Targeting the Post-80's Market: An MCDM Approach

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Abstract

The post 80's generation has recently been becoming the main consumer base. The existing literature on the post 80's generation, however, emphasizes social, macro-economic, and reflections on materialism perspectives rather than their standpoint as an influential consumer in terms of marketing positioning. This study presents a consequences process showing a Taiwanese smartphone manufacturer searching for an appropriate agent in East China in terms of an Multiple Criterion Decision Making (MCDM) method. Subsequently, the survey results revealed some useful information on post 80's smartphone users. The conclusion provides numerous research directions that are worth following for the study of targeting post 80's consumers.

Keywords*: The post-80s, Smartphone, Consumer Behavior, Target marketing, China*

1. Introduction

The smartphone market is rapidly growing around the world, but particularly in the Asia-Pacific region. Shipments in this region are expected to grow 52.8% year-on-year in 2010 to reach 76.7 million units and are projected to easily surpass 100 million units in 2011. China became a competitive market in 2009 due to the gradual growth of smartphone users [1]. Obviously, this country has huge opportunities for smartphone manufacturers. In this study, in addition to introducing the process of a smartphone fabricator from Taiwan competing in the East China market with The technique for order preference by similarity to ideal solution (TOPSIS) - an Multiple Criterion Decision Making (MCDM) method, the results revealed the post 1980's (80's) generation consumers greatly influence the overall market.

Many published literatures have focused on the post 80's generation. Details of their thinking and behavior have become popular issues. Compared to other generations, the post 80's generation live an in era of high economic growth and expansion of higher education. Social development large variation is far-reaching the post 80's general characters. In Mainland China, the 'One Child Policy' has been implemented for over three decades, and the post 80's generations' group and individual behavior have been mentioned in numerous dimensions, e.g. family structure reconstruction and culture recognition [2]; ideology changes from collectivism to individualism [3] and skepticism of Western advertising promotions in China media [4]. These studies, however, seldom adopt practical means to survey the market-oriented approach deeply. For filling in the blank of the post 80's issue, this empirical study discusses the numerous implications in terms of our survey results of the post 80's smartphone consumers.

The rest of this paper is organized as follows. The following section uses the TOPSIS method, with the preliminary analysis and survey describing the results. Conclusions are given in the last section.

2. TOPSIS method

TOPSIS method is presented in Chen and Hwang [5], and extended to Hwang and Yoon [6]. The basic principle is the chosen alternative should have the shortest distance from the ideal solution and the farthest distance from the negative-ideal solution. This approach has been successfully applied in

online community-based group opinion collection [7], information source selection [8], social responsibility evaluation [9], and long distance highway bus company development [10]. The TOPSIS procedure consists of the following six steps:

(1) Calculate the normalized decision matrix. The normalized value r_{ij} is calculated as

$$r_{ij} = f_{ij} \sqrt{\sum_{j=1}^{J} f_{ij}^2} \quad J = 1,...,J; \quad i = 1,...,n.$$

(2) Calculate the weighted normalized decision matrix. The weighted normalized value v_{ij} is calculated as

$$v_{ij} = w_i r_{ij} \quad J = 1,...,J; i = 1,...,n. \tag{1}$$

where w_i is the weight of the ith attribute or criterion and $\sum_{i=1}^{n} w_i = 1$.

(3) Determine the ideal and negative-ideal solution.

$$A^* = \{v_1^*,...,v_n^*\} = \left\{ \left(j \max v_{ij} \big| i \in I' \right), \left(j \min v_{ij} \big| i \in I'' \right) \right\}, \tag{2}$$

$$A^- = \{v_1^*,...,v_n^*\} = \left\{ \left(j \min v_{ij} \big| i \in I' \right), \left(j \max v_{ij} \big| i \in I'' \right) \right\}, \tag{3}$$

where I' is associated with the benefit criteria and I'' is associated with the cost criteria.

