

Influences of Marketing Activities on the Attitude toward Slimming Dietary Supplements

อิทธิพลของกิจกรรมทางการตลาดต่อทัศนคติในผลิตภัณฑ์เสริมอาหารกลุ่มลดน้ำหนัก

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The purposes of this study were to investigate the factors affecting the consumers' attitudes and intentions to continue to use the brand. The selected product in this study is a slimming dietary supplement, conjugated linoleic acid. The study had covered all essential marketing activities, including the confidence in the product and the company, the product attributes, the price or value for money, the channel of distribution, the company communication in term of advertising and the sales promotional programs. Study method was conducted by using the self-administered questionnaire surveying among the current users of the supplement. Data were analyzed by structural equation modeling statistical method. Findings showed that the intentions to continue to use the brands were affected by the attitudes ($\beta=0.80$) which in turn, were affected by perceived confidence ($\gamma=0.19$), perceived price or value for money ($\gamma=0.62$), and perceived promotional programs ($\gamma=0.15$). Of the 208 respondents, nearly all were female. Majorities were in the age range of 20-40 years, held bachelor degree; worked with the private sectors or owned businesses and their mean body mass index (BMI) was in the normal range (22.38 ± 3.95). Other demographic and psychographic characteristics of the samples were revealed. Conclusion and suggestion to product manager and other health personnel, limitations, and future research directions are also discussed.

Keywords : Slimming dietary supplement, marketing activities, attitude, intention.

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การศึกษานี้มีวัตถุประสงค์เพื่อทำการสำรวจอิทธิพล อันจะส่งผลต่อทัศนคติและความตั้งใจของผู้บริโภคที่จะใช้ผลิตภัณฑ์เสริมอาหารชนิดควบคุมน้ำหนักนี้ต่อไป สำหรับผลิตภัณฑ์ที่เลือกเพื่อการศึกษาในครั้งนี้เป็นผลิตภัณฑ์เสริมอาหารกลุ่มลดน้ำหนัก การศึกษานี้ได้ครอบคลุมกิจกรรมทางการตลาดที่สำคัญอันได้แก่ ความมั่นใจในสินค้าและบริษัทผู้ผลิต ลักษณะของสินค้าในด้านรูปลักษณ์ ความคุ้มค่าในด้านราคา สถานที่จัดจำหน่าย การสื่อสารของบริษัทกับผู้บริโภค และการส่งเสริมการขาย การศึกษานี้กระทำโดยใช้แบบสอบถามชนิดกรอกข้อมูลด้วยตัวเอง ในกลุ่มของผู้ใช้ผลิตภัณฑ์เสริมอาหารนี้ ทำการวิเคราะห์ข้อมูลโดยใช้สถิติ SEM (structural equation modeling) ผลการศึกษา พบว่า ความตั้งใจของผู้บริโภค ที่จะใช้ผลิตภัณฑ์เสริมอาหารชนิดควบคุมน้ำหนักนี้ต่อไปนั้นได้รับอิทธิพลมาจากทัศนคติต่อตัวผลิตภัณฑ์ ($\beta=0.80$) และทัศนคติต่อผลิตภัณฑ์นี้ได้รับอิทธิพลมาจากกิจกรรมทางการตลาด 3 ด้าน เท่านั้น คือ ความรับรู้ในเรื่องของความมั่นใจในตัวสินค้าและบริษัทผู้ผลิต ($\gamma=0.19$) ความรับรู้ในเรื่องของความคุ้มค่าในด้านราคาที่จ่ายไป ($\gamma=0.62$) และความรับรู้ในกิจกรรมส่งเสริมการขายต่าง ๆ ($\gamma=0.15$) เกือบทั้งหมดของผู้ตอบแบบสอบถาม 208 ฉบับ เป็นเพศหญิง ส่วนมากมีอายุอยู่ในช่วงของ 20-40 ปี จบปริญญาตรี ทำงานกับภาคเอกชนหรือมีธุรกิจเป็นของตนเอง ค่าเฉลี่ยของดัชนีมวลกายอยู่ในเกณฑ์ปกติ (body mass index; BMI= 22.38 ± 3.95) ผลการศึกษายังได้แสดงถึงลักษณะของประชากร และลักษณะทางด้านจิตวิทยาของกลุ่มตัวอย่างที่เก็บข้อมูล ในด้านอื่น ๆ อีกด้วย การศึกษานี้ยังได้แสดงถึงข้อจำกัดในงานชิ้นนี้ พร้อมทั้งขอแนะนำต่อผู้บริหารของผลิตภัณฑ์ และเภสัชกรที่ต้องพบกับผู้บริโภคที่สนใจจะใช้ผลิตภัณฑ์นี้โดยตรง รวมทั้งทิศทางและข้อเสนอแนะ ในการทำวิจัยที่เกี่ยวข้องต่อไป

