

THE ANALYSIS OF CONSUMER BEHAVIOR AND RECOMMENDATIONS TO IMPROVE TAIWANES SATISFACTION IN BUYING VIETNAM COFFEE

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ABSTRACT

Vietnam coffee industry has been well-known over the world for many decades. However, Vietnam products do not meet Taiwan customers' expectation, it has led to urgent challenges for the industry. Therefore, the paper proposed the integrated approach by using exploratory factor analysis, reliability analysis and regression analysis. The results of this study were used to formulate and recommend on how to improve the products of Vietnam coffee by using SPSS statistics for analysis. The major findings of this paper was found out that there are six important determinants of Taiwanese decision-making in buying coffee. In order to enhance customer satisfaction with the coffee products from Vietnam, the companies need right strategies to improve these six groups of factors. The paper contributes meaningful and helpful results to the development of Vietnam coffee industry.

Keywords: Vietnam coffee, exploratory factor analysis, reliability analysis, regression analysis, SPSS.

1. Introduction

Coffee production has been major economic industry for Vietnam since the early of 20th century; the industry is the nation's second-largest agricultural export products in term of value, after rice . Vietnam has been the second largest coffee exporter in the world with famous trademarks; one of them is Trung Nguyen coffee. Therefore, the industry has been attracted by many researchers and reporters over the world. According to Global Trade Atlas (GTA), Vietnam exported 10.95 million 60-kg bags in the first six months of period from October 2014 to March 2015 to 82 countries and territories around the world as shown in figure 1. Taiwan is the fix largest importer of Vietnamese coffee recently, it indicates that Taiwan has been an important market for Vietnam coffee manufacturers.

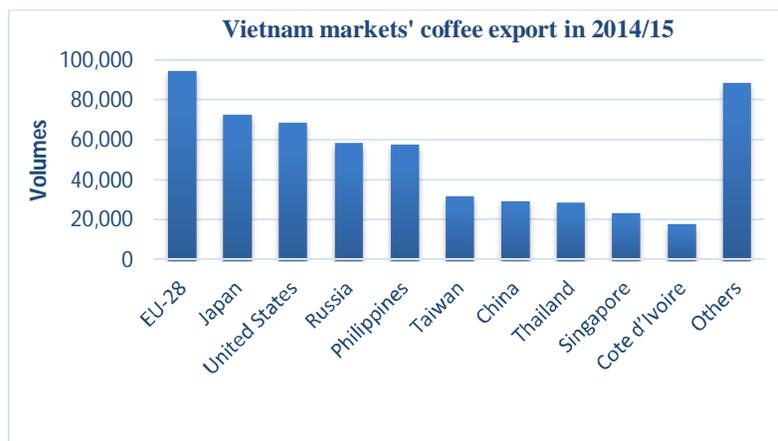


Figure 1. Vietnam key market's coffee export in Oct 2014 to March 2015

During the world coffee crisis, Vietnam coffee commodity chain was one of the most negatively affected in the world, coffee quality were reduced. This is a serious lesson shows that Vietnam coffee industry is very vulnerable and remained a lot of troubles which need to be solved and improved in all stages of development. The rapid expansion of production is a strong point of Vietnam coffee industry; however it leads to some imbalances that need to be urgently taken into account, especially when Vietnam coffee industry penetrated into new markets such as Taiwan. Taiwanese people have been used to drink tea and coffee brands from the US and Japan. The market is highly competitive with products from different countries and different flavored expectation. Therefore, It is rather difficult for Vietnam coffee producers to establish a good foundation and boost valued exports in this market section. It is necessary to analysis customers' reflection about satisfaction, and expectation. In looking for solutions it is crucial to understand local people's needs and customer's buying behavior. The coffee development program is still carried out, it is necessary to work out an adjustment for long-term of sustainable development in order to focus on Taiwan's potential segment.

