Smoker Behavior and Social Marketing Policy

Takeshi Shimizu

Abstract

Recently, people have been calling for restrictions against tobacco smoking that is regarded as a social issue. This study attempts, based on the author's research approach, to examine how the marketing information and social norms affect the smoker's decision making process, thereby contributing to the social marketing policy that will effectively reduce the consumption of tobacco.

According to the results of positive analysis, it can be concluded that the smoking intention and the continuation of smoking are determined by the effects of both the marketing information related to tobacco and the information of the social norms that are, based on his or her own values, internally processed by the smoker. Also, we may be able to predict that the regular smoker's smoking intention and behavior will be maintained even if the number of cigarettes being consumed may decrease. Finally, based on the smoker behavior model formulated here, the study will provide some suggestions for a social marketing policy towards the reduction of tobacco consumptions.

Key Words

Tobacco issues, framework convention on tobacco control, smoker behavior model, analytical framework, functional analysis, marketing
information, reference group, social norms, subjective norms, smoker's motive, covariance structure analysis, social marketing policy

1. Problems and Research Tasks

In May 2003, WHO put together the framework convention on tobacco control aiming at the reduction of tobacco consumption, which was unanimously adopted at the annual assembly in Geneva. This treaty enforces, on one hand, a direction towards heavier tax, and on the other hand, the international restrictions on tobacco marketing in such areas as advertising, sales promotion, sponsorships, package information, vending machine use by minors.

Based on a survey conducted by Japan Tobacco Inc., 300 billion cigarettes were sold nationwide in 2003. Compared to other advanced countries, the ratio of adult smokers is higher with a smoker population of 30 million, on which the ratio of male smokers, female smokers and the total number of smokers being 48%, 14%, and 30% respectively. The number of smokers are increasing in the segments of young females and minors; the tax rate of 63% and the retail price of tobacco are at the lowest level; the total tax amount on tobacco in the national and local tax exceeds 2 trillion yen annually; there are 20,000 tobacco farmers, 310,000 authorized tobacco retailers and 630,000 tobacco vending machines which cover 40% of the total sales. When we consider these facts, the enforcement on such global restrictions, as well as the Health Promotion Law enacted in May 2003, are drawing great interests from not just the marketing related businesses, smokers, nonsmokers or minors, but also from many other fields such as social and medical security, social welfare service and national finance.

2. Objectives of the Study

The key issue lying in this multi-faceted and social tobacco problem is that, why do people buy and smoke tobacco despite the
fact that its dangers on health have been pointed out from early times, with various social restrictions being strengthened. To answer this question, we need an interdisciplinary examination from the viewpoint of various fields such as epidemiology, physiology, psychology, social psychology, pathology and psychoanalysis. From the viewpoint of marketing research, the companies' marketing activities inherently affects the promotion of consumption by meeting the needs for products and services. Therefore, based on a series of steps in the marketing research method suggested by the author and through the smokers' decision making process model, this study will attempt to obtain an answer to the question of how do the seller's activities affect the smoker's continual smoking intentions and eventually the continuation of the smoking behavior while restrictions based on tobacco related social norms are strengthened, as we can see in the case of regulations aiming at the reduction of cigarette consumptions. The analytical results of this model will also attempt to obtain insights for an effective social marketing policy, reflecting the smoker behaviors, in order to reduce the consumption of tobacco.

3. General Framework of Reference

In pursuing the research objectives, it will be necessary to present the author's approach towards the research. In other words, we need to confirm the general framework of reference and the definition of the research subject, as a conceptual frame of reference of the marketing research. These issues are mentioned in the author's other writings\(^3\), so here, we will only refer to the areas that concern this study.

Firstly, in setting a general framework of reference for this research, marketing will be defined as a whole of the interaction process between the seller and the buyer participating in the transactions of physical goods and services. It is considered to be an interaction process between the seller and the buyer involved in this transaction process, where they exchange the input and the output in
the flow of products, information, money, risk taking, and possession as they mutually take part in such activities as product planning, selling, purchasing, communication, distribution and payment. Therefore, marketing is a social system, with its components being the seller and the buyer, which establishes, maintains and develops a good relationship between the seller and the buyer through the exchange of the flow arising from activities between the two parties. It is also a dyadic intersystem\(^4\) to which the seller and the buyer are moderately connected as its subsystem.

Here, the seller and buyer form an autonomous open system with their own objectives or values, attributes and structure, and therefore, they input (I) information, money, material and human resource to themselves from the outer world, then internally process (P) them, and then output (O) them to the outer world. As a result, the seller and the buyer themselves obtain certain performances related to their own objectives. At the same time, they also provide such input to the outer world.

