock-in certain content providers and end-users (Kim, Lee, & Park, 2017). This can be a breakthrough as well as a challenge at the same time for the local snack-media platforms.

In the real snack-media market, however, there are two additional conditions, or assumptions, that hinder the dominant platform's infinite market dominance due to network effects, taking into account of negative network effects. First, in the two-sided market, incentives for potential complementors can be reduced, when the complementor side is too crowded so that a part of them are not willing to join the platform (Boudreau, 2012; Gawer & Cusumano, 2014). Second, from the end-user side, if users are

heterogeneous, in terms of their needs, network effects are perturbed, thus first-mover advantages are discounted (Hwang & Oh, 2009).

Therefore, within the natural market settings without any intervention from market authorities, differentiation must be the most reasonable and even the only strategic option for the snack-media platforms, of which market shares are far behind that of the dominant one (Banerji & Dutta, 2009). Price or service quality (of platforms themselves) competition based on technological innovations solely cannot be the determinants of market dominance, considering that access to snack-media platforms and content has been inherently free of charge, and it has not been an intense competition in state-of-the-art technologies. Furthermore, even if the impacts of price and service quality on the competition are considerable, it is not a plausible assumption that the catching-up snack-media platforms have a chance to defeat the dominant platforms in a direct competition. Consequently, in order to cause turbulence in the snack-media market structure where network effects are likely to solidify the dominant player's market power, the catching-up platforms should discover end-users' heterogeneous unmet needs and develop corresponding strategies.

In fact, the clue can be found in a Korean snack-media market case. In 2014, the Korean broadcasters, including the private terrestrial televisions, launched SMR, which is the exclusive agent of online advertising sales for its members. SMR discontinued to provide the broadcasters' content to YouTube, while revised the contracts with the Korean local snack-media platforms, e.g. Naver, to be exclusive but much more favorable for SMR itself. SMR required the platforms to allow its autonomous advertising sales and 90% of the revenue. The local snack-media platforms have accepted the contracts, despite the unfavorable requirements (Hwang, 2014 Dec 3).

Interestingly but not surprisingly, after the advent of SMR, the Korean snack-media platform market has undergone a considerable turbulence, which caused YouTube's dominance in traffic occupancy to erode, from about 80% in 2014 to about 40% in 2017 (Cho, 2018 Jan 5; Iglauer, 2015 Nov 23). SMR's exclusive content provision should not be the only determinant of such drastic change in the market structure, but its significance can be inferred from the fact that the majority of the local snack-media platforms' traffic is generated from the broadcasters' content, while YouTube still has dominance in traffic based on the individual content providers. Accordingly, it is reasonable to consider

differentiation as one of the most feasible strategic options for the local snack-media platforms to compete against the ever-growing dominant players.

As well known, differentiation strategies need to be developed upon market analysis, especially market segmentation. It is quite clear that market segmentation must be grounded on diversity in demand side, i.e. user (consumer) heterogeneity (Hahn, Johnson, Herrmann, & Huber, 2002; Smith, 1956). Therefore, segmentation of the snack-media market, which actually has only been partially defined, is needed in the first place, so that challengeable but significant niches for the local platforms are discovered.

In this regard, this study addresses the following research questions.

RQ1. What are the critical user heterogeneities for snack-media platform market segmentation?

RQ2. How can snack-media users be classified?

RQ3. What can be the corresponding strategies for the local snack-media platforms?

### **3. Procedure**

#### **3.1. Q-methodology**

In order to address the three research questions, Q-methodology was adopted. Q-methodology is a useful research technique for extracting subjective opinion, which combines the advantages of both qualitative and quantitative approaches (Dennis & Goldberg, 1996, cited in Brown, 1996). The purpose of Q-methodology is to explore the perspective of people in a variety of standpoints about an issue, by having them rank and sort a set of prepared statements (Brown, 1996). Although Q-methodology has been criticized for lack of validity, reliability, and generalizability, in social science community (Van Exel & De Graaf, 2005, cited in Plummer, 2012), its usefulness also has been accepted, considering its wide application in various research fields, such as geology, resource development, business, healthcare research, and technology adoption, to name a few (Kim & Kim, 2018). Especially, Q-methodology also has widely been used as a means for segmenting consumer, including audience, markets by examining their attitude and behavior (Cools, Moons, Janssens, & Wets, 2009; Davis & Michelle, 2011).

Q-methodology is instrumented through the following procedure. First, Q-statements or Q-set are drawn, which are the statements that participants are asked to rank and sort

according to the degree of their own agreement and disagreement. It needs to be "broadly representative of an opinion domain at issue"(Watts & Stenner, 2005, p75), therefore, it should be drawn from a careful investigation based on credible information sources.

Second, participants (P-sample) are collected and asked to rank and sort the Q-statements by their own evaluation on each statement, adopting forced distribution method which intentionally forms (quasi-) normal distribution (Brown, 1996).

Third, the data are analyzed using principal component analysis (PCA), which follows the same procedure of factor analysis. From the results, types of content providers responding to the value proposition model are defined. The classified types are identical with the results of factor analysis, of which output is significant factors according to eigenvalues.

The results can provide two kinds of important information: 1) it suggests the proper number of types, i.e. groups and shows how the participant in the P-sample are classified, and 2) it shows how each statement is associated with each type, referring to factor scores. Combining the results of Q-factor analysis and post-hoc interview, we can interpret and compare the properties of each type.

### **3.2. Q-statements**

To construct Q-statements for this study, we used data obtained from a written interview conducted in October 2017. The interviewees consisted of 28 undergraduate students who had taken a one-semester course related to snack-media. They were asked to answer open-ended questionnaires about their attitude and behavior regarding snack-media. The questions were 1) how and why they use snack-media content, 2) how their snack-media usage is influenced by their environment, and 3) which snack-media platform they frequently use and what the platforms' pros and cons are.

