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## A COMPARATIVE STUDY OF GRAMMAR EXERCISES DESIGNED FOR MATTHAYOMSUKSA 1 STUDENTS AT BANGKOK CHRISTIAN COLLEGE

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### ABSTRACT

The purposes of this research were to design a grammar exercise for Matthayomsuksa 1 students studying Pre-gifted Child English Program and to test the hypothesis set for this study. By means of purposive sampling, the subjects of this study were 24 high-school Matthayomsuksa 1 students of Class 17 studying “*Module 3 Growing Books on Trees*” in Pre-gifted Child English Program at Bangkok Christian College. The research instrument was the students’ writing samples of book reviews and through frequency after checking their book reviews, subject-verb agreement was the greatest problem at 67 errors among the 7 categories of local errors identified. For this reason, a gap-filling or completion exercise of subject-verb agreement was selected and designed from the 67 errors. This exercise divided into the 2 types of the posttests which were with and without based form of verbs in parenthesis was set the hypothesis and the data were analyzed for mean and standard deviation. The hypothesis was tested by a dependent sample t-test.

The research results revealed that both posttests scores were significantly higher than the pretest scores at a statistical level of 0.01. Next, concerning the research results, the hypothesis is rejected. Therefore, on average the scores of the posttest with based form of verbs in parenthesis ( $M = 11.15$ ,  $SD. = 2.38$ ) and the scores of the posttest without based form of verbs in parenthesis ( $M = 13.73$ ,  $SD. = 1.16$ ) were significantly different at 0.01. This means that, on average, the latter was higher than the former. The hypothesis is declined since presenting the students in Pre-gifted Child English Program with one fixed answer, a traditional fill-in item, a testing task, and a measure of recognition found in the gap-filling exercise of subject-verb agreement with based form of verbs in parenthesis was not adequately challenging and complicated for this group of the students.

**Keywords:** Local Errors, Gap-filling Exercises, Pre-gifted Child English Program

### Introduction

It is hard to avoid grammar because grammar is an integral part of language we use from the most to the least in writing, speaking, reading, and listening respectively. In reference to Jintana Sujjanun (2001), Jintana states that teaching language emphasized only language functions will meet a lot of problems because learners need to know grammar for the use of those language functions and as noted by Dickins (1988), Bowen (1985), Weaver (1979), and Supanil (1971), teaching grammar should be supported to be successful in listening, speaking, reading, and writing (Cited in Jintana Sujjanun, 2001: 9-10).

Bangkok Christian College offers Pre-gifted Child English Program for Class 17. There are several modules in Pre-gifted Child English Program adapted from “*The teaching materials for gifted English students.*” “*Module 3 Growing Books on Trees*” consisting of Penniless Scholars, Types of Books, Mystery Book, My Poor Choice of Book, How to Choose a Book, To the Bookshop, and Book Review has no grammar exercises. For this reason, the students’ book review writing in Class 17 are

grammatically incorrect. The students are able to make people interested in reading books. However, it is not enough for the students to learn communicative writing. Grammar is also vitally important for them. Without grammar exercises, local errors are generally found. With regard to Burt and Kiparsky (1972), there are two kinds of errors: global and local ones. Global errors significantly hinder communication while local errors do not hinder communication. Kaeoluan (2009) reports that “global errors cause a listener or reader to misunderstand a message or to consider a sentence incomprehensible; on the other hand, local errors don’t.” To design a grammar exercise for solving the students’ problem on local errors, the students’ book reviews are analyzed and their local errors are selected and taken as data for designing a grammar exercise.

### **Objectives of the Study**

The objectives of this study were to design a grammar exercise for Matthayomsuksa 1 students studying Pre-gifted Child English Program of Class 17 at Bangkok Christian College.

### **Literature Review**

Designing interesting, meaningful and contextualized grammar lessons needs to have approaches. They should give the learners grammar input for helping them to learn the language. Designing grammar lessons can be sorted into three examples according to the principles of the deductive-inductive language learning.

#### **1. Grammar Games**

Designing grammar games for analytical learners and thinkers is one of the most favorite lessons commonly used especially for primary and elementary level. Krashen (1987) indicates that deductive learning is suitable and effective for analytical learners and thinkers because this learning style dominates left-brain hemisphere and builds left-brain power. In grammar games, Johnson (1973) says that setting a goal has to be organized according to rules (Cited in Celce-Murcia, M. and Hilles, S., 1988, p. 132). This technique can easily be made into a team game. Therefore, providing a handy introduction and introduction hand-out explaining how to play the game and demonstrating the game before playing is necessary. Another thing is that formal and focused grammatical work should be realized in inventing grammar games for analytical learners and thinkers. Too various grammar may cause the games to be difficult to set if knowledge, abilities, needs and interests of learners are not known when teaching learners for a few periods of time.

#### **2. Problem-solving Activities**

Designing problem-solving activities for holistic learners and analogic thinkers is another approach of the most popular lessons generally used from young to adult learners. Not only is it used in language classes, but it is also an easy innovation for adding pleasure to the learning of grammar. Krashen (1987) points out that inductive learning is appropriate and efficient for holistic learners and analogic thinkers. In problem-solving activities, Celce-Murcia and Hilles (1988) states that a goal (the solution of the problem) rarely has elaborate game-type rules and is structured so as to require unique and creative solutions. Problem-solving activities can be ranged into various levels. Elementary structures are designed for young learners because linguistic simplicity can lessen the affective filter. For instance, young learners will have high motivation, self-confidence and low anxiety after they reach a goal (the solution of the problem). However, adept learners may see the regularity after only a few examples. Therefore, problem-solving may occur very quickly for them.

### **3. Gap Filling or Completion Exercises**

Grammar lessons can also be in the form of exercises according to the natural preferences of the teacher and students. As stated by Krashen (1987), exercises are a part of cognitive-code teaching and grammar-translation and both are examples of the “rule-first” deductive approach. In this study, gap-filling or completion exercises are chosen. Larsen-Freeman says on “Fill-in-the-blanks” that “students are given a series of sentences with words missing. They fill in the blanks with new vocabulary items or with items of a particular grammar type, such as prepositions or verbs with different tenses.” One reason for choosing gap-filling or completion exercises is that not only do the students enrich their vocabulary, but they also get new language structures because they will use context to help them understand language directed at them. In gap-filling or completion exercises, one technique comes from Michael Lewis and Jimmie Hill (Lewis, M., & Hill, J. 1999: 81) presenting that “the sentence in fill-in exercises contains clues to the correct answer – the part to be filled in in some way collocates with other words in the sentence, so the student needs to say the whole sentence aloud to increase the chance of the items being remembered correctly.” The other reason for selecting gap-filling or completion exercises is that regarding Celce-Murcia and Hilles (1988), “grammar games and problem-solving activities are more complex than many of the exercises and students are expected to have a certain level of grammar and vocabulary proficiency” (Cited in Celce-Murcia, M. and Hilles, S., 1988, p. 147).

### **Hypothesis**

The formulated hypothesis was that the scores of the posttest without based form of verbs in parenthesis were below the scores of the posttest with based form of verbs in parenthesis.

### **Research Methodology**

#### **1. Subjects**

The subjects of this study were 24 high-school Matthayomsuksa 1 students of Class 17 studying Pre-gifted Child English Program at Bangkok Christian College. The subjects were selected by means of purposive sampling for this study because Class 17 was the only one class in Matthayomsuksa 1 level which studied “*Module 3 Growing Books on Trees*” in Pre-gifted Child English Program.

#### **2. Data Collection Instrument**

The data collection process was book review writing. After buying books from the bookshop, 24 students were assigned to write a paragraph containing 100 – 120 words on book review.

#### **3. Data Analysis**

After the data collection, 24 writing samples of book reviews were analyzed by way of frequency in terms of tense, active/ passive voice, subject-verb agreement, conjunction, preposition, singular-plural and spelling to calculate the number of errors so that the most one would be selected and taken as data for designing 2 types of gap-filling or completion exercises from the book reviews. One included based form of verbs in parenthesis. The other did not include based form of verbs in parenthesis. After that, the data were analyzed by mean and standard deviation and to test the hypothesis, a dependent sample t-test was employed.

## Results

To find out what type of local errors are frequency found in the book reviews written by the 24 students studying “*Module 3 Growing Books on Trees*” in Pre-gifted Child English Program, their local errors in terms of tense, active/ passive voice, subject-verb agreement, conjunction, preposition, singular-plural and spelling are calculated by means of frequency.

**Table 1:** The 24 Students’ Local Errors

No.	The 24 Students’ 7 Categories of Local Errors						
	Tense	Active/Passive Voice	Subject-verb agreement	Conj.	Prep.	Singular-plural	Spelling
1.	-	-	2	1	1	1	2
2.	-	-	6	1	5	1	-
3.	-	2	3	2	1	-	5
4.	-	-	4	-	1	-	1
5.	-	-	2	-	1	2	-
6.	-	-	-	-	-	-	-
7.	-	-	3	1	2	1	5
8.	3	-	2	1	1	4	1
9.	-	-	2	-	1	1	1
10.	1	2	7	-	-	1	-
11.	-	-	1	-	3	2	-
12.	1	1	1	-	-	3	3
13.	-	1	2	-	1	1	2
14.	-	1	3	1	3	2	-
15.	-	-	2	1	2	3	1
16.	-	-	2	-	-	-	4
17.	-	-	-	-	1	-	3
18.	1	-	5	1	1	1	3
19.	-	1	3	-	1	1	-
20.	-	-	1	-	1	1	1
21.	2	1	2	2	1	-	3
22.	1	-	3	2	1	1	1
23.	-	-	2	1	1	-	2
24.	-	1	4	1	1	2	-
Total	10	10	67	15	30	32	39

From the table, the 7 categories of local errors were identified from the most to the least as follows:

- |                           |    |        |
|---------------------------|----|--------|
| 1. Subject-verb Agreement | 67 | errors |
| 2. Spelling               | 39 | errors |
| 3. Singular-plural        | 32 | errors |
| 4. Preposition            | 30 | errors |
| 5. Conjunction            | 15 | errors |
| 6. Tense                  | 10 | errors |
| 7. Active/ Passive Voice  | 10 | errors |

Pertaining to the 7 categories of local errors identified, it was found that the students had the greatest problem with subject-verb agreement (67 errors as the most frequency). As a result, a gap-filling or completion exercise of subject-verb agreement was designed from the 67 errors of subject-verb agreement in the students' writing samples of book reviews. After designed, "Fill-in-the-blanks" has two types as the gap-filling or completion exercise of subject-verb agreement with based form of verbs in parenthesis for only posttest and the gap-filling or completion exercise of subject-verb agreement without based form of verbs in parenthesis for both pretest and posttest.

To find the result of the gap-filling test scores of subject verb agreement between the pretest without based form of verbs in parenthesis and the posttest with based form of verbs in parenthesis, the data were shown in Table 2.

**Table 2:** The Result of the Gap-filling Test Scores of Subject-verb Agreement between the Pretest without Based Form of Verbs in Parenthesis and the Posttest with Based Form of Verbs in Parenthesis

The Gap-filling or Completion Exercise of Subject-verb Agreement Categorized as:	N	M	SD.	df	t	Sig. (2-tailed)
The Pretest without Based Form of Verbs in Parenthesis	24	8.3750	2.08123	23	-4.650	.000**
The Posttest with Based Form of verbs in Parenthesis	24	11.1458	2.37962			

.000\*\* has a significance level of 0.01.

With regard to Table 2, the gap-filling pretest score of the subject-verb agreement exercise without based form of verbs in parenthesis had mean score (M) at 8.38 (SD. = 2.08) and the gap-filling posttest score of the subject-verb agreement exercise with based form of verbs in parenthesis had mean score (M) at 11.15 (SD. = 2.38).

Table 2 demonstrates that the gap-filling posttest score of the subject-verb agreement exercise with based form of verbs in parenthesis was above the gap-filling pretest score of the subject-verb agreement exercise without based form of verbs in parenthesis at a statistical level of 0.01.

To find the result of the gap-filling test scores of subject-verb agreement between the pretest without based form of verbs in parenthesis and the posttest without based form of verbs in parenthesis, the data were demonstrated in Table 3.

**Table 3:** The Result of the Gap-filling Test Scores of Subject-verb Agreement between the Pretest without Based Form of Verbs in Parenthesis and the Posttest without Based Form of Verbs in Parenthesis

The Gap-filling or Completion Exercise of Subject-verb Agreement Categorized as:	N	M	SD.	df	t	Sig. (2-tailed)
The Pretest without Based Form of Verbs in Parenthesis	24	8.3750	2.08123	23	-10.641	.000**
The Posttest without Based Form of verbs in Parenthesis	24	13.7292	1.16076			

.000\*\* has a significance level of 0.01.

Regarding Table 3, the gap-filling pretest score of the subject-verb agreement exercise without based form of verbs in parenthesis had mean score (M) at 8.38 (SD. = 2.08) and the gap-filling posttest score of the subject-verb agreement exercise without based form of verbs in parenthesis had mean score (M) at 13.73 (SD. = 1.16).

Table 3 shows that the gap-filling posttest score of the subject-verb agreement exercise without based form of verbs in parenthesis was above the gap-filling pretest score of the subject-verb agreement exercise without based form of verbs in parenthesis at a statistical level of 0.01.

From Table 2 and Table 3, the students had the scores of the both types of the posttests above the scores of the pretest without based form of verbs in parenthesis. However, the students had the scores of the posttest without based form of verbs in parenthesis above the scores of the posttest with based form of verbs in parenthesis.

To test the hypothesis, the data were indicated in Table 4.

**Table 4:** The Result of the Gap-filling Test Scores of Subject-verb Agreement between the Posttest with Based Form of Verbs in Parenthesis and the Posttest without Based Form of Verbs in Parenthesis

The Gap-filling or Completion Exercise of Subject-verb Agreement Categorized as:	N	M	SD.	df	t	Sig. (2-tailed)
The Posttest with Based Form of Verbs in Parenthesis	24	11.1458	2.37962	23	-5.818	.000**
The Posttest without Based Form of verbs in Parenthesis	24	13.7292	1.16076			

.000\*\* has a significance level of 0.01.

Table 4 disclosed that the significant differences were between the gap-filling posttest scores of subject-verb agreement exercise with based form of verbs in parenthesis and the gap-filling posttest scores of subject-verb agreement exercise without based form of verbs in parenthesis at 0.01. The scores of the posttest without based form of verbs in parenthesis were higher than the scores of the posttest with based form of verbs in parenthesis. This result did not accord with the set hypothesis.

## Discussions

The hypothesis, indicating that the scores of the posttest without based form of verbs in parenthesis were below the scores of the posttest with based form of verbs in parenthesis, was not in accordance with the results of the study according to these four reasons.