คำสำคัญ : ผลิตภัณฑ์เสริมอาหารกลุ่มลดน้ำหนัก อิทธิพลของกิจกรรมทางการตลาด ทัศนคติ ความตั้งใจ

Introduction

Dietary supplements (DS) have become a major consumer product category in many countries around the world including Thailand. The worldwide market size estimation was US\$ 16.5 billions (660 billion baht) in 2001¹ and US\$ 60.2 billions (2400 billion baht) in 2005.² The supplement products could be categorized into many subgroups such as

by active ingredients; e.g. vitamins, minerals, phytochemicals, and others. They could also be classified by health benefit such as for the slimming and beauty, for heart health, for bone and joint health, and others. Slimming and beauty supplements are now getting more popular around the world especially among the women population. The market size of this group of supplements is estimated at 3.5 billions euros

(177.45 billion baht) worldwide and represented 9% of food supplements market while the growth rate is 15% per annum.³ The major reason for the acceptance of DS worldwide concerns with its benefits in improving consumer's general or specific health condition such as for cognitive benefits.⁴

Dietary supplement industry in Thailand is growing quite fast. The numbers of this product group registered with the Thai Food and Drug Administration (FDA) during 1996-2003 were almost 5000 formulations⁵ and reached 7362 items by November 2005.⁶ The turnover of the industry could be estimated at more than ten billion baht per annum and is backing up with significant growths for many consecutive years.^{7,8} DS products comprise of vitamins and minerals and other food supplements. Nevertheless, the biggest contributor of this substantial growth in Thailand is the slimming and beauty supplements subgroups. The products cover various ingredients indirectly claimed for this slimming and beauty purposes such as conjugated linoleic acid (CLA) which is well supported by scientific evidences on slimming effect.^{9,10} Green tea extract and antioxidant vitamins such as vitamin C and E and other antioxidants such as coenzyme Q10 and others.

To promote general health of consumers through DS by relevant health personnel especially for those who work closely to the consumer including hospital and community pharmacists, it is important to understand what

factors affect the attitude and behavior toward DS.

It is generally accepted that the marketing effort by companies selling DS plays an important role in increasing the consumer's acceptance of DS. Marketing activities, comprising of the four Ps of marketing mix concept¹¹ i.e. product, price, place (distribution), and promotion (communication) have been claimed to contribute to this market growth. The examples of these activities are the advertisement and distribution channel. The advertisement spending in 2002 for vitamins and slimming supplements was recorded at 370 million baht⁵ covering various types of media such as TVs, radios, newspapers, magazine, and others. This substantial spending signified the high potential and competition of the industry. The channel of distributions have been changed to accommodate the consumer trend that the health food and modern chain drug stores are now getting more popular among Thai consumers.

Slimming DS are of high interest since they are registered with Thai FDA as foods items, therefore, all types of marketing activities could be implemented. Besides, there are many groups of products available for consumers to choose but indications are based on the same direction, the slimming purpose. The recently scientific back up for the products such as CLA and EGCG (epigallocatechin gallate) for weight controlling purpose is enhancing the growth of this supplement group. And CLA, in particular,

is well backed up with sciences as well as the popularity as the top ten products for weight controlling purpose.¹²

Slimming DS products are gaining popularity among Thai consumer. Marketing activities that are implemented toward the consumers should have a high impact to this consumption and popularity. The influences of marketing mix will affect the attitude toward the products for the consumers. This attitude toward the products will then influence the consumer further on the behavioral intention such as to continue to use or to consider using the products in the future. The knowledge of the influences of these marketing activities on the health product like slimming dietary supplement is then worth studying since the local available study is still limited. However, since there are many slimming DS available in Thai market and to recruit all items into the study might need high resources and time spending, so, we have scoped down to one product only. The researchers have selected the conjugated linoleic acid from the reasons described next.

The reasons why the researchers selected CLA as the product for this study

1. Among many weight management DS, CLA is one of a few that is well backed up by scientific data^{9,10}.

2. Market value of CLA is substantial worldwide and the growth rate on consumption is on the rise.¹³ This is also the case happened in Thailand.

3. Although there are so many weight management DS in Thailand, CLA is still considered as the high ranking product in term of popularity¹².

4. Thai local company who commands the largest portion of CLA sales was interested to give the cooperation to the study. They considered that the study detail would enable them to understand Thai consumer better.¹⁴

5. From the fact that this local company is the largest player for CLA business, therefore, their user data base is substantial and will be workable for the study.

Objective

The objectives of this study were to explore the role of the company's marketing programs on consumers' attitudes toward the slimming dietary supplements and intention to continue to use the products. Specifically, the role of marketing mix on the consumer's attitude toward the slimming dietary supplements and intention to continue to use the products will be focused and empirically explored.