209 statements were extracted from the answers and 34 statements were sorted out after eliminating duplicates. Most of them maintained the original wording, but several of them were rephrased in order to make them more comprehensive. For example, the interviewees' favorite snack-media genres were too diverse to be comprehensive statements, thus they were combined to form 6 statements related to snack-media genre. Also, the term 'online video' instead of snack-media, was used in the survey in order to avoid participants' confusion caused by the unfamiliarity of the terminology.

Table 1. Categorized Q-statements

Category	Sub-category	No.	Statement
Content-related attitude and behavior	Preferred genre	1	I prefer to watch video clips of re-edited TV content (e.g. shows, sports events) using online video services
		2	I prefer to watch web-oriented content (e.g. web variety show, web drama) using online video services
		3	I prefer to watch videos related to celebrities (i.e. TV stars) using online video services
		4	I prefer to use online video services in place of music services
		5	The genres (e.g. gaming, beauty, eating, talk...) which I usually watch are mostly fixed
		6	I prefer to watch online videos which are useful for knowledge acquisition (e.g. content related to current affair, culture, education...)
	Preferred feature of content archive	7	I prefer an online video service of which archive is qualitatively selected
		8	I prefer an online video service with an archive as large as possible regardless of quality
		9	I prefer an online video service which is specialized in the genres I usually watch
		10	I prefer an online video service of which archive includes foreign creators' content
Platform-related attitude and behavior	Preferred content exposure model	11	I prefer an online video service which exposes recommended videos as a form of SNS newsfeed
		12	I prefer an online video service which exposes recommended videos based on my usage history
		13	I prefer an online video service in which I can search what I want to watch
		14	I prefer an online video service which recommends more diverse videos based on other sources besides my usage history
	Platform avoidance factor	15	I don't want to use an online video service which has a large portion of commercially sponsored content
		16	I don't want to use an online video service which doesn't allow ad skip
		17	I don't want to use an online video service which has a large portion of provocative and suggestive content
Usage motivation	Snack-media usage motivation	18	I use online video services to spend spare time
		19	I use online video services to get vicarious satisfaction
		20	I use online video services to get useful information
		21	I use online video services because it is more time-effective than watching TV
	22	I use online video services because it gives more freedom of choice than watching TV	
	Live streaming usage motivation	23	I prefer to watch online live streaming for real-time communication with streamers and other viewers
24		I prefer to watch online live streaming because of ad-lib fun found only in real-time	
Contextual/social behavior	Use context	25	I don't prefer online live streaming because it is time sensitive
		26	It discomforts me that I often can't watch online videos because of limited mobile data
		27	It is not proper for me to watch online videos with long playtime in public transportation or outdoor
		28	There is a significant difference between the kinds of content I watch at home and outside
	social interaction	29	I consistently watch certain creators' updated videos utilizing subscription
		30	It is important for me to read other viewers' comments when I watch online videos
		31	I want many other viewers to read my comments on online videos
		32	It is important for me to be informed of famous videos among my friends
		33	I want to inform my friends of online videos which I recommend
		34	It is important for me to communicate with online video creators through chatting and writing comments

The finalized Q-statements were categorized into four major subjects, which have two subordinate attributes each (Table 1). First, the ‘content-related attitude and behavior’ category includes preferred genres (six statements)’ and ‘preferred features of content archive (four statements)’. Second, the ‘platform-related attitude and behavior’ category consists of ‘preferred content exposure models (four statements)’ and ‘platform avoidance factors (three statements)’. Third, the ‘usage motivation’ category was divided into ‘snack-media usage motivation (five statements)’ and ‘live streaming usage motivation (three statements)’. Finally, the ‘contextual/social behavior’ category includes ‘use context (four statements)’ and ‘social interaction (five statements)’.

### 3.3. P-sample and Q-sorting

45 cases in the P-sample were mostly randomly collected in several coffee places in Seoul, South Korea, who reported that they frequently use online video platforms (at least 30 minutes a day). In the meantime, snowball sampling method was adopted for collecting a part of teenager sample, due to difficulty in randomly reaching them. The P-sample consists of three groups by age, i.e. 10s, 20s, and 30s, which are considered to be the relevant age groups for studying active snack-media users. Also, the number of male and female was equally assigned.

Table 2. Demographics and most used platforms of P-sample

Age group	Gender		Daily usage (hour)					Platform	Most used platform			
	Male	Female	<1	1-2	2-3	3-4	>4		Primary	Secondary	Tertiary	Subtotal
10s	7	8	3	6	1	1	4	YouTube	36	5	4	45
20s	8	7	2	6	4	1	2	NaverTV	2	16	8	26
30s	7	8	10	3	0	1	1	Facebook	3	9	8	20
Subtotal	22	23	15	15	5	3	7	Others	4	13	14	31
Total	45		45					Subtotal	45	43	34	

According to the self-reported daily usage time of the sample, 10s and 20s were more active snack-media users than 30s were, although each group respectively showed lighter (less than 1 hour a day) to heavier (more than 4 hours a day) usage time distribution. The most primarily used snack-media platform was YouTube (36 out of 45) and all of the participants reported that they frequently use YouTube as at least secondary or tertiary snack-media platform. Including second most and third most used platform, NaverTV ranked second (26 out of 45) and Facebook ranked third (20 out of 45). 31 out of 45

participants mentioned other platforms such as KakaoTV, Facebook, Instagram, Twitter, Twitch, and AfreecaTV (see Table 2).

The participants were asked to fulfill Q-sorting through in-person interview. For Q-sorting, forced (quasi-normal) distribution, of which degree of disagreement/agreement ranges from -4 to +4 was adopted (Figure 2). The survey sheet was designed to answer, in the first place, whether a participant agree or disagree with each statement, so that the statements are classified into agree, neutral, and disagree. Then, the participant sorts the entire statements to match to the forced distribution model, referring to his/her previous decision. In addition, they were also asked to participate in post-hoc interview and to provide information about their daily snack-media use behavior.