First of all, Phothisuk (1999) states that gifted students would like to get challenging and complicated questions and independence. Therefore, exercises should avoid one fixed answer. The gap-filling exercise of subject-verb agreement without based form of verbs in parenthesis is suitable for the students in Pre-gifted Child English Program. Without based form of verbs in parenthesis, the students will have more chances to think than to intensely memorize.

Moreover, as stated by Harmer (1987), the students know the right vocabulary and grammar to fill in the gap as integrative tasks which are not found in the traditional fill-in item. There will be more than one word which could be possible to fill in a blank in the gap-filling exercise of subject-verb agreement without based form of verbs in parenthesis. This type of the gap-filling exercise is likely to respond to this group of the students while the gap-filling exercise of subject-verb agreement with based form of verbs in parenthesis seems to be more traditional. With written practice, the gap-

filling exercise of subject-verb agreement with based form of verbs in parenthesis is the most controlled kind of writing practice, whereas the gap-filling exercise of subject-verb agreement without based form of verbs in parenthesis is a bit freer. This can be applied with a P-P-P methodology.

Particularly, White (1980) points out that displaying the learner with the infinitive (or Base) form of the verb, the exercise might be judged as a test item. The gap-filling exercise of subject-verb agreement with based form of verbs in parenthesis is prone to be a testing task which checks if the student could produce the correct verb form or not. The gap-filling exercise of subject-verb agreement without based form of verbs in parenthesis would become more practicing as a practice exercise. The students can practice much more in a truly practice exercise. However, in terms of testing grammar, Harmer (1987) indicates that testing grammar can be divided into discrete items which only test one thing and integrative items which test all things on knowledge of the language. The gap-filling exercise of subject-verb agreement with based form of verbs in parenthesis can be used as discrete items. Harmer (1987); on the other hand, does not suggest only testing the knowledge of grammatical accuracy.

Finally, as for both classroom tests and exercise purposes, Heaton (1975) says that completion items measure production rather than recognition. For this reason, the gap-filling exercise of subject-verb agreement with based form of verbs in parenthesis is not different from multiple-choice items. Without based form of verbs in parenthesis, the exercise of subject-verb agreement measures more production.

## **Conclusion**

Overall, to design a grammar exercise for solving the students' problem on local errors, the 7 categories of local errors from their book review writing samples were specified by means of frequency and subject-verb agreement which was the greatest problem for the students was selected and some data from the 67 errors of subject-verb agreement in their writing samples were designed as a gap-filling or completion exercise of subject-verb agreement. The result of the study contradicted the hypothesis because the gap-filling exercise of subject-verb agreement with based form of verbs in parenthesis was one fixed answer, a traditional fill-in item, a testing task, and a measure of recognition. For this reason, the exercise was not appropriate to the students in Pre-gifted Child English Program who needed more challenge while the gap-filling exercise of subject-verb agreement without based form of verbs in parenthesis was the other way round with the higher scores at a significance level of 0.01.

## **Recommendations**

The results of this study have been recommended as follows:

1. From classifying the 7 categories of local errors, this classification can be analyzed for the individual student to solve his specific program on discrete grammar individually.
2. This classification of local errors can also be analyzed for solving the group of the students who have the same specific problem on discrete grammar.
3. An action research study can be conducted to be certain whether exercises or tests designed from the students' writing samples can solve their local errors on discrete grammar or combined grammar or not.
4. A comparative study of gap-filling exercises with based form of verbs in parenthesis between students in Pre-gifted Child English Program and students in regular classes can be conducted.



5. A comparative study of gap-filling exercises without based form of verbs in parenthesis between students in Pre-gifted Child English Program and students in regular classes can be conducted.
6. A synthesis of the two comparative studies of number 4 and 5 can be conducted.

## References

- Bowen, D.J., Madsen, H., & Hilferty, A. (1985). *TESOL Techniques and Procedures*. Rowley, MA: New House.
- Burt, M., & Kiparsky, C. (1972). *The Gooficon: A Repair Manual for English*. Rowley Massachusetts: Newbury House.
- Celce-Murcia, M. & Hilles, S. (1988). *Techniques and Resources in Teaching Grammar*. Oxford: Oxford University Press.
- Dickins, P., & Woods, E. (1988). Some Criteria for the Development of Communicative Grammar Tasks. *TESOL Quarterly*, 22, 623-646.
- Harmer, J. (1987). *Teaching and Learning Grammar*. New York: Longman.
- Heaton, J.B. (1975). *Writing English Language Tests*. New York: Longman.
- Hiranburana, S. (2004). *Module 3 Growing Books on Trees*. Bangkok: Office of The Education Council.
- Hiranburana, S. et al. (2001). *The Teaching Materials for English Gifted Students*. Bangkok: Office of The Education Council. [in Thai]
- Johnson, F.C. (1973). *English as a Second Language: An Individual Approach*. Singapore: Jacaranda Press.
- Kaeoluan, H. (2009). A Review of the Roles of Errors and Error Corrections in the Teaching of English as a Foreign Language. *Language Institute Journal*, vol.4 (September 2009), 139-150.
- Krashen, S. (1982). *Principles and Practice in Second Language Acquisition*. Oxford: Pergamon Press.
- Larsen-Freeman, D. (2001). *Techniques and Principles in Language Teaching*. 2<sup>nd</sup> ed. Oxford: Oxford University Press.
- Lewis, M., & Hill, J. (1992). *Practical Techniques for Language Teaching*. England: Language Teaching Publications.
- Phothisuk, U. (1999). *Raising A Genius Book 5*. 3<sup>rd</sup> ed. Bangkok: Family Direct Company Limited. [in Thai]
- Sujjanun, J. (2001). *Learning and Teaching English Grammar*. Bangkok: Chiangmai University. [in Thai]
- Supanil, S. (1971). *Techniques of Teaching Written Composition in Upper Secondary Class in Thailand*. Singapore: SEAMEO Regional English Language Center.
- Weaver, C. (1979). *Grammar for Teachers*. Urbana, IL: NCTE.
- White, R.V. (1980). *Teaching Written English*. London: George Allen & Unwin.

## Appendix

### The Pretest without Based Form of Verbs in Parenthesis

Direction: Fill in the gaps with the words you can think of. Some gaps use *present simple tense*, but some gaps use *present continuous tense*.

1. The characters \_\_\_\_\_ angry easily, but some characters \_\_\_\_\_ kind and lonely.
2. The story \_\_\_\_\_ when the prisoners escaping from the police.
3. At the end of the story, the prisoners \_\_\_\_\_ arrested by the inspectors.
4. The story \_\_\_\_\_ me about honesty.
5. The setting \_\_\_\_\_ in the pirate ship.
6. Carter \_\_\_\_\_ the robbers to rob his own bank.
7. This book is about a man who \_\_\_\_\_ for peace.
8. People \_\_\_\_\_ leaving home and \_\_\_\_\_ going to clean the street.
9. The men \_\_\_\_\_ falling in love.
10. Mr. and Mrs. Painter who \_\_\_\_\_ in the house near the sea \_\_\_\_\_ the thieves.
11. The man who \_\_\_\_\_ to an old town \_\_\_\_\_ in the haunted hotel.
12. She \_\_\_\_\_ rescued by a fighter named Sam who \_\_\_\_\_ dangerous.
13. The characters \_\_\_\_\_ two girls who \_\_\_\_\_ camping.
14. The Escape And Other Stories \_\_\_\_\_ a romance about the love of man and woman.
15. There \_\_\_\_\_ three children who \_\_\_\_\_ to transform the abandoned lot to the park.

### The Posttest with Based Form of verbs in Parenthesis

Direction: Fill in the gaps with the words in the parentheses. Some gaps use *present simple tense*, but some gaps use *present continuous tense*.

1. The characters \_\_\_\_\_ (verb to be) angry easily, but some characters \_\_\_\_\_ (verb to be) kind and lonely.
2. The story \_\_\_\_\_ (begin) when the prisoners escaping from the police.
3. At the end of the story, the prisoners \_\_\_\_\_ (verb to be) arrested by the inspectors.
4. The story \_\_\_\_\_ (tell) me about honesty.
5. The setting \_\_\_\_\_ (verb to be) in the pirate ship.
6. Carter \_\_\_\_\_ (want) the robbers to rob his own bank.
7. This book is about a man who \_\_\_\_\_ (fight) for peace.
8. People \_\_\_\_\_ (verb to be) leaving home and \_\_\_\_\_ (verb to be) going to clean the street.
9. The men \_\_\_\_\_ (verb to be) falling in love.
10. Mr. and Mrs. Painter who \_\_\_\_\_ (live) in the house near the sea \_\_\_\_\_ (arrest) the thieves.
11. The man who \_\_\_\_\_ (go) to an old town \_\_\_\_\_ (live) in the haunted hotel.
12. She \_\_\_\_\_ (verb to be) rescued by a fighter named Sam who \_\_\_\_\_ (verb to be) dangerous.
13. The characters \_\_\_\_\_ (verb to be) two girls who \_\_\_\_\_ (go) camping.
14. The Escape And Other Stories \_\_\_\_\_ (verb to be) a romance about the love of man and woman.
15. There \_\_\_\_\_ (verb to be) three children who \_\_\_\_\_ (want) to transform the abandoned lot to the park.

### The Posttest without Based Form of Verbs in Parenthesis

Direction: Fill in the gaps with the words you can think of. Some gaps use *present simple tense*, but some gaps use *present continuous tense*.

1. There \_\_\_\_\_ three children who \_\_\_\_\_ to transform the abandoned lot to the park.
2. The Escape And Other Stories \_\_\_\_\_ a romance about the love of man and woman.
3. The characters \_\_\_\_\_ two girls who \_\_\_\_\_ camping.
4. She \_\_\_\_\_ rescued by a fighter named Sam who \_\_\_\_\_ dangerous.
5. The man who \_\_\_\_\_ to an old town \_\_\_\_\_ in the haunted hotel.
6. Mr. and Mrs. Painter who \_\_\_\_\_ in the house near the sea \_\_\_\_\_ the thieves.
7. The men \_\_\_\_\_ falling in love.
8. People \_\_\_\_\_ leaving home and \_\_\_\_\_ going to clean the street.
9. This book is about a man who \_\_\_\_\_ for peace.
10. Carter \_\_\_\_\_ the robbers to rob his own bank.
11. The setting \_\_\_\_\_ in the pirate ship.
12. The story \_\_\_\_\_ me about honesty.
13. At the end of the story, the prisoners \_\_\_\_\_ arrested by the inspectors.
14. The story \_\_\_\_\_ when the prisoners escaping from the police.
15. The characters \_\_\_\_\_ angry easily, but some characters \_\_\_\_\_ kind and lonely.

## A STUDY OF CONSUMER SATISFACTION TOWARD FOOD TRUCK BUSINESS IN BANGKOK METROPOLITAN AREA

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### ABSTRACT

Nowadays, consumer behavior is changed for roadside dining; thus, food trucks are the latest and most fashionable to fit consumer needs. Food truck business will be successful if owner business know what customers need and what to make them satisfaction and loyalty. This survey research studied customer's satisfaction toward food from the food truck business in Bangkok and metropolitan areas using 402 target consumers. The results showed that most of consumers participated were female (N=253, 62.94%), 22-39 years (N=221, 54.98%), bachelor degree (N=128, 31.84%), college student (N=165, 41.04%) and income at 10,000 - 20,000 THB (N=190, 47.26%). The results of the marketing mix (7Ps) and target consumer satisfaction level showed that all marketing mix (7Ps) affected at very much on satisfaction level. The factors that have high satisfaction score are novelty packaging, clear price tag, arrange the location for customers to come to serve, convenient parking of food truck, promotion organization during various festivals, smart employees, product display sign visible, read and understand, use the service of the food truck, considering the location, and convenient transportation. The correlation between demographic information and marketing mix (7P) found that age, occupation, and income impacted on all marketing mix factors as significant differences ( $P < 0.05$ ). As for sex ( $P = 0.002$ ) and education ( $P = 0.041$ ) was significant differences only physical and people factor, respectively. Hence, food truck management could use these factors to concern and improve the service to fit the target consumer needs.

**Keywords:** Food Truck, Food Truck Business, Consumer's Satisfaction, Marketing Mix on Food Truck Business

### Introduction

Lifestyle and consumer behavior were changed from era to era. People like to get together for eating out in a beautiful restaurant. That is a simple lifestyle of people who lives in the city. A different food culture makes consumers always seek a new place to try. The first times of food truck business were from the ideal of fast food restaurant and street food. The people in Thailand know food truck businesses from sharing pictures on social media after that it becomes a part of every event due to changing consumer lifestyle. The outstanding of food truck are design and decoration, modern and fusion food serving, business name that strange, unique and easy to remember. Hence, this business is attracted by a young entrepreneur start-up with a lower investment fund than brick and mortar storefront. The business owner can control costs for example, rent, labor, commodities, and so on. (Anonymous, 2016: online) The characteristic of food truck is truck owner can move to

everywhere to reach their customer such as communities, flea markets, night markets, events, food exhibitions and etcetera.

Today food truck have more than 1,500 trucks in Thailand, were located in Bangkok and metropolitan area 70 percent and up-country 30 percent. Providing food 57 percent, beverage 49 percent and dessert 14 percent (Anonymous, 2019: online). Bangkok has been ranked by CNN, as the world's best city for street food from 23 cities (Anonymous, 2020: online). Thus, Thai street food styles are a mainly concept of food truck, but international food styles are also interested. There not only served grab and go style but also providing a couple of table for service their customers.

Food truck business trends to rapidly growth in the future because it response need of customer that need a convenience, quickly and fashionable. We realized a services marketing is also importance which are products, price, place, promotion, people, process and physical evidence. Food truck business will be successful if we know what customer really need and what to make them satisfaction and loyalty.

Therefore, we are interested to study a consumer satisfaction toward the food truck business in Bangkok metropolitan's area. To study the personal factors and services marketing mix of consumer satisfaction toward food truck business. The business owner and whoever interested in the food truck business can use the conclusion for developing, defining business strategies and reaching a target customer of their business in the future.