Conceptual Framework

The conceptual model of influences of marketing activities on the attitude toward the slimming dietary supplements and intention to continue to use the products had been developed for this study. The main components in the model are based on the tricomponent attitude model^{15,16} together with the concept of marketing

management, focus on marketing mix¹⁷ concept. These two models together provide a suitable framework for conceptualizing such behavior. The conceptual model used to investigate factors affecting consumers' intentions to continue to use the weight management DS in this study conjugated linoleic acid is derived from the contemporary view of this tricomponent attitude model.

From a consumer behavior perspective, attitude was defined as a learned predisposition to behave in a consistently favorable or unfavorable way with respect to a given object^{15,16,18}. Attitude had traditionally been viewed as consisting of three components: cognitive, affective, and conative. A person's knowledge and beliefs (or perceptions) about some attitude object reside within the cognitive component. The affective component represents a person's feelings about the attitude object. The conative component refers to the person's actions or behavioral tendencies toward the attitude object.

The more contemporary view of attitude is reflected in Figure 1. From this perspective, attitude is viewed as distinct from its components,, with each component being related to attitude. Both the cognitive component (beliefs/perceptions) and the affective component (feelings) are conceptualized as determinants of attitude. In other words, a person's overall evaluation (attitude) of an attitude object is seen as being determined by the person's beliefs and/or

feelings about the attitude.^{15,16} For some products, attitude will depend primarily on belief or perceptions. For other products, however, feelings may be the primary determinants of attitude. It is also possible for both beliefs and feelings to influence attitudes. From the preliminary study, the slimming DS fits nicely into the situation where consumers use their beliefs/perceptions rather than their feelings about the product to form their attitudes toward the products. As such, only beliefs/perceptions about the brand are included in the conceptual model in the study.

"Attitude is a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object" is the definition given by Ajzen and Fishbein.¹⁹ Attitude is influenced by beliefs (or perceptions) and affect concerning the object. Attitude is a mental construct which could be studied by observing verbal responses and behavior in relation to the object. According to Ajzen and Fishbein¹⁹ and Batra and Olli¹⁵, attitudes are the determinants of behavioral intention. As such, it is hypothesized in this study that attitude toward the slimming DS had a direct positive effect on behavioral intention to continue to use the slimming DS.

Marketing Activities. Marketing management concept is generally accepted and being implemented worldwide. Most of the modern organizations, including private or public sectors, nongovernment organization (NGO) or non-NGO are adopting the marketing management

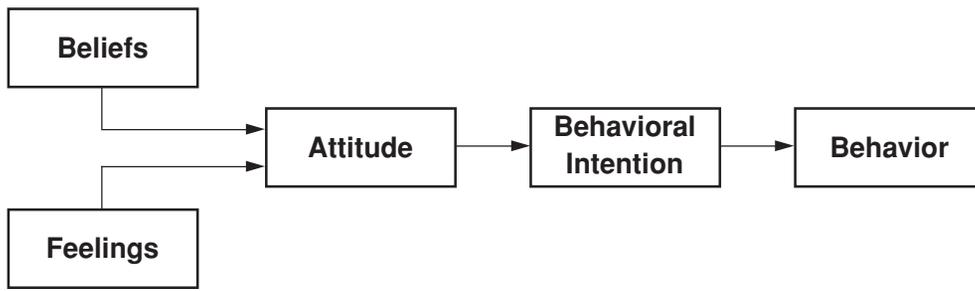


Figure 1. Contemporary view of the relationships among beliefs, feelings, attitude, behavioral intention and behavior.

concept to their day to day operation. The marketing program or activities are implemented so to achieve company's desired objectives. The marketing program consists of numerous decisions on the mix of marketing tools to use as suggested by Kotler¹⁷. The marketing mix is the set of marketing tools the firm uses to pursue its marketing objectives in the target market. McCarthy¹¹ classified these tools into four groups that he called the four Ps of marketing i.e. product (which could be sub-grouped into the confidence in product and company and the extrinsic attributes such as packaging), price (or value for money), place (distribution channel), and promotion (which could be sub-grouped again into company communication and advertising). Marketing mix decisions must be made for influencing the trade channels as well as the attitude of final consumers.

When we specify this marketing mix concept together with the tricomponent model to DS consumption, we can identify the concepts and their constructs as shown in Figure 2.

Hypothesis

Based on the conceptual framework, attitude is determined by the influences of marketing activities, therefore, it is hypothesized in the study that:

H1: There is a positive relationship between perceived product quality and attitude toward the brand.

H2: There is a positive relationship between perceived value for money and attitude toward the brand.

H3: There is a positive relationship between perceived convenience in accessibility and attitude toward the brand.

H4: There is a positive relationship between perceived effectiveness of advertising and attitude toward the brand.

H5: There is a positive relationship between perceived effectiveness of sales promotion and attitude toward the brand.

