Full Length Research Paper

The effects of service quality and lifestyle on consumer choice of channel types: The health food industry as an example

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Nowadays, many people have to live a bustling life, more and more of them choose to eat out and eat fast food. The health food industry is developing in a rapid pace. All kinds of marketing channels are dedicated to the sale of health foods, resulting from a significant reform of the structure of the health food marketing channels. As competitions are intense and multiple channels are available for consumers, how to identify the factors affecting consumers' choice of the health food channels is an imperative issue for health food providers. This study focuses on consumers of health foods in Taiwan as a research subject. The questionnaire survey is executed by the sampling method. The collected data was analyzed by using statistical methods such as correlation analysis. The research findings indicate: (1) Service quality has a significant and positive relationship with choice of channel types; (2) Satisfaction of service quality in the aspects of personnel interaction and problem solving significantly influences consumer's choice of channel types; (3) Both price and leisure factors of lifestyle significantly affect consumer's choice of channel types; and (4) Some demographic variables may significantly influence consumer's choice of channel types and perception of service quality.

Key words: Service quality, lifestyle, choice of channel type, health food industry.

INTRODUCTION

With the improvement of general living environment and living standard around the globe in recent years, people have attached more importance to health. Modern people live a hectic life. More and more of them choose to eat out especially when they are busy at work, they usually neglect the balance in diet. The average expenditure of household on food away from home is about NT$ 238,000 (US$ 7,437.5) each year according to the statistics of Directorate General of Budget, Accounting and Statistics, Executive Yuan in Taiwan (2008). In pursuit of a healthy body, they may take health foods to supplement the nutrients deficient in their diet. This has become a diet supplementary model widely accepted by consumers in nowadays. The trend of taking supplementary health foods has emerged. No matter

people take health foods for prevention and cure of disease or for a healthier body, they have been very much affected by health foods in their daily life and dietary habits (Lu and Hsu, 2006). In recent years, pharmaceutical and cosmetic channels have increased rapidly, causing the shrinkage of direct selling/marketing channels. The gradual rise of wholesale stores, convenient stores, online shopping and mail orders has also facilitated the diversified development of health foods channels and caused a large structural change of the existing sales channels (Lin, 2003).

Due to the fast development of information, consumers' lifestyles have changed drastically. Consumers' lifestyles are closely associated with their behaviors (Huang, 1999). Therefore, consumers' lifestyles are focuses of enterprises. Through the research of consumers' lifestyles, enterprises expect to get hold of their demands and develop products from their perspectives. Moreover, they can also forecast consumers' behavioral models and product preferences to ultimately win more customers in

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their competitive markets (Hawkins et al., 1992). With the rise of consumer awareness, service quality has been extensively discussed and stressed in both the academic and commercial arenas. Because more importance has been attached to service quality, providing better service quality is now a basic element for enterprises to build a good relationship with their consumers. As enterprises seek to enhance their competitiveness by providing better service quality, how to enhance service quality to attract or retain customers has become one of the most important issues (Parasuraman et al., 1988, 1996; Chuang, 1998; Lin, 2002).

In the present, the health food industry is under rapid development, but the marketing channels of this industry are seldom studied because the health food industry is regarded as a start-up business in Taiwan. The research motivation arises from the lack of related studies and the rapid development of the potential market of the health food industry, which has to focus on the importance of service quality, lifestyles, and channels when the economic environment is in face of a drastic change of channel structure of this industry and increase of channel options for consumers.

The main objective of this research is to explore and analyze the effects of service quality and lifestyle on consumers' choice of health food sales channels. In this research, we expect to first identify key factors affecting consumers' choice of channels in the purchase of health foods and provide a basis of decision making for health food manufacturers to select a proper channel to increase their market share and profits. To sum up, this study has the following objectives: (1) Explore the relationships between both service quality and consumers' choice of channel types, and both lifestyles and consumers' choice of channel types; (2) Explore the effects of service quality and lifestyles on consumers' choice of channel types; (3) Analyze the difference among various types of consumers in their choice of channel type and perception of service quality; (4) Based on the research findings, provide a reference for health food manufacturers and suppliers to help them select a proper sales channel.

LITERATURE REVIEW

Health foods

Cheng (1996) defined that "health foods", in a broad sense, are "foods with a specific health-maintaining function, suitable for specific user groups, capable of regulating the biological body, but not taken for the purpose of curing diseases." According to Lu and Hsu (2006), "health foods" refer to foods containing specific components and capable of regulating the physiological functions or maintaining the well-being of human bodies. Hence, in addition to products certified as health foods by

Department of Health (DOH), "functional foods" with specific functions, "dietary and supplementary foods" that supplement nutrients, "health-supporting foods" that supply nutrients and help maintain well-being and "special nutritious foods" that satisfy specific physiological demands can all be viewed as health foods. Therefore, "health foods" can offer the natural functions of foods, including regulating human physiology, maintaining human health, and facilitating recovery of physical functions.

Service quality

Parasuraman et al. (1985) conducted in-depth interviews with managerial staffs in five service industries, including retail banking, appliance repair, long-distance telephone service, securities brokerage, and credit card companies, respectively, and later developed a "Model of Service Quality Gap", commonly called "PZB Gap Model".

Parasuraman et al. (1988) later empirically verified the original ten dimensions to develop a multiple-item scale called "SERVQUAL" for measuring the five dimensions of service quality (tangibles, assurance, responsiveness, reliability, and empathy) and the 22 statements.

In the present, SERVQUAL is one of the most commonly used measures of service quality. However, many scholars have cast doubt on its applicability and validity when it is applied to the retail industry, saying that it cannot be extensively applied across a variety of service industries. Therefore, Dabholkar et al. (1996) proposed a hierarchical model (DTR) of service quality for the retail industry and defined retail service quality as composed of multiple levels and multiple dimensions. They divided retail service quality into three levels. The first level is consumer perception and judgment of the overall service quality.

The second level consists of five dimensions, including physical aspects, reliability, personal interaction, problem-solving, and policy. The third level is the sub-dimensional level, which mainly presents the multi-dimensionality of service quality, because three of the five main dimensions also contain two sub-dimensions. For instance, the physical aspects have two sub-dimensions, including convenience and appearance; Reliability includes correctness and commitment; and personal interaction involves confidence and courtesy/help. In the empirical research of this model, they integrated quail-tative and empirical research methods to analyze the collected results.