### ***1. Services marketing mix (7Ps) theory***

In food business, products and services are the key of business successful. The owner should know what customer are seeking for, set and sell products in the right price, distribute products in the right place and deliver to the right target customer for their highest satisfaction. Kotler (2003) defined a marketing mix as a set of marketing tools that a firm must decides to use with the target markets. Referred to the idea of McCarthy (2005) categorized the principle of fourth elements called "the 4Ps" are product, price, place and promotion that is helpful in goods or tangible products. According to Booms and Bitners (1981) described to additional the three elements; people, process and physical evidence which called "the 7Ps or the services marketing mix". The details defined 7Ps of the marketing mix as follow:

#### **1.1 Product**

The product makes up the first element of the marketing mix and affects the other three elements of the marketing mix due to its nature and attributes. The product can be intangible or tangible as it can be in the form of services or goods and attributes and features of products based on the difference in the needs and wants of target markets (Mathieu, 2001). The product factors in a successful business will consider the three concepts in product strategy. First, a strategy of differentiating related interests of customers. Second, a product component based on utility, appearance, quality, packaging, and brand that persuade customers to purchase. Last, product development helps a product attractive by improving and developing a characteristic, quality, and adding some new features to satisfy a new customer and existing customer (Lovelock & Wright, 2002). In general, products in food truck businesses are food and service such as food quality, a taste of food, a variety of food, food packaging, and customer service.

#### **1.2 Price**

The price can be defined as the amount that consumer will exchange to receive an offering (Singh, 2012). Various factors that affect the pricing strategy, for example the cost of materials, product differentiation, competition level, market share, and the customer's perceived value of the product. Pricing determined the factor as above. Hence, consumer will pay in a reasonable price for obtaining a product or service that consumer satisfaction. Price in food truck business will be vary

because it is depend on a total cost. In consumer behavior, customer willing to pay for the product and service that satisfied their expectation.

### **1.3 Place**

The place can be defined as the mechanism through which goods and services are moved from the provider or manufacturer to the consumer (Goi, 2009). The channels of distribution comprise all those activities that place the product or service to the customer. These channels help the organization to promote, sell, and distribute its goods to final buyers, such as resellers (Kotler and Armstrong, 2012). An advantage of food truck business, food truck can move to everywhere that customer can easy access such as communities, flea markets, night markets, events and food exhibitions. Moreover, social media is a channel that can access target customer, can give target customer information.

### **1.4 Promotion**

The promotion is a communicate from provider to the consumer for persuade process target market including all marketing activities for reminding the target market about products or services to build a relationship in the mind of the customer (Sidhanta and Chakrabarty, 2010). Kotler and Armstrong (2012) defined promotion as human activities based on a communication process that can be directed via personal selling points or indirectly via advertising messages through the media.

The promotion mix is important and effectively in food truck business. Therefore, most of food truck business launch their promotion direct on social media in order to communication and persuade target market. Regarding to sale promotion, business owner provides a special offer to new customer and existing customer.

### **1.5 People**

In most service, people are an essential element of the services marketing mix. A well-trained staff can develop a good relationship between customer and service providers (Palmer, 2005). A successful service providers devote significant effort to recruit, train and motivated their staff, especially staff who in direct contact with customer. Staff who have skill and motivate can support business by making customer happy when they providing the service.

In food truck business, the limitation of two to three people to work in one truck. Staff must have a skillful, service mind and attentive to customer. The key element of success, staff have to keep customer satisfied especially staff who direct contact with customer.

### **1.6 Process**

The process is a part of activity operation when delivery the service. Otherwise, customer experience is determined by poor process or smooth process that is very important for customer satisfaction.

Regarding process in food truck have to be fast because of high turnover customer. Customer will appreciate good coordination among workers. Also a smooth and rapid workflow will show a performance of the business. Moreover, change of customer behavior in a process of payment use technology for business such as quick service from bank transfer using the application.

### **1.7 Physical Evidence**

The physical evidence is a presentation of business that aspects of place and product that are particular to service purchases. It is includes the appearance of building, landscape, parking, and other vehicle sign. (Lovelock and Wright, 2002)

In generally of food truck business, physical evidence that represent the business is a cleanliness of service area; eating area, cooking area and preparation area. It is including the body of truck decoration, menu, light, business card.

In summary, in each elements of the mix is important in business. In business that related with food service must consider the 7Ps factors. Hence, in food truck business must offer the product and service that give customer a different experience; food quality, taste of food and quick service which sell in a reasonable price. Social media help business connect with the target market to inform an information and promotion direct to customer. Well-trained staff with service mind and a process when deliver a product and service to customer will represent a workflow of business. For business environment, including a unique design the truck, cleanliness of service area and option of payment that give customer easy to access. Customer perceive a good feeling of intangible and they will satisfy and become a return customer.

## **2. Demographic characteristics**

Phimolsomphong, C. (2005) mention that the demographic factor consist of family size, gender, age, education, income, occupation and nationality affecting to consumer need of purchase.

As same as Hanna and Wozniak (2001), Shiffman and Kanuk (2003) mention a meaning of demographic characteristic were the personal information such as age, gender, education, occupation, income and nationality affecting to consumer behavior. In general, marketer will concerns with market segmentation and preference and a frequency of consumer use the product.

Serirat (1995) said that market segmentation in demographic factor related with gender, age, marital status, family size, education level and monthly income. This is an important qualitative of population, help to market target while a factor of psychology, social and culture were explained and ideal, feeling of target market.

In this research the important personal factor are age, gender, education, income and occupation.

### **2.1 Gender**

A different gender leading to different consumer behavior. Females tend to receive and send information than males while males tend to build a relationship from receive and send information. In research of Brooks (1987) aimed to Ladies' Home Journal (January 2014) survey a purchasing of female behavior found that female tend to believe in word-of-mouth and friend was an influencer in the decision process in 82%, Sharing of product and service with a friend in 79%, make decision product and service from an influencer in 52% and a friend recommend product and service in 84%

### **2.2 Age**

Age due to the products which the consumers purchase depends on the age of consumers such as the aspects of product and service. A difference in the age of buyers leading to different needs.

### **2.3 Occupation**

A difference profession of each person have influence of purchasing behavior. Consumer make a decision to purchase following their lifestyle and standard of their occupation. Thus, the marketing managers have to design different marketing strategies which is suitable the buying purpose of different occupation target market (Yaowasang, 2012).

### **2.4 Income**

Income is an important source of purchasing power, Thus it can significantly influence in shaping the consumption pattern. So, different purchasing standard of each person it depend on a different levels of income (Yaowasang, 2012).

## 2.5 Education

The previous study tested the effect of education differences on decision purchasing behavior the result is the education level of consumer influences their purchasing behavior (Rayrayab, 2013). Thus, in this study will focus on five factor of demographic characteristic that affecting consumer satisfaction toward buying food from food truck business in Bangkok metropolitan's area

### Objectives

1. To analyze the personal factors on consumer satisfaction toward buying food from food truck business in Bangkok metropolitan's area
2. To analyze a services marketing mix of consumer satisfaction toward buying food from food truck business in Bangkok metropolitan's area

### Literature Review

#### 1. History of food truck

A food truck is a huge motorized vehicle, such as a van or trailer, inside the truck equipped to cook, prepare, serve, and sell food for customer. The originally in Texas in the states of America from a concept of Charles Goodnight. He purchased the government wagon and had it completely rebuilt it in 1866. The feature of the wagon was the sloping box on the rear with hinged lid that lowered to become a cook's worktable. The box was fitted to the width of the wagon and contained shelves and drawers for holding food and utensils. "Chuck" was food to a cowboy. So the Wagon that carried the food became the "Chuck Wagon" (Mobile-cuisine, Richard Myrick). A type of food that carried in the wagon was consisted of dried beans, coffee, cornmeal, greasy cloth-wrapped bacon, salt pork, beef, usually dried or salted or smoked, and other easy to preserve food stuffs as shown in the Picture 1 (Butler, 2014).



**Picture 1:** The feature of the first food wagon invented by Charlies Goodnight in 1866

**Source:** [www.mobile-cuisine.com/business/history-of-american-food-trucks](http://www.mobile-cuisine.com/business/history-of-american-food-trucks)

In the late 1950s, the food truck were mobile canteens (Picture 2), which were authorized by the U.S. Army and operated on stateside army bases. The food truck traditionally offered only quick lunch at a low cost (Loscutoff, 2013)





**Figure 2:** The Mobile Canteen lunch truck which were authorized by the U.S. Army.

**Source:** [www.brooklynhistory.org/photos-of-the-week/food-trucks/](http://www.brooklynhistory.org/photos-of-the-week/food-trucks/)

The food truck well-known in the states caused by economic recession in 2000s. Many business was closed and the chef from high-end restaurants were being laid off. Meanwhile, the food truck business was increased because it was less risk and less investment business than a brick-and-mortar restaurant. Then, food truck were a famous business in many country (Buck, 2011).

In Thailand, people are familiar with street food that sell in a small mobile vendor. A feature of food is quick bite and only sell a simple items such as fried or grilled meat balls, sausage, ice-cream, noodle and beverage. Currently, a combination between lifestyle and technology leading to Thai consumption behavior changed and food truck culture is refreshing Thailand's food scene that response to consumers lifestyle in Thailand (Jamroonwat, 2016). Food truck become a new food business trend in Thailand. Today, a number of food truck business have more than 500 businesses. (Food truck club Thailand, 2018)

## **2. Related research**

Dumsong (2016) studied motivation and marketing mix influencing the decision to purchase food truck in Bangkok. The objectives of this research were to 1) study motives affecting a consumer in purchasing food trucks in Bangkok, 2) study marketing mix influencing a consumer in purchasing food trucks in Bangkok, 3) study consumers' buying behavior towards the purchase of food trucks in Bangkok. The samples for this research were 400 customers who were deciding to buy food trucks and who used to buy and consume food trucks. The tool used to collect data was a survey questionnaire. Data was analyzed by using descriptive statistics to determine percentage, mean, and standard deviation, as well as inferential statistics including multiple regression analysis for analyzing data and testing the hypothesis at the statistical significant level of 0.05. The research results revealed that the majority of respondents were female, aged between 21-30 years and private employees who had average monthly income at 10,001-20,000 baht. They typically had a bachelor's degree or a

diploma. They tended to purchase food trucks less than or equal to 3 times per month and spent 101-200 baht each time. The most popular type of food trucks was beverage. From samples, motives and marketing mix were significant towards the decision in purchasing food trucks. Hypothesis test showed that product buying motives, rational buying motives, emotional buying motive and patronage buying motives influenced the decision in purchasing food truck in Bangkok, as well as marketing mix that product, price, place and promotion also influencing the decision in purchasing food truck in Bangkok.

Jamroonwat (2016) studies the factors affecting food truck selection to customer in Bangkok. The overall objectives of this study were to find out the result of 7P's marketing mix and demographic factors include gender, age, degree, average income and occupation that affecting food truck selection of customers in Bangkok. The result of this study were used to develop your business strategy in order to attract new customers and retain existing customers. The finding of this study indicated that food truck selection of customers in Bangkok were not affected by differences in demographic factor - gender, age, degree, average income and occupation. The Quality of food and proper pricing was the most affected customer's food truck selection.

Nimchokchairat and Kessuvan (2016) studied the consumption behavior and service marketing factor affecting purchase decision from food truck channel. This research explores the demographics, consumption behaviors, lifestyles and marketing mix factors affecting purchase decision for Thai foods from food truck channel. Questionnaire survey was conducted with experienced consumers in Bangkok metropolitan. In general, respondents are single female, 20-50 years old who are employed and university college student with bachelor degree. Flea market and community mall are the most favorable channels. Consumers normally purchase less than once a week with average expenses of THB 67-132. They focus on product taste, easy to commute and food truck decoration as major purchase decision criteria. The most popular food is meat appetizer. The analysis indicated that age or generation show the difference in consumption behavior and lifestyles. Regarding the important level marketing factors affecting purchasing decision, ANOVA revealed that the difference in generation X and generation Y had significant effects on promotion strategy. The research provides benefit to entrepreneur in order to identify the consumer segment according to behavior and lifestyle, and become a guideline to formulate the effective differentiated marketing strategy for the target consumers.

Panyaporn (2015) studied willingness to pay for food truck's goods and service in Bangkok. This study has two main objectives which are; 1) to assess the value of willingness to pay for food truck's goods and service in Bangkok and; 2) to study the factors affected to the determination of the willingness to pay by applying Contingent Valuation method (CMV), Stepwise Multiple Regression Analysis and Cross-tabulation table Analysis. The analyzed data were received from the sample groups (all 400 samples) both have experience and no experience in food truck restaurants to assess the value of willingness to pay comparing for 3 types of restaurants which are restaurant, food truck and street food vendor.

According to the survey results of the assessment of value of the willingness to pay for dining out, the highest average price each time per person in the restaurant with good atmosphere, the restaurant in building, food truck restaurant and wayside restaurant was 286.7 baht, 131.9 baht, 82.5 baht and 53.2 baht respectively. Furthermore, it was also found that the factors affected to the determination of value of the willingness to pay for food truck restaurant was significantly higher than others which were the characteristics of family residence, average income between 10,001 – 20,000 baht, the behaviors of popular convenience ready to cook foods, the behaviors of dining out in special occasions, the restaurant reputation, food varieties and the restaurant atmosphere decoration. On the

other hand, the factors affected to the determination of value of the willingness to pay for food truck restaurant was significantly lower than others which were the enterprise owner, the behaviors of popular convenience in good view restaurant, the non-verity menu, the non-staff service and non-restaurant facilities such as table or chair.

From the analysis results of relationships of the factors between the group who were willing to pay for food truck and the group who spent for the restaurant in building, it was discovered that the samples who provided value of the willingness to pay for food truck more than the others were the consumers who often go dining out average a time per month, and have behaviors of accessing to Chain restaurants. They also greatly prioritized on food varieties and restaurant reputation whereas less emphasize on price factor. While the testing results when compared with the value of willingness to pay for food truck and street food vendor suggested that the samples who provided value of the willingness to pay for food truck more than street food vendor were single female consumers who have the age between 15-26 years old. Most of them were private company employees. They admired street food vendor the most, and they usually go for dining out 1-3 times per week. The reasons they were willing to pay are that their life style always spend outside most and the influence from online social media. The media was also highly affected to the decision on choosing restaurants. Moreover, they prioritized on food novelty and restaurant reputation whereas they gave less importance on price, cleanliness and facilities.

Additionally, Suwunnamek and Krommuang (2019) studied factors affecting satisfaction toward street food consumption in Bangkok. This study is aimed to analyze factors affecting satisfaction toward street food consumption in Bangkok. It is attempted to examine relationship between factors and consumer satisfaction in order to improve street food stand, one of businesses which is important for Bangkok people's lifestyle, to compete with other food businesses and business environment changes at present. In this study, population were persons who live and work in Bangkok. Sample size is determined by using the Taro Yamane's formula (Taro Yamane, 1967). Data collection was from 384 respondents, using convenience sampling. Frequency, mean, percentage and multiple regression analysis were applied. The result showed that convenience of access and food taste was two factors that affected satisfaction, while good sanitation, price, and nutrition showed no statistical significance at the 0.01 level.