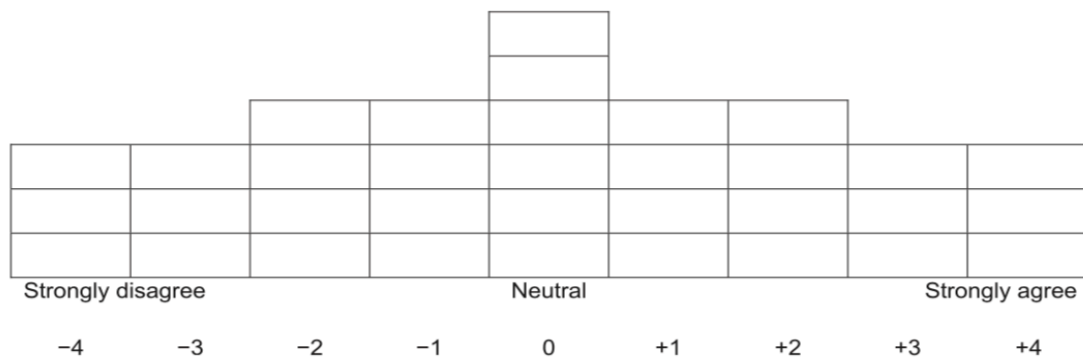


Figure 2. Quasi-normal forced distribution used for Q-sorting

### 3.4. Q-factor analysis

The Q-sorting data were analyzed through principal component analysis (PCA) and varimax rotation, using the statistical program for Q-methodology called PQMethod. Eight factors were drawn from the PCA result, and five of them were chosen to be applied to rotation, according to the Scree test result.

Table 3. Extracted factors and eigenvalues

Factor (#)	1	2	3	4	5	6	7	8
Eigenvalues	13.95	3.97	3.35	2.82	2.39	1.88	1.76	1.60
Explained variance (%)	31.01	8.81	7.45	6.27	5.31	4.18	3.91	3.55

In Q-methodology, the Scree test has widely been used to determine the number of validate factors for additional analysis, which suggests it based on the point where the eigenvalue shows only trivial drops (Kim & Kim, 2018). As seen in Table 3, the eigenvalues start to drop marginally from factor 6 to 8. The sum of explained variance by

the five factors was 58.85%, which exceeds the rule of thumb - 25% indicating the extracted factors' sufficient explanatory power (Kim & Kim, 2018).

Table 4. Participants' demographics and factor loadings

No.	Age	gender	Type1	Type2	Type3	Type4	Type5
1	18	male	-0.18	0.16	0.61*	0.43	-0.01
2	19	male	0.42	0.44	0.04	-0.08	0.21
3	19	male	-0.01	0.79*	0.11	0.13	0.21
4	18	male	0.39	0.56*	0.21	-0.23	-0.08
5	19	male	-0.12	0.82*	0.06	0.04	-0.13
6	18	female	0.19	0.17	0.69*	-0.02	0.03
7	17	female	0.22	0.23	0.45*	-0.09	0.09
8	18	female	0.08	-0.10	0.57*	0.31	0.11
9	17	female	0.38	0.06	0.22	0.68*	0.07
10	17	female	-0.08	0.21	0.54*	0.09	0.34
11	17	female	0.19	0.14	0.71*	0.06	-0.05
12	19	female	0.10	0.60*	0.52	0.03	0.00
13	17	female	0.64*	-0.03	0.24	0.03	-0.01
14	19	male	-0.08	0.35	0.63*	-0.34	0.32
15	19	male	0.06	0.10	0.78*	0.32	0.26
16	29	female	0.71*	-0.09	0.19	0.06	0.47
17	24	male	0.43	0.33	0.24	-0.08	0.67*
18	23	female	0.51	0.17	0.34	0.08	0.41
19	28	male	0.44	0.38	0.22	-0.48	-0.05
20	26	female	0.40	0.01	0.30	0.47	0.23
21	28	male	0.29	0.07	0.48*	-0.19	-0.17
22	24	female	0.06	-0.05	0.63*	0.10	0.35
23	27	female	0.74*	0.13	0.27	0.05	0.21
24	28	female	0.59*	0.27	0.07	0.12	0.24
25	27	male	0.13	0.20	0.01	-0.11	0.73*
26	26	male	0.22	-0.03	0.18	0.20	0.58*
27	27	male	0.44	-0.01	0.10	-0.17	0.64*
28	27	male	0.02	-0.05	-0.05	0.36	0.78*
29	27	male	-0.01	-0.05	0.25	0.31	0.60*
30	29	female	0.23	-0.03	0.47	-0.21	0.47
31	36	female	0.70*	-0.20	0.19	0.21	0.06
32	36	female	0.28	-0.36	0.41	-0.12	0.08
33	31	female	0.77*	-0.22	-0.08	-0.08	0.08
34	31	female	0.39	0.14	0.39	-0.27	0.13
35	30	female	0.59*	0.11	0.07	-0.03	0.44
36	34	male	0.25	0.05	0.10	0.64*	0.07
37	31	male	0.37	-0.31	0.39	-0.04	0.49
38	33	male	0.36	-0.29	0.52	0.09	0.54
39	31	female	0.71*	0.00	0.11	0.17	0.25
40	33	male	0.17	-0.06	0.32	-0.50	0.51
41	33	male	0.38	0.21	0.39	-0.10	0.47
42	31	male	0.25	0.15	0.57*	-0.18	0.45
43	31	female	0.30	-0.14	0.56	0.08	0.46
44	33	male	0.25	-0.10	0.63*	0.14	0.36
45	31	female	0.72*	0.20	0.03	0.35	0.13
Number of cases belong to each factor			9	4	12	2	6

The results of varimax rotation show that 33 cases belong to the five factors, i.e. five user types, and accordingly 12 cases do not belong to any of the types (see Table 4).



Interestingly, but not surprisingly, the age groups showed a noticeable difference, which is that most teenagers belong to type 2 and type 3, while the majority of the 20s and 30s belongs to type 5 and type 1.

## 4. Results and discussions

### 4.1. Results

As seen in Table 5, factor scores (z-score) indicate how each type is associated with each Q-statement. The user types were interpreted based on the relevant statements, of which factor scores given to each type were below -1 or above +1.