In order to improve product quality to foreign market demands, the technique of coffee production, promotion channels and designing should be improved. However, the strategy is to meet customers' need has been never easy. Therefore, the innovative analysis is applied in this paper by using SPSS statistics. It combined three steps of methodologies, they are Exploratory Factor Analysis (EFA), Reliability Analysis, and Regression Analysis. Exploratory factor analysis was used to find out the determinants of buying Vietnam coffee in Taiwan market. The purpose of reliability analysis is to assess the degree of consistency among multiple measurements of a variable, this help to find out the gap between the customers expectation in using Vietnam coffee and the actual performance of Vietnam coffee companies based on their judgments.

Regression analysis is used to find out the importance of each elements, which influence to the satisfaction of customers who have experienced in enjoying Vietnam coffee. By using SPSS statistics, the paper finds out there are six important determinants of decision-making in buying coffee in Taiwan. In order to improve customer satisfaction, coffee companies need strategies to be improved and enhance these six group of factors. The results are used to formulate and recommend on how to improve coffee products in order to convince customers in choosing Vietnam coffee.

In this study, the authors contribute to development of Vietnam coffee industry in Taiwan market in particular and overview of the industry in general. The study aims to evaluate customers' satisfaction by applying practical analysis in order to find out the determinants of buying favorite coffee in Taiwan. This combined approach has helped to accentuate the diversification options are frustrated in view of the difficulty of access to potential markets. The paper provides suggestions in improving packages design and increase the concentration of coffee products. It is valued insights for market researchers to understand what customers really expect the qualitative products and services from original manufacturers. The findings of main determinants help Vietnam coffee companies make right market strategies to enhance decision-making of Taiwan people in buying their favorite coffee and select advertising channels properly in Taiwan in order to make local market being aware of the presence of Vietnam coffee. The paper aims to improve the consumption situation in producing coffee products and some suggestions will be given for the sustainable development of Vietnam coffee industry.

2. Methodologies and analysis

2.1 Design questionnaire

After identifying the problems, the questionnaire is designed based on research objectives. Personal information, general information, appreciation the importance level and satisfaction level are required on making survey. The first part of questionnaire is about personal information which surveys about gender, age, nationality, profession, income of customer. The second part of questionnaire surveys general information such as: how long have they enjoyed coffee, an average monthly expense for coffee, the latest time of purchasing coffee, shops for buying coffee, reasons for drinking coffee, factors influencing consumer behavior.

The third part of questionnaire includes 27 statements. These statements are used to appreciate the importance level of factors that is affecting customer satisfaction in using a certain brand of coffee. These statements are also used to evaluate the satisfaction level of factors in using Vietnam coffee brands. This part of the questionnaire is designed with five point bipolar scale from very unimportant, unimportant, normal, important, very important, they are coded as (1), (2), (3), (4), (5) accordingly.

In this paper, questionnaires are designed based on the famous book "Questionnaire design, interviewing and attitude measurement" by Oppenheim in 1992. Firstly, questionnaires are delivered to respondent, it is necessary to define samples for this survey before delivering questionnaire. The questionnaires were delivered to Taiwanese people at supermarkets, agents, Vietnam stores. There were totally 500 questionnaires delivered; however, there were only 350 valid observations in this study. Among the total 350 people were interviewed and recorded, there are 190 people who have been drinking coffee for over 3 years, accounting for 54.2 % of the total observations. 82.5% of the respondents have enjoyed coffee for more than 1 year. This indicates that the people in this survey have enough experience to decide their favorite coffee and respondents' feedback are useful for this research.

2.2 Encode and Input data into SPSS

This section describes data analysis methods includes 27 statements. In order to analyze the data from the survey, the first necessary step is encoding system of the responses. The valid responses are encoded as conventions in Table 1.

The elements from C1 to C27 are analyzed by EFA approach to find out the six determinants of decision-making of Taiwanese customers in buying their favorite coffee. The results of outputs from SPSS statistics, the KMO value of this analysis is 0.913 with the significance of Bartlett's Test of Sphericity is 0.000. Thus, EFA model in this study is accurately appropriate. Finally, six components of 27 values are factors of color and smell, package, concentration, brand, sugar and milk, contact information, they are designated as order as F1 to F6. The six factors are now to be tested for their reliability with Cronbach's alpha coefficient.