## **Methods**

### ***1. Demographic information on target consumer satisfaction toward food truck business in Bangkok metropolitan's area***

The 402 target consumer who have been to buy food at food truck was asked the demographic information with questionnaire including gender, age, education, income and occupation. The data collection was expressed in term of percentage.

#### **1.1 Sampling of population**

The population of this study will be a customer who used to buy food from food truck in Bangkok and metropolitan's area.

The sample of this study will be selected from customer who used to buy food from food truck in Bangkok and metropolitan's area. The study is quantitative by using taro Yamane formula to calculate the sample size. (According 5,666,246 of population in Bangkok, 2019. Wikipedia)

$$\text{Formula} \quad n = \frac{N}{1+N(e)^2}$$

Where: n = sample size, N = Population of sample, e = Possibility of error

$$n = \frac{5,666,246}{1 + 5,666,246 (0.05)^2}$$

$$n = 399.98 \text{ or } 400$$

This study used a confidence level of 95% for a better accuracy, which will give a margin error of 0.05. N, is the population in Bangkok and metropolitan's area. According to the calculation, the population of sample size is 400 sampling.

Quota sampling technique was applied for representing data into 5 groups which are Pathumwan (49,121 people), Chatuchak (156,684 people), Wattana (84,967 people), Ladprao (120,394 people), and Haui kwang (81,517 people). (Population statistics, 2019) We used quota sampling technique which 10 percent of population from 50 districts with this following formula.

$$492,683 \times 10 / 400 = 12,317$$

Districts	Calculate Population	Sampling size
Pathumwan	49,121 x 10 / 12,317	39.88 = 40
Chatuchak	156,684 x 10 / 12,317	127.20 = 127
Wattana	84,967 x 10 / 12,317	68.98 = 69
Ladprao	120,394 x 10 / 12,317	97.74 = 98
Haui kwang	81,517 x 10 / 12,317	66.18 = 66
<b>Total</b>	<b>492,683</b>	<b>400</b>

According to the calculation, the population of sample size is 400 sampling by selected from 10 percent in each district which are Pathumwan 40 people, Chatuchak 127 people, Wattana 69 people, Ladprao 98 people and Haui kwang 66 people. A total of sample size from each district is 400.

This study focused on customer's satisfaction toward food from food truck business in Bangkok and metropolitan area using 402 target consumer.

## 1.2 Research hypothesis

1.2.1 A different of personal factors affecting consumer satisfaction in food truck business in Bangkok and metropolitan's area

1.2.2 Factors of the services marketing mix (7Ps) affecting consumer satisfaction level in the food truck business in Bangkok and metropolitan area

## 1.3 Definitions of terms

Food truck is a vehicle in which food can be cooked and sold, that moves from place to place. Customer satisfaction is a consumer behavior buying a product and service of food truck which meet customer expectation. Services marketing mix is the combination of marketing activities an organization engages in to promote and sell intangible services, as opposed to tangible products. In this study will focuses on seven aspects as known as 7Ps which are product, price, place, promotion, people, process and physical evidence.

## 2. The marketing mix (7Ps) on target consumer satisfaction level toward food truck business in Bangkok metropolitan's area

The marketing mix (7Ps) including product, price, place, promotion, people, physical evidence and process factor was studied to know the impact of consumer satisfaction level for development the food truck business in Bangkok metropolitan's area.

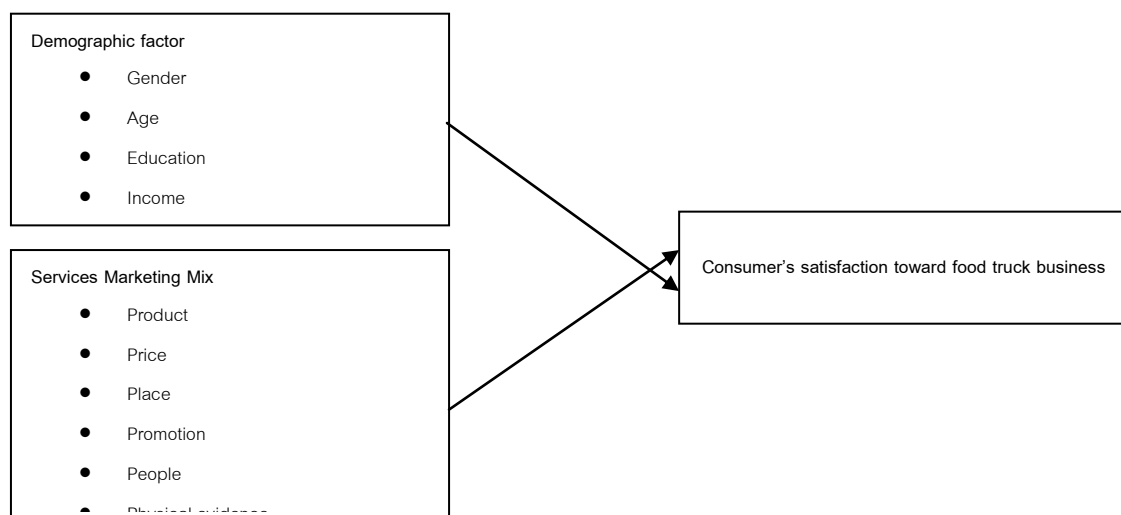
The data was analyzed in satisfaction level by dividing the importance level of factors into 5 levels as follows:

- Average score of 1.00 - 1.49 means not at all.
- Average score of 1.59 - 2.49 means slightly.
- Average score of 2.50 - 3.49 means moderately.
- Average score of 3.50 - 4.49 means very much
- Average score of 4.50 - 5.00 means the extremely

### 3. *The correlation between demographic information (sex, age, education, occupation, income) and marketing mix (7P) on target consumer satisfaction level toward food truck business in Bangkok metropolitan area*

The correlation between demographic information (sex, age, education, career, income) and marketing mix (7P) was evaluated significant differences among means by one-way ANOVA using SPSS (Version 12, SPSS Inc., Chicago, USA). The conceptual framework of research showed in the Picture 3.

#### 3.1 Conceptual framework



**Picture 3:** Conceptual framework

## Results and Discussion

The consumer satisfaction (N=402) toward food truck business in Bangkok metropolitan area was studied using questionnaire.

### 1. *Demographic information on target consumer satisfaction toward food truck business in Bangkok metropolitan's area*

Most of consumers participated with satisfaction toward food truck business in Bangkok metropolitan area were female (N=253, 62.94%), 22-39 years (N=221, 54.98%), bachelor degree (N=128, 31.84%), college student (N=165, 41.04%) and income at 10,000 - 20,000 THB (N=190, 47.26%). This result was suggested that most college students like to hang out with friends after school. As for the second, consumers participated was an employee because they finished work would be relaxed by out walking to buy food, so food truck business was popular for dinner now as shown in Table 1.

**Table 1:** Demographic information of target consumer satisfaction toward food truck business in Bangkok metropolitan area

Demographics	Number ( N=402 )	%
1. Sex		
Male	149	37.06
Female	253	62.94
2. Age		
10 - 21 years	107	26.62
22 - 39 years	221	54.98
40 - 54 years	71	17.66
Over 55 years	3	0.75
3. Education		
Middle school	70	17.41
High school	91	22.64
Vocational Certificate	55	13.68
High Vocational Certificate	58	14.43
Bachelor	128	31.84
4. Occupation		
government officer	29	7.21
State enterprise employee	33	8.21
Office worker	34	8.46
Employee	62	15.42
Merchant	44	10.95
College student	165	41.04
Butler/Maid	23	5.72
Unemployed	7	1.74
Etc.....	5	1.24
5. Income		
Lower 10,000 THB	113	28.11
10,001 - 20,000 THB	190	47.26
30,000 - 40,000 THB	92	22.89
40,001 – 50,000 THB	7	1.74

**2. The marketing mix (7Ps) on target consumer satisfaction level toward food truck business in Bangkok metropolitan's area**

This part for testing the research hypothesis in the question of different personal factors affecting consumer satisfaction in the food truck business in Bangkok and the metropolitan area was investigated. The results of the marketing mix (7Ps) and target consumer satisfaction level showed that all marketing mix (7Ps) including product, price, place, promotion, people, physical evidence and process factor affected at very much on satisfaction level. The marketing mix (7Ps) is an important benefit of providing an idea to business successfully (Manoj Kumar Jain, 2013: 23-28). The novelty packaging, delicious food, and receiving benefits and product value had the highest satisfaction score in the product factor. A clear price tag had the highest satisfaction score in price factors. Those factors of arranging the location for customers to come to serve and convenient parking of food trucks had the highest satisfaction score in place factors. The promotions organization during various festivals had the highest satisfaction score in promotion factors. As for people factors, smart employees had the highest satisfaction score. The product display sign clearly visible, read, and understand had the highest satisfaction score in physical evidence factor. Use of service in the food truck business, considering the location and convenient transportation had the highest satisfaction score in the physical process factor.

The factors of the marketing mix (7Ps) with a lower score than 4.00 including the value of food compared to the price, various activities for consumers, employee's interest in consumers, interesting shop, sufficient lighting for clear product visibility and fast service; however, these factors were satisfaction in the very much level (score in the range of 3.50 to 4.49). The food truck business with delicious food and good service is impressed by the customers who are satisfied and the loyalty will be repeated purchase of products and services. Hence, these factors were conducted to careful the food truck service to fit the target consumer needs as shown in Table 2.

**Table 2:** The correlation between marketing mix (7Ps) and target consumer satisfaction level toward food truck business in Bangkok metropolitan area

Marketing Mix	Satisfaction score	Satisfaction Level
<b>Product Factors</b>		
1. Variety of menus to choose from	4.00±0.72	Very much
2. Delicious food	4.13±0.71	Very much
3. Freshness and cleanliness of raw materials	4.03±0.71	Very much
4. Novelty packaging	4.14±0.71	Very much
5. Receiving benefits and product value.	4.13±0.71	Very much
6. Service satisfaction	4.08±0.71	Very much
<b>Price Factors</b>		
1. Value of food compared to price	3.88±0.81	Very much
2. A clear price tag	4.17±0.74	Very much
3. Receiving of service value	4.03±0.80	Very much
<b>Place Factors</b>		
1. Various activities for consumers	3.95±0.77	Very much
2. Arrange the location for customers to come to serve	4.08±0.79	Very much
3. The movement of the food truck to service	4.00±0.78	Very much
4. Convenient parking	4.08±0.79	Very much
<b>Promotion Factors</b>		
1. Advertisement through television, print media and billboards	4.06±0.65	Very much
2. Promotions organization during various festivals		
3. The promotion of accumulating points to eat for free.	4.14±0.74	Very much
4. Advertising media through various electronic media well and updated regularly product information	4.00±0.78	Very much
	4.06±0.81	Very much
<b>People Factors</b>		
1. Employee's interest in consumers	3.78±0.80	Very much
2. Smart Employees	4.08±0.78	Very much
3. Speaking courteous, smiling, paying respect and human relations with customers	4.05±0.79	Very much
<b>Physical Evidence Factor</b>		
1. Interesting shop	3.95±0.72	Very much
2. The product display sign clearly visible, read and understand	4.15±0.73	Very much
3. Sufficient lighting for clear product visibility	3.97±0.80	Very much
4. Cleanliness of the location	4.14±0.74	Very much
<b>Process Factors</b>		
1. Fast service	3.90±0.78	Very much
2. Use the service of food truck, considering location and convenient transportation	4.11±0.73	Very much
3. Facilities in the store such as tables and chairs.	4.02±0.81	Very much
4. Orderliness of the products placed	4.08±0.78	Very much

### 3. The correlation between demographic information (sex, age, education, occupation, income) and marketing mix (7P) on target consumer satisfaction level toward food truck business in Bangkok metropolitan area

This part for testing the research hypothesis in the question of the services marketing mix (7Ps) affecting consumer satisfaction in the food truck business in Bangkok and metropolitan area different was investigated. The results (Table 3) of correlation between demographic information (sex, age, education, occupation, income) and marketing mix (7P) on target consumer satisfaction level toward food truck business in Bangkok metropolitan area found that age, occupation, and income impacted on all marketing mix (product, price, place, promotion, people, physical evidence and process factor) as significant differences ( $P < 0.05$ ). As for sex ( $P = 0.002$ ) and education ( $P = 0.041$ ) was significant differences only physical and people factor, respectively. Different age impacted the decision to buy different food because some health-conscious people would choose to buy food carefully. People with high incomes would have high purchasing power and easy purchasing decisions. Hence, food truck management could use these factors to concern and improve the service to fit the target consumer needs. The consumers are satisfied in the service, repeated purchases occurrence that causes business successfully.

**Table 3:** The correlation between demographic information (sex, age, education, occupation, income) and marketing mix (7Ps) on target consumer satisfaction level toward food truck business in Bangkok metropolitan's area

Marketing mix	Significant				
	Sex	Age	Education	Occupation	Income
1. Product Factors	0.884	0.000*	0.459	0.000*	0.000*
2. Price Factors	0.224	0.000*	0.124	0.000*	0.000*
3. Place Factors	0.304	0.000*	0.195	0.000*	0.001*
4. Promotion Factors	0.248	0.000*	0.083	0.000*	0.000*
5. People Factors	0.672	0.000*	0.041*	0.000*	0.000*
6. Process Factors	0.060	0.000*	0.376	0.000*	0.000*
7. Physical Factor	0.002*	0.000*	0.790	0.000*	0.000*

**Remark:** \*Significant differences between demographic information and marketing mix (7Ps) based on the F's test ( $P < 0.05$ ).

### Conclusions

Food truck business trends to rapid growth in the future because of its response need of the customer that needs a convenience, quickly and fashionable. The consumption behavior and service marketing factor affecting purchase decisions from the food truck channel. The marketing mix (7Ps) is an important benefit of providing an idea to increase business growth. Food truck business will be successful if the enterprise knows what customers really need and what to make them satisfaction and loyalty. Thus, consumer satisfaction understanding had high importance in the food truck business.