Table 2. Factor scores for each user type

No.	Statement	Type1	Type2	Type3	Type4	Type5
1	I prefer to watch video clips of re-edited TV content (e.g. shows, sport events) using online video services	0.97	0.69	0.86	0.27	1.57
2	I prefer to watch web-oriented content (e.g. web variety show, web drama) using online video services	-0.55	-0.96	-1.03	-0.43	-0.35
3	I prefer to watch videos related to celebrities (i.e. TV stars) using online video services	0.20	-1.37	0.48	1.05	-0.85
4	I prefer to use online video services in place of music services	0.16	0.33	0.52	1.21	0
5	The genres (e.g. gaming, beauty, eating, talk...) which I usually watch are mostly fixed	0.97	2.02	0.99	0	0.69
6	I prefer to watch online videos which are useful for knowledge acquisition (e.g. content related to current affair, culture, education...)	1.55	-0.86	-0.98	0.67	0.59
7	I prefer an online video service of which archive is qualitatively selected	0.19	-1.08	-0.30	-1.01	-0.06
8	I prefer an online video service with archive as large as possible regardless of quality	-0.72	-0.28	-1.27	0.31	1.17
9	I prefer an online video service which is specialized in the genres I usually watch	0.67	0.92	0.95	1.09	-0.19
10	I prefer an online video service of which archive includes foreign creators' content	-1.37	0.46	-1.27	-1.48	-1.08
11	I prefer an online video service which exposes recommended videos as a form of SNS newsfeed	0.05	-0.55	-0.70	0.07	-0.65
12	I prefer an online video service which exposes recommended videos based on my usage history	0.39	0.64	1.39	1.56	1.04
13	I prefer an online video service in which I can search what I want to watch	1.52	0.59	1.57	1.25	1.09
14	I prefer an online video service which recommends more diverse videos based on other sources besides my usage history	-0.17	0.51	-0.52	0.24	1.14
15	I don't want to use an online video service which has a large portion of commercially sponsored content	0.08	-1.4	1.07	0.78	0.62
16	I don't want to use an online video service which doesn't allow ad skip	-0.09	-1.09	1.44	0.71	0.62
17	I don't want to use an online video service which has a large portion of provocative and suggestive content	1.38	1.09	0.05	-0.20	-0.86
18	I use online video services to spend spare time	-0.07	0.61	1.74	-0.71	1.98
19	I use online video services to get vicarious satisfaction	-0.66	0.86	0.90	-1.56	-1.48
20	I use online video services to get useful information	1.70	-0.66	0.65	1.76	0.03
21	I use online video services because it is more time-effective than watching TV	1.13	-1.06	-1.1	-2.03	0.46
22	I use online video services because it gives more freedom of choice than watching TV	1.60	-0.34	0.65	0.24	1.64

23	I prefer to watch online live streaming for real-time communication with streamers and other viewers	-1.77	0.78	-0.87	-0.11	-1.30
24	I prefer to watch online live streaming because of ad-lib fun found only in real-time	-1.68	0.99	-0.60	-1.32	-0.86
25	I don't prefer online live streaming because it is time sensitive	-1.51	-0.82	-0.41	-0.98	0.02
26	It discomforts me that I often can't watch online videos because of limited mobile data	-1.44	0.22	1.37	-1.48	-1.35
27	It is not proper for me to watch online videos with long playtime in public transportation or outdoor	-0.55	-0.64	-1.03	-1.05	0.71
28	There is a significant difference between the kinds of content I watch at home and outside	-1.26	-1.39	-1.46	-0.82	-1.61
29	I consistently watch certain creators' updated videos utilizing subscription	-0.02	1.25	0.55	0.20	0.81
30	It is important for me to read other viewers' comments when I watch online videos	0.49	1.53	-0.57	1.09	-0.35
31	I want many other viewers to read my comments on online videos	-1.18	-1.26	-1.22	0	-1.20
32	It is important for me to be informed of famous videos among my friends	0.12	-1.20	-1.27	-0.51	-1.43
33	I want to inform my friends of online videos which I recommend	0.05	-0.11	-0.26	-0.07	-0.43
34	It is important for me to communicate with online video creators through chatting and writing comments	-0.20	1.56	-0.28	1.29	-0.11

#### 4.1.1. Type 1 - Efficient information seeker

We named user type 1 'efficient information seeker' (Table 6). They clearly stated that getting useful information is one of the most important motivation to use snack-media (#20,  $Z=1.704$ ), and they watch snack-media content that is useful for knowledge acquisition (#6,  $Z=1.55$ ). They also think that the virtues of snack-media are better time efficiency and freedom of choice compared to watching television (#21,  $Z=1.13$ ; #22,  $z=1.602$ ). Accordingly, they prefer watching snack-media content mainly by searching (#13,  $Z=1.52$ ).

Table 3. Q-statements with factor scores that exceed  $\pm 1$  (user type 1 - efficient information seeker)

No.	Statement	Score
20	I use online video services to get useful information	1.70
22	I use online video services because it gives more freedom of choice than watching TV	1.60
6	I prefer to watch online videos which are useful for knowledge acquisition (e.g. content related to current affair, culture, education...)	1.55
13	I prefer an online video service in which I can search what I want to watch	1.52
17	I don't want to use an online video service which has a large portion of provocative and suggestive content	1.38
21	I use online video services because it is more time-effective than watching TV	1.13
31	I want many other viewers to read my comments on online videos	-1.18
28	There is a significant difference between the kinds of content I watch at home and outside	-1.26
10	I prefer an online video service of which archive includes foreign creators' content	-1.37
26	It discomforts me that I often can't watch online videos because of limited mobile data	-1.44
25	I don't prefer online live streaming because it is time sensitive	-1.51
24	I prefer to watch online live streaming because of ad-lib fun found only in real-time	-1.68

In the meantime, they do not prefer watching live streaming content through snack-media platforms (#23,  $Z=-1.77$ ; #24,  $Z=-1.68$ ). Nonetheless, the reason why they do not use live streaming is the matter of time consumption (#25,  $Z=-1.51$ ), but they just have never had much use for live streaming in their snack-media usage pattern, according to the post-hoc interview.