2.3 Data reduction by Exploratory Factor Analysis

Factor analysis is an analysis tools to find the structure of the correlations among a large number of variables by defining set of variables which are highly interrelated, called "factors". There are two important classes of factor analysis, including Exploratory Factor Analysis (EFA), and Confirmatory Factor Analysis (CFA). EFA is used to discover the underlying structure of a relatively large set of variables. In EFA, there is no prior theory and one uses factor loadings to intuit the factor structure of the data. However, CFA method is often used to test a proposed theory or model. CFA seeks to determine if the number of factors and the loadings of measured variables on them conform to what is expected on the basis of pre-established theory (Williams et al, 2010).

In this research, EFA approach aims to identify representative variables from a larger set of variables for use in subsequent multivariate analysis. KMO and Bartlett's Test of Sphericity is a measure of sampling adequacy that is recommended to check the case to variable ratio for the analysis being conducted. KMO & Bartlett's test play an important role for accepting the sample adequacy. For Factor Analysis to be recommended suitable, KMO ranges from 0 to 1 and the Bartlett's Test of Sphericity must be less than 0.05. The application of EFA approach to reduce the number of variables from a larger set is referred as data reduction.

Table 1. Encoded system based on questionnaires

No.	Statement	Importance level	Satisfaction level
1	Reasonable price	C1	D1
2	Promotion programs of company	C2	D2
3	Presentable packaging	C3	D3
4	Languages printed on the packet of products	C4	D4
5	Product packaging is easy to tear	C5	D5
6	The net weight of coffee in one packet	C6	D6
7	High concentrations of coffee in packet	C7	D7
8	Expired time of product	C8	D8
9	Color of coffee before making coffee	C9	D9
10	Color of coffee after making coffee	C10	D10
11	Good smell of the coffee before making	C11	D11
12	Good smell of the coffee after making	C12	D12
13	The special and attractive flavor	C13	D13
14	The time of keeping smell after making	C14	D14
15	The coffee viscosity after making	C15	D15
16	Bitter taste of coffee	C16	D16
17	Sour taste of coffee	C17	D17
18	High level of sugar in coffee	C18	D18
19	Milk concentration in coffee	C19	D19
20	The alertness after drinking coffee	C20	D20
21	Recognizable brand	C21	D21
22	Trusted brand	C22	D22
23	Clear contact information of the manufacturer	C23	D23
24	Different types of coffee from the same brand	C24	D24
25	The widespread advertisement	C25	D25
26	The ease in storage	C26	D26
27	The ease in use	C27	D27

2.4 Reliability Analysis

The purpose of reliability analysis is to assess the degree of consistency among multiple measurements of a variable. Chronbach's alpha is designed as a measure of internal consistency. Cronbach's Alpha is most appropriately used when the items measure different substantive areas within a single construct (Schmitt, 1996). In reliability analysis, when a factor is considered consistently, Cronbach's Alpha

is used to create a summary statistics for the factors in the “importance level” and relevant variables in the “satisfaction level”. Then based on the minimum, mean, and maximum values of each factor. Cronbach’s Alpha is compared together to know whether Vietnam coffee has satisfied its customers to what extent. In this paper, the Cronbach’s alpha coefficient while running SPSS statistics is 0.7 in average, this indicates that all items have strongly high internal consistency.

As per the above reliability analysis, all of the six factors extracted are reliable for further analysis. Based on the values of mean of the importance level, the six factors are ranked as in Table 2.

Table 2. Rank the importance of six factors in the decision-making

Rank#	Factor	About	Mean	Min	Max
1	F3	Smell, special flavor, high concentrations, expiry time, net weight	4.03	3.90	4.22
2	F5	Milk concentrations, sugar level	3.89	3.86	3.93
3	F2	Languages printed, promotion programs, packaging easy tear, presentable packaging	3.85	3.64	4.01
4	F4	Brand, advertisements	3.76	3.59	4.05
5	F1	Time of keeping smell, taste, color	3.52	3.35	3.69
6	F6	Various types, contact information	3.42	3.40	3.42

Based on the above table, consumers in Taiwan pay most attention to five characteristics of coffee, including: smell, special flavor, high concentrations of coffee, expiry time and net weight per package. This is the first determinant of decision-making of Taiwanese in buying their favorite coffee. The second determinant is the milk concentration and sugar level in the package. Other four determinants are also very important. Any company doing business in coffee industry should take all of these six factors into their consideration to create proper actions to meet their customers’ expectations. With the six determinants, the customers’ expectations on each factor are already shown under the mean, minimum and maximum values summarized in Table 2. Based on the items in these factors, the customer satisfaction level to Vietnam coffee is accordingly calculated.