As well, behavioral intention is determined by attitude, therefore, it is hypothesized in the study that:

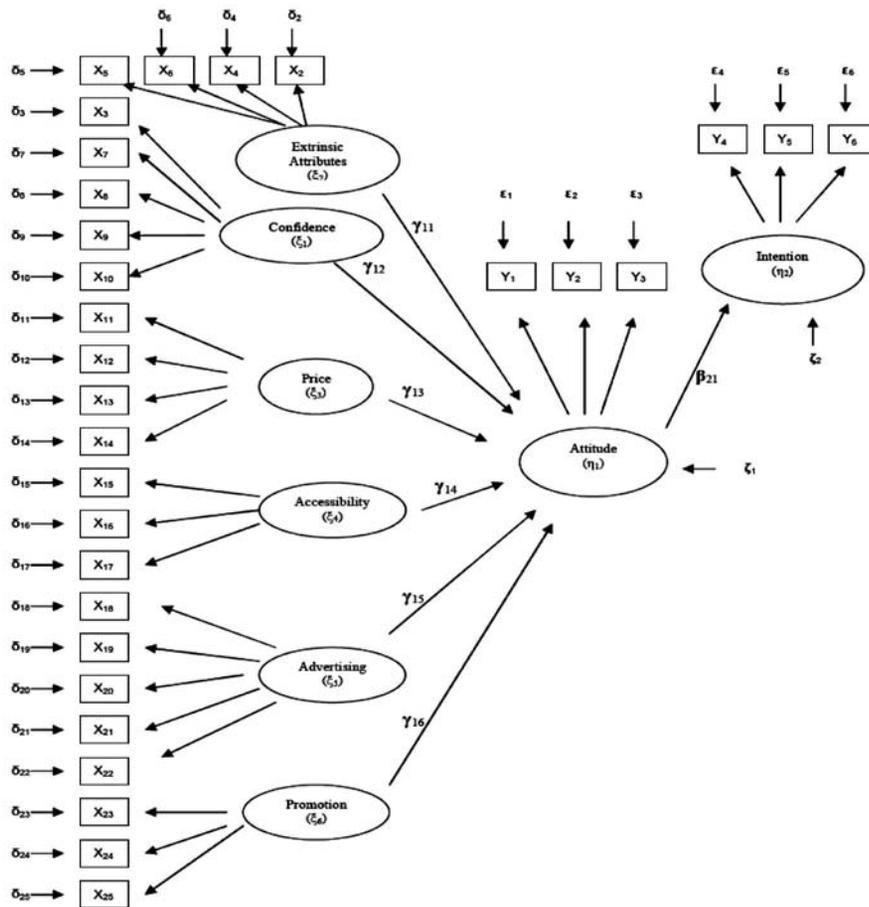


Figure 2. The conceptual model of factors affecting intention to continue to use the brand

H6: There is a positive relationship between attitude toward the brand and intention to continue to use the brand.

Method

1. Questionnaire Design and Development. We have started the questionnaire design by conducted the focus group qualitative research so to get the first hand information on product awareness, the consumption and buying behaviors, the impact of marketing activities toward the awareness and decision making process. From the result, the research-

ers can then operationalize the constructs and creating the item statements for each variable. The researchers have reviewed and assessed the content validity by the experts and then conducted the pilot scale testing with 30 current users. Then, the researchers have reviewed the questionnaire again and got the 8 constructs in the conceptual model and 31 questionnaire items were then generated. The questionnaire comprised of the covering letter and 3 sections as follows:

Section I: Knowledge, understanding, general information, consumption, expenses

used, other weight controlling measures employed, other types of DS used, place to buy, media exposure, promotion exposure, and influential people.

Section II: Perception on these 8 variables in 31 questions.

Section III: Demographic data i.e. gender, age, education, marital status, lover status, occupation, monthly income, family monthly income, height and weight.

The researchers have reviewed this questionnaire with the experts in the field and the actual users of the product so to check the understanding of the same meaning, clarity of the questionnaire and easiness for the completion. The researchers did send out 50 mails and used the SPSS statistical program to check the reliability i.e. Cronbach's alpha. After this, the researchers have reviewed the questionnaire again for better result expectation i.e. response rate, completion, and reliability.

2. Sample and Sampling Procedure.

The samples were selected from the company customer database, the current users of conjugated linoleic acid. This data base, as the sampling frame, was used twice i.e. for pilot scale testing and the final survey work, however, the set of names randomly selected were different. The researchers selected the names out by systemic random (1 out of every 25), then the marketing service staff of the company phoned the selected candidates in person, explained the concept of this research work and asked

for their consents to response to the questionnaire. After we got the consents to answer the questionnaire the researchers then sent it out to these users. For the main study, the researchers did send 400 mails out to these agreed to response samples. However, the researchers received 208 questionnaires back only within 38 days. The response rate, therefore, was 52 percent.