In addition, type 1 users do not want to be exposed to too provocative and suggestive content (#17,  $Z=1.13$ ). They also seem not to be interested in social interaction with either content creators and other viewers, considering that they are not active comment posters while none of the statements related to social interaction indicates a significant positive attitude toward social viewing (#31,  $Z=-1.18$ ).

#### 4.1.2. Type 2 - Patron of online creator

We named user type 2 ‘patron of online creator’ (Table 7), which means that they are likely to be loyal users of certain snack-media genres and creators. They assured that their favorite snack-media genres are fixed (#5,  $Z=2.02$ ) and they consistently track certain creators' content by being fed of updates utilizing subscription (#29,  $Z=1.25$ ). In the post-hoc interview, the fixed genres were mostly gaming, beauty, and eating (creators show themselves eating well and talk with viewers).

Efficiency seems not to be type 2 users' primary concern in snack-media usage. They do not think time-saving can be the advantage of using snack-media platform compared to watching TV (#21,  $Z=-1.06$ ). Rather, it can be possible that snack-media completely replaced television-originated content, considering that they even disagree with the statement that they prefer to watch television celebrities using snack-media platforms (#3,  $Z=-1.36$ ). Indeed, several of the participants in the type 2 group said that they actually watch snack-media content even all day whenever time allows, not watching TV.

Table 4. Q-statements with factor scores that exceed  $\pm 1$  (user type 2 - patron of online creator)

No.	Statement	Score
5	The genres (e.g. gaming, beauty, eating, talk...) which I usually watch are mostly fixed	2.02
34	It is important for me to communicate with online video creators through chatting and writing comments	1.56
30	It is important for me to read other viewers' comments when I watch online videos	1.53
29	I consistently watch certain creators' updated videos utilizing subscription	1.25
17	I don't want to use an online video service which has a large portion of provocative and suggestive content	1.10

21	I use online video services because it is more time-effective than watching TV	-1.06
7	I prefer an online video service of which archive is qualitatively selected	-1.08
16	I don't want to use an online video service which doesn't allow ad skip	-1.09
32	It is important for me to be informed of famous videos among my friends	-1.21
31	I want many other viewers to read my comments on online videos	-1.26
3	I prefer to watch videos related to celebrities (i.e. TV stars) using online video services	-1.36
28	There is a significant difference between the kinds of content I watch at home and outside	-1.39
15	I don't want to use an online video service which has a large portion of commercially sponsored content	-1.40

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They admired that communicating with online content creators and other viewers while watching snack-media content (#34,  $Z=1.56$ ; #30, 1.53), although they are not active commenters (#31,  $Z=-1.26$ ). Also, famous content among offline friends should not matter to them (#32,  $Z=-1.21$ ).

Interestingly, this type of users are the only group showed positive reactions to advertising and commercially sponsored content (#16,  $Z=-1.09$ ; #15,  $Z=-1.40$ ). According to the post-hoc interview, although they naturally do not like being exposed to commercials, the reason why they are more tolerant to those avoidance factors is that they understand it is online content creators' important source of income. Yet, they still do not like too provocative and suggestive content on their platforms (#17,  $Z=1.10$ ), even though they do not prefer qualitatively selected content archive (#7,  $Z=-1.08$ ).

#### 4.1.3. Type 3 - Sensitive entertainment consumer

User type 3 can be named as 'sensitive entertainment consumer' (Table 8), who seeks for entertainment and mid-level efficiency in snack-media. Their preferred snack-media genres were not specified from the results, because none of the statements related to content genre scored above +1. Yet, we only can infer that a part of them prefer re-edited TV content and online creator content based on the statements scored close to +1 (#1,  $Z=0.86$ ; #5,  $Z=0.99$ ), but not web-oriented content and knowledge content (#2,  $Z=-1.03$ ; #6,  $Z=-0.98$ ). Thus, they should be viewed as a group of entertainment content viewers, regardless of genre, who use snack-media in their spare time (#18,  $Z=1.74$ ). In addition, they prefer both searching and being recommended as means for selecting what to watch in snack-media platforms (#13,  $Z=1.57$ ; #12,  $Z=1.39$ ).

The negatively scored statement regarding time-efficiency suggests that snack-media should not be very efficient ways of entertainment-seeking for type 3 users (#21,  $Z=-$

1.10). However, they are not completely indifferent to efficiency, considering that they sensitively react to several of the disturbing factors, i.e. advertising, commercially sponsored content, and mobile data (#16,  $Z=1.44$ ; #15,  $Z=1.07$ ; #26,  $Z=1.37$ ). They also do not want content archives as large as possible regardless of quality, which might hinder their undisturbed content consumption (#8,  $Z= -1.28$ ).

**Table 5. Q-statements with factor scores that exceed  $\pm 1$  (user type 3 - sensitive entertainment consumer)**

No.	Statement	Score
18	I use online video services to spend spare time	1.74
13	I prefer an online video service in which I can search what I want to watch	1.57
16	I don't want to use an online video service which doesn't allow ad skip	1.44
12	I prefer an online video service which exposes recommended videos based on my usage history	1.39
26	It discomforts me that I often can't watch online videos because of limited mobile data	1.37
15	I don't want to use an online video service which has a large portion of commercially sponsored content	1.07
2	I prefer to watch web-oriented content (e.g. web variety show, web drama) using online video services	-1.03
27	It is not proper for me to watch online videos with long playtime in public transportation or outdoor	-1.03
21	I use online video services because it is more time-effective than watching TV	-1.10
31	I want many other viewers to read my comments on online videos	-1.22
32	It is important for me to be informed of famous videos among my friends	-1.27
10	I prefer an online video service of which archive includes foreign creators' content	-1.27
8	I prefer an online video service with an archive as large as possible regardless of quality	-1.28
28	There is a significant difference between the kinds of content I watch at home and outside	-1.47

#### **4.1.4. Type 4 - Mania**

Type 4 users seek for useful information as type 1 users do, however, which is not for knowledge acquisition but for deeper scrutinization about their preferred offline celebrities and cultural products, e.g. music and musicians. They frequently use snack-media platforms as a window for accessing music content, e.g. listening to original music, watching music video, and sharing covered music (#4,  $Z=1.21$ ). Also, they prefer to watch online videos related to offline celebrities including TV stars (#3,  $Z=1.05$ ). According to the post-hoc interview, one of the type 4 users said that snack-media platforms are useful to get information about idol musicians, while the other one was an indie music mania. Therefore, we named user type 4 'mania' (Table 9).