Such mutual exchanges of input and output between the seller and the buyer synthesize new objectives, attributes, structures and eventually performances within the marketing system they belong to, and at the same time, such exchanges will present an output to the social space beyond the boundaries of the marketing system.

The seller system and buyer system as the subsystem, and the marketing system as a whole of both subsystems will exchange input and output with various social action systems within the social space that has its own economic, technical, human, cultural, legal, political, natural and international structures and institutions, thereby affecting the social action systems and eventually the social structures and social institutions, and then in turn, will get affected by them. The specification of the marketing system and the social space discussed in this study will be referred to in detail in the steps of operational definitions.
4. The Definition of The Marketing System

To confirm the definition of the marketing system, which is the other conceptual framework of reference, the marketing system will be classified according to the following three dimensions: field of activity, the distribution channel from production to consumption, and the micro to macro analytical levels based on the aggregation level of the marketing system that have the interaction and interrelation between the social space. Then, among the combination of these three dimensions, the marketing system to be the subject of the research will be chosen and determined based on the researcher's objectives and interests.

5. The Analytical Framework

In order to carry out a concrete analysis on the marketing system as a specific research subject defined by the above mentioned conceptual framework together with its research tasks, it will be necessary to have in advance a framework showing the basic directions of the analysis. Concerning the basic analytical framework of this study, the effects that a certain social system's output of actions have on other social systems will be examined, based on R.K. Merton's framework of functional analysis, from a functional point of view as explained below.

In other words, the subject system's function towards the object system can be classified into manifest function and latent function depending on whether there is a direct accordance between the subject's goals, intentions or motives, and the consequences of its actions. These two can then be classified into positive functions, negative functions, or non-functions depending on their positive, negative or non-contribution to the maintenance and growth of the object system. In this analytical framework, therefore, we first need to determine whether the actions of the social system as a functional subject fulfill a manifest function or a latent function upon a social
system as a functional object. In other words, we need to determine the correspondence between the purpose and intentions of the social system's actions, and their consequences. Secondly, we need to determine if the functional subject's actions are contributing to the maintenance and growth of the object system. In other words, we need to know the subject system's effects on the functional requisite of the object system.

Applications to the Cigarette Issues

If we look at the tobacco issues based on the above mentioned general frame of reference, the definition of the marketing system as the research subject and the analytical framework, the tobacco seller here is the cigarette maker with the tobacco farmers and tobacco retailers in its background, and the buyer is the consumer who regularly buys and smokes tobacco. Here, each maker as a seller, and each consumer as a buyer form an autonomous system where both parties have their own goals or values, attributes, structures, processing, and performances. However, the two parties, through the regular selling and buying of tobacco, are regarded to be a moderate intersystem that may be physically on and off, but psychologically closely connected, and an existence as a dyadic whole, with its own goals, attributes, structures and performances.

To confirm the research subject in relation to the definition of the marketing system, it will be, at the level of marketing activity field, a combination of all marketing activities concerning the transactions between the tobacco maker as the seller, and the smoker as the buyer. At the level of distribution channel, the research subject will be the flow from the tobacco maker and the smoker, the final consumer, and at the analytical level, it will be the statistical analysis of massive samples of individual smokers who, on one hand form a permanent intersystem with the cigarette seller, interacts with other factors of the social system.

In reference to the analytical framework, the tobacco seller's goal,
intention and motive of marketing is to promote sales and help the growth of companies and industries by satisfying the buyer's needs and tastes. From a historical point of view, the increase in the number of smokers, as the buyer, has contributed to the growth of the industry, starting from a hand-made small production, developing into a mass production, and then to a big enterprise, to an increase in the sales and revenue, and to the development of the industry. This proves that the seller's goal and intention correspond directly to the regular purchase of tobacco, and we could conclude that the tobacco maker as the seller system fulfills a manifest function in the regular and continual relation between the consumer as the buyer system, presenting a high performance.

Now, if we look at the possible contributions the sellers with such goal and motive can have, through their marketing activities, on the maintenance and growth of the life system, which constitute the regular smokers' or avid smokers' basic goal and functional requisite, it can be said that the needs and tastes that cigarettes fulfill as performance of the buyer system have a mixed effect of physiologic, sensuous satisfaction and psychological, mental satisfaction, where on one hand satisfactions in daily life are promoted and increased while on the other hand the dissatisfactions in daily life are reduced, relieved or removed.