From data of table 2, the mean, minimum and maximum values of the six factors in the satisfaction level are calculated by the reliability analysis and shown in table 3. It can be seen that Vietnam coffee has well performed in F1 and F6. Table 4 points out that products do not meet the customers’ expectations in remaining four factors, including F2, F3, F4 and F5.

Table 3. The calculated values of six factors in the satisfaction level

Factor	Mean	Min	Max
F1	3.68	3.55	3.76
F2	3.30	3.16	3.48
F3	3.06	2.98	3.21
F4	2.84	2.67	2.96
F5	3.80	3.78	3.81
F6	3.66	3.61	3.72

Table 4. Satisfaction level on each factor

Factor	Satisfaction Mean	Important Mean	Satisfaction radio
F1	3.68	3.52	104.6%
F2	3.30	3.85	85.7%
F3	3.06	4.03	75.7%
F4	2.84	3.76	75.6%
F5	3.80	3.89	97.5%
F6	3.66	3.42	107.1%

Table 2 also shows that Taiwanese people are paying most attention to the smell of the coffee after making, also its special flavor, the ease of tearing the package and the brand. All of these elements have the mean values of more than 4 points in the scale of 5 points and they are in 3 factors that are top ranked in the six determinants found. In order to win this market, Vietnam must be aware of its coffee performance as per the evaluation of each specific element shown in table 5. Table 5 demonstrates the details of the satisfaction level on each factor compared to relevant importance level. It indicates each item in the above factors of both satisfaction level and important level, which values Vietnam coffee companies should put more efforts in order to be successful in its development.

Table 5. Satisfaction level on each item of six factors according to important mean

Factor Rank	Item	Content	Importance Mean	Satisfaction Mean	Satisfaction and Importance ratio
F3 (1 st)	12	Smell after making	4.22	3.04	72.0%
F3 (1 st)	13	Special flavor	4.17	3.09	74.1%
F2 (3 rd)	5	Packaging easy tear	4.12	3.48	84.5%
F4 (4 th)	22	Trusted brand	4.04	2.97	3.5%
F3 (1 st)	8	Expiry time	3.97	2.95	74.3%
F5 (2 nd)	19	Milk concentration	3.93	3.77	95.9%
F2 (3 rd)	3	Presentable packaging	3.92	3.34	85.2%
F3 (1 st)	7	High concentrations	3.91	3.12	79.8%
F3 (1 st)	6	Net weight	3.91	2.97	76.0%
F5 (2 nd)	18	Sugar level	3.86	3.81	98.7%
F1 (5 th)	14	Keeping smell time	3.76	4.01	106.6%
F1 (5 th)	10	Color after making	3.74	3.84	102.4%
F2 (3 rd)	2	Promotion programs	3.70	3.20	86.5%
F2 (3 rd)	4	Languages printed	3.69	3.16	85.6%
F1 (5 th)	15	Coffee viscosity	3.68	3.81	103.4%
F1 (5 th)	16	Bitter taste	3.67	3.94	107.3%
F4 (4 th)	21	Recognizable brand	3.65	2.85	78.1%
F4 (4 th)	25	Widespread advertisement	3.59	2.69	74.9%
F1 (5 th)	17	Sour taste	3.55	3.64	102.6%
F6 (6 th)	23	Contact information	3.43	3.56	103.8%
F6 (6 th)	24	Many types	3.40	3.77	110.9%

2.5 Regression Analysis

After using reliability analysis method to compare elements with others and to find out the role of each element in creating satisfied of customers who have experience in enjoying Vietnam coffee. Regression analysis method is used to analyze these elements to determine the state of customer's satisfaction for remaining advantages and improving disadvantages of these elements for Vietnam coffee's development. The analysis results are as in table 6.