3. Data Analysis Data were analyzed using the statistical package for the social sciences (SPSS) version 10.0, Preliis and Lisrel programs (version 8.54), as the following:

3.1 Descriptive statistics. Such as the frequency table, mean, standard deviation and percentage were used to describe socio-demographic data of the respondents.

3.2 To test the hypothesized relationships among the constructs specified in the conceptual model, a structural equation modeling approach was employed. This approach was selected because a structural equation model or SEM could be used to specify and test the phenomenon under study in terms of hypothesized cause-and-effect constructs and their indicators.²⁰⁻²³

Result and Discussion

1. Demographic Data of the Respondent.

Demographic data of the respondents were shown in Table 1. Nearly all of the respondents were female as compared to male i.e. 206 against 2 or 99 percent against 1 percent. This dominance of gender for this particular product

Table 1. Demographic data of the respondents (categorical data)

Demographic Characteristics	Frequency	Valid Percent
Gender		
Male	2	1.0
Female	206	99.0
Age range (20-59)		
20-29	65	32.2
30-39	77	38.1
40-49	48	23.8
50-59	12	5.9
Education		
< Bachelor	51	25.0
Bachelor	133	65.2
Master	19	9.3
Doctorate	1	0.5
Occupation		
House wife	32	15.6
Student	17	8.3
Company staff	75	36.6
Privately owned business	54	26.3
Government / state enterprise officer	23	11.2
Others	4	2.0

usage was similar to other studies i.e. Duangtim et al²⁴; Sakunsonkdat²⁵ which indicated that majority of the weight controlling DS were more likely to be female and held bachelor degree. The education of the respondents were below bachelor at 51 (25.0 percent), bachelor at 133 (65.2 percent), master at 19 (9.3 percent), and just one doctorate level or 0.5 percent, which again seconded the findings of Duangtim et al²⁴ and Sakunsonkda²⁵. The researchers had categorized the age distribution into 4 groups i.e. 20-29, 30-39, 40-49, and 50-59

years of age and found out that the majority were with the first two categories at 32.2 percent and 38.1 percent respectively. The prevalence of age levels could be from the reasons of need to have a better shape is mostly confined to the younger consumers than that of the mature and the reasons why the researchers had no data base on below 20 might be from; again, the need is less for teenagers who are more physically active with slender shape. The other reason is that DS is an expensive product, therefore, likely that the consumers must acquire their own incomes so to allocate the money to buy.

For occupation, majority of the samples were working as the private company staff (75 or 36.6 percent), privately owned business (54 or 26.3 percent), and the third group were house wife (32 or 15.6 percent). Much lesser were the government/state enterprise officer (23 or 11.2 percent) and the student (17 or 8.3 percent).

The average income was in the range of a bit over 20,000 baht. The average BMI was 22.38 ± 3.95 . These profiles were tally with the previous studies of Duangtim et al²⁴ and Sakunsonkdat²⁵. (Table 2, 3)

The average amounts of CLA capsules taken were confined mainly to 2-3 capsules/day and their average monthly expense for the product was nearly 1500 baht/month. The other weight controlling methods they mostly employed were also similar to Duangtim

Table 2. Income distribution (baht)

	Min	Max	Mean	SD
Self salary	2000	70000	20498	13920
Family income	6800	250000	58035	44235

Note: Min = minimum, Max = maximum, SD = standard deviation

Table 3. age, height, weight, and body mass index (BMI)

	Min	Max	Mean	SD
Age	20	59	34.96	8.96
Height	142.00	174.00	159.39	5.84
Weight	40.00	99.00	56.88	10.81
BMI	16.30	34.66	22.38	3.95

Note: Min = minimum, Max = maximum, SD = standard deviation

et al²⁴ study i.e. diet control and exercise. These group of CLA users also consumed other DS including vitamins, other weight controlling DS and skin health/beauty DS although the prevalence didn't go beyond 50 percent. For advertising media, TV, and magazine were the media most mentioned. When the researchers took a look on promotional campaign, and found out that all kinds of offering were well accepted by the users including discount, duo or trio packs, free CLA or other items as a gift, lucky draw or even the mailing back of the leaflet inside for free gift. The last investigation was on the influential people for decision making, in this regard, we just observed that pharmacist ranked as the first, followed by friends, product consultant at the shelf and doctors.