As to the former case of promotion and increase in satisfaction, we could cite as examples, the promotion of concentration and creativity, an improvement in the sense of achievement, self, adulthood and fellow feeling, improvements in communication and sociability, additional values to the food and drink intake, an additional touch to the fashion, as well as the physiological and sensuous pleasures. Examples to the latter case of reduction and dissolution of dissatisfaction will be the reduction of various psychological stresses such as frustration, anxiety, tension, boredom, social pressure, mental fatigue, as well as the reduction or dissolution of psychological dissatisfaction arising from gaps between different genders, ages or social status.
In this way, the seller's marketing activities to promote the sales of tobacco that have the possibility of increasing satisfaction and decreasing dissatisfaction, on one hand, fulfill a manifest function when such activities lead to the buyer's direct reaction, that is, the daily purchase, while on the other hand, they manifest a contributive, positive function on the maintenance and growth of life system that is the buyer's basic functional requisite, thereby enhancing the performance of the buyer system. In its long history, tobacco have been integrated into daily life within the social space as a kind of life style culture, not only for the avid smokers but also for the nonsmokers. Such historical facts show that the seller-buyer marketing system has established and maintained a good relation not only within the marketing system but also with the outer world, and therefore has been recognized as an existence providing social performance.

However, the smoker, or the buyer as the social system, has a survival requisite in the basis of his or her intentional, value or functional requisites, among various other factors included as a chain of means and goals. That is because there is no maintenance or growth in the buyer's life system as a whole, without his or her survival. The tobacco consumption indeed potentially holds such a definitely negative function. For ages, studies and discussions have been carried out on the tobacco's possibilities of causing fatal health disorders such as cancer and heart disease through the buyer, the daily smoker. As a result, it can be said that the possibilities of health disorders caused by the addictive tobacco are evident. Moreover, it has been pointed out that tobacco has a bad influence on passive smokers of by-stream smoke, be it minors or even fetuses in pregnant mothers, and therefore, various social norms of different social systems are demanding abstinence of smoking, as it can be seen in the example of restrictions by WHO or the framework convention on tobacco control. Therefore, the seller's marketing activities with a manifest function have, from the view point of maintenance and growth of the regular smoker's life system, the aspects of both positive and negative functions for the buyer.
Meanwhile, concerning the non-smokers, if purchasing doesn't take place as a result of intentional marketing activities towards non-smokers, then the marketing activities will be considered to have a latent function with a non-function on them. Yet, if a non-smoker becomes a passive smoker of the by-stream smoke, then the same marketing activities will turn out to have a non-contributive, negative function on him or her. As to the case of minors and expecting mothers, if purchase takes place as a result of the seller's unintentional marketing activities, such activities will have a latent but non-contributive function on them, since their smoking is detrimental to their body, threatening their survival requisite. Moreover, if they become passive smokers of the by-stream smoke, then the seller's marketing activities will prove non-contributive to them in a double sense.

If we examine solely the regular smokers, who are the subject group of this research, these people, as they can potentially affect the health of themselves as well as that of the others, would have to go through the following two contradicting decision making processes. That is, on one hand, they would have to decide if they are going to continue to buy and smoke tobacco, what positive attitudes they will form and maintain towards the seller's marketing activities that can potentially harm their health and thereby threatening their survival requisite, while at the same time, they would also have to be aware of the fact that in a social space, their smoking behavior can affect the life system of a reference group outside the boundaries of the seller-buyer-marketing space, and eventually decide how much they would control their smoking in accordance with the expectations of the social space.

In this way, it can be assumed that the smoker will determine his or her smoking intention and the continuation via two routes: on one hand, the smoker will form and maintain a certain attitude towards tobacco by recognizing the tobacco seller's marketing information, and internalizing it, or in other words, integrating acknowledged information after evaluating and assessing it based on
his or her own values, while on the other hand, the smoker would also recognize information on various social norms, and again, integrate it through evaluation, assessment and internalization based on his or her own values, to form subjective norms towards smoking. This decision making process of the smoker on the continuation of smoking can be explained as a conceptual model shown in Figure 1.8)

![Diagram of Model of the Decision Making Process on Continual Smoking]

**Figure 1**
Model of the Decision Making Process on Continual Smoking

6. Setting the Hypotheses

The hypotheses that have to be tested based on this conceptual model are as follows.