Table 6. Coefficients

Model	Unstandardized coefficients		Unstandardized coefficients	t	Sig.	Collinearity Statistic	
	B	Std. error	Beta			Tolerance	VIF
1 constant	3.81	.033		114.3	.000		
F1	.131	.057	.242	2.3	.023	.346	2.9
F2	.198	.043	.367	4.6	.000	.589	1.7
F3	.104	.051	.193	2.1	.043	.427	1.3
F4	.056	.045	.105	1.3	.212	.544	1.8
F5	.040	.046	.074	.875	.384	.521	1.9
F6	-.010	.050	-.018	-.197	.845	.446	2.2

From table 6, it can be concluded that F1, F2 and F3 are statistically significant in this regression model. Anova analysis is conducted to test the model fit as in table 7 which reconfirms that the model is fit to the actual phenomenon and good enough to use in this study.

According to table 5, with the given significance 5% of F4, F5 and F6 are not considered statistically significant because their significance values are greater than the given one. Thus, these variables are one-by-one dropped out of the regression model. The final results from regression analysis are presented in table 7.

F2 has the highest value of standardized coefficient "Beta", F1 comes next and F3 has the lowest. This indicates that F2 has the strongest impact on the overall satisfaction level of the customers; F1 comes second; F3 comes third; whereas, F4, F5 and F6 do not have any effect on the overall satisfaction level of the customers towards Vietnam coffee. There are 6 major determinants affecting the decision-making in buying coffee of customer. These 6 determinants are resulted from analysis surveyed data by SPSS statistics. These factors are very important in meeting customers' expectation. Therefore, in order to dominate Taiwan market, Vietnam coffee should put more attention to meet customer satisfaction based on these factors.

Table 7. Anova Analysis

Model	Sum of square	df	Mean square	F	Sig.
1 Regression	19.44	3	6.48	51.22	.000 ^a
Residual	14.17	112	.13		
Total	33.61	115			
a. Predictors: (constant), F3, F2, F1 b. Dependent Variable :E					

3. Discussion and Solutions

There are many studies about customer satisfaction for different products. However, there are only few researches for Vietnam coffee with shortcomings, and lacks of research methods. The previous studies only focuses on prices and the appearance of product. Therefore, the paper is the important values contributing to Vietnam coffee in foreign market by analyzing detailed factors on which affecting to customer satisfaction about quality and brands. As results from previous section, Vietnam coffee producers should pay special attentions to improve the six important determinants of demand, they are factors of color and smell, package, concentration, brand, sugar, milk, and contact information which are shown in table 2.

Table 8. Three factors affecting the overall satisfaction

Factor	Item	Content
F1	14	Keeping smell time
	15	Coffee viscosity
	16	Bitter taste
	17	Sour taste
	10	Color after making
F2	4	Languages printed
	2	Promotion programs
	5	Packaging easy tear
	3	Presentable packaging
F3	12	Smell after making
	13	Special flavor
	7	High concentrations
	8	Expiry time
	6	Net weight

Further to the results in table 6 and table 7, there are three main factors affecting the overall satisfaction level of Vietnam coffee listed in table 8. Among the three factors, F2 has the strongest influence on the overall satisfaction, F1 and F3 come in second and third respectively. Whereas, F4, F5 and F6 do not have any effect on the overall satisfaction level of the customers towards Vietnam coffee. Currently, Vietnam coffee has a very good performance in terms of time of keeping good smell, the viscosity, taste and color after making which are the elements of factor F1. Therefore, it is obvious that Vietnam coffee companies should take this factor F1 as its strength on the market. In this section, some solutions are suggested to enhance the current satisfaction level on F2 and F3 only. Therefore, this section provides some valued solutions in order to improve satisfaction and expectation in using Vietnam coffee brands for Taiwan customers.