Through observation and in-depth inter-views, they recorded consumer activities in an attempt to identify key factors affecting consumer evaluation of retail service quality. Finally, based on the 17 items selected from SERVQUAL, 11 new items applicable to the retail Industry were added to develop a scale comprising 28 items, called Retail Service Quality Scale (RSQS). Yuksel et al. (2003) discussed the lodging service quality on the

island of Crete by making use of the modified SERVQUAL to provide to British authorities that the intangible service qualities are more important than the tangible from viewpoints of the customers. Yeh et al. (2007) explored that the Taiwanese semiconductor Industry implements effectively enterprise resource planning (ERP) to improve service quality by evaluating expected and perceived service quality for both upstream manufacturers and downstream customers through questionnaire survey. Hsieh et al. (2008) applied analysis network process (ANP) to study expected service quality for customers in hot spring hotels in Taiwan. Nakhai and Neves (2009) found that service quality is more difficult for the customer to assess than product quality; the measure of service quality perceptions is to compare customer expectations to real service performance; and the assessment of service quality are not found only on the results of a service but also include the delivery process assessment of the service from three decades of service quality research. Chuang (2010) thought that perceptions of service quality can be assessed and regarded as the measurement of differences between perceptions and expectations of the customers related to the specific service that the service enterprise offers.

Lifestyle

Lifestyle was first defined by Lazer (1963) as "a systematic concept representing the living characteristics of a certain society or group of people, which also differ from those of other societies and groups of people." Kotler (2000, 2003) defined lifestyle as the way one lives his life, which is, in other words, how one presents himself in his interests, activities, and opinions.

In recent years, the AIO variables (Activities, Interests, and Opinions) introduced by Plummer (1974) have been frequently applied to measure lifestyle, along with an additional demographic variable. Plummer mentioned that in the measurement of lifestyle, consumer is viewed as a whole entity that cannot be presented with fragmented data, but the sub-dimensions of each dimension can be added, deleted or modified according to research objectives. In practical application, the AIO scale is the dominant method. Based on people's perceptions of regular activities, interests, and opinions on various events, Wells and Tigerts (1971) developed an AIO scale comprising 300 items, which have also become model items for the measurement of lifestyles. Through a pretest, Huang (1999) selected 132 items from the AIO scale proposed by Wells and Tigerts (1971).

He then conducted a factor analysis to extract dimensions of lifestyles and used lifestyle as a variable to describe and segment consumers. Yeh (2008) thought that lifestyle is a behavioral model in the process of individual or group socialization. It produces different behavioral ways with the diversification of time, energy,

wealth, social environment, and personality characteristic.

Channel

According to American Market Association, channel is a structure jointly composed of a company's internal organizations, external agents, dealers, wholesales, and retailers. The company needs to rely on them to successfully market their products or services. Kotler (1999) argued that channel is an institution or an individual assisting in the transfer or acquisition of ownership of a certain product or service from manufacturers to consumers. In Taiwan, the marketing channels of health foods mainly include direct selling/marketing, pharmaceutical/cosmetic store, general food store (convenience store, cooperative store, supermarket, welfare center for civil servants, and wholesale store), and so on (Lin, 2003).

RESEARCH FRAMEWORK AND METHODS

Research framework

The framework of this research could be developed as described below. In the aspect of retail service quality, the retail service quality model introduced by Dabholkar et al. (1996) was adopted. In the aspect of lifestyle, through an interview with five experts in the health food industry to adopt the dimensions of lifestyles that were proposed by Plummer (1974), finally four dimensions of lifestyles were obtained, and demographic variables were added into the framework. In the aspect of channel, the classification of sales channels of health food products in Taiwan proposed by Lin (2003) was employed. The research data were expected to be analyzed using descriptive statistics analysis, reliability and validity analysis, one-sample t-test analysis, correlation analysis, factor analysis, one-way ANOVA, and chi-square test analysis. The research framework is shown in Figure 1.

Hypotheses

Bitner (1990) found that the customer satisfaction of the service contact can affect the perceived service quality, and the perceived service quality also can promote to affect repurchase intention, word of mouth, switching channels or stores, and customer loyalty in studying service contact model. Parasuraman et al. (1996) developed that consumer's perception evaluation of service quality could lead to many changes for behavior intentions and to be positive or negative effect on channels. The positive effect included "recommendation to others", "increase customer loyalty", and "repurchase intention". The negative effect included "customer complaint" and "customer turns to other channel or brand consumption". According to above theoretical basis, hypothesis 1 and 2 of this study are proposed as follows:

H1: Retail service quality has a positive relationship with consumers' choice of channel type.
H2: Retail service quality has significant effects on consumers' choice of channel type.

Hawkins, Best and Coney (1992) claimed that personal lifestyles are subjected to the effects of culture, demographic variables, the
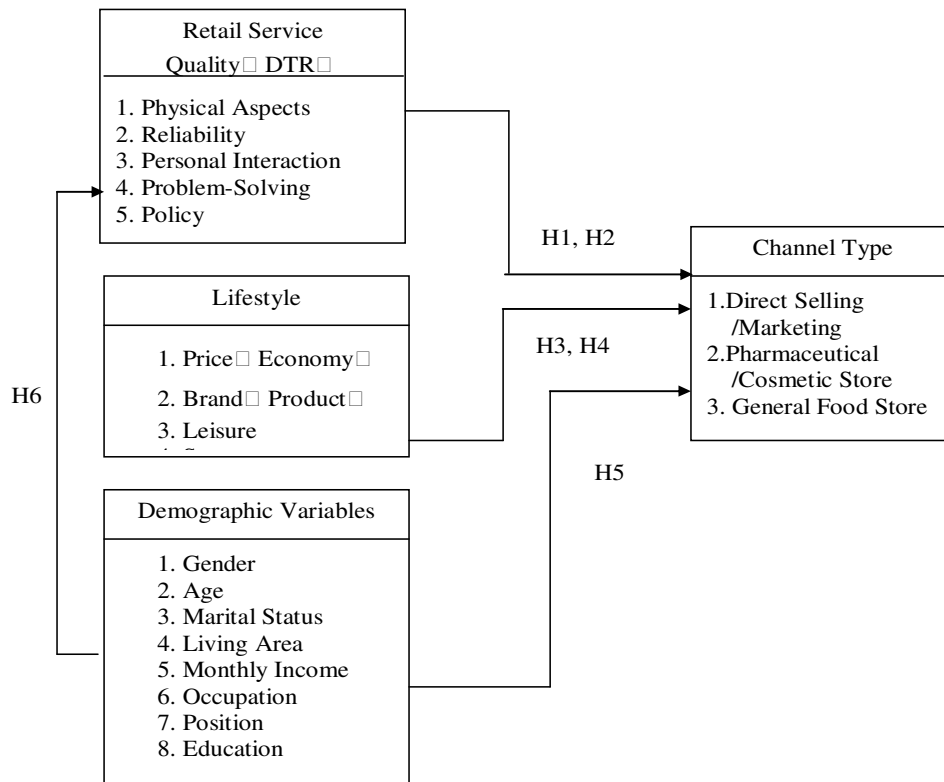
Figure 1. The research framework.