Basic Hypothesis:
The smoker's smoking intention and the eventual continuation of smoking behavior are determined by both the smoker's internalization of the seller's marketing information, and social norms towards smoking within a reference group.

Corollary 1:
The regular smoker's recognition of the seller's tobacco-related marketing information can lead to, through internalization based on the smoker's own values, the formation and maintenance of a positive attitude towards tobacco, and will have an effect to maintain the smoker's intention to smoke.
Corollary 2:
The regular smoker's recognition of the social norms related to smoking within a reference group will, through internalization based on the smoker's own values, lead to the formation of his or her subjective norms and will have an effect to control the continuation of smoking intention.

Corollary 3:
The smoking intention and the eventual smoking behavior will continue, due to its addictive nature of smoking, as the net effect of the formation and maintenance of a continual smoking intention based on the smoker's positive attitude towards tobacco marketing information recognized, and the control effect on the continual smoking intention based on the smoker's subjective norms accepting the recognized social norm information.

7. Operational Definitions

This research needs to be further specified and operationally defined in order to test the above-mentioned hypotheses. In relation to the conceptual frame of reference mentioned previously, this study will first of all focus on the regular smoker smoking every day as the buyer system, and will consist of the following two analyses: On one hand is the analysis of the influential relation between the cigarette maker as the seller and the regular smoker. In other words, the analysis on the internal relation of how the regular smoker receives the output of marketing activities related to the maker's 4P—price, channel, product, and promotion—and then turns it into output towards the seller in the form of smoking intention, after the formation and maintenance of attitude through internalization. On the other hand is the analysis of the external relation of how the regular smoker receives, as the recognition input, the social norms of a reference group, including the reactions and institutional regulations—demands for non-smoking on the part of the family, friends or
coworkers in the regular smoker's reference group, national restrictions, and smoking restrictions in the community – of social space affected by the regular smoker's output, that is, his or her smoking behavior, and how the smoker then turns it into an output directed to the social space in the form of changes in the intention and continuation of smoking, after forming his or her subjective norms through the internalization process.

**Figure 2**

Marketing System in The Social Space

Here, internalization means the process of mentally integrating the input information received from the exterior, by giving it a positive or negative evaluation and assessment based on the multi-layered system of one's own physical, sensual, esthetic, social or cultural values. Since it would be difficult to directly assess the very process of internalization based on such value systems, the attitude and

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subjective norms as the output of such process were assessed by multiplying the smoker's subjective norms by the subjective weight. Figure 2 is the chart showing the subject of this research by adding the operational definitions to the general conceptual frame of reference of the marketing system and the social space.

8. Testing the Hypotheses

In testing the hypotheses, a pass diagram of the smoker's behavior model was prepared, as shown in Figure 3. Then, at the end of October 2002, the students in the Takeshi Shimizu research seminar conducted a random sampling, considering the characteristics of the 23 wards in Tokyo, of adult male and female regular smokers in the wards of Adachi, Itabashi, Ota, Katsushika and Nerima. The results of a covariance structure analysis by the CALLIS procedure of SAS 8.0 on all of the 451 samples are shown in Figure 3.

The measurement variables are as follows:

<table>
<thead>
<tr>
<th>(Recognition of Marketing Information)</th>
<th>(Recognition of Social Norm Information)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1  Recognition of Price</td>
<td>X5  Recognition of Non-Smoking Family</td>
</tr>
<tr>
<td>X2  Recognition of Vending Machines</td>
<td>X6  Recognition of Non-Smoking Friends &amp;</td>
</tr>
<tr>
<td>X3  Recognition of Product Utility</td>
<td>X7  Recognition of National Legal</td>
</tr>
<tr>
<td>X4  Recognition of Advertising</td>
<td>(Subjective Norm)</td>
</tr>
<tr>
<td>(Attitude)</td>
<td>X8  Recognition of the Community's Rules</td>
</tr>
<tr>
<td>X9  Attitude towards Price</td>
<td>X13 Acceptance of the Family's request to Abstain from Smoking</td>
</tr>
<tr>
<td>X10 Attitude towards Vending Machines</td>
<td>X14 Acceptance of the Friends' and Coworkers' Request to Abstain from Smoking</td>
</tr>
<tr>
<td>X11 Attitude towards Product Utility</td>
<td>X15 Acceptance of Legal Restrictions such as Littering</td>
</tr>
<tr>
<td>X12 Attitude towards Advertising</td>
<td>X16 Acceptance of the Community's Rules on Separate Smoking, etc.</td>
</tr>
<tr>
<td>(Intention for Continual Smoking)</td>
<td></td>
</tr>
<tr>
<td>X17 Degree of Habit Formation</td>
<td></td>
</tr>
<tr>
<td>X18 Smoking Intention in Future</td>
<td></td>
</tr>
</tbody>
</table>
Figure 3
Covariance Structure Analysis (all samples)