Type 4 shows a certain level of similarity with type 2 in terms of their loyalty and relatively low level of efficiency-oriented behavior. They stated that time-efficiency is not their snack-media usage motivation (#21,  $Z=-2.03$ ). In addition, they give emphases

on social interaction with content creators and other viewers as like type 2 users (#34,  $Z=1.29$ ; #30,  $Z=1.09$ ).

Type 4 was the only group who showed a positive attitude toward genre-specialized platform (#9,  $Z=1.09$ ). Yet, filtering of content by quality was not a favorable option for them (#7,  $Z=-1.01$ ).

Table 6. Q-statements with factor scores that exceed  $\pm 1$  (user type 4 - mania)

No.	Statement	Score
20	I use online video services to get useful information	1.76
12	I prefer an online video service which exposes recommended videos based on my usage history	1.56
34	It is important for me to communicate with online video creators through chatting and writing comments	1.29
13	I prefer an online video service in which I can search what I want to watch	1.24
4	I prefer to use online video services in place of music services	1.21
9	I prefer an online video service which is specialized in the genres I usually watch	1.09
30	It is important for me to read other viewers' comments when I watch online videos	1.09
3	I prefer to watch videos related to celebrities (i.e. TV stars) using online video services	1.05
7	I prefer an online video service of which archive is qualitatively selected	-1.01
27	It is not proper for me to watch online videos with long playtime in public transportation or outdoor	-1.05
24	I prefer to watch online live streaming because of ad-lib fun found only in real-time	-1.32
26	It discomforts me that I often can't watch online videos because of limited mobile data	-1.49
10	I prefer an online video service of which archive includes foreign creators' content	-1.49
19	I use online video services to get vicarious satisfaction	-1.56
21	I use online video services because it is more time-effective than watching TV	-2.03

#### 4.1.5. Type 5 - Efficient entertainment seeker

Type 5 users can be named as 'efficient entertainment seeker' (Table 10), whose purpose of snack-media usage is not focused on information seeking but on more efficient consumption of content aided by snack-media's properties. In their spare time, type 5 users enjoy re-edited television content using snack-media platforms (#18,  $Z=1.98$ ; #1,  $Z=1.57$ ). They think one of the most important advantages of snack-media is freedom of choice that can help them selectively watch what they want to (#22,  $Z=1.64$ ).

Unlike type 3 users whose needs for a qualitatively filtered content archive are derived from needs for undisturbed viewing, type 5 users' positive attitude toward massive content archive should derive from needs for one-stop shopping (#8,  $Z=1.17$ ). Indeed, several of them complained about NaverTVs' poor content archive and, on the contrary, YouTube's lack of local television content.

Table 7. Q-statements with factor scores that exceed  $\pm 1$  (user type 5 - efficient entertainment seeker)

No.	Statement	Score
18	I use online video services to spend spare time	1.98
22	I use online video services because it gives more freedom of choice than watching TV	1.64
1	I prefer to watch video clips of re-edited TV content (e.g. shows, sports events) using online video services	1.57
8	I prefer an online video service with an archive as large as possible regardless of quality	1.17
14	I prefer an online video service which recommends more diverse videos based on other sources besides my usage history	1.14
13	I prefer an online video service in which I can search what I want to watch	1.09
12	I prefer an online video service which exposes recommended videos based on my usage history	1.04
10	I prefer an online video service of which archive includes foreign creators' content	-1.08
31	I want many other viewers to read my comments on online videos	-1.20
23	I prefer to watch online live streaming for real-time communication with streamers and other viewers	-1.30
26	It discomforts me that I often can't watch online videos because of limited mobile data	-1.35
32	It is important for me to be informed of famous videos among my friends	-1.43
19	I use online video services to get vicarious satisfaction	-1.48
28	There is a significant difference between the kinds of content I watch at home and outside	-1.61

Social interaction can hardly be their snack-media usage motivation and behavior, considering that none of the statements related to it showed a positive sign, including ones scored below -1 (#31,  $Z=-1.20$ , #32,  $Z=-1.43$ ). Even though a part of them frequently watch live streaming content, it was not accepted that real-time communication with content creators and other viewers could be their usage motivation (#23,  $Z=-1.30$ ).

Interestingly, user type 5 was the only group who positively perceived content recommendation based on more diverse data source besides their usage history (#14,  $Z=1.14$ ), although they already prefer not only searching but also history-based recommendation (#13,  $Z=1.09$ ; #12,  $Z=1.04$ ). We cautiously infer that they want more effective technical aid from snack-media platforms for their efficient selection, considering that many of them pointed out repetitive and monotonous recommendation of YouTube.

## 4.2. Discussions

The results of Q-analysis suggest remarkable differences between the extracted user types. First of all, type 1 and type 4 users tend to use snack-media platforms as windows for information acquisition, namely, their primary gratification from snack-media can be

information-seeking. But, they show disparities in the level of pursuit of efficiency. Type 1 users have a profound utilitarian purpose and efficiency-oriented usage behavior regarding snack-media. In the meantime, type 4 users utilize the platforms as information sources for their cultural activities and experiences, thus efficiency shall not be the major consideration in their snack-media usage.