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## References

- Anonymous. (2016). *Food Truck, Food and Beverage Mobile Investment Trends*. Retrieved March 20, 2020, from <https://moneyhub.in.th/article/food-truck-trend>. [in Thai]
- Anonymous. (2020). “Food Truck” *Mobile Business Runs in CLMV Market*. Retrieved March 20, 2020, from <https://www.prachachat.net/marketing/news-294329>. [in Thai]
- Anonymous. (2019). “Food Truck” *New Business Industry for in Town Lifestyle*. Retrieved March 20, 2020, from <http://www.voicetv.co.th/read/RDXExtr7P>. [in Thai]
- Bernama. (2016). *Bangkok's Street Food World's Best*. Retrieved March 20, 2020, from <https://www.nst.com.my/news/2016/08/164682/bangkoks-street-food-worlds-best-says-cnn>
- Booms, B. H. & Bitner, M. J. (1981). *Marketing of Services*. Chicago, IL: American Marketing Association.
- Buck, S. (2011). *The Rise of the Social Food Truck*. Retrieved March 22, 2020, from <http://mashable.com/2011/08/04/food-truck-history-infographic/>.
- Butler, S. (2014). *From Chuck Wagons to Pushcarts: The History of the Food Truck*. Retrieved March 22, 2020, from <http://www.history.com/news/hungry-history/from-chuck-wagons-to-pushcarts-the-history-of-the-food-truck>.
- Dumsong, J. (2016). *Motivation and Marketing Mix Influencing the Decision to Purchase Food Truck in Bangkok*. Master of Art. Rajamangala University of Technology Phra Nakorn. [in Thai]
- Dumsong, J. (2018). *Motivation and marketing mix influencing the decision to purchase food truck in Bangkok*. Rajamangala University of Technology Phra Nakhon [in Thai]
- Goi, C. L. (2009). *A Review of Marketing Mix: 4Ps or More?*. Journal of Marketing Studies Vol.1, No.1, 2-15
- Hanna, N., and Wozniak, R. (2001). *Consumer Behavior: An Applied Approach*. Upper Saddle River, NJ : Prentice Hall
- Jain, M.K. (2013). An analysis of Marketing Mix: 7Ps or More. *Asian Journal of Multidisciplinary Studies.*, 1(4), 23-28.
- Jamroonwat, S. (2016). *Factors Affecting Food Truck Selection of Customers in Bangkok*. Master of Business Administration, Thammasat University. [in Thai]
- Kolter, P. (2003). *Marketing management* (7<sup>th</sup> ed). Upper Saddle River, NJ: Pearson Education.
- Kotler, P. and Armstrong, G. (2012). *Principles of Marketing*. (7<sup>th</sup> ed). England: Pearson Education Limited.
- Lempert, P. (2010). *Evolution: The Time for Food Trucks Has Arrived!*. Retrieved March 22, 2020, from <http://supermarketnews.com/viewpoints/evolution-time-food-trucks-1025>.
- Loscutoff, L. (2013). *Food Trucks*. Retrieved March 22, 2020, from <https://www.brooklynhistory.org/photos-of-the-week/food-trucks/>
- Lovelock, C. and Wright, L. (2002). *Principles Of Service Marketing And Management*. Upper Saddle River, NJ: Prentice Hall.
- McCarthy, E. (2005). *Basic Marketing: A Global Managerial Approach*. Chicago, IL: Irwin/ Mcgraw-Hill
- Mathieu, V. (2001) *Product Services: From a Service Supporting the Product to a Service Supporting the Client*. Journal of Business & Industrial Marketing, 16, 39-58.
- Nimchokchairat, K. and Kessuvan, A. (2016). *The Study of Consumption Behavior and Service Marketing Factor Affecting Purchase Decision from Food Truck Channel*. The 55th Kasetsart University Annual Conference. [in Thai]

- Palmer, A. (2005). *Principle of Service marketing (4<sup>th</sup> ed.)*. London: McGraw-Hill
- Panyaporn, C. (2015). *Willingness to Pay for Food Truck's Goods and Service in Bangkok*. Master of Arts Program in Business Economics, Thammasat University. [in Thai]
- Phimolsomphong C. (2005). *Planning and development of tourism market*. Bangkok: Kasetsart University Press
- Serirat, S. (1995). *Marketing Management*. Bangkok: Dharmasarn Printing Company Limited
- Singh, M. (2012). *Marketing Mix of 4P'S for Competitive Advantage*. IOSR Journal of Business and Management. 3 (6), pp.40-45.
- Sidhanta, S., & Chakrabarty, A. (2010). *Promotional Mix and Corporate Performance - An Empirical Study*. Paradigm, 14(1), 97–102.
- Schiffman, G., & Kanuk, L. (2003). *Customer Behavior (5<sup>th</sup> ed.)*. Upper Saddle River, NJ: Prentice Hall
- Suwunnamek, O. and Krommuang, A. (2019). *Factors Affecting Satisfaction Toward Street Food Consumption in Bangkok*. Srinakarinwirot Business Journal

## **A STUDY OF THE SERVICE MARKETING MIX (7P'S) OF MOONCAKES PRODUCTS THAT INFLUENCE THE PURCHASING DECISIONS OF CONSUMERS IN BANGKOK**

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### **Abstract**

The purpose of this research is to study the service marketing mix (7P's) that influence consumer purchasing decisions of mooncakes products in Bangkok. The survey used a questionnaire to collect data from 405 consumers who lived in Bangkok and used to decide to buy mooncakes products during the past five years (2015-2019). This research used descriptive statistical techniques and standard deviation, including Multiple Regression Analysis: MRA methods and stepwise regression. The result confirmed that five elements; Product, Promotion, Personal, Process, and Physical are influential on consumer purchasing decisions for mooncakes products in Bangkok, and accept with statistical significance at the 0.05 level. And service marketing mix factors can predict that 25.8 percent of the purchasing decisions.

**Keywords:** Service Marketing Mix (7P's), Purchasing Decisions, Mooncakes

### **Introduction**

Every year, there is a mid-autumn day. It the day Chinese believe that the full moon is so beautiful. It will be on the 15th day of the 8th lunar month every year. Chinese consider it a day of harmony, creating unity, gathering friends and relatives. Many places will be decorated with decorative lamps to create a festive atmosphere. However, interesting information is about market growth and the growth rate of mooncakes in the Thai market. The market value of mooncakes was 750 million THB in 2013. And the market value was 800 million Baht in 2014, so it increased from 2013 by 6.67 percent. In addition, in 2015 and 2016, the market values were 840 and 900 million Baht. The growth rates increased from the previous year by 5.0 and 7.14 percent, respectively. In 2017, the market value was 900 million THB, and it was the steady growth from 2016. And in 2018, the market value was 930 million Baht, which was 3.33 percent increasing from 2017 (Kasikorn Research Center, 2017- 2018). They tend to be in the direction of an increase in the market value.

The mid-autumn festival is in September in Thailand. Formerly, mooncakes products were sold only in the festival for the moon worship ceremonies. They are festive desserts from the beliefs of the old generation. Currently, mooncakes selling will start in August and end in October. The selling price will include promotions offered by various manufacturers when consumers purchase mooncakes at the shopping malls or hotels such as special promotions and discounts when orders reach purchasing targets. For membership, members will get the privilege or discounts when they purchase mooncakes in the period of full moon festival in Thailand. In addition, to attract consumers groups from foreign countries such as Hong Kong or China, uniqueness, and cheapness may be employed, besides offering special products such as durian mooncakes for consumers who are interested in Thai style mooncakes products as well. Whatever there is a group of buyers who buy mooncakes for paying respect to their elders in this family-specific ceremonies and the group of

buyers who purchase mooncakes for just eating because they like to eat mooncakes. Moreover, there is the buyer group who buy mooncakes for exotic flavor experiment and the group who buy mooncakes as souvenirs which will be focused on the large-sized appearance (Kasikorn Research Center, 2018). The attraction of the festival food like mooncake is that it is an exotic food which was not local Thai food. It also has a short selling period. And the market value is continually increasing every year as well as the increase of competitors. Manufacturers, entrepreneurs, restaurant, and dining-rooms in hotels designed new marketing strategies which were matched with the market trend, and consumers need every year. So it is an opportunity to study seasonal products like mooncakes, its marketing strategies, and factors that affect consumer purchasing decisions. It will be a useful guideline for both manufacturers and entrepreneurs to create a seasonal product market and develop a seasonal product to be economical.

## **Objectives**

To study the service marketing mix factors (7P's) that influence the consumer purchasing decisions of mooncakes of consumers in Bangkok.

## **Literature Review**

The service marketing mix of mooncakes products in this research is the marketing tool that used to achieve the objectives and goals of mooncakes business, including delivering products to increase the satisfaction of consumers with all seven elements (Acutt, 2015). And there are important factors using in the study as follows.

1. Product: mooncakes products. Factors are the appearance, variety of mooncakes products, the taste of mooncakes, packaging of the products, and brand of the products.

2. Price: Price of mooncakes. The price of the products is suitable for the quality and quantity, the price of the products is varied, the price of the products is clearly specified, and the price of the products is suitable with the fame of mooncake's brand.

3. Place: Distribution channels of mooncakes products, including distribution channels, are easy to find, distribution channels are available for sale at convenience stores or shopping malls that are easy to find, distribution channels have easy and convenient communication systems for ordering and distribution channels have products delivery services.

4. Promotion: Marketing promotion of mooncakes products consists of the exhibitions in the mooncakes festival, the marketing promotion through online media such as website, and offline media such as billboard, besides, special discount for members, discount for orders that reach the targeted amount or special promotions such as food for healthy or product packaging that has low impact on the environment.

5. Person: Personal characteristics are employees with good communication skills, staff with the ability to provide product information and clear answers for consumers' questions, courteous and enthusiastic staff, staff who can provide delivery hospitable service and willing to provide good service, staff with the ability to solve problems and respond appropriately.

6. Physical Evidence: Creation and presentation of the brand are interesting, unique, clearly visible, and attractive. The creation and presentation of places, their decorations, and all equipment are clean and hygienic. Staff's uniform is appropriated, unique, and interesting. Products emplacement is neat and tidy.

7. Process: Process of mooncake products; the ordering and delivery process is quick and convenient. All services throughout the ordering and delivery process are systematical and well-managed. Staffs get orders accurately and deliver the correct product to consumers.

Purchasing decisions in this research are the decisions of consumers who decided to buy mooncakes for various reasonable reasons. There are many forms of buyers' decisions, as explained below.

- Purchasing decision based product quality.
- Purchasing decisions according to popular trends
- Self-indulgent purchasing decision/Unplanned
- Purchasing decisions based on familiarity
- The purchasing decision to try new things

**Hypothesis:** Marketing mix has influenced by the purchasing decisions of mooncakes in Bangkok.

## **Research Methodology**

### ***1. Populations and samples***

1.1 The Population in this research is consumers who lived in Bangkok and used to make the decision to buy mooncakes, which does not know a certain number of population.

1.2 The sample size was calculated by Cochran's formula to determine the confidence level of 95 percent and the proportion of tolerances that could be equal to 0.05, representing a total of 405 samples.

1.3 Random sampling is defined randomly by a variety of selection techniques by the probability determination multi-step method to represent the large and complex of the population in Bangkok.

This sample group consists of consumers who live in Bangkok and have decided to buy mooncakes during the past five years (2015-2019). Samples are from 6 districts; 25 samples from Pom Prap Sattru Phai District, 55 samples from Khlong Toei District, 68 samples from Bang Sue District, 95 samples from Lat Krabang District, 58 samples from Thonburi District and 104 samples from Bang Khae District. The total numbers from 6 districts are 405 samples.

### ***2. The statistics used in the data analysis***

2.1 Descriptive data analysis explains related to personal information about respondents' service marketing mix information of mooncakes products and explains the importance level related to consumer purchasing decision information by calculating Percentage, Mean and Standard Deviation.

2.2 Inferred data analysis explains the relationship between the data related to the studied variable, namely, personal factors affecting the purchasing decisions of consumers in Bangkok. Then comparing the mean values with the Independent Samples *t*-test, the One-way ANOVA method, and comparing the significant differences with the Least Significant Difference (LSD) method. Including service marketing mix of mooncakes products that influence the purchasing decisions of consumers in Bangkok by using multiple regression analysis (stepwise regression).

## **Results and Discussion**

The majority samples of the respondents are 68.6% female and 31.4% male, 43.2% of respondents aged between 30-39 years, and 51.9% were married. Moreover, 73.3% of respondents graduated with bachelor's degrees or equivalent, 44.0% were private company employees, and 39.3% of respondents got 30,001-45,000 THB as monthly income.

**Table 1:** Means and Standard Deviation of the service marketing mix

No	Marketing Mix	Level of Important		
		MEAN	S.D.	Interpret
1	Product	4.07	0.330	High
2	Price	4.06	0.353	High
3	Place	4.07	0.354	High
4	Promotion	4.09	0.364	High
5	Personal	4.10	0.423	High
6	Physical Evidence	4.08	0.400	High
7	Process	4.12	0.359	High
<b>Total</b>		<b>4.08</b>	<b>0.220</b>	<b>High</b>

From Table 1, it shows that the most influential factor in the service marketing mix is Process (mean =4.12, S.D.=0.359), followed by Personal (mean = 4.10, S.D. = 0.423) and Promotion (mean =4.09, S.D.=0.364), respectively.

**Table 2:** Means and Standard Deviation of the consumer purchasing decision

Marketing Mix	Level of Purchasing Decision		
	MEAN	S.D.	Interpret
1 Purchasing decisions about product quality	3.94	0.621	High
2 Purchasing decisions according to popular trends	4.14	0.914	High
3 Self-indulgent purchasing decision to Unplanned	4.05	0.735	High
4 Purchasing decisions based on familiarity	4.03	0.833	High
5 The purchasing decision to try new things	4.19	0.756	High
<b>Total</b>	<b>4.07</b>	<b>0.336</b>	<b>High</b>

Table 2 indicates that the most influential factor in the consumer purchasing decision is the decision by a new thing (mean= 4.19, S.D. = 0.756), followed by the decision of the popular trends (mean = 4.14, S.D.= 0.914) and unplanned decision (mean = 4.05, S.D.= 0.735), respectively.

The result using multiple regression analysis by stepwise regression showed that five aspects; Product, Price, Personal, Physical evidence, and Process are influential on purchasing decisions of consumers in Bangkok with statistical significance at the level of 0.05. Meanwhile, Price and Place of

the marketing mix of mooncakes products do not affect the purchasing decisions of consumers in Bangkok. And that result was not consistent with the research studied by Thitima Phensuk (2018). But studying Porranee Yamphan (2016) founded factors that affecting the decision to buy branded tea of consumers in Bangkok, and the suburb area found that marketing mix in terms of price and distribution channel. It influences the purchasing decisions of “Cha Tra Meu” of consumers in Bangkok and its surrounding provinces. The study of factors affecting the decision to buy vegetable and fruit products in the Doi Kam brand was founded that the marketing mix as for the price has the most influence on the decision to buy. Therefore, it can be observed that most mooncakes are priced at a relatively high price per pie, and the value of the mooncakes market in Thailand will continue higher.