2. Structural Equation Modeling (SEM)

Statistical Analysis. In the following sections, the SEM results of the conceptual model were firstly discussed. The modified conceptual model was then proposed and tested. For SEM

results, the discussion of the results of the SEM was proceeded in two stages. First, the researchers examined the measurement model and then followed by the discussion of structural model results. For measurement model results, the measurement model specifies how the latent variables or hypothetical constructs are measured in terms of the observed variables, and it describes the measurement properties (validities and reliabilities) of the observed variables. A good measurement model should have high and statistically significant indicator coefficients (λ^x s and λ^y s), high reliabilities (i.e. high Cronbach's alpha), and high validities including the convergent and discriminant validities (i.e. high proportion-of-variance-extracted indices). The researchers had then started to check the full model (Model I) which comprised of all constructs, followed by the modified models (Model II) which were the reduced forms of the full model and the results were discussed next. In the following sections,

the SEM results of the conceptual model were firstly discussed. The modified conceptual model was then proposed and tested.

2.1. Measurement Model I Results.

The indicator coefficients (i.e. standardized factor loadings), reliabilities, and proportion-of variance-extracted indices of the constructs in the measurement are shown in Table 4. The indicator coefficients were generally high and statistically significant. Reliability levels of the constructs were moderately high to high (ranging from 0.7351 to 0.9496). All of them exceeded 0.7, the threshold recommended by Nunnally.²⁶ The more conservative proportion-of-variance-extracted indices, Fornell and Larcker,²⁷ which indicated the amount of variance captured by a construct in relation to the amount of variance due to measurement error, demonstrated that all of the constructs had moderate to high convergent validities (ranging from 0.5360 to 0.8767). Therefore, all of the indices exceeded the minimal standard of 0.50, which indicates that the variance captured by the construct exceeds the variance due to measurement error. The researchers then moved to investigate the discriminating validity measurement by checking the proportion-of-variance-extracted and the correlation matrix of the latent variables. We found out that all of the constructs were not highly correlated (<0.50). For a good measurement model, the square of the correlation between any pair of the constructs/latent variables must be lower than the proportion-of variance-extracted

index of these two variables which was true for this case.

Since the entire indicator coefficients were high and statistically significant and the reliabilities (Cronbach's alpha) and construct validities (both convergent and discriminant) of all the constructs exceeded the minimal standards required, no negative value of error variance and low number (<30) of iterations (12 iterations in Model I), it was reasonable to conclude that the measurement model was acceptable. The researchers then moved to the structural equation model testing.

2.2 Structural Model I Results.

The structural model specifies the causal relations among the latent variables and describes the causal effects and the amount of unexplained variance. An initial matter, however, is whether or not the maximum likelihood estimate for the structural equation model provides a satisfactory fit to the data. The chi-square value (see Table 4B) indicated that the model did not adequately account of the relationship between the observed sample covariance and the hypothetical population covariance ($\chi^2_{187} = 315.60, p=0.00$). Since it is generally agreed that the chi-square test should be used as a guide rather than an absolute index of fit, other diagnostics need to be examined.^{20,27,28} Apart from an absolute fit index such as Joreskog and Sorbom's "relative fit index (RFI)", incremental fit indices such as Bentler and Bonett's "normal fit index (NFI)", Bentler's "comparative fit index (CFI)", and

Bollen's "incremental fit index (IFI)"; which are fit indices measuring how much better the model fits as compared to a baseline model (in this case, an independence model), are particularly useful in determining the overall model fit.²⁹⁻³¹

The NFI, CFI, and IFI for the model were calculated based on the chi-square value of the independence model with 231 degrees of freedom ($\chi^2_{231} = 5642.64$, $p=0.00$). Results (see Table 4B) showed that the RFI, NFI, CFI, and IFI were 0.93, 0.94, 0.98, and 0.98 respectively. According to Joreskog and Sorbom's, Bentler and Bonett's, Bentler's, and Bollen's heuristics; model fits of less than 90 percent are inadequate.²⁹⁻³¹ As such, the structural model was adequately fit based on these indices.

Since the model fit could be considered adequate, the researchers turned to the structural parameter estimates. It was hypothesized that the conjugated linoleic acid brand users' intention to continue to use the brand (H_6) is positively influenced by their attitudes toward the brand, which is, in turn, positively affected by perceived product quality (or product attributes/confidence) (H_1), perceived price (or value for money) (H_2), perceived convenience in accessibility (H_3), perceived effectiveness of advertising (H_4), and perceived effectiveness of sales promotion (H_5).

Results (see Table 4B) showed that attitude toward the brand was a significant determinant of intention to continue to use the brand as hypothesized ($\beta_{21} = 0.80$; $p < 0.01$, one tailed). The proportion of variance explained,

or R^2 of the function was 0.63. For attitude toward the brand, results showed that only perceived confidence ($\gamma_{11} = 0.19$; $p < 0.01$, one tailed), perceived price or value for money ($\gamma_{13} = 0.60$; $p < 0.01$, one tailed), and perceived sales promotion ($\gamma_{16} = 0.12$; $p < 0.01$, one tailed) were significant determinants of attitude toward the brand as hypothesized. Perceived extrinsic factor ($\gamma_{12} = 0.11$; $p > 0.05$, one tailed), perceived convenience in accessibility ($\gamma_{14} = -0.06$; $p > 0.05$, one tailed), and perceived advertising ($\gamma_{15} = -0.00$; $p > 0.05$, one tailed); on the other hand, did not appear to be related to attitude toward the brand. The proportion of variance explained, or R^2 of the function, was 0.64.