First, if we look at the overall evaluation, the P value is 0.001, GFI = 0.903, AGFI = 0.868, RMR = 0.131, RMSEA = 0.076, AIC = 239.1, which presents a fairly good explanation and stability. As to the partial evaluation, the coefficients of each variable observed were all significant at the 1% level. Moreover, the coefficient of determination to explain the continual smoking intention by the smoker's internalized attitude and subjective norms towards tobacco marketing activities marked a positive 0.69, supporting the basic hypothesis. (See Table 1, all samples)
Table 1
Overall Evaluation of Covariance Structure Analysis

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Young male Segment</th>
<th>Middle Aged Male Segment</th>
<th>Young Female Segment</th>
<th>Middle Aged Female Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>451</td>
<td>115</td>
<td>167</td>
<td>100</td>
<td>69</td>
</tr>
<tr>
<td>GFI</td>
<td>0.903</td>
<td>0.771</td>
<td>0.781</td>
<td>0.845</td>
<td>0.727</td>
</tr>
<tr>
<td>AGFI</td>
<td>0.868</td>
<td>0.690</td>
<td>0.703</td>
<td>0.790</td>
<td>0.630</td>
</tr>
<tr>
<td>RMR</td>
<td>0.131</td>
<td>0.213</td>
<td>0.230</td>
<td>0.150</td>
<td>0.180</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.076</td>
<td>0.136</td>
<td>0.131</td>
<td>0.088</td>
<td>0.131</td>
</tr>
<tr>
<td>AIC</td>
<td>239.1</td>
<td>324.8</td>
<td>306.2</td>
<td>50.83</td>
<td>55.32</td>
</tr>
<tr>
<td>Coefficient Of Determination</td>
<td>0.69</td>
<td>0.56</td>
<td>0.70</td>
<td>0.73</td>
<td>0.28</td>
</tr>
</tbody>
</table>

Looking at these analysis results in relation to corollary 1 of the hypothesis, the recognition of marketing information such as the tobacco price, convenience of purchase due to vending machines, product attributes contributing to the smoker's mental relaxation, and advertising campaigns on cigarettes all go through the internalization process based on the smoker's values, and then, form and maintain a positive attitude towards tobacco, as we can see in the significant causal coefficient of a positive $\alpha_1 = 0.57$, and may also contribute to the continuation of the smoking intention as seen in $\beta_1 = 0.80$. (See Figure 3 and Table 2)

In reference to corollary 2 of the hypothesis, a certain reference group's social norms, such as the demands for non-smoking and cautions arising from family, friends and coworkers, nation and community as well as restrictions on littering, smoking while walking, and separate smoking, will go through the internalization process based on the smoker's values, and as the significant positive value $\alpha_2 = 0.54$ shows, will be internalized as subjective norms accepting the social norms, and then, will have an effect to control the continuation of smoking intention, as shown in $\beta_2 = -0.23$.

Furthermore, in reference to corollary 3 of the hypothesis, it was
assumed that the intention and the actual smoking behavior would continue, since \((\alpha_1 \times \beta_1) = 0.46\), representing the recognized marketing information's effects to maintain the smoking intention through forming and maintaining a positive attitude, proved to be larger than \((\alpha_2 \times \beta_2) = -0.12\), representing the effects of the social norms, recognized and then internalized into subjective norms, to control the continuation of the smoking intention, showing a correlative ratio of \(3.8:1\).

However, it was assumed that the smoker's behavior would vary according to the attribute-based segment differences Therefore, the overall 451 samples of regular smokers were divided, according to their gender and age, into young male segment (115 males aged between 20 and 39), middle-aged to aged male segment (167 males aged between 40 and 89), young female segment (100 females aged between 20 and 39), and meddle-aged to aged female segment (69 females aged between 40 and 89). Then, we conducted a covariance structure analysis on a model identical to the above-mentioned overall model, and obtained results for each of the segments, as shown in Tables 1 and 2.