reference groups, family, personality, social status, value views, motives, cognition, learning and marketing activities factors and are formed through the different attitudes and needs, and affect further the decision process of consumers including the choice of channel type and purchase. Kotler (2000) pointed out that, the factor of influencing consumer's purchase behaviors are subjected to the effects of culture, society, individual and mentality factors of consumer characteristic, for individual factor including age, life cycle stage, occupation, economic situation, lifestyle, personality and self-concept. They would affect purchase decision and the choice of the channel of the consumer. Jinkook (2002) also studied many researches to find out if the consumer would have different preferences of the choice of channel type while getting in touch with various financial merchandises and services. The consumer who has different lifestyles and demographic characteristics purchases the same merchandises with the diverse preferences of the choice of channel type. According to above theoretical basis, hypothesis 3, 4, and 5 of this study are proposed as follows:

H3: Consumers' lifestyle has a positive relationship with their choice of channel type.
H4: Consumers' lifestyle has significant effects on their choice of channel type.
H5: Demographic variables cause significant differences in consumers' perceptions of choice of channel type.

Chuang (1998) studied the effect of demographic variables on total satisfaction of service quality to find out, if age and education had significant effect on total satisfaction of service quality in the department store of the community style, but demographic variables had no significant effect on total satisfaction of service quality in the department store of the metropolis style. Age and monthly income had significant effect on total satisfaction of service quality in the

department store of the boutique style. The result of the research from Lin (2002) showed that there were significant difference between expected service and perceived service from some demographic variables and there were significant effects of expected service on perceived service. There were significant effects of perceived service on total customer satisfaction, and total customer satisfaction on customer loyalty. According to above theoretical basis, hypothesis 6 of this study is proposed as follows:

H6: Demographic variables cause significant differences in Consumers' perceptions of retail service quality.

Questionnaire design and content

The questionnaire was designed on the basis of dimensions listed in the research framework. All the items were expected to be measured on a Likert 5-point scale, ranging from 1 - 5 points, respectively denoting "very disagree", "disagree", "neutral", "agree", and "very agree".

Questionnaire design

The research focus was placed on the health food industry in Taiwan, and the research subjects were consumers in Taiwan who had purchased health foods The questionnaire was designed to explore the relationships between service quality and consumers' choice of channel type Direct Selling/Marketing has about 327 stores, Pharmaceutical/Cosmetic Store has about 14,701 stores, and General Food Store including supermarket, hypermarket, convenience store, and department store has about 10,176 stores in whole Taiwan), and lifestyle and consumers' choice of channel type

and the effects of service quality and lifestyle on their choice of channel type. The collected data were later statistically processed to derive useful information.

Questionnaire content

1. Consumers' choice of channels: To understand consumers' choice of channels when purchasing health foods, one question was designed on the basis of the channel types of health foods in Taiwan proposed by Lin (2003). Four choices were available, including direct selling/marketing, pharmaceutical/cosmetic store, general food store, and others.
2. Consumers' perception of service quality: The service quality section was designed according to the Retail Service Quality Scale (RSQS) introduced by Dabholkar et al. (1996) to measure consumers' perception of service quality on Likert's five-point scale. Choices from 1 - 5 points were available, and these choices respectively denoted "very disagree", "disagree", "neutral", "agree", and "very agree".
3. Lifestyle: The lifestyle section was designed on the basis of the dimensions of lifestyle proposed by Plummer (1974). Through an interview with five experts in health foods to adopt the dimensions of lifestyle, four dimensions were obtained. According to the above four dimensions obtained, the lifestyle measurement scale of Huang (1999) and questionnaires developed by Tan et al. (1999), Wu (2000), Chang (2001), and Cheng and Liu (2001), the items of the questionnaire about lifestyle were designed to measure consumers' perception of lifestyle. 20 items were designed and expected to be measured on Likert's five-point scale. Choices from 1 - 5 points were available, and these choices respectively denoted "very disagree", "disagree", "neutral", "agree", and "very agree"
4. Consumer basic data: In this section, consumers were required to fill in their basic data, including gender, age, marital status, position, monthly income, residential area, and education.

Sampling design

The questionnaires were distributed to consumers living in Taiwan in proportion to the population in each county/city as released by the website of Directorate-General of Budget, Accounting and Statistics, Executive Yuan (the organization of Taiwan government, 2008). Statistical sampling such as convenience sampling method was adopted. A total of 601 questionnaires were distributed. These questionnaires were distributed in public areas where more people would gather, including department stores, wholesale stores, train stations, and office buildings.

Data analysis methods

SPSS 12.0 was employed as the major analysis tool. The collected data were analyzed using descriptive statistics analysis reliability and validity analysis, one-sample t-test analysis, correlation analysis factor analysis, one-way ANOVA, and chi-square test analysis.

ANALYSIS AND RESULTS

Descriptive statistics analysis

A total of 601 questionnaires were distributed to consumers living in Taiwan who had purchased health food products through different channel types. 549 usable res-

ponses were collected, resulting in an acceptable response rate of 91.35%. The descriptive statistics analysis of the sample with the first two top frequencies is shown in Table 1.

Reliability and validity analysis

The analysis result produced by SPSS 12.0 indicated that the questionnaire had a total reliability coefficient (Cronbach's α) which was 0.918, and Cronbach's α was also above 0.7 across all the dimensions. According to Guieford (1965), Cronbach's α in the range of 0.55 - 0.7 is acceptable, Cronbach's α above 0.70 indicates high reliability, and modification of the research tool is required if the coefficient is below 0.54. It can be discovered the reliability coefficients of the questionnaire are within the acceptable range. Overall, the questionnaire results feature a certain degree of consistency and stability and will produce meaningful findings in subsequent analyses.