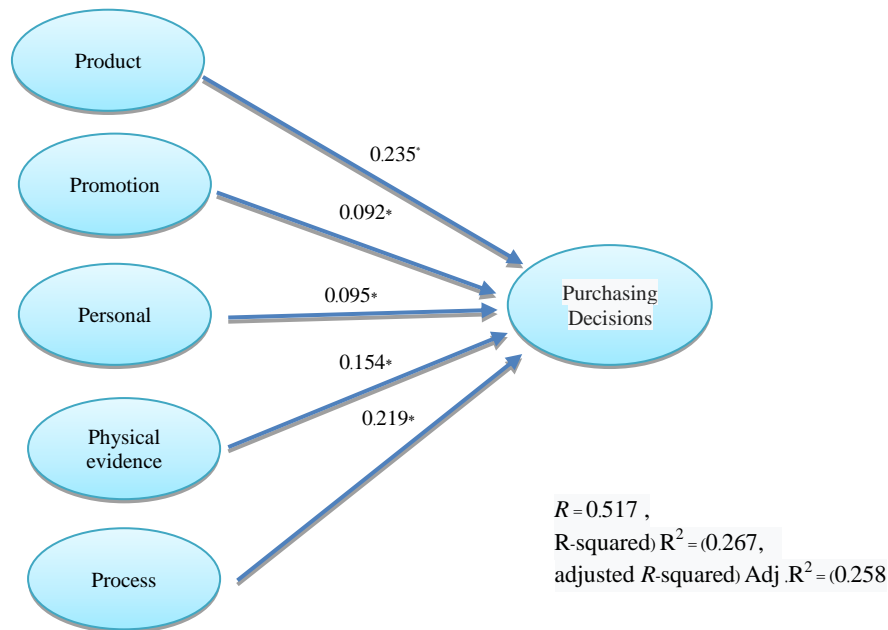
**Table 3:** Results of multiple regression analysis (MRA) by stepwise regression of the service marketing mix

Marketing Mix	<i>b</i>	SE. <i>b</i>	$\beta$	<i>t</i>	Sig.
(Constant)	1.061	0.255		4.156	0.000*
Product	0.239	0.046	0.235	5.171	0.000*
Promotion	0.085	0.042	0.092	2.011	0.045*
Personal	0.076	0.037	0.095	2.028	0.043*
Physical Evidence	0.129	0.041	0.154	3.142	0.002*
Process	0.205	0.045	0.219	4.599	0.000*
$R = 0.517$ $R\text{-squared } (R^2) = 0.267$ adjusted $R\text{-squared } (\text{Adj. } R^2) = 0.258$ Std. error of the estimate = 0.289 $F = 29.054$ $p = 0.000^*$					

\* It has a significance level of 0.05

The percentage of predicting or estimating consumer purchasing decisions in Bangkok is 25.8%, and the standard error is 0.289. The relationship between the service marketing mix of mooncakes products and the purchasing decisions of the consumers in Bangkok can be used to predict or estimate the values related to customer feelings. The consumer's mind is at a low level (Suphawan, 2013). It is possible that choosing the best option for making decisions for consumers, and also influenced motivations and decisions. (Phensuk, 2018) such as influences by cultural psychology and social (Mechinda, 2010). The result of the cause-effect analysis model among the service marketing mix and purchasing decisions can be written in the form of Equation Model as follows:

Purchasing decisions =  $0.235(\text{Product}) + 0.092(\text{Promotion}) + 0.095(\text{Personal}) + 0.154(\text{Physical evidence}) + 0.219(\text{Process})$  (as shown in figure No.1 below)



**Figure 1:** Indicates the relationship between the service marketing mix and purchasing decisions

## Conclusions

From the study of the service marketing mix (7P's) of Mooncakes products that influence the purchasing decisions of consumers in Bangkok, the results can be summarized as follows:

1. Personal factors consist of age, marital status, education, occupation, and monthly income are influential on consumer purchasing decisions in Bangkok.
2. There are five factors of the service marketing mix of Mooncakes that are influential in the purchasing decision of consumers in Bangkok. The most effectual factor is Product. Next, they are Process, Physical evidence, Promotion, and Personal, consequently. This result will be useful information for entrepreneurs to make decisions for products and design marketing strategies to compete with other products in mooncakes products.
3. Most consumers in Bangkok decided to buy mooncakes because they would like to try a new product. There is a high possibility of making a purchasing decision on buying products when there is a new product of mooncakes. But it cannot be confirmed that the consumers will certainly buy mooncake products.

## Suggestion

The suggestions from this research used to make business decisions and determine the competitive strategy of mooncakes products are as follows:

1. The product should be focused on the brand of mooncake and its reputation to create an understanding of product strengths as well as not to cause consumers to confuse the product with the other competitors' products.
2. The process's first priority should be given to the service process of ordering and delivering the correct products. Customer relationship management should build a product's credibility, monitor, and track the visible data with technology or tools that are correspond to consumer's behavior in modern times.
3. Physical creation and presentation should be focused on creating and presenting locations, place, and decoration must be clean and hygienic.



4. Marketing promotion should be focused on public relations through online media, websites, and advertisement boards.

5. Personnel must be focused on training development in order to train employees to be polite as well as good hospitality to improve the satisfaction of the consumers.

## References

- Acutt, M. (2015). *The Marketing Mix 7P's*. Retrieved April 1, 2020, from <https://marketingmix.co.uk/marketing-mix-7ps/>
- Gourmet & Cuisine Magazine. (2019). *Give happiness in the Mid-Autumn Festival with good promotions from many famous hotels*. Retrieved Dec 1, 2019, from <https://www.gourmetandcuisine.com/happening/detail/536>
- Kasikorn Research center. (2017). *The value of mooncakes*. Retrieved Dec 1, 2019, from <https://positioningmag.com/1142277>
- Kasikorn Research center. (2018). *Mooncakes Market Year 61: market to buy/eat as souvenirs supporting the market growth of 930 million Baht.*. Retrieved Sep 1, 2019, from <https://kasikornresearch.com/th/analysis/k-econ/business/Pages/2926.aspx>
- Mohamad A. B. (2018). *A review of sample size determination for Cronbach's alpha test: A sample guide for researchers*. Retrieved Dec 1, 2019, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6422571/>
- Niamruksa, W. (2015). *Factors affecting consumer purchasing behavior with food for Thai tourists in Amphawa floating market Samut Songkhram province*. Silpakorn University. [In Thai]
- Phensuk.. T. (2018). *Factors affecting consumer decisions about Cha Tra Mue brand Thai tea mix*. Thammasat University. [In Thai]
- Strategy and Evaluation Department. (2017). *Statistic 2017*. Bangkok.
- Retrieved from [http://203.155.220.230/m.info/bkkstat/stat\\_2559\\_thai.pdf](http://203.155.220.230/m.info/bkkstat/stat_2559_thai.pdf) (Dec 1, 2019.)
- Panisa, M.. (2010). *Consumer behavior*. Bangkok. Dharmmasarn.
- Suphawan, P. (2013). *Regression analysis: Chapter 5 Multiple linear regression Analysis*. Bangkok. Phranakhon Rajabhat University. [In Thai]
- Thansettakij, P. (2018). *Mooncakes Market Year 61, worth almost a billion*. Retrieved Dec 1, 2019, from <https://www.thansettakij.com/content/314602>
- Yamphan, .P. (2016). *Factors affecting purchasing decisions for Doi Kham food products company limited processed fruits and vegetables*. Thammasat University. [In Thai]

## THE STUDY OF BEIJING XICHENG DISTRICT TONGRENTANG'S CORPORATE CULTURE AND ENTERPRISE PERFORMANCE

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### ABSTRACT

The purposes of this research were to study the level of corporate culture, to study the level of enterprise performance, and to explore a relationship between corporate culture and enterprise performance of Beijing Xicheng district Tongrentang. A questionnaire was collected from 92 employees. The statistics used in this research were frequency, percentage, mean, standard deviation and Pearson correlation.

The results showed that most of respondents were at agree level with the corporate culture. The highest mean was consistency, while the lowest mean was involvement. Most of respondents were at agree level with enterprise performance. The highest mean was efficiency, the second was productivity and the lowest was validity. There was a very strong positive correlation between corporate culture and enterprise performance with statistically significant at .01 level.

**Keywords:** Corporate Culture, Enterprise Performance, Tongrentang

### Introduction

With the rapid development of the world economy, more and more enterprises are facing the unprecedented fierce market competition. The main competition field of contemporary enterprises has gradually shifted from the symbol layer and the system behavior layer to the theoretical layer, that is, the competition in the field of corporate culture. Corporate culture is one of the most important core competencies in the process of enterprise survival and development. (Zhang, 2018)

Beijing Xicheng district Tongrentang is a famous time-honored brand in the Chinese traditional medicine industry. Tongrentang is a Chinese pharmaceutical company founded in 1669 and currently the world's largest producer of traditional Chinese medicine (TCM). The researcher has chosen Tongrentang as the research object because Tongrentang has a long history in China, and its unique corporate culture and experience make me very interested in exploring. (Tongrentang, 2018)

This research is interested to study the corporate culture which including involvement: employees have a low sense of responsibility and lack the initiative to participate in corporate behavior. These problems that affect employees' participation have a profound impact on the performance of enterprises, consistency: the enterprise lacks the cultivation of employees' sense of identity, enterprise spirit is difficult to direct the employees' professional behavior, and lacks effective mass foundation, so the cohesion brought by the value system established by the enterprise is greatly reduced, adaptability: enterprises lack the cultivation of employees' innovative thinking. Facing the complex and changeable external market environment, Tongrentang's ability to adapt to the external influence still needs to be improved and mission: employees lack internal cohesion. Losing the motivation to work together for corporate goals and social missions seriously affects the long-term development and performance of enterprises. Moreover, this research is interested to study the enterprise performance which including efficiency: employees are able to work successfully

according to the organization's goals within a specific time, productivity: the ability of an organization to engage in relevant activities in order to achieve the quantity, quality, efficiency and profitability of organizational goals during a given period of time and validity: is in the process of production and operation, the enterprise's subjective feelings and scientific analysis of the organization's operating results. Finally, this research will conduct the research on corporate culture and enterprise performance of Beijing Xicheng district Tongrentang.

## **Objectives**

1. To study the level of corporate culture of Beijing Xicheng district Tongrentang.
2. To study the level of enterprise performance of Beijing Xicheng district Tongrentang.
3. To explore a relationship between corporate culture and enterprise performance of Beijing Xicheng district Tongrentang.

## **Literature Review**

### ***Corporate Culture***

Denison, Haaland and Goelzer (2003) Denison's corporate culture model is a good tool for corporate culture diagnosis. Denison, a famous professor of International Management College in Lausanne, Switzerland, pointed out that the four cultural characteristics of participation, consistency, adaptive and mission have a significant impact on the operation and development of an organization after the study of more than 1500 sample companies.

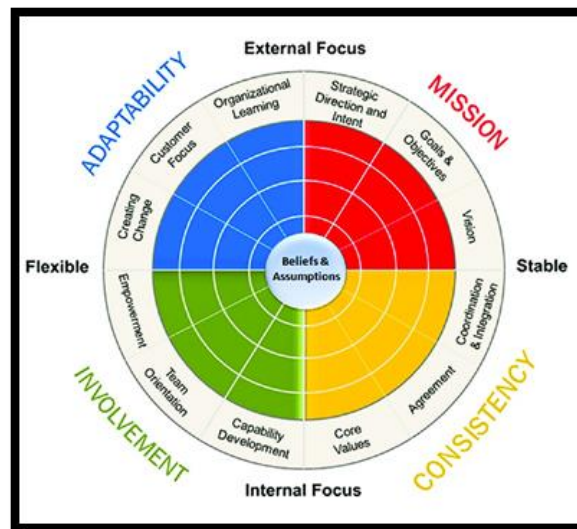
According to the trait model theory of corporate culture, there are four factors in corporate culture, and an enterprise can adjust these four factors to influence the change of enterprise performance. These factors are consist of the following:

Involvement: it can enhance employees' sense of responsibility, improve their subjective initiative and initiative to participate in the behavior of the enterprise.

Consistency: it can enhance the staff's sense of identity, direct the staff's professional behavior with the enterprise spirit, strengthen the mass base, and strengthen the cohesion of the enterprise.

Adaptive: it can enhance the enterprise's ability to cope with changes in the external environment. In the complex and changeable market environment, it can enhance employees' willingness to innovate and broaden their innovative thinking.

Mission: the promotion of the core values and social responsibility of the enterprise is closely combined with the practical work, so as to enhance the internal cohesion and social mission of the employees to achieve the enterprise goals, so as to improve the future development space and performance level of the enterprise.



**Figure 1:** Denison's Corporate Culture Model  
**Source:** (Wahyuningsih et al., 2019)

The Denison model of corporate cultural idiosyncrasies was born in Switzerland, where basic living problems (such as diet and housing) had been solved. Beijing Xicheng Tongrentang, founded in 1669, is located in Beijing, the capital of China. Now the younger generation has gradually become the main employees of Tongrentang in Beijing, and their food and living problems have been basically solved. How to improve the four dimensions of corporate culture to enhance the internal cohesion of employees and thus improve enterprise performance has become an urgent problem.

This research is conducted on the level of corporate culture of Beijing Xicheng district Tongrentang and focuses on the influencing factors of Denison's corporate culture trait model theory. Influencing factors of the existence of corporate culture enables enterprises to achieve higher performance.

### ***Enterprise Performance***

Drucker is one of the most famous management scientists of the 20th century, known as the father of modern management. In the middle of the 20th century, Drucker discussed enterprise performance from a variety of perspectives. The author summarized it as: in order to achieve organizational goals, through systematic and three-dimensional thinking, continuous improvement of communication with performance, promoting or endow teams or individuals with behaviors conducive to goals or visions, and finally forming the optimization process of corporate benefit output. (Zhou, 2018)

The definition of enterprise performance can be divided into three types. The first type is to regard enterprise performance as the result of enterprise behavior, i.e. the completion of enterprise work objectives, or to regard enterprise performance as the completion of enterprise tasks, output and other indicators. The second type is to regard enterprise performance as the relevant behaviors of enterprises to achieve the established goals. The third type is to regard enterprise performance as the collection of business results and corporate behavior. Because there is still no unified and widely accepted explanation of the concept of enterprise performance in the current academic circle, it cannot be defined in detail. Enterprise performance is the final and effective completion of the quantity, quality, efficiency and profitability of the enterprise's objectives in the production and operation

process. Enterprise performance can be divided into three parts: efficiency, productivity and effectiveness. These factors are consist of the following:

Efficiency: is in a specific time and external conditions, the organization of various inputs and outputs between the ratio relationships.