Type 2 and type 5 users' snack-media usage motivation is centered more on entertainment, yet, likewise, the two types also can be distinguished mainly by the level of pursuit of efficiency. Type 2 users' attitude and behavior seem to be formed based on their loyalty to online content creators, considering that they continuously revisit and want to interact with online content creators in certain genres they prefer. Accordingly, they use live streaming relatively more frequently than other types of users do, although their live streaming usage motivation is not completely consistent. Whereas type 5 users focus more on enjoying the massive entertainment content in snack-media platforms, thus their attitude and behavior are not determined by loyalty to certain content creators. Rather, they want to be aided by platforms' and content makers' user experience designs, such as a sufficient volume of content archive that allows one-stop shopping and content curation based on multiple recommendation methods.

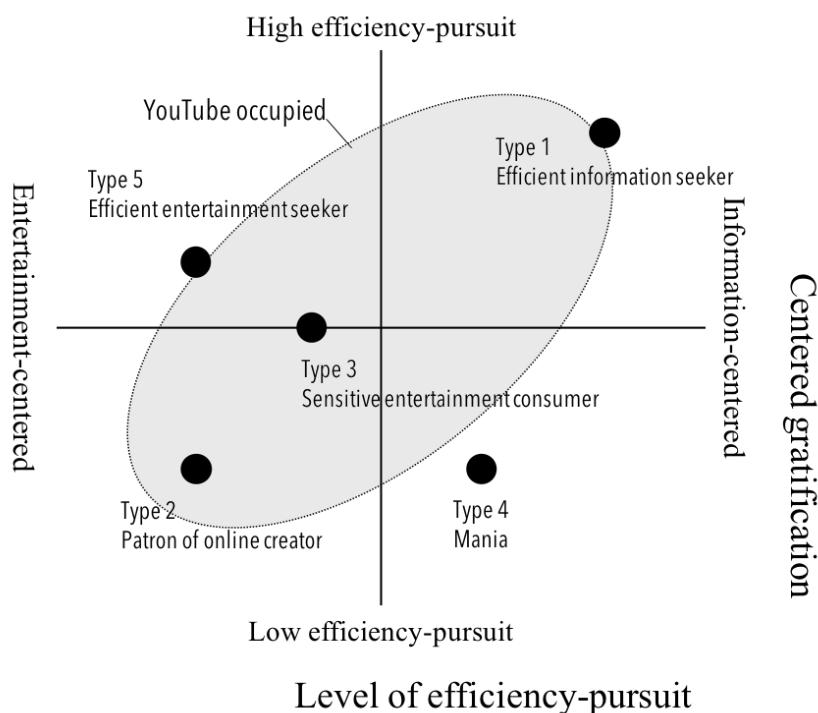


Figure 3. Positioning map of snack-media user types



Type 3 users are similar to type 2 and type 5 in the way that their centered gratification leans toward entertainment-seeking, although their preferred genres and behavioral traits could not be clearly identified from the Q-analysis results in this study. It is only inferred that their efficiency-pursuit tendency is not as strong as type 1 and type 5 users are, but they are still sensitive to disturbing factors such as advertising, commercially sponsored content, and unfiltered content archive.

Figure 3 shows the mapping of the five types applying the two salient variables as the axes, which are the centered gratification (information-centered - entertainment-centered) and the level of efficiency-pursuit (high efficiency-pursuit - low efficiency-pursuit). It also marks the market area occupied by YouTube. YouTube should overwhelm the type 2 segment, while its regime should not be solid yet in the type 4 segment. YouTube's massive content archive would largely satisfy both information seekers and entertainment seekers, but we expect that still a well-established target strategy can create opportunities. Based on this taxonomy, we can discuss more concrete strategies of the local snack-media platforms for targeting each user segment.

First, considering the extremely high efficiency-pursuit tendency of type 1 users, the local snack-media platforms can build a knowledge-providing content archive and maximize the effectiveness of search functions, which aim to meet their needs for efficient information seeking. For instance, the platforms (and content providers) can provide multiple versions of video clips with various playtime for users to choose depending on whether they want a quick overview or a full video.

In the same sense, a video platform that allows more text, sound, and image as additional means to convey information can be an attractive option. Internet portal services, of course, have provided such search results from diverse sources including video, audio, text, and image, and the incumbent snack-media platform, i.e. YouTube has already been actively used as a search engine. Yet, we cautiously predict that there should be room for developing an information-centered content platform by supplementing shortcomings of the current video platforms and Internet portals, which can satisfy the unmet needs of the efficient information seekers. Unfortunately, however, the strategic options targeted on the segment type 1 locates are still more favorable for the incumbents who already have a much more massive content archive and pool of content providers.

Second, the market segments of type 2 should be the incumbents' occupied territories

and must have the most solid barriers for the local snack-media platforms to overcome. Indeed, type 2 is the target group that any snack-media platforms hardly want to lose, because they are loyal to content creators thus more tolerant or even favorable to the creators' profit-making activities. As discussed, the majority of snack-media content creators use or will use the incumbent platforms, especially YouTube, as the primary or at least secondary platform to reach as many end-users as possible, and it is quite difficult to induce them to leave YouTube and to single-home one of the local snack-media platforms. More importantly, there is only a slim chance of the loyal users' emigration to smaller platforms unless the creators accompany them. In other words, type 2 should be the segment with the most powerful indirect network effects.

If so, on one hand, the local snack-media platforms need to develop value proposition models, of which incentives given to both content creators and end-users are greater enough to countervail the network effects. On the other hand, given that a direct competition against the incumbents is likely to require excessive costs, concentrating limited resources on other target markets can be a more desirable option for the local snack-media platforms.

Third, type 3 users, in this study, only showed a vague identity that they do not want to be disturbed while using snack-media. If so, a relevant strategic consideration can be how to guarantee them undisturbed usage experiences, such as relieving bothersome experiences derived from advertising and messy content archive. Yet, the results should not be interpreted that type 3 users are commonly indifferent to content creators and genres, but that their tastes are rather more diverse than the other groups. Thus, strategies targeting type 3 users need to be more carefully discussed after further investigations on potential subgroups within them.