According to Wen-Hsien (2001), if the questionnaire items are based on theoretic foundation, empirical studies, logical inference, and expert consensus, the questionnaire can be viewed as having high validity. The questionnaire was designed on theoretic foundations. For instance, in the aspect of retail service quality, dimensions were designed according to Dabholkar et al. (1996). Through an interview with five experts in health foods to adopt the dimensions of lifestyle that were proposed by Plummer (1974), the lifestyle measurement scale of Huang (1999) and questionnaires developed by Tan et al. (1999), Wu (2000), Chang (2001), and Cheng and Liu (2001) were used to design the dimensions of lifestyle. Therefore, it could be presumed that the questionnaire items had good construct validity. The reliability test results are shown in Table 2.

One-sample t-test analysis

Through one-sample t-test analysis, it was discovered that all items of the questionnaire had a p-value (0.000) less than 0.05, indicating that retail service quality and lifestyle were shown a higher satisfaction(agreement) by consumers. The results of one-sample t-test analysis on retail service quality and lifestyle are shown in Table 3 and 4.

Correlation analysis

The correlation analysis indicated that the correlation between retail service quality and choice of channel type was +0.103, a p-value 0.016 smaller than the level of significance of α = 0.05. Hence, retail service quality has a positive relationship with consumers' choice of channel type. In other words, customers' satisfaction with retail

Table 1. The descriptive statistics analysis of the sample with the first two top frequencies.

Items		Frequency	Relative frequency
Gender	Male	225	0.41
	Female	324	0.59
Age	21 - 30	228	0.415
	31 - 40	186	0.34
Marital status	Single	294	0.536
	Married (with kid(s)	207	0.377
Occupation	Service industry	255	0.464
	Manufacturing industry	159	0.29
Position	Technicians and service personnel	200	0.364
	Administrative personnel	161	0.293
Monthly income	NT$20,001 - 30,000 (US$ 625.03 - 937.5)	188	0.342
	NT$30,001 - 40,000 (US$ 937.53 - 1,250)	119	0.217
Residential area	Northern Taiwan	215	0.392
	Central Taiwan	186	0.339
Education	College/university	341	0.621
	High/vocational school	128	0.233

Table 2. Reliability analysis of this research.

Main dimensions	Sub-dimensions	Cronbach's α	Cronbach's α of main dimensions
Retail service quality	Personal interaction and problem-solving	0.7419	
	Reliability	0.7460	
	Policy	0.7519	0.931
	Appearance	0.7651	
	Convenience	0.7485	
Lifestyle	Price	0.7894	
	Brand	0.7707	0.836
	Leisure	0.7806	
	Sport	0.7890	
Total Cronbach's α		0.918	

service quality results in their various choices for channel types. The analysis result is shown in Table 5.

In the correlation analysis between lifestyle and choice of channel type, it was found the correlation coefficient was -0.056, a p-value 0.196 greater than the level of significance of α=0.05. Hence, lifestyle has not significantly a positive relationship or is not correlated with choice of channel type. The correlation analysis between lifestyle and choice of channel type is shown in Table 6.

From the above results, it can be concluded that H1 (Retail service quality has a positive relationship with consumers' choice of channel type) is supported, but H3 (Consumers' lifestyle has a positive relationship with their choice of channel type) is not supported.

Factor analysis

The principal component analysis was employed to

Table 3. One-sample t-test of retail service quality.

Items of the questionnaire	μ test value=3	
	t-value	p-value (significance, upper tail)
b1. This store is equipped with modern interior facilities and décor.	24.509	0.000
b2. The facilities and appearance of this store are attractive.	21.669	0.000
b3. The accessories of this store (such as catalogues or ad phrases) are attractive.	23.463	0.000
b4. The design of this store allows me to easily find needed products.	31.476	0.000
b5. The design of traffic flow in this store allows me to move around easily.	30.155	0.000
b6. The promises made by this store can be fulfilled in time.	28.341	0.000
b7. This store can provide correct services at the first time.	29.382	0.000
b8. This store provides products that I need.	35.059	0.000
b9. This store provides correct transactions and records.	35.290	0.000
b10. All the employees in this store are able to answer my question.	26.720	0.000
b11. I feel worriless when I shop in this store.	36.909	0.000
b12. The employees in this store can offer me adequate services.	33.077	0.000
b13. The employees in this store never ignore my needs because they are busy.	20.138	0.000
b14. The employees in this store can provide me individual services or care.	14.342	0.000
b15. The employees in this store are polite to me.	32.907	0.000
b16. The employees in this store will answer my questions on the phone in good manners.	25.356	0.000
b17. This store is willing to accept return or change of sold products.	29.666	0.000
b18. This store is willing to solve all the problems I encounter.	33.790	0.000
b19.The employees in this store can directly and instantly handle customer complaints.	25.757	0.000
b20. I feel satisfied with how they address my problems.	28.718	0.000
b21. This store has an exclusive service center or provides a toll-free service line to handle customer's problems.	13.521	0.000
b22. This store provides high-quality products.	24.228	0.000
b23. This store provides a convenient parking space.	11.501	0.000
b24. This store provides convenient shopping time.	26.511	0.000
b25. This store accepts credit cards.	25.82	0.000
b26. This store provides online shopping service or information query service.	16.645	0.000
b27. This store accepts credit cards.	25.82	0.000
b28. This store provides online shopping service or information query service.	16.645	0.000

extract the main factors of retail service quality and lifestyle. Factors with an eigenvalue greater than 1 were selected. As suggested by Kaiser (1974), Varimax was used to rotate the factor matrix. Items with an absolute factor loading greater than 0.4, were extracted. The extracted factors were respectively named to construct the dimensions of retail service quality and lifestyle.

Factor analysis of service quality

The KMO (Kaiser-Meyer-Olkin) measure of sampling adequacy coefficient was 0.936, also greater than 0.8. According to Kaiser (1974), KMO value greater than 0.8 indicated that the data were appropriate for factor analysis. Also, the variable rate caused by latent factors was considerably high. The Bartlett's test derived the significance level as 0.00. Therefore, the retail service

quality data were appropriate for factor analysis.