As to the overall evaluation on each segment, the P value is low, as was the case in the total samples. However, as it can be seen in Table 1, despite the fact that the samples are divided into small numbers, each segment presents an adequate explanation and stability. Moreover, judging from the significant coefficient of determination of the continual smoking intention, it was concluded that the basic hypothesis was supported and verified. As to the middle-aged to aged female segment, however, it had to be noted that the AGFI was low, and the coefficient of determination of the continuation of smoking intention was also low, although this segment satisfied the condition of degree of freedom and the number of samples required to identify the research model.

Looking at the analysis results of each segment's partial evaluation, most coefficients of the observed variables proved to be significant at the level of 1%, but, due to the advancement in
<table>
<thead>
<tr>
<th></th>
<th>Total Samples</th>
<th>Young male Segment 20s ~ 30s</th>
<th>Middle Aged And Senior Male Segment 40s ~ 80s</th>
<th>Young Female Segment 20s ~ 30s</th>
<th>Middle Aged And Senior Female Segment 40s ~ 80s</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>Price Recognition</td>
<td>.79</td>
<td>.84</td>
<td>.78</td>
<td>.60</td>
</tr>
<tr>
<td>X2</td>
<td>Machine Recognition</td>
<td>.46</td>
<td>.67</td>
<td>.66</td>
<td>.24</td>
</tr>
<tr>
<td>X3</td>
<td>Product Recognition</td>
<td>.33</td>
<td>.23</td>
<td>.24</td>
<td>.58</td>
</tr>
<tr>
<td>X4</td>
<td>Ad Recognition</td>
<td>.19</td>
<td>.22</td>
<td>.12</td>
<td>.09</td>
</tr>
<tr>
<td>X5</td>
<td>Family Recognition</td>
<td>.29</td>
<td>.26</td>
<td>.30</td>
<td>.35</td>
</tr>
<tr>
<td>X6</td>
<td>Peer Recognition</td>
<td>.63</td>
<td>.78</td>
<td>.96</td>
<td>.56</td>
</tr>
<tr>
<td>X7</td>
<td>Legal Recognition</td>
<td>.39</td>
<td>.40</td>
<td>.23</td>
<td>.46</td>
</tr>
<tr>
<td>X8</td>
<td>Rule Recognition</td>
<td>.38</td>
<td>.46</td>
<td>.31</td>
<td>.37</td>
</tr>
<tr>
<td>X9</td>
<td>Attitude to Price</td>
<td>.40</td>
<td>.68</td>
<td>.76</td>
<td>.20</td>
</tr>
<tr>
<td>X10</td>
<td>Attitude to Machine</td>
<td>.63</td>
<td>.67</td>
<td>.70</td>
<td>.61</td>
</tr>
<tr>
<td>X11</td>
<td>Attitude to Product</td>
<td>.45</td>
<td>.22</td>
<td>.26</td>
<td>.79</td>
</tr>
<tr>
<td>X12</td>
<td>Attitude to Ad</td>
<td>.26</td>
<td>.43</td>
<td>.52</td>
<td>.18</td>
</tr>
<tr>
<td>X13</td>
<td>Family Norm</td>
<td>.54</td>
<td>.91</td>
<td>.69</td>
<td>.49</td>
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<tr>
<td>X14</td>
<td>Peer Norm</td>
<td>.63</td>
<td>.32</td>
<td>.40</td>
<td>.73</td>
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<tr>
<td>X15</td>
<td>Legal Norm</td>
<td>.27</td>
<td>.29</td>
<td>.36</td>
<td>.62</td>
</tr>
<tr>
<td>X16</td>
<td>Rule Norm</td>
<td>.33</td>
<td>.36</td>
<td>.45</td>
<td>.36</td>
</tr>
<tr>
<td>X17</td>
<td>Degree of Habit Formation</td>
<td>.88</td>
<td>.79</td>
<td>.79</td>
<td>.90</td>
</tr>
<tr>
<td>X18</td>
<td>Smoking Intention</td>
<td>.65</td>
<td>.69</td>
<td>.63</td>
<td>.70</td>
</tr>
</tbody>
</table>

\[\frac{a_{1 \times \beta_1}}{a_{2 \times \beta_2}} : 1\]

| Relative Ratio | 3.8:1 | 1.1:1 | 5.0:1 | 6.7:1 | 1.9:1 |
restrictions probably, the X4 for the middle-aged to aged male and female segments, and the young female segment, as well as the X12 for the middle-aged to aged female segment were at the level of 5%, proving to be insignificant.