(4) Calculate the separation measures using the n-dimensional Euclidean distance. The separation of each alternative from the ideal solution is given as

$$D_j^* = \sqrt{\sum_{i=1}^{n} \left(v_{ij} - v_i^* \right)^2}, j = 1,...,J. \tag{4}$$

Similarly, the separation from the negative-ideal solution is given as

$$D_j^- = \sqrt{\sum_{i=1}^{n} \left(v_{ij} - v_i^- \right)^2}, j = 1,...,J. \tag{5}$$

(5) Calculate the relative closeness to the ideal solution. The relative closeness of the alternative a_j with respect to A^* is defined as

$$c_j^- = D_j^- / \left(D_j^* + D_j^- \right), j = 1,...,J. \tag{6}$$

(6) Finally, rank the preference order.

3. An empirical case

Firm J is a smartphone original design manufacturer in Taiwan. Firm J is focusing on the post 80s generation in the Greater China economy due to its rising enterprise reputation. Moreover, firm J has been increasing customer service experiences in Mainland China in recent years. The management recognizes they might be able to actively promote their own brand of smartphone into the Mainland market. After a fierce discussion, firm J decided to seek a regional agent for smartphones in the East China area. The potential agent had to meet the following criteria: 1) the past sales scope of the agent is not limited to Computer, Communications, and Consumer electronics (3C) field, but the major customer base is the post 80s generation; 2) five years or above sales experiences; and 3) distribution channels in East China. Each judgment criterion's definition and evaluation is made by five experts from sales and marketing, channel development, China hand, and mobile users. In assessing the agent's historical financial performance, channel control capability, and service competence for the young generation customer base, four potentially suitable agents were selected in the initial stage. Table 1 illustrates each criterion, relative weighting, and raw data from the four candidates.

Table 1. Criterions and four agents' information

Criterions	Suppliers				Weights
	Supplier A	Supplier B	Supplier C	Supplier D	
Ability to highlight the young characteristics of the product itself	5.00	2.86	3.57	4.32	0.16
Ability to meet the customer's requirement that provide the good service	4.51	4.37	4.57	5.00	0.11
Ability to integrate the customer's opinion that offer the product improvement suggestion	4.37	4.57	3.95	4.13	0.12
Average pretax margin within 3 years	68.46	96.56	88.93	52.34	0.09
Average market share within 3 years (%)	45.65	42.70	30.15	26.50	0.12
Average sales staff ages	23.00	26.00	27.00	21.00	0.14
Average sales staff experiences	5.50	8.00	4.00	3.00	0.10
Retail channel intensity	4.57	2.17	1.64	4.32	0.05
e-commerce system performance	5.00	3.37	2.61	4.78	0.12

Table 2 shows the weighted normalized decision matrix used by Eq. (1).

Table 2. Normalized matrix

Criterions	Agents			
	Agent A	Agent B	Agent C	Agent D
Ability to highlight the young characteristics of the product itself	0.00491	0.00245	0.00350	0.00562
Ability to meet the customer's requirement that provide the good service	0.00296	0.00250	0.00299	0.00435
Ability to integrate the customer's opinion that offer the product improvement suggestion	0.00305	0.00278	0.00275	0.00382
Average pretax margin within 3 years	0.03669	0.04509	0.04756	0.03715
Average market share within 3 years (%)	0.03161	0.02576	0.02083	0.02430
Average sales staff ages	0.01939	0.01910	0.02271	0.02345
Average sales staff experiences	0.00341	0.00432	0.00248	0.00246
Retail channel intensity	0.00124	0.00051	0.00044	0.00155
e-commerce system performance	0.00358	0.00210	0.00187	0.00454

Subsequently, after obtaining the negative and non-negative solution used by Eq. (2) to (5), table 3 presents the ranking result of each agent preference by Eq. (6). Agent A leads the selection contest for firm J's Smartphone marketing in the East China area.