2.3 The Modified Model (Model II).

Based on the above results, the conceptual model was modified to see whether improvement in terms of model fit could be achieved. In the modified model (Model II), the insignificant independent constructs (i.e. perceived extrinsic factor or packaging, perceived convenience in accessibility, and perceived advertising) were deleted from the model. According to the modified model, intention to continue to use the brand was determined by attitude toward the brand which was, in turn, affected by perceived confidence, perceived price or value for money, and perceived promotion. Table 5 showed the measurement model and the structural model results of the modified model for the conjugated linoleic acid brand users.

From Table 4 and Table 5, it was clear

Table 4. Measurement and structural model results (model I)

A. Measurement Model Results Constructs and Indicators	Standardized Factor Loading	Reliability	Proportion of Variance Extracted
Perceived confidence (ξ_1)		0.7351	0.6350
Q ₉ ("long establishment")	0.87 ^a	0.76	
Q ₁₀ ("number one in the market")	0.71 ^b	0.51	
Perceived extrinsic attributes (ξ_2)		0.7518	0.5700
Q ₅ ("attractive packaging")	0.79 ^a	0.63	
Q ₆ ("good packaging")	0.72 ^b	0.51	
Perceived price (ξ_3)		0.8329	0.7400
P ₃ ("good value for money")	0.82 ^a	0.68	
P ₄ ("compare to result")	0.90 ^b	0.80	
Perceived accessibility (ξ_3)		0.9226	0.7933
D ₁ ("easy to find")	0.84 ^a	0.71	
D ₂ ("widely distributed")	0.91 ^b	0.82	
D ₃ ("substantial outlet")	0.92 ^b	0.85	
Perceived communication (ξ_5)		0.8317	0.5360
AD ₁ ("attractive AD")	0.70 ^a	0.49	
AD ₂ ("high frequency AD")	0.79 ^b	0.63	
AD ₃ ("regularly exposed AD")	0.79 ^b	0.62	
AD ₅ ("easy to remember AD")	0.72 ^b	0.51	
Perceived promotion (ξ_6)		0.8904	0.7233
SP ₁ ("attractive promotion")	0.86 ^a	0.74	
SP ₂ ("various types promotion")	0.88 ^b	0.78	
SP ₃ ("suit requirement")	0.81 ^b	0.65	
Attitude toward the brand (ξ_1)		0.9187	0.7866
Y ₁ ("positive attitude")	0.89 ^a	0.80	
Y ₂ ("good attitude")	0.90 ^b	0.80	
Y ₃ ("favorable attitude")	0.87 ^b	0.76	
Intention toward the brand (ξ_2)		0.9496	0.8767
Y ₄ ("continue to use")	0.89 ^a	0.80	
Y ₅ ("continue to buy")	0.94 ^b	0.89	
Y ₆ ("buy in the future")	0.97 ^b	0.94	
Dependent Constructs			
B. Structural Model Results		Attitude toward the Brand (η_1)	Intention toward the Brand (η_2)
Independent Constructs			
Perceived confidence (ξ_1)		0.19	
Perceived extrinsic attributes (ξ_2)		0.11	
Perceived price (ξ_3)		0.60	
Perceived accessibility (ξ_4)		-0.06	
Perceived communication (ξ_5)		-0.00	
Perceived promotion (ξ_6)		0.12	
Attitude toward the brand (η_1)			0.80
Proportion of variance explained (R^2)		0.64	0.63
Fit statistics:			
Chi-square		315.60	
Degree of freedom		187	
Probability		P<0.001	
RFI ^c		0.93	
NFI ^d		0.94	
CFI ^e		0.981	
IFI ^f		0.98	

^a Fixed at 1.00, ^b p<0.001, one tailed, ^c Joreskog and Sorbom's (1989) "Relative Fit Index"^d Bentler and Nonett's (1980) "Normal Fit Index", ^e Bentler's (1990) "Comparative Fit Index"^f Bollen's (1989) "Incremental Fit Index"

Table 5. Measurement and structural model results (Model II)