Now let us turn to the test result evaluation of the corollaries in the hypothesis concerning these four segments. As to corollary 1 of the hypothesis, the recognition of marketing-related information proved to contribute in forming and maintaining a positive attitude towards tobacco in all segments, as seen in the positively significant causal coefficient $\alpha_1 (0.22, 0.43, 0.89, 0.89)$, and in continuing smoking intention, as seen in the positive $\beta_1 (0.70, 0.81, 0.83, 0.44)$. As to corollary 2 of the hypothesis, the recognition of the social norms within the smoker's reference group leads to the acceptance of such social norms as personal norms in all segments, as shown in the positively significant $\alpha_2 (0.50, 0.35, 0.58, 0.74)$, and controls the continuation of smoking intention, as shown in the minus $\beta_2 (-0.27, -0.21, -0.19, -0.29)$. As to corollary 3 of the hypothesis, the forming and maintaining effects, $\alpha_1 \times \beta_1 (0.45, 0.35, 0.74, 0.39)$, that recognized marketing information has on the continuation of the smoking intention, through a positive attitude, is larger compared to the control effects, $\alpha_2 \times \beta_2 (-0.14, -0.07, -0.11, -0.21)$, that recognized social norms have on the continuation of the smoking intention, through internalized subjective norms, showing a ratio of $(1.1:1, 5.0:1, 6.7:1, 1.9:1)$, although they are almost equal for the young male segment, and confirmed the continuation of smoking intention and the actual smoking as a net effect of the forming-maintaining effect and the control effect.

9. Conclusions of the Research

In this way, it can basically be confirmed, as predicted in the basic hypothesis incorporated in the smoker's decision making model, that the continuation of the regular smoker's smoking intention and the eventual smoking will be determined by the internalization of the
tobacco-related marketing information and the information of the social norms within a reference group, based on the smoker's value standards. Also, it can be assumed that, despite a possible decrease in the number of cigarettes consumed, the regular smoker's smoking intention and the actual smoking will be maintained.

**Social Marketing Implications for the Reduction of Tobacco Consumption**

The number of samples and their analysis conducted in this research have their own limitations. However, judging from the analysis results of the decision making model of continual smoking, the following points can be suggested for a social marketing policy to reduce tobacco consumptions.

1. The seller's tobacco-related marketing activities form and maintain a regular smoker's positive attitude towards tobacco, and lead to the continuation of the smoking intention. Such maintaining effects of the seller's marketing activities are the most significant in the young female segment and the least significant in the young male segment.

2. The social norms of the regular smoker's reference group affect his or her subject norms and control the continuation of the smoking intention. Such control effects of the social norms in a reference group are the most significant in the middle-aged to aged female segment and the least significant in the middle-aged to aged male segment.

3. The effects that the seller's marketing activities have on the continuation of smoking intention is more significant than the control effects that the social norms have, through the smoker's subjective norms, on the continuation of smoking intention, and therefore, the smoking behavior will continue. The correlative ratio showing the power of such maintaining effects of the marketing activities surpassing the social norms' control effects on smoking are the most significant in the young female segment, and then middle-aged to aged male segment, middle-aged to aged female segment and young male segment in that order.
4. Therefore, in order to establish a social marketing policy effective to the reduction of tobacco consumptions, it is necessary to conduct researches concerning the effects on each segment. In the case of this research, we suggest the following policies as indicated by each observed variable's question, pointing out their effectiveness: cigarette price raising policies accompanying tax increase, reduction policies of vending machines, regulation policies on packaging information, restriction policies on advertising, smoking control demand policies from the family within the reference group, smoking control demand policies from friends and coworkers within the reference group, manner policies concerning smoking and walking, as well as littering, and separate smoking policies, all tabulated in the order of the number of Xs. In other words, concerning the attitudes leading to the continuation of smoking intention through the internalization of recognized marketing information, the effects of tobacco price raising policies accompanying tax increases, reduction policies of vending machines, restriction policies on packaging information and restriction policies on advertising are suggested for each segment, depending on the coefficient's size of the four observed variables X9, X10, X11, and X12. Meanwhile, concerning the subjective norms leading to the control of the smoking intention, through the internalization of recognized social norms, the effects of the control policies from the family, control policies from friends and coworkers, restriction policies on smoking manners and separate smoking policies are suggested for each segment, depending on the coefficient's size of the four observed variables X13, X14, X15, and X16.

5. Before examining the effectiveness of the policies on each segment, let us evaluate the policies' effectiveness on the whole of the regular smokers; as it can be observed in Table 2, if we look at the coefficients of X9 to X16, the attitude towards vending machines, X10, and the acceptance of friends and coworkers, X14, are the most effective, 0.63, while the acceptance of legal norms, X15, and the attitude towards advertising, X12, are the least effective. This indicates that the reduction of vending machines and the control from
friends and coworkers are the most effective policies in curbing smoking intentions and the actual reduction in the cigarette consumptions, while restriction policies on smoking manners and advertising are not very effective.