Table 3. Ranking result

	Agent A	Agent B	Agent C	Agent D
Value	0.39291	0.35056	0.34069	0.38054
Ranking	1	3	4	2

After two quarters of the product listing in East China, to ascertain the opinions from users who purchased firm J's Smartphone, the survey began in Hangzhou, Nanjing, Shanghai, and Wenzhou for 1200 samples. The surveys excluded the interviewees who were not willing to answer. A total of 1038 questionnaires were issued and conducted in person. Invalid respondents were ruled out, leaving 1000 valid interviewees (n = 1000, approximately 83.3%) for this study. The survey period was from 2011/7/15 to 2011/8/14. The questionnaire consisted of three main dimensions: smartphone's functionality, channel services, and product identity, respectively (Table 4). This survey is also employed the Likert 1-to-5 rating scale (1 = strongly disagree to 5 = strongly agree). The questionnaire construction fully considered the internal consistencies of each survey item, and prevented reliability and validity from being less than the normal value (Cronbach's alpha value = 0.67). Female respondents comprised 47 % and males 53 %. The survey found respondents' average birth year distributions were between the 1980's (45 %) and the 1990's (40 %). The average disposable yearly income was RMB 35,000 (approximately USD 5,480). The Barlett test was significant ($p < 0.001$).

Table 4. Survey dimension and questionnaires

Functionality	F1	The appearance style of Brand J's smartphone is fashion
	F2	The functionality of Brand J's smartphone is very well
	F3	The wireless access quality of Brand J's smartphone is high
Services	S1	Brand J's shop staffs exactly knowing the customer needs.
	S2	I can quickly find the Q&A of Brand J's smartphone on their customer service website
	S3	I can clearly knowing the updated product information of Brand J
	S4	I can easily find Brand J's shop whereever I am
Identity	I1	I feel Brand J's smartphone is belonging for young generation
	I2	I will re-purchase Brand J's next smartphone
	I3	I attend the Brand J's smartphone fan club regularly

Table 5 presents the survey results. Functionality and product identity both have increased satisfaction degrees, particular for the 80's and 90's users. Agent's services were relatively weaker than the other dimensions. The 'provides real-time updates' self-service function prominence proved the post 80's generations pay attention to individualism. Interestingly, the users from the 60's and above generations showed lower satisfaction on all surveyed dimensions than the post 80's generation. The survey results revealed agent A should concentrate on its own advantages for targeting the young generations' market, due to this customer base mostly being born in the booming economy times, and having access to more social resources than their parents. Undoubtedly, since it is a fashionable item with outstanding functions, the smartphone has becomes a symbol of the mutual recognition of their identity.

Table 5. Survey results

Item	The Year of birth					F value	Significant	
	1990 and later	1980-1989	1970-1979	1960-1969	1959 and before			
Functionality								
F1	4.04	5.00	4.00	4.00	3.82	4.797	0.001	**
F2	4.27	5.00	3.79	3.00	4.11	4.077	0.004	**
F3	4.17	4.40	4.18	3.84	2.25	10.508	0.000	**
Services								
S1	4.13	4.08	3.33	3.21	3.18	2.686	0.036	*
S2	3.55	3.75	4.20	4.05	3.75	0.809	0.523	
S3	3.45	3.84	3.25	2.83	2.27	4.691	0.002	**
S4	4.36	3.88	4.21	4.17	3.93	0.652	0.627	
Identity								
I1	4.82	5.00	4.00	4.29	3.67	5.534	0.000	**
I2	4.91	5.00	3.88	4.18	4.00	4.236	0.003	**
I3	4.21	4.91	4.13	4.13	2.92	4.910	0.001	**

4. Conclusions

Entering an entirely new market is filled with unknowns and risks. However, this study revealed the TOPSIS method can be effectively utilized in important solutions selection, saves on time and cost, and assists decision makers to select a 'relatively well' solution. Before the criterions are established, however, clear positioning of the problem itself is necessary. Firm J's customer base targets the young generation users (the post 80's). The survey results show agent A would be a successful choice for best helping Firm J. Undoubtedly, the TOPSIS can assist the decision-makers' making the 'correct and effective' business judgment, and achieves the goal of the target customer (the post-80s) satisfaction with a simple operation.

Subsequently, the user survey reflects the fact the main market in East China of firm J's Smartphone is the post 80's generation. The users of this generation are more individualistic in their behavior. This result can be a valuable reference for the consumer electronics based industries. Finally, two future directions could be a reference for the following study: (1) Broaden the research scope to numerous markets in similar industries e.g. the post 80's consumer nationwide or multinational comparative studies. (2) Deeply understand the post 80's generation group through psychological and consumer behavior approaches.

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