Finally, the retail service quality was divided into five factors, and the eigen values of these factors were 5.728, 2.933, 2.466, 2.370, and 2.163, respectively. All of these values were greater than 1, indicating the clustering was appropriate and meaningful, and the cumulative variance explained reached 60.232%.

Factor 1: Items b6, b12, b13, b14, b15, b16, b18, b19, b20, and b22 were included. These items described whether employees could provide individual services, solve customer problems, handle complaints instantly etc. Hence, this factor was named "personal interaction and problem-solving".
Factor 2: Items b7, b8, b9, b10, and b11 were included. These items described whether stores could provide accurate and correct transaction and records, fulfill their promises in time, and provide reliable services. Hence,

Table 4. One-sample t-test of lifestyle.

Items of the questionnaire	μ test value=3	
	t-value	p-value (significance, upper tail)
c1. When purchasing health foods, I usually compare prices carefully.	22.532	0.000
c2. When purchasing health foods, I usually compare products across various stores to avoid being cheated.	16.453	0.000
c3. I will make use of coupons when purchasing health foods.	11.02	0.000
c4. Even if a store is far away from me, as long as it offers cheaper or more products, I will still purchase necessary items at this store.	13.477	0.000
c5. If promotions are offered, I will purchase more goods than I normally do.	11.972	0.000
c6. I attach much important to brand and quality of health foods.	38.066	0.000
c7. When purchasing health foods, I think advertised brands are more reliable.	19.92	0.000
c8. Generally, I prefer imported health foods.	10.427	0.000
c9. When purchasing health foods, I usually select products of a certain brand.	16.476	0.000
c10. When purchasing health foods, brand is an important factor I consider.	28.517	0.000
c11. I like to take part in leisure activities.	27.997	0.000
c12. I will pay attention to news related to leisure and tour activities.	26.669	0.000
cc13. On holidays, I like to go out or go on a trip.	27.586	0.000
c14. To enjoy my leisure time, I think it's worth to spend some money.	31.093	0.000
c15. I attach much importance to my leisure life and hobbies.	32.197	0.000
c16. I think working out is good for health.	44.441	0.000
c17. I hope that I can engage in my favorite sports on holidays.	34.972	0.000
c18. I like to watch sport games on TV.	9.856	0.000
c19. I like to work out and keep fit.	17.711	0.000
c20. I will pay attention to sport news.	11.868	0.000

Table 5. Correlation analysis between retail service quality and choice of channel type.

		Choice of channel type	Retail service quality
Choice of channel type	Pearson correlation	1.000	0.103
	Significance (two-tailed)		0.016*
Retail service quality	Pearson correlation	0.103	1.000
	Significance (two-tailed)	0.016*	

Note: * p< 0.05, (two-tailed test).

Table 6. Correlation analysis between lifestyle and choice of channel type.

		Choice of channel type	Lifestyle
Choice of channel type	Pearson correlation	1.000	-0.056
	Significance (two-tailed)		0.196
Lifestyle	Pearson correlation	-0.056	1.000

Factor 3: Items b21, b24, b25, and b26 were included. this factor was named "reliability". These items described whether stores set up an exclusive service line, accept credit cards, and provide information query services. This factor was therefore named "policy".

Factor 4: Items b1, b2, and b3 were included. These items described mainly a store's appearance, facilities, and décor. Thus, this factor was named "appearance".

Factor 5: Items b4, b5, b17, and b23 were included. These items described mainly the convenience of looking for needed commodities, moving around in the store, and parking. This factor was named "convenience". The factor analysis result of the retail service quality is shown in Table 7.

Table 7. Factor analysis of retail service quality.

Factors	Item No.	Factor loadings	Eigenvalues	Variance explained	Cumulative% of variance explained
Personal interaction and problem-solving	b.6	0.474	5.728	22.031	22.031
	b.12	0.616			
	b.13	0.617			
	b.14	0.734			
	b.15	0.647			
	b.16	0.736			
	b.18	0.666			
	b.19	0.727			
	b.20	0.673			
	b.22	0.542			
Reliability	b.7	0.608	2.933	11.280	33.311
	b.8	0.743			
	b.9	0.571			
	b.10	0.586			
	b.11	0.503			
Policy	b.21	0.561	2.466	9.485	42.797
	b.24	0.551			
	b.25	0.766			
	b.26	0.749			
Appearance	b.1	0.777	2.370	9.115	51.911
	b.2	0.790			
	b.3	0.642			
Convenience	b.4	0.578	2.163	8.320	60.232
	b.5	0.537			
	b.17	0.553			
	b.23	0.469			

Factor analysis of lifestyle

The KMO (Kaiser-Meyer-Olkin) measure of sampling adequacy coefficient was 0.833, also greater than 0.8. According to Kaiser (1974), KMO value greater than 0.8 indicated that the data were appropriate for factor analysis. Also, the variable rate caused by latent factors was considerably high. The Bartlett's test derived the significance level as 0.00. Therefore, the lifestyle data were appropriate for factor analysis.

Finally, the lifestyle was divided into four factors, and the eigenvalues of these factors were 4.010, 2.754, 2.463, and 2.148, respectively. All of these values were greater than 1, indicating the clustering was appropriate and meaningful, and the cumulative variance explained reached 56.872%.

Factor 1: Items c1, c2, c3, c4, and c5 were included.

These items described mainly whether the subject would compare prices carefully, compare products across various stores, and use coupons to purchase health food products. Therefore, this factor was named "price".

Factor 2: Items c6, c7, c8, c9, and c10 were included. These items described whether the subject would prefer buying imported products or buying products of a particular brand, and consider brand as an important factor. This factor was named "brand".

Factor 3: Items c11, c12, c13, c14, c15, c16, and c17 were included. These items described whether the subject would like to go on a trip on holidays, care about travel news, and join leisure activities. This factor was thus named "leisure".

Factor 4: Items c18, c19, and c20 were included. These items described whether the subject would enjoy watching sport games on TV, pay attention to sport news, and like to work out and keep fit. Thus, this factor was

Table 8. Factor analysis of lifestyle.