A. Measurement Model Results		Standardized	Proportion of Variance	
Constructs and Indicators		Factor Loading	Reliability	Extracted
Perceived confidence (ξ_1)			0.8162	0.6400
	Q ₉ (“long establishment”)	0.91 ^a	0.82	
	Q ₁₀ (“number one in the market”)	0.68 ^b	0.46	
Perceived price (ξ_3)			0.8605	0.7400
	P ₃ (“good value for money”)	0.82 ^b	0.67	
	P ₄ (“compare to result”)	0.90 ^b	0.81	
Perceived promotion (ξ_8)			0.8904	0.7233
	SP ₁ (“attractive promotion”)	0.86 ^a	0.73	
	SP ₂ (“various types promotion”)	0.88 ^b	0.78	
	SP ₃ (“suit requirement”)	0.81 ^b	0.66	
Attitude toward the brand (η_1)			0.9187	0.7866
	Y ₁ (“positive attitude”)	0.90 ^a	0.80	
	Y ₂ (“good attitude”)	0.90 ^b	0.81	
	Y ₃ (“favorable attitude”)	0.87 ^b	0.76	
A. Measurement Model Results		Standardized	Proportion of Variance	
Constructs and Indicators		Factor Loading	Reliability	Extracted
Intention toward the brand (η_2)			0.9496	0.8767
	Y ₄ (“continue to use”)	0.89 ^a	0.80	
	Y ₅ (“continue to buy”)	0.94 ^b	0.89	
	Y ₆ (“buy in the future”)	0.97 ^b	0.94	
B. Structural Model Results		Dependent Constructs		
Independent Constructs		Attitude toward the Brand (η_1)	Intention toward the Brand (η_2)	
Perceived confidence (ξ_1)			0.19	
Perceived price (ξ_3)			0.62	
Perceived promotion (ξ_8)			0.15	
Attitude toward the brand (η_1)				0.80
Proportion of variance explained (R^2)			0.63	0.64
Fit statistics:				
	Chi-square	129.59		
	Degree of freedom	58		
	Probability	P<0.001		
	RFI ^c	0.95		
	NFI ^d	0.97		
	CFI ^e	0.98		
	IFI ^f	0.98		

^a Fixed at 1.00, ^b p<0.001, 1 tailed, ^c Joreskog and Sorbom’s (1989) “Relative Fit Index”

^d Bentler and Nonett’s (1980) “Normal Fit Index”, ^e Bentler ‘s (1990) “Comparative Fit Index”

^f Bollen’s (1989) “Incremental Fit Index”

that the measurement models of the modified models were essentially the same as those of the full models. For the structural model results, the chi-square values of the modified model (Model II), was significantly improved over model I ($\chi^2_{2\text{diff} = 187-58} = 315.60 - 129.59; p < 0.001$), indicates that the fit of the modified model was adequate.

Besides, the modified model was then simpler than Model I since it could explain the overall model with less complicated (parsimonized).

Examination of RFI, NFI, CFI, and IFI, as well, showed that modified model was adequately fit according to the heuristics of 0.90. In terms of model fit, it could be conclude that the modified model (Model II) was superior to Model I.

In term of causal relations, it was found that attitude toward the brand was the significant determinant of intention to continue to use the brand for conjugated linoleic acid users. Attitude toward the brand was positively affected by perceived confidence and perceived price or value for money and perceived sales promotion.

Conclusion

This study represented an attempt to understand factors affecting the intention to continue to use the brand, which, in this regard, is the weight controlling DS (conjugated linoleic acid). Specified down on the factors, the

study had examined the influences of marketing on the attitude toward this particular supplement. Besides, the profile of the current users was also explored for further understanding.

The researchers could then conclude that, in term of causal relations, it was found that attitude toward the brand was the significant determinant of intention to continue to use the brand for conjugated linoleic acid users. Attitude toward the brand was positively affected by perceived confidence, perceived price or value for money, and perceived sales promotion.

Therefore, for health personnel who work closely with the patients or consumers such as the hospitals and community pharmacies, they should then have the background to understand the motive behind the consumption of slimming DS together with the proper way to provide the advise so the maximum benefit of the consumer is well preserved.

Limitations and Research Directions

This study has provides certain relevant information of the profile and behavior of the current users of one of the most popular weight controlling DS, but, the study, itself contained many limitations. And so to address these limitations effectively, we have as well suggest some research directions so to get a better understanding in the future endeavor, as follows:

1. The study is necessarily limited in generalizability. The data in this study were

obtained from the users of just one product of weight controlling DS although there are more than 50 different brands of similar purposed products available in the market in Thailand. Besides, our samples were the current users of the product only. Therefore, the results of this study are exploratory and preliminary in nature and should be used with great care. The replication of this kind of study but in a wider scope such as more weight controlling DS items and different group of users as the samples should be recruited. Moreover, to conduct the studies in the regional area (Asia Pacific) or cross cultural (overseas) might be

of great value and is essential in validation and generalization of the finding.

2. Since the study is a cross sectional study, the most important limitation is the exclusion of the assessment of the actual purchasing behavior. It would be useful to explore more on the relationship between the intention and the actual behavior in future works.

3. Demographic variables might be the confounding factors or effect modification of influencing factors. As well, there might be interactions between the influencing factors themselves. These two points should be further explored for better understanding.

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