Productivity: is the ability of an organization to engage in relevant behaviors to achieve the quantity, quality, efficiency and profitability of organizational goals within a certain period of time.

Validity: is in the process of production and operation, the enterprise's subjective feelings and scientific analysis of the organization's operating results.

This research is conducted on the level of enterprise performance of Beijing Xicheng district Tongrentang and the factors of enterprise performance which including, efficiency, productivity, validity.

### ***Company Profile***

Beijing Xicheng district Tongrentang is a famous time-honored brand in Chinese traditional medicine industry. Tongrentang is a Chinese pharmaceutical company founded in 1669 and currently the world's largest producer of traditional Chinese medicine (TCM). Headquartered in Beijing, the company is engaged in manufacturing and retail, operating mainly in the chinese-speaking regions of the pharmacy. Tongrentang is considered to be one of the existing "four" traditional Chinese medicine brands. These four companies include: Guangyuyuan (1541), Chen liji (1600) in Guangzhou, Tongrentang in Beijing (1669), and hu qingyu hall in hangzhou (1874). "Tongrentang" and "Quangyuyuan" have been officially recognized as "time-honored brands of China" by the ministry of commerce of the People's Republic of China.

In 1669, in the eighth year of the reign of emperor kangxi of the qing dynasty (1644-1911), yue xianyang, a senior physician of the qing court, founded Tongrentang in Beijing. The company moved to Beijing in 1702 and has operated there ever since. In 1723, emperor yongzheng appointed Tongrentang as the court's sole supplier of Chinese herbs, a position it maintained until the qing dynasty collapsed in 1911. In 1924, the company tiger bone wine won an award at the leipzig trade fair, making the product the most popular type of business. Like many established Chinese companies, Tongrentang has struggled to adapt to market changes. In recent years, Tongrentang has modernized its facilities and changed its name to Tongrentang. It remains one of the oldest Chinese medicine brands in existence and enjoys widespread popularity among Chinese and Asians around the world. It is also one of the largest Chinese medicine companies in the world, and its products are sold all over the world.

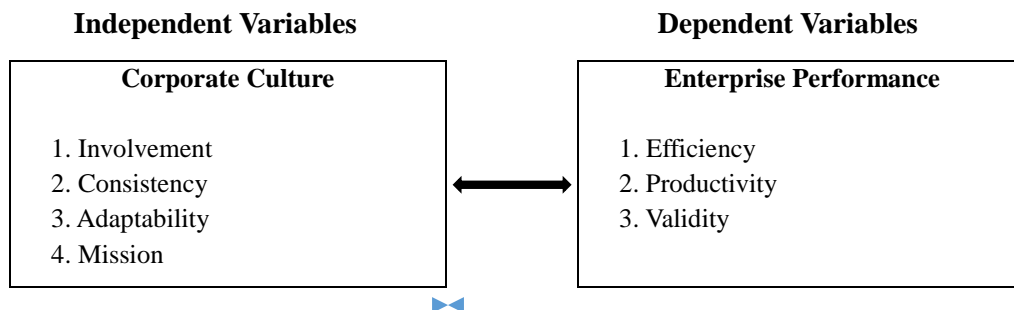
In 2001, Tongrentang entered skincare with Germany-based Mirahi Biotech. Using the most advanced western technology and Tongrentang's vast collection of Chinese herbs, the partnership has produced an impressive range of products. In 2004, Tongrentang invested HK \$150m to build a manufacturing plant in Hong Kong.

In October 2007, Tongrentang and greater China group, an American company, jointly announced the establishment of Tongrentang healthcare company to "develop spa-like healthcare centers to provide treatments and products based on the famous Tongrentang herbs in China". These treatments will include acupuncture, massage, acupoint massage, massage, tai chi, qigong, reflexology and many other Oriental therapies, as well as a whole range of herbal foods and health products."

With the rapid development of China in recent years and the constantly changing transformation of social industries, the company is currently facing some problems in the development process, one of which is the weak participation and consistency of employees in the enterprise behavior, and the general lack of innovative thinking and social mission of employees. This

study explores the relationship between corporate culture and enterprise performance and tries to provide some suggestions for companies. (Tongrentang, 2018)

The independent variable is corporate culture (Denison, Haaland & Goelzer, 2003) and the dependent variable is enterprise performance. (Zhou, 2018)



**Figure 2:** Conceptual Framework

## Methods

This research was designed as a quantitative research of the research method. There were parts of the research method as follows:

- Population and Sample
- Data Collection
- Research Design
- Assessment of Research Tool
- Data Analysis

## Population and Sample

### *Population*

This research selected Beijing Xicheng district Tongrentang as the research object. The population was 120 employees from Beijing Xicheng district Tongrentang.

### *Sample*

The sample size was calculated based on Yamane's formula (Yamane, 1967). By using formula of sample size with an error 5% and with a confidence coefficient of 95%, the calculation from a population of 120 (previous population approximation) came up with 92 employees from Beijing Xicheng district Tongrentang.

**Table 1:** Population and sample classified by department

Department	Population	Sample
1. Financial department	20	16
2. Administration department	15	10
3. Human resources department	30	24
4. Production technology department	35	26
5. Marketing and customer management	20	16
<b>Total</b>	<b>120</b>	<b>92</b>



## Data Collection

Asked the company for the permission to collect data from all employees. Then, the researcher and research assistants distributed the questionnaires to a total of 92 employees.

## Research Design

This research used a questionnaire survey method to explore the role of corporate culture and enterprise performance. Questionnaires were used as a data collection tool in this research. The questionnaire was designed into 4 sections. The section A was employees' background consist of gender, age, education background, working years and department. The section B was corporate culture which can be divided into four parts which consist of involvement, consistency, adaptability and mission. The section C was enterprise performance which can be divided into 3 parts which consist of efficiency, productivity and validity.

## Assessment of Research Tools

This process ensures that all questions are valid and reliable with the following steps:

### *Step 1: The validity of instruments*

The questionnaire was designed after interviewing employee and managers of the company. Depends on feedback of experts, researcher revised the instrument.

The Item-Objective Congruence (IOC) was used to evaluate the Items of the questionnaire based on the score range from -1 to +1 (Turner & Carlson, 2003).

Congruent = + 1

Questionable = 0

Incongruent = -1

The items that had scores lower than .50 were revised. On the other hand, the items that had scores higher than or equal to .50 were reserved. In this process, three experts checked the questionnaire. The average score is 0.925, more than .50 Therefore, score was accepted to issue questionnaire.

### *Step 2: The Reliability of Questionnaire*

The scales and questionnaire had been used repeatedly in previous studies and had been shown high reliability. Before the distributing the questionnaire, it was approved from the professional scholars and sent it to 30 people for reliability test.

The reliability value was calculated by using Cronbach's Alpha to ensure whether there was internal consistency within the items illustrated the value of Coefficient Cronbach's Alpha as the following: 0.9 = Excellent, 0.8 = Good, 0.7 = Acceptable, 0.6 = Questionable, 0.5 = Poor, and lower than 0.5 = Unacceptable. Therefore, in order for the research questionnaire its value of Coefficient Cronbach's Alpha must be at least 0.7.

According to the reliability of questionnaire, the Cronbach's Alpha of corporate culture was 0.978, the Cronbach's Alpha of enterprise performance was 0.972. Therefore, the questionnaire was highly reliable.

## Data Analysis

Descriptive statistical analysis was used to describe the level of corporate culture and enterprise performance. These data are described by frequency, percentage, average and standard deviation.

Likert's Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

Interpret the average of mean scale (Warmbrod, 2014).

4.50-5.00=Strongly Agree

3.50-4.49=Agree

2.50-3.49=Neutral

1.50-2.49=Disagree

1.00-1.49=Strongly Disagree

The relationship between corporate culture and enterprise performance was using Pearson correlation standard.

Level of the correlation (Evans, 1996)

.00 - .19 = Very Weak

.20 - .39 = Weak

.40 - .59 = Moderate

.60 - .79 = Strong

.80 - 1.0 = Very Strong

## Results and Discussions

The results of this study were consistent with previous studies on the role of corporate culture and enterprise performance. In this section, the results of the study have been discussed and will be analyzed in relation to previous research.

### *Background:*

There was background of the respondents of Beijing Xicheng district Tongrentang. Most of respondents were male age between 36-45 years old, education background was bachelor degree, working year's was 10 years and above and worked in administration department.

### *Corporate Culture:*

It was about the level of corporate culture, mean and SD were used to analysis data. The result had shown that corporate culture of Beijing Xicheng district Tongrentang. In the overview and all aspects were at agree level. The highest variable of corporate culture was consistency, the second was mission and the lowest was involvement.

**Table 2:** Mean and std. deviation of corporate culture

Corporate Culture	$\bar{X}$	SD	Level	Rank
1. Involvement	3.92	0.926	Agree	4
2. Consistency	4.06	0.919	Agree	1
3. Adaptability	3.96	0.976	Agree	3
4. Mission	4.05	0.903	Agree	2
<b>Total</b>	<b>4.00</b>	<b>0.886</b>	<b>Agree</b>	

Table 2 showed that there was corporate culture at agree level ( $\bar{X}$ =4.00, SD=0.886). The highest was consistency at agree level ( $\bar{X}$  = 4.06, SD = 0.919), the second was mission at agree level ( $\bar{X}$  = 4.05, SD = 0.903) and the lowest was involvement at agree level ( $\bar{X}$  = 3.92, SD = 0.926) respectively.



### *Enterprise Performance:*

It was about the level of enterprise performance mean and SD was used to analysis the data. The result had shown that enterprise performance of Beijing Xicheng district Tongrentang. In the overview all aspects were at agree level. The highest variable of enterprise performance was productivity, the second was efficiency and the lowest was validity.

**Table 3:** Mean and std. deviation of enterprise performance

Enterprise Performance	$\bar{X}$	SD	Level	Rank
1. Efficiency	4.08	0.858	Agree	2
2. Productivity	4.08	0.876	Agree	1
3. Validity	4.01	0.930	Agree	3
<b>Total</b>	<b>4.06</b>	<b>0.847</b>	<b>Agree</b>	

Table 3 showed that there was enterprise performance at agree level ( $\bar{X}$ =4.06, SD=0.847). The highest was productivity at agree level ( $\bar{X}$  = 4.08, SD = 0.876), the second was efficiency at agree level ( $\bar{X}$  = 4.08, SD = 0.858) and the lowest was validity at agree level ( $\bar{X}$  = 4.01, SD=0.930) respectively.

**Hypothesis testing 1:** The relationship between corporate culture and enterprise performance of Beijing Xicheng district Tongrentang.

**Table 4:** Pearson correlations of corporate culture and enterprise performance

Corporate Culture	Enterprise Performance			
	r	Sig. (2-tailed)	Level	Rank
1. Involvement	.831**	.000	Very Strong	4
2. Consistency	.919**	.000	Very Strong	2
3. Adaptability	.934**	.000	Very Strong	1
4. Mission	.914**	.000	Very Strong	3
<b>Total</b>	<b>.945**</b>	<b>.000</b>	<b>Very Strong</b>	

\*\* Correlation is significant at the .01 level (2 -tailed)

Table 4 showed that there was a relationship between corporate culture and enterprise performance at a very strong positive correlation ( $r$  = .945). All aspects of variables had a positive correlation with enterprise performance. The highest was adaptability ( $r$  = .934), the second was consistency ( $r$  = .919) and the lowest was involvement ( $r$  = .831) with statistically significant at .01 level.

**Hypothesis testing 2:** The relationship between corporate culture and efficiency of Beijing Xicheng district Tongrentang.

**Table 5:** Pearson correlations of corporate culture and efficiency

Corporate Culture	Efficiency			
	r	Sig. (2-tailed)	Level	Rank
1. Involvement	.796**	.000	Strong	4
2. Consistency	.870**	.000	Very Strong	3
3. Adaptability	.900**	.000	Very Strong	1
4. Mission	.886**	.000	Very Strong	2
<b>Total</b>	<b>.907**</b>	<b>.000</b>	<b>Very Strong</b>	

\*\* . Correlation is significant at the .01 level (2 -tailed)

Table 5 showed that there was a relationship between corporate culture and efficiency at a very strong positive correlation ( $r=.907$ ). All aspects of corporate culture variables had positive correlation with efficiency. The highest was adaptability ( $r=.900$ ), the second was mission ( $r=.886$ ) and the lowest was involvement ( $r=.796$ ) with statistically significant at .01 level.

**Hypothesis testing 3:** The relationship between corporate culture and productivity of Beijing Xicheng district Tongrentang.

**Table 6:** Pearson correlations of corporate culture and productivity

Corporate Culture	Productivity			
	r	Sig. (2-tailed)	Level	Rank
1. Involvement	.813**	.000	Strong	4
2. Consistency	.880**	.000	Very Strong	3
3. Adaptability	.909**	.000	Very Strong	1
4. Mission	.904**	.000	Very Strong	2
<b>Total</b>	<b>.922**</b>	<b>.000</b>	<b>Very Strong</b>	

\*\* . Correlation is significant at the .01 level (2 -tailed)

Table 6 showed that there was a relationship between corporate culture and productivity at a very strong positive correlation ( $r=.922$ ). All aspects of corporate culture variables had positive correlation with productivity. The highest was adaptability ( $r=.909$ ), the second was mission ( $r=.904$ ) and the lowest was involvement ( $r=.813$ ) with statistically significant at .01 level.

**Hypothesis testing 4:** The relationship between corporate culture and validity of Beijing Xicheng district Tongrentang.

**Table 7:** Pearson correlations of corporate culture and validity

Corporate Culture	Validity			
	r	Sig. (2-tailed)	Level	Rank
1. Involvement	.770**	.000	Strong	4
2. Consistency	.869**	.000	Very Strong	1
3. Adaptability	.863**	.000	Very Strong	2
4. Mission	.827**	.000	Very Strong	3
<b>Total</b>	<b>.875**</b>	<b>.000</b>	<b>Very Strong</b>	

\*\* . Correlation is significant at the .01 level (2 -tailed)

Table 7 showed that there was a relationship between corporate culture and validity at a very strong positive correlation ( $r=.875$ ). All aspects of corporate culture variables had positive correlation with validity. The highest was consistency ( $r=.869$ ), the second was adaptability ( $r=.863$ ) and the lowest was involvement ( $r=.770$ ) with statistically significant at .01 level.

## Discussions

### *Corporate Culture:*

The results of this research showed that the level of corporate culture was at agree level. The results were totally the same with the research of Lu (2018) studied the corporate culture structure and enterprise performance management of Beijing blue sky flight general aviation technology. The results showed that the corporate culture structure of Beijing blue sky flight general aviation technology was at agree level. Moreover, the results showed that the highest was consistency, the second rank was mission, the third rank was adaptability and the lowest was involvement. The results were totally the same with the research of Lu (2018) studied on the corporate culture structure and the results showed that the highest was consistency, the second rank was mission, the third rank was adaptability and the lowest was involvement.