Factors	Item No.	Factor loadings	Eigenvalues	Variance explained	Cumulative% of variance explained
Price	c1.	0.781	4.010	20.048	20.048
	c2.	0.808			
	c3.	0.741			
	c4.	0.661			
	c5.	0.596			
Brand	c6.	0.540	2.754	13.768	33.816
	c7.	0.643			
	c8.	0.712			
	c9.	0.706			
	c10.	0.713			
Leisure	c11.	0.767	2.463	12.315	46.130
	c12.	0.782			
	c13.	0.801			
	c14.	0.647			
	c15.	0.744			
	c16.	0.611			
	c17.	0.626			
Sport	c18.	0.839	2.148	10.742	56.872
	c19.	0.643			
	c20.	0.863			

named "sport". The factor analysis result of the lifestyle is shown in Table 8.

One-way ANOVA

In this study, one-way ANOVA was performed to analyze whether demographic variables would significantly affect perceptions of retail service quality. Tukey's multiple comparison was also employed to test the significant difference between the means of every two populations.

Before testing the effects of demographic variables on "retail service quality", homogeneity test of the variance of the population was conducted first. It was found the variances of the populations of gender, marital status, occupation, position, monthly income, and education on perceptions of retail service quality were the same for all of the populations, indicating the data were appropriate for one-way ANOVA. From the result of ANOVA, it was discovered that gender, marital status, and occupation were influential to perceptions of retail service quality. Subjects of different genders, marital statuses, and occupations would have significant different perceptions of retail service quality.

In the test of the effect of "gender" on "retail service quality", F-value was 3.919 and p-value was 0.048, which was less than the level of significance of $\alpha = 0.05$. This revealed that subjects of different genders would have different perceptions of retail service quality. However, there were no more than three (3) groups of gender, so multiple comparison procedure was not conducted. In the comparison of means, the result found female subjects had a higher satisfaction than male ones. Therefore, female subjects were more satisfied with retail service quality than male ones.

In the test of the effect of "marital status" on "retail service quality", F-value was 8.693, and p-value was 0.000, which was less than the level of significance of $\alpha = 0.05$. In other words, subjects of different marital statuses would have different perceptions of retail service quality. In a further multiple comparison procedure among subjects with different marital statuses, the result found that married subjects (with no kid) showed significantly higher satisfaction with retail service quality than married ones (with kid(s)), and married subjects (with no kid) also showed significantly higher satisfaction with retail service quality than unmarried ones.

In the test of the effect of "occupation" on "retail service quality", F-value was 3.114, and p-value was 0.005, which was less than the level of significance of $\alpha = 0.01$.

Table 9. ANOVA of demographic variables on retail service quality.

demographic variables	Homogeneity test	F-test	p-value (significance)	Tukey (multiple comparison procedures)
Gender	0.625	3.919	0.048*	There were no more than 3 groups of gender, so multiple comparison procedure was not conducted. In the comparison of means, the result can be obtained as follows. Female>Male
Age	0.329	0.497	0.778	-
Marital status	0.788	8.693	0.000***	1. Married Subjects (with no kid) > Married Subjects (with kid(s)) 2. Married Subjects (with no kid) > Unmarried Subjects
Occupation	0.542	3.114	0.005**	1.Service Industry > Manufacturing Industry
Position	0.845	1.531	0.178	-
Monthly Income	0.763	1.036	0.396	-
Living Area	0.004	---	---	-
Education	0.718	0.514	0.725	-

Note: * $p < 0.05$, **$p<0.01$, ***$p<0.001$.

This implied that subjects of different occupations would have different perceptions of retail service quality. The further multiple comparison procedure indicated that subjects working in the service industry showed significantly higher satisfaction with retail service quality than those working in the manufacturing industry. The ANOVA results are shown in Table 9. From the above results, it can be concluded that H6 (Demographic variables significantly affect one's perception of retail service quality) is partially supported.

Chi-square test analysis

In this section, chi-square test was adopted to explore whether retail service quality or lifestyle has significant effects on choice of channel type and analyze whether demographic variables have significant effects on consumers' choices of channel types.

The effect of retail service quality on choice of channel type

Through the chi-square test of the effect of retail service quality on choice of channel type, in the personal interaction and problem-solving dimensions (factors), the Pearson chi-square value was 77.500 and the p-value was 0.030, which was less than the level of significance of $α = 0.05$. This revealed that consumers' satisfaction with employees' personal interaction and problem solving would affect their choice of channel type. A further contingency table analysis of the items under these two dimensions was conducted.

In the contingency table of personal interaction and problem solving items, b6, b12, b13, b15, b18, b19, b20, and b22 showed that the ranking of the channels, in terms of the subjects' choice, was "pharmaceutical/cosmetic store > general food store > direct selling/marketing". This is to say that most of the consumers who attached much importance to "personal interaction and problem solving" would tend to purchase health foods at pharmaceutical/cosmetic stores because they perceived better service quality of these stores. Their second choice was general food stores, and those who chose to purchase health foods through direct selling/marketing made up the smallest proportion. This finding can be explained by the rise of consumer awareness and increased emphasis on retail service quality. Consumers hope to interact with professions and listen to their explanations before purchasing health food products. This is why a larger proportion of the subjects would choose pharmaceutical/cosmetic stores when purchasing health food products.

In item b14, the ranking of the channels was "pharmaceutical/cosmetic store > general food store = direct selling/marketing". This is mainly because in pharmaceutical/cosmetic stores there are usually more than one specialist providing individual services. In general food stores and direct selling/marketing channels, individual services are usually not available due to the absence of specialists. Both of these two channel types have the same problem. Therefore, in this item, the subjects had the same perceptions of the two channel types.

In item b16, the ranking of the channels was "pharmaceutical/cosmetic store > direct selling/marketing > general food store". This is mainly because most of the

Table 10. The contingency table of the items in the personal interaction and problem-solving dimensions versus choice of channel type.

Item No.	Choice of channel type
b6.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
b12.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
b13.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
b14.	Pharmaceutical/Cosmetic Store> General Food Store=Direct Selling/Marketing
b15.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
b16.	Pharmaceutical/Cosmetic Store>Direct Selling/Marketing>General Food Store
b18.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
b19.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
b20.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
b22.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing

pharmaceutical/cosmetic stores in nowadays have set up an exclusive service line and assign specialists to provide online consulting service. The direct selling/marketing channel also has a customer service line but the service persons may not necessarily be professionals. Among general food stores, wholesale stores cannot set up an exclusive service line for the health food department, because they are selling more products. Convenience stores usually do not have an exclusive service line and professionals in charge of consulting service. Therefore, the subjects would be more satisfied with direct selling/ marketing than with general food stores. The contingency table of personal interaction and problem solving items versus choice of channel type is shown in Table 10. From the above results, it can be concluded that H2 (Retail service quality has significant effects on consumers' choice of channel type) is partially supported.