The findings of the main determinants will help those coffee exporters make proper strategies for their long term development. However, in order to enhance customer satisfaction level always face with difficulties on severe competitive market. Therefore, it is an urgent requirement for Vietnam coffee industry to have feasible solutions for improving its customer satisfaction.

3.1 Recommendations for enhancing the satisfaction level on F2

Taiwanese customers are currently unsatisfied with the packaging of Vietnam coffee regarding language printed on the package, ease of tearing the package, ability to use the package and the promotion program offered by Vietnam coffee companies. Based on the results in table 5, Vietnam coffee can only reach 84.5% of the customer expectations. This is the main reason why customers are satisfied only 85.2% of their expectations in terms of presentable packaging (Table 5). In order to make Vietnam coffee package differ from those of its competitors, it is suggested that Vietnamese coffee companies should design special shapes and packaging materials, such as wood, bamboo, etc.

Moreover, In order to accelerate Vietnam coffee's development, it is crucial to offer small gifts to regular customers on special occasions are effective ways to improve their satisfaction and customer loyalty to its products and services. Coffee market specialists should provide proper advertisement channels on how Vietnam's coffee is conquering foreign customers. In Taiwan, there are different chains of supermarkets, such as Family Marts, Seven Eleventh, Carrefour, etc., which are extremely important channels to launch the campaigns besides the official advertisements on public media.

3.2 Recommendations for enhancing the satisfaction level on F3

Based on table 2 and table 5, it is clearly shown that customers are currently satisfied only 75.7 % of the important satisfaction level in terms of the smell after making, special flavor, coffee concentrations, net weight and expiry time. The ratio of satisfaction level is about 75.7% in average, which is considered a serious problem to Vietnam coffee industry in this market.

Table 5 indicates that special smell and flavor are important factors attracting not only the coffee users but also others who may haven't tried coffee before. Coffee smell should be particularly recognizable fragrant and distinguishable with the other products. The most remarkable value of the coffee smell and flavor is that provides users alertness, and euphoria. Therefore, coffee companies should improve its unique smell and flavor which requires a special effort in researching and development.

As a result, customers are also dissatisfied with Vietnam coffee in term of expiry date. In order to solve this problem, coffee producers should discuss with the Taiwan agents not selling products that will be expired within the next two months. To do this, they should support the agents by replacing the old products with the new ones. If customers are happy and get used to Vietnam coffee taste, the sales will be boosted up. Therefore, there are no stock remained.

3.3 Recommendations to enhance customers' satisfaction

Based on analysis results in previous sector, there are six important determinants of decision-making. Among these six determinants, Table 2, 3, 4 and 5 clearly shows that factor F3 is the most important determinant. This means that customers pay the most attention to smell, special flavor, coffee concentrations, expiry time, and net weight. Vietnam coffee companies should take these elements into serious consideration to meet the customer expectation. The second important determinant relates to milk concentration and sugar level (F5) which implies that the taste of the consumers in Taiwan is more biased to sweetened coffee.

In addition, local consumers also pay a strong attention to the packaging of the product prior to making their buying-decisions. Specifically, they pay attention to languages printed, promotion programs, packaging easy tear, and presentable packaging. In severe competitive market, the interested packages are considered as important factor to attract customers attention.

4. Conclusion

The coffee industry is now getting fiercer competition, therefore most of companies are trying to find out what factors being affected customers' buying-decisions and how they are currently satisfied with their products on its services. There are six main determinants are found in this study which influenced customer buying behavior. In this study, Vietnam coffee brands are now having some certain problems to be solved in terms of language printed on the package, ease of tearing the package, and promotion programs offered by Vietnam coffee brands, the smell after making the coffee, the flavor, coffee concentrations, net weight and expiry time. Those problems are to be seriously considered and settled to enhance the customer satisfaction level.

In our limitations of this research, the paper aims to help Vietnam coffee companies solve these problems, some possible solutions were suggested as valued insights to market researchers. These solutions are considered as immediate actions that can improve the customers current satisfaction level of Vietnam coffee in Taiwan. However, the integrated performance is required a detailed reevaluation in term of different markets that can be applied efficiently and more input data from respondents. Those disadvantages will be improved by the future directions and researches.

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