### *Enterprise Performance:*

The results of this research showed most of respondents had the opinions about enterprise performance at agree level. It means that all three variables consist of efficiency productivity and validity they were important at agree level. The results were totally the same with research of Beheshti and Beheshit (2010) studied the improving productivity and firm performance with enterprise research planning. The results showed that the full benefits of productivity important measures are realized when productivity is examined from operational efficiency of an individual worker or business units as well as performance (efficiency) with regard to end user or customer satisfaction.

### *Correlation:*

There was a positive correlation between corporate culture and enterprise performance, the related research such as Wang (2018) Analysis on the effect of corporate culture on enterprise performance -- taking S company as an example. The result showed that there was a positive correlation between corporate culture and enterprise performance with significantly at .01 level. Also, the results totally the same with the research of Kaman and Wanyoike (2018) research on corporate culture and organizational performance: A case of Mayfair casino, Nairobi city county, Kenya. The results showed that there exists a strong positive correlation between corporate culture and organizational performance.

## Conclusions

From the results of the research topic “Corporate Culture and Enterprise Performance of Beijing Xicheng district Tongrentang. The research findings can be summarized as follows: There was corporate culture at agree level in total. The highest was corporate culture has a deep influence on employees' rights at agree level. There was enterprise performance at agree level in total. The highest was the higher productivity of employees makes the enterprise have higher performance. There was a relationship between corporate culture and enterprise performance at a very strong positive correlation. The highest was adaptability, the second was consistency and the lowest was involvement. Therefore, the company needs to increase the level of corporate culture for higher level of enterprise performance.

## References

- Beheshti, M.H. & Beheshti, M.C. (2010). Improving Productivity and Firm Performance with Enterprise Resource Planning. *Journal of Enterprise Information System*, 4(4), 445-472.
- Denison, D. R., Haaland, S., & Goelzer P. (2003). Corporate Culture and Structure is Asia Completely Different from the Remainder of the Globe. *Organizational Dynamics*, 33(1).
- Evans, J.D. (1996). *Straightforward statistics for the behavioral sciences*. Pacific Grove, Tanmontion R: Product CA: Brook/Cole Publishing.
- Kaman, P.M. & Wanyoike, R.W. (2019). Corporate Culture and Organizational Performance: A Case of Mayfair Casino, Nairobi City Country, Kenya. *Global Journal of Commerce and Management Perspective*, 8(1), 8-17.
- Lu, M. (2018). *Corporate Culture Structure and Performance Management of Beijing Blue Sky Flight General Aviation Technology Co., Ltd*. Independent Study, Rajapruk University.
- Tongrentang. (2018). *Beijing Tongrentang Introduction*. Retrieved December 20, 2019, from <http://wki.mbalib.com>.
- Turner, R. & Carlson, L. (2003). Indexes of Item-Objective Congruence for Multidimensional Items. *International Journal of Testing*, (3), 163-171.
- Wahyuningsih, S.H., Sudiro, A, Troena, E.A. & Irawanto, D.W. (2019). Analysis of Organisational Culture with Denison's Model Approach for International Business Competitiveness. *Journal of Problems and Perspectives in Management*, 17(1), 142-151.
- Wang, J.G. (2018). *Analysis on the Effect of Corporate Culture on Enterprise Performance. A Case of S Company*. MBA Thesis, Shandong Normal University.
- Warmbrod, J.R. (2014). Reporting and Interpreting Scores Derived from Likert-Type Scales. *Journal of Agricultural Education*, 55(5), 30-47.
- Yamane, T. (1967). *Statistics: an introductory analysis*. 2<sup>nd</sup> ed., New York: Harper and Row.
- Zhang, D. (2018). *Corporate Culture*. Tsing Hua University Press.
- Zhou, S. (2018). *Principles and Methods of Management*. Fudan University Press.

## **CULTURAL DIFFERENCES FACTORS RELATED TO SERVICE MANAGEMENT OF TOURIST FROM MIDDLE EAST OF TRAVEL BUSINESS IN THAILAND**

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### **ABSTRACT**

The objective of this study is to study the cultural dimension factors related to service management for Middle Eastern tourists of tourism business in Thailand the sample group in this study was entrepreneurs of inbound tourism business. The sample group in this research is entrepreneurs entered in a total of 305 people. The instrument used in this research was a five-level rating estimation questionnaire. Statistics are used in the test were mean and standard deviation. The results of the research showed that the cultural dimension factor in the overview is at a high level. Considering each aspect in ascending order, it was found that the dimension of emotional expression was followed by the dimension of long-term focus and the dimension of uncertainty avoidance is at a high level respectively. When analyzing the relationships of cultural dimensions, it was found that the avoidance dimensions of uncertainty dimension to see long-term results and the dimension of emotional expression is related to service management for Middle Eastern tourists of tourism businesses in Thailand.

**Keywords:** Cultural Differences Factors, Service Management, Tourism Business

### **1. Introduction**

#### ***2.1 Significance of Research***

Culture is a common way of life for humans in a particular environment. The culture in each place is diverse and different according to the living environment. This common culture or way of life, aside from for the sake of livelihood or for survival is still living well-being until it is customary and the spiritual dimension from mutual belief in the realization of the values of the environment that they rely on. Culture is therefore learned and passed on from one generation to another. Culture accepted by people in other societies and adjusting the culture to be compatible with people of different societies. (Chansiriboonmee Chaiwat, 2013).

Cultural dimensions and service management appropriate for tourists the tourism business operators in Thailand can adapt to the cultural diversity of tourists coming from the Middle East. In this regard, the researcher is interested in studying cultural dimension factors related to service management for Middle Eastern tourists of tourism business in Thailand.

#### ***2.2 Objective of Research***

This study aims to cultural differences factors related to service management of tourist from Middle East of travel business in Thailand. The detail objectives are:

- (1) To study the perception of differences in cultural dimensions of tourism business operators in Thailand.
- (2) To service management for Middle Eastern tourists in tourism business in Thailand.

### ***2.3 Hypothesis of Research***

This study aims to cultural differences factors related to service management of tourist from Middle East of travel business in Thailand. The detail objectives are:

- (1) Perceptions of cultural differences in tourism business operators in Thailand at a high level.
- (2) Opinions on service management for Middle Eastern tourists of tourism business in Thailand at a high level.

## **2. Literature Review**

### ***Concepts and theories about cultural dimensions***

Culture of Geert Hofstede Cultural education under the education framework of Hofstede, G. (2011 and 2005) classifies the cultural characteristics into various dimensions according to the definition of culture, which refers to forms, methods, thinking, feelings, and responses of groups of people which can show important basic cultural characteristics in each of the 5 dimensions are.

1) Power distance means the extent to which members in organizations with less power expect and accept unequal decentralization in an organization that has a disparity of high power. The supervisor will be the sole decision maker-controlled work close and strict command, but an organization with little inequality members in the organization has similar rights. In each person is highly independent. Decisions are often made between supervisors and subordinates.

2) Individual and individualism dimensions (Individualism and Collectivism) an individualistic society means a society that has loose personal ties. Everyone will focus on their thoughts and actions more than their interests in the group. Each individual's interests are above the interests of the group as for the popular society people in society are bound together and attach importance to group decisions. Being honest and loyal to each other, providing care to each other family resembling.

3) The dimension of masculinity and femininity (Masculinity and Femininity) means the characteristics that accept the male characteristics of aggression and competition. Giving importance to money and goods and success in work. It is a society that clearly separates the roles of men and women. There are duties specifically reserved for men. While female characteristics give importance to the quality of life Politeness Sympathy Relationships with others, polite, gentle and pay more attention to the quality of life.

4) Uncertainty Avoidance means the level in which members of a culture are threatened by an uncertain situation. Causing uncertainty avoidance behavior and reflected in the decision form organizations that have the characteristics of avoiding high uncertainty are created a lot of rules and regulations for members to follow causing high stress and various decisions will use the group resolution as the primary or step as for the nature of the low uncertainty avoidance. There will be an organization structure that is not complicated. Make bold decisions that face risks. There is little work stress accept different opinions and highly creative do not like formal regulations, have low anxiety like relaxation etc.

5) Long-term orientation dimension means the level of long-term focus the higher the level of perseverance and persistence obedience to a less powerful person will make the role of management even more important, economical, thrifty, and more investment and the obligation to make each other a big deal as for the level of focus on short-term goals Will make people without originality not trying to take risks and not changing yourself too much respect and respect for traditions can either prevent new ideas or refuse to accept new technology about products and services. Compensation in society

with greetings, love and gifts is expressed by emphasizing good manners in society rather than competence.

In addition, Baron, (Baron, 1989: 304) states that the emotional dimension is another dimension that affects the quality of service because each day, people will have many different emotions may be contentment, anger, cheerfulness, pain, and disappointment all the time as a person. Being in a situation a person is subjected to stimulus and their experience, causing their mood to change. In which these emotions will influence a person's behavior.

### **3. Methods**

The population used in this research are tourism operators (Inbound), Asian and Middle East groups in Bangkok, 1,300 people organized tourism Inbound tourism is the journey of a person who does not have a permanent residence in that country from the Thai Tourism Business Association.

The sample group used in this research was 305 inbound tourism business operators. The sample size was determined by Yamani's (1973) calculation formula at the expected value. 5 ( $\alpha = .05$ ).

The instrument used in this research was a questionnaire which was constructed by researching relevant theories to determine the structure of the questionnaire, including questions about 6 cultural dimensions and questions about service management for Middle Eastern tourists of 10 types of tourism businesses in Thailand look like a 5-level rating scale questionnaire. Most agree, moderate, agree slightly and agree least according to the likert scales measure, the reliability is 0.80. (Srisa-ard Boonchom. 2002).

Data were collected from 2 sources which are.

- 1) Primary data: data collection using a questionnaire (Questionnaires) 305 sets.
- 2) Secondary data study data from relevant research documents. This has been researched and collected from government and private agencies, including various theories related.

Data analysis 6 dimensions of cultural dimension and service management for Middle Eastern tourists of tourism business in Thailand in 10 aspects. Statistics are used only descriptive statistic.

### **4. Results and Discussion**

#### **4.1 Perception of cultural differences among tourism operators in Thailand.**

Dimension factor for power inequality overall and each aspect is at a high level. Ranking in descending order of the top three, it was found that the company organized the service system to suit the different power differences of tourists in each country. Employees in the company can build relationships with tourists from each country and the company understands the dimensions of the power of tourists in each country ranked at the high level respectively.

Individual and individual dimension dimensions overall and each aspect is at a high level. When ranked in descending order of the top three, it was found that employees in the organization were able to arrange the service system to suit tourists with appropriate personal and group dimensions. Employees of the company can understand the services of tourists with a personal dimension to understand and the company understands that the cultural dimensions of tourists are different for individuals and groups ranked at the high level respectively.

Dimension factors, male and female characteristics overall and each aspect is at a high level. When ranked in descending order of the top three, it was found that company employees were able to arrange services for tourists with cultural dimensions that provided equality for men and women. Company employees can arrange services for tourists with cultural dimensions that value men and the company organized the service system for tourists according to the dimension system of importance between men and women ranked at the high level respectively.



Dimensional factors to avoid uncertainty overall and each aspect is at a high level. When ranked in descending order of the top three, it was found that the staff were able to provide services appropriately for tourists with cultural differences in avoiding uncertainty. The company can provide a service system suitable for tourists with cultural differences in the avoidance of uncertainty and the company understands about the dimension to avoid the uncertainty of foreign tourists ranked at the high level respectively.

Dimension factors aiming for long-term results overall and each aspect are at a high level. When ranked in descending order of the top three, it was found that the staff were able to provide services appropriately for tourists with cultural differences in terms of dimension, long-term results. The company understands about the dimension of long-term results of foreign tourists and the company can provide a service system suitable for tourists with cultural differences in terms of long-term results ranked at the high level respectively.

Emotional expression overall and each aspect is at a high level. When sorting in descending order of the top three, it was found that the company had an understanding of foreign tourists' emotional dimension. The company is able to provide a service system suitable for tourists with cultural differences in terms of emotional expression and the staff are able to provide services appropriately for tourists with cultural differences in terms of emotional expression Ranked at the high level respectively.

In conclusion, the perception of cultural dimension in all aspects in overall is at a high level. Considering each aspect in ascending order, it was found that the dimension of emotional expression dimension to see long-term results and the dimension to avoid uncertainty at a high level, respectively, and finally, the dimensions of individual and group differences at a high-level details as in Table 1.

**Table 1:** Mean and standard deviation of opinions on perception of cultural dimensions in all aspects.

Cultural dimension awareness	$\bar{X}$	S.D.	Interpret
1. Dimension of power differences	4.16	0.42	very
2. Dimension of individual and group differences	4.13	0.47	very
3. Dimension of emphasis between men and women	4.18	0.38	very
4. Uncertainty avoidance dimension	4.25	0.50	very
5. Dimension to see long-term results	4.26	0.47	very
6. Emotional expression	4.31	0.51	very
<b>Total</b>	<b>4.22</b>	<b>0.29</b>	<b>very</b>

4.2 Service management for middle Eastern tourists in tourism business in Thailand. Service access in overall, at a high level when considering the issues in ascending order, it is found that the staff has recommended tourist attractions and can provide good information suitable for tourists from the country able to provide tourist attractions with relaxing seats suitable for tourists from different countries have employees able to provide service systems for customers in each country to access and the employees have personality, dress code, and order that enhance the good image to the organization ranked at the high level respectively.

Communication in overall, at a high level when considering the issues in ascending order, it was found that the company was able to advertise tourist destinations via the internet suitable for foreign tourists. The company makes brochures and brochures to recommend places to give to tourists



appropriately with culture and staff in the company can use foreign language to communicate clearly with tourists ranked at the high level respectively.

Performance was at a high level. When considering the issues in ascending order, it was found that the company provided a good atmosphere and environment suitable for tourism and rest suitable for tourists in each country. The company is able to find quality tourist attractions that make tourists the most impressive and a company providing tourist attractions and accommodation near convenient community locations ranked at the high level respectively.

Goodwill in overall, at a high level when considering the issues in ascending order, it is found that tourists are well looked after and cared for by the staff of the company. The staff can give advice and give information about tourist attractions as well and the staff can answer questions that tourists need to know very well ranked at the high level respectively.

Reliability in overall, at a high level when considering the issues in ascending order, it was found that the staff provided the correct services to