The effect of lifestyle on choice of channel type

In the chi-square test of the effect of lifestyle on choice ofchannel type, the result indicated that both the price and leisure dimensions had a p-value less than the level of significance of α = 0.05, indicating that the price and leisure dimensions would affect consumers' choice of channel tape.

In terms of price, the Pearson chi-square value was 64.052, and the p-value was 0.005. It was less than the level of significance of α = 0.01. Therefore, it can be inferred that price would affect consumers' choice of channel type. A further analysis of contingency table is provided as follows.

In the contingency table of price versus choice of channel type, c1, c2, c3, c4, and c5 showed that the ranking of the channels, in terms of the subjects' choice, was "pharmaceutical/cosmetic store > general food store > direct selling/marketing". This means that most of the consumers who attached much importance to "price" would tend to purchase health foods at pharmaceutical/ cosmetic stores. Their second choice was general food stores, and those who chose to purchase health foods through direct selling/marketing made up the smallest proportion. This is mainly because those consumers who care more about price in their life tend to spend more time on comparing prices and looking for suitable products. In the present, pharmaceutical/cosmetic stores indeed provide relatively more diversified products and promotions (such as coupons, special offers, and combo offers). Consumers can carefully compare the price of various food products and avoid being cheated. Hence, a larger proportion of consumers would choose to purchase health foods at pharmaceutical/cosmetic stores. General food stores have been devoted to the sales of health foods for a relatively shorter time and also provide fewer product choices (most of the products are of famous brands) as well as promotional offers. With fewer product choices, consumers could hardly compare prices of different products. This is why those who would purchase health foods at general food stores made up only the second largest proportion. Besides, health foods sold via the direct selling/marketing channel are usually more ex-pensive with fewer promotional offers available. Product choices are also limited. Consumers could hardly

Table 11. The contingency table of the items in the price dimension versus choice of channel type.

Item No.	Choice of channel type
c1.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
c2.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
c3.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
c4.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
C5.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing

Table 12. The contingency table of the items in the leisure dimension versus choice of channel type.

Item No.	Choice of channel type
c11.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
c12.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
c13.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
c14.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
c15.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
c16.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing
c17.	Pharmaceutical/Cosmetic Store> General Food Store> Direct Selling/Marketing

compare prices of various products or brands. Therefore, this group of consumers was the smallest. Through the above analysis, the results conclude that consumers who care about the price factor will mostly purchase health food products at pharmaceutical/cosmetic stores. The contingency table of the items in the price dimension versus choice of channel type is shown in Table 11.

In terms of leisure, the Pearson chi-square value was 43.114, and the p-value was 0.034, which was less than the level of significance of $\alpha = 0.05$. Therefore, it can be inferred that the leisure dimension would affect consumers' choice of channel type. A further analysis of the contingency table is provided as follows.

In the contingency table of leisure versus choice of channel type, c11, c12, c13, c14, c15, c16, and c17 showed that the ranking of the channels, in terms of the subjects' choice, was "pharmaceutical/cosmetic store > general food store > direct selling/marketing". This means that most of the consumers who attached much importance to "leisure" would tend to purchase health foods at pharmaceutical/cosmetic stores. Their second choice was general food stores, and those who chose to purchase health foods through direct selling/marketing made up the smallest proportion. Consumers who attach more importance to recreation tend to spend more time on leisure activities and more money on leisure life. In the present, more diversified products are available in pharmaceutical/cosmetic stores, so consumers have more choices when they visit these stores. Due to the inclusion of convenience stores, the number of general food stores is the largest, but the number of product choices available in this kind of stores is the smallest. Consumers have more choices in this kind of stores. The number of sales points

of the direct selling/marketing channel is the smallest, and the number of products provided is also limited. Therefore, consumers have fewest choices in this kind of sales channel. Thus, consumers who attach more importance to recreation, on the condition that their leisure activities and time will not be affected, will tend to purchase health foods at channels with more sales points and product choices. The above analysis indicates that in the "leisure" dimension, a higher proportion of the subjects will choose to purchase health foods at pharmaceutical/cosmetic stores. The contingency table of items in the leisure dimension and choice of channel type is shown in Table 12. Through the above analysis result, we can conclude that H4 (Consumers' lifestyle has significant effects on their choice of channel type) is partially supported.

The effect of demographic variables on choice of channel type

In the chi-square test of the effect of demographic variables on choice of channel type, the result indicated that age and occupation had a p-value less than the level of significance of $\alpha = 0.05$, indicating that age and occupation would affect consumers' choice of channel tape.

In terms of age, the Pearson chi-square value was 18.475, and the p-value was 0.047, which was less than the level of significance of $\alpha = 0.05$. Therefore, it can be inferred that consumers' age would affect their choice of channel type. A further analysis of the contingency table is presented as follows:

Table 13. The contingency table of age versus choice of channel type.

			Choice of channel type			Total (%)
			General food store (%)	Pharmaceutical/cosmetic store (%)	Direct selling/marketing (%)	
Age	Below 20 (including 20)	Individual	9	14	3	26
		% of total	(1.60)	(2.60)	(0.50)	(4.70)
	21~30	Individual	54	145	29	228
		% of total	(9.80)	(26.40)	(5.30)	(41.50)
	31~40	Individual	45	103	38	186
		% of total	(8.20)	(18.80)	(6.90)	(33.90)
	41~50	Individual	18	45	22	85
		% of total	(3.30)	(8.20)	(4.00)	(15.50)
	51~60	Individual	6	8	7	21
		% of total	(1.10)	(1.40)	(1.30)	(3.80)
	Above 61 (including 61)	Individual	2	1	0	3
		% of total	(0.40)	(0.20)	(0.00)	(0.60)
Total		Individual	134	316	99	549
		% of total	(24.40)	(57.60)	(18.00)	(100.00)

In the contingency table of "age" versus "choice of channel type", age is divided into six groups (below 20 (including 20), 21 - 30, 31 - 40, 41 - 50, 51 - 60, and above 61 (including 61)), and there are three choices of channel type (general food store, pharmaceutical/ cosmetic store, direct selling/marketing). Through a cross-analysis, we found that among the subjects in the age groups of below 20 (including 20), 21 - 30, and 31 - 40, those who choose to purchase health foods at "pharmaceutical/cosmetic stores" significantly outnumber those who chose to purchase health foods at "general food stores" or via "direct selling/marketing". Among the subjects in the age groups of 41 - 50 and 51 - 60, those who choose to purchase health foods at "pharmaceutical/cosmetic stores" significantly outnumber those who choose to purchase health foods via "direct selling/marketing" or at "general food stores". Among subjects aged over 61 (including 61), those who choose to purchase health foods at "general food stores" outnumber those who choose to purchase health foods at "pharmaceutical/cosmetic stores" and via "direct selling/marketing". The contingency table of age versus choice of channel type is shown in Table 13.