Fourth, although only a small number of participants were assigned to type 4, the segment they locate should be viewed as a great niche that cannot be neglected, considering the market's attractiveness. This type of users tends to show a high level of involvement in the fields of their interest, accordingly to seek for perfect information, not merely casual entertainment. These mania traits may allow local snack-media entrepreneurs a chance to discover more atomized markets and to diversify business models, where specialized platforms can effectively penetrate into.

Naver's V Live would be a good example. V Live has currently pioneered a snack-

media niche market by targeting celebrity, including television idol, fandom. It has achieved a certain degree of success in settling many celebrities' single-homing, via proposing them a distinguished platform identity and additional means for profit-making (e.g. paid subscription to each celebrity channel, selling individual special videos, and offline product promotion). In addition, V Live also aim to provide community spaces for the fandom, as the results of this study suggest that social interaction is one of the important needs of type 4 users.

Lastly, type 5 is also the target user group that the incumbents, especially YouTube, are more likely to gratify to a great extent with the massive content archive, considering that they are efficiency-oriented entertainment seekers. YouTube has not failed to satisfy them to the present day, except that it lacks local television content due to SMR. Accordingly, type 5 users reported that they frequently multi-home a local snack-media platform, i.e. NaverTV. Yet, NaverTV seems not to have a content archive which is sufficient to satisfy the visitors and lock them in. Taking into account that type 5 users pursue technically aided efficiency, one feasible option can be to extend their length of stay time per visit, adopting the virtue of curation. As discussed, on one hand, they actively utilize recommendation functions in snack-media platforms, but on the other hand, they are not fully satisfied with it because of repetitive and monotonous recommendations. In other words, the local snack-media platforms can focus more on developing curation systems, which not only mechanically recommend content using an algorithm based on usage history but provide curated content experience exploiting multiple recommenders and data sources.

Table 11 presents the assessments on the feasibility of the local snack-media platforms' responsiveness to the needs of each user type, namely it shows whether the catching-up platforms have high chances of meeting the required content- and platform-features, against the established platform, i.e. YouTube. Critical obstacles and opportunities also were suggested.

As discussed, type 4 is likely to be the most feasible niche for the local snack-media platforms, due to the users' loyalty to offline celebrities and cultural products, which makes the local platforms easier to narrow down the market and to build relationships with content providers. More importantly, they can aim at the vulnerable points of global giant platforms namely negative network effects. Too crowded platform can reduce both

content providers and end-users' willingness to join the platform, especially when they do not gain strong value from uninvolved others.

Table 11. Feasibility assessment of local snack-media platforms' responsiveness to user needs

	Content-feature	Feasibility	Platform-feature	Feasibility	Critical obstacle	Opportunity
Type 1	Utilitarian	Weak	Effective information acquisition	Moderate	-Weak information content	-Synergy with local search engines
Type 2	Online creator	Weak	Right creator	Weak	-End-user and creator lock-in	-Higher value proposed to online creator
Type 3	Not certain	N/A	Undisturbed experience	Moderate		-Qualitatively filtered content archive
Type 4	Celebrity/culture	Strong	Specialized	Strong		-Exploitation of loyalty via specialized platform
Type 5	TV-originated + online creator	Moderate	Curated	Moderate	-Weak online creator content	-Locking in visitors lured by SMR content using curation

Regarding the type 5 segment, the local snack-media platform also can have its strength in content differentiation, due to favorable relationship with SMR, but they only enjoy moderate feasibility in coping with type 5 users' required content-feature because of relatively weak online creator content archive compared to YouTube. We suggested curation as a means for locking in the type 5 users induced by SMR content, yet in order to assure its effectiveness, a series of experiments will be needed as long as their resources allow.

For the snack-media platforms, setting aside type 3 which is not proper for a deeper discussion only based on the results in this study, type 1 and type 2 will not be very feasible segments, regardless of the size and importance of the market. On one hand, critical hurdles in securing content providers are posed in both segments. On the other hand, although the potential breakthroughs are suggested, their feasibility are not guaranteed. As mentioned, providing an information-centered content archive with advanced search functions has already been in YouTube and its sister platform, i.e. Google's territory. Likewise, it can be too costly to propose online content creators sufficient value that exceed the benefits of single- or multi-homing YouTube.

## 5. Conclusion

This study tried to segment the snack-media market and discussed relevant strategic approaches to each target market based on the taxonomy drawn from user heterogeneity.

In its research background, we recognized a potential problem of global incumbent platforms' market domination driven by network effects thus suggested that the local snack-media platforms need to develop proper counterstrategies. Given that competing directly against the incumbents in the same market can hardly be a feasible winning strategy, discovering and targeting a critical niche can be the starting point for recovering the lost market. To provide a clue to snack-media market segmentation, therefore, we investigated users' heterogeneity by observing their attitude and behavior regarding snack-media, adopting Q-methodology.

The Q-analysis results revealed five salient user types, and we located them in a positioning map with two axes, i.e. the level of efficiency-pursuit and the centered gratification. We also discussed corresponding strategies for targeting each user type, but it does not mean that the local snack-media platforms have to engage in every battle. Rather, it is suggested that a local snack-media platform should define a challengeable niche and concentrate their resources on it, keeping an old saying in mind - all covet, all lose. According to our analysis, the segments of user type 4 and type 5 are the challengeable niches, and the counter-strategies will be feasible to a certain degree.

This study is not without its limitations. First of all, due to the inherent shortcomings of Q-methodology, if the set of Q-statements was not sufficiently comprehensive to reflect the majority of snack-media users' subjectivity, the results also cannot guarantee validity and reliability. In order to minimize such error, we analyzed interview data for the Q-statement construction, but perfection in the comprehensiveness of the Q-statements still has not been confirmed.

In addition, as the number of cases in the P-sample was predetermined, we endeavored to secure representativeness and independence, but the results should not be as generalizable as the ordinary surveys with carefully applied sampling frames are.

In order for this approach to be practically applied in the business fields, further research will be needed, which investigates, for instance, refined conceptualization of the user heterogeneity variables and measurement methods for them, additional properties of each user group and its subgroup, and more in-between groups.

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