6. It should be noted, however, that the most effective policies for the whole of the smokers are not necessarily the most effective for each segment. For instance, the policy to reduce vending machines, X10, that has the biggest coefficient on the whole, does have a relatively big coefficient in each of the four segments too, showing a general effectiveness, but the figure isn't considerable enough in any of the segments and thus, not the most effective policy for all segments. Likewise, the control policy from friends and coworkers are the most effective only for the middle-aged to aged female segment, quite effective for young female segment, but rather ineffective for the young male segment and middle-aged to aged male segment. Meanwhile, the restriction policies on smoking manners which is regarded ineffective on the whole, is indeed very effective for the young female segment. All this holds the possibility of a result similar to that demonstrated in the Simpson's paradox.

7. To confirm that each policy's effectiveness to curb the regular smoker's continual smoking intention and the reduce tobacco consumptions will vary depending on the segment, the tobacco price raising policies accompanying tax increase, X9, are quite effective for the male segments, while not so for the female segments, and the reduction policies on vending machines, X10, are effective for all segment, as mentioned above. Restriction policies on advertising X12, are comparatively more effective for male segments rather than for female segments. The control policies from the family, as indicated in X13, is more effective for male segments, especially young male segment, than for female segments. In contrast, the control policies from friends and coworkers, X14, are ineffective for male segments while very effective for female segments. In relation to the curbing of continual smoking intentions, restriction policies on smoking manners, X15, are effective only for the young female segment, and the
separate smoking policies, X16, are not particularly effective for any of the segments; in curbing continual smoking intentions, it is more or less effective for the middle-aged to aged male segment, but barely effective for the middle-aged to aged female segment, due to their own life styles.

8. Finally, if we are to determine the policies that are effective in curbing the continual smoking intentions and the actual reduction of tobacco consumptions, the control policies from the family is the most effective for the young male segment, followed by the tobacco price raising policies due to tax increase and the reduction policies on vending machines. As to the middle-aged to aged male segment (40 to 89), the tobacco price raising policies accompanying tax increase is the most effective, with reduction policies on vending machines and control policies from the family being next with only a slight difference. As to the young female segment (20 to 39), the restriction policies on packaging information and the control policies from family and friends are the most effective, as well as the restriction policies on smoking manners and the vending machine reduction policies. Although the middle-aged to aged female segment (40 to 89), needs more consideration, the control policies from friends and coworkers are especially effective, with the vending machine reduction policies being right next.

The results of this study presents, as an approach to analyze marketing issues in general, the following suggestions:
- The analysis approach consisting of a series of steps used in this study can also be useful in specific tobacco issues.
- In order to establish policies to reduce cigarette consumptions of the regular smokers, who are likely to continue smoking, it is necessary to carry out further researches into the decision making process of smoking as a regular smoker's behavior model.
- It is important to incorporate variables related to social marketing policies into the smoker's smoking behavior model, in order to assess the significance of each policy's effects from this model.
- Since each policy's significance will vary according to the smoker segment, social marketing policies to be adopted should take into account the target subjects' personal values on various smoking situations and circumstances, or the characteristics of their internalization process based on their personalized lifestyles.

This will be an application of the basic philosophy of micro marketing and market segmentation policies, to a social policy, and lays the important principles for the macro social marketing and for a social change in the form of de-marketing that intends to change the age-old marketing system and reduce the total demand of tobacco.\footnote{This model was established taking into account Bass's Attitude Model, based on Fishbein's Behavior Intention Model, in order to attain the purpose of this}  

Notes

1) Asahi Shinbun, May 22\textsuperscript{nd}, 2003, \textit{WHO Treaty on Restrictions Adopted}.

2) From the homepage of Japan Tobacco Inc., www.jti.co.jp/JTI/Welcome.html, and Asahi Shinbun, \textit{In Wait for the Enactment of Health Promotion Law, as of March 30\textsuperscript{th}}, 2003.


7) Readers can be referred to a detailed discussion on the tobacco's cost efficiency. However, concerning the cigarette issues, it would be necessary to note that the issue may drastically change if they can develop, by way of product planning within the marketing activities, new types of cigarettes that fulfill the smokers' needs and tastes, while being safe to both smokers and nonsmokers.