In terms of occupation, the Pearson chi-square value was 37.553, and the p-value was 0.000, which was less than the level of significance of $\alpha = 0.05$. Therefore, it can be inferred that consumers' occupation would affect their choice of channel type. A further analysis of the contingency table is presented as follows:

In the contingency table of "occupation" versus "choice of channel type", occupation is divided into seven groups (civil servant, agriculture/forestry/fishery/husbandry, manufacturing, service, specialist, student, and others), and there are three choices of channel type (general food store, pharmaceutical/cosmetic store, direct selling/ marketing). Through a cross-analysis, it can be found that among the subjects working as civil servants, students, and employees in other industries, those who choose "pharmaceutical/cosmetic stores" significantly outnumber those who choose "general food stores" or "direct selling/marketing". Among subjects working as specialists (dietitian, physician, and pharmacist), those who choose "general food stores" significantly outnumber those who choose "pharmaceutical/cosmetic store" or "direct selling/ marketing". Among those working in the service or agriculture/forestry/fishery/husbandry industries, those who choose "pharmaceutical/cosmetic store" significantly outnumber those who choose "direct selling/marketing" or "general food stores". The contingency table is shown in Table 14. From the above results, it can be concluded that H5 (Demographic variables significantly affect one's perception of choice of channel type) is partially supported.

The test result of research hypotheses

The test result of the proposed hypotheses is

Table 14. The contingency table of occupation versus choice of channel type.

			Choice of channel type			
			General food store (%)	Pharmaceutical/ cosmetic store (%)	Direct selling/marketing (%)	Total (%)
Occupation	Civil servant	Individual	10	22	6	38
		% of total	(1.8)	(4.00)	(1.1)	(6.9)
	Agriculture/Forestry/Fishery/ Husbandry	Individual	0	1	1	2
		% of total	0	(0.2)	(0.2)	(0.4)
	Manufacturing	Individual	44	99	16	159
		% of total	(8.0)	(18.0)	(2.9)	(29.0)
	Service	Individual	48	139	68	255
		% of total	(8.7)	(25.3)	(12.4)	(46.4)
	Specialist (Dietitian, physician, and pharmacist)	Individual	8	5	0	13
		% of total	(1.5)	(0.9)	(0)	(2.4)
	Student	Individual	19	39	6	64
		% of total	(3.5)	(7.1)	(1.1)	(11.7)
	Others	Individual	5	11	2	18
		% of total	(0.9)	(2.0)	(0.4)	(3.3)
Total		Individual	134	316	99	549
		% of total	(24.4)	(57.6)	(18.0)	(100)

Table 15. Results of research hypothesis tests.

Proposed hypotheses		Results
H1	Retail service quality has a positive relationship with consumers' choice of channel type.	Supported
H2	Retail service quality has significant effects on consumers' choice of channel type.	Partially supported
H3	Consumers' lifestyle has a positive relationship with their choice of channel type.	Not supported
H4	Consumers' lifestyle has significant effects on their choice of channel type.	Partially supported
H5	Demographic variables cause significant differences in Consumers' perceptions of choice of channel type.	Partially supported
H6	Demographic variables cause significant differences in Consumers' perceptions of retail service quality.	Partially supported

summarized in Table 15.

CONCLUSIONS AND SUGGESTIONS

Conclusions

In this study, the subjects were consumers of health food products. Based on the DTR model and AIO scale, a questionnaire was designed to statistically explore the effects of retail service quality and lifestyle on choice of channel type and analyze the difference among consumers of different demographic variables in their perceptions of retail service quality and channel type. According to the research findings, conclusions and suggestions are proposed as a reference for health food suppliers and consumers. The major conclusions are shown as: (1) Better retail service quality leads to

pharmaceutical/cosmetic stores chosen by the con-sumers, or pharmaceutical/cosmetic stores are able to provide better service quality; (2) Most of the consumers who attached much importance to "personal interaction and problem solving", "price", and "leisure" would tend to purchase health foods at pharmaceutical/ cosmetic stores; (3) Consumers with age below 60 (including 60) and occupation except specialists(dietitian, physician, and pharmacist)would tend to purchase health foods at pharmaceutical/cosmetic stores; (4)Consumers who are female and married with no kid have the perception of higher satisfaction with retail service quality.

Suggestions

Health food suppliers should pay more attention to factors affecting retail service quality and consumers' lifestyle. Besides, it is necessary for them to identify which demographic variables would affect their choice of chan-nel type, so as to select an optimal channel to sell their products to their target consumers. Ultimately, their business performance can also be enhanced directly or indirectly. Five suggestions are proposed as: (1) Better service quality is provided by pharmaceutical/cosmetic stores; (2) Most consumers would tend to purchase health foods at pharmaceutical/cosmetic stores. There-fore, it is suggested that health food providers hire more professionals at sales points to provide onsite explanation and consulting service and sell their products at pharmaceutical/cosmetic stores where a dedicated customer service line is provided. Besides, health food suppliers sell their products at pharmaceutical/cosmetic stores that offer more price offers, product choices, and more shopping convenience; (3)Consumers would tend to purchase health foods at the specific stores due to various age and occupation. Therefore, through market segmentation, suppliers can provide health products at pharmaceutical/cosmetic stores according to the age below 60 (including 60) and occupation except specialists (dietitian, physician, and pharmacist) as their target con-sumers, to increase consumers' purchase intention and business performance; (4) Consumers who are female and married with no kid have the perception of better retail service quality. It is suggested that channel operators propose service quality improvement programs according to the variables including male, married with kid(s), and unmarried consumers because of their lower satisfaction with retail service quality. For instance, they can provide children's playing facilities or nursing rooms for consumers who are married with kid(s) to enhance customer satisfaction with retail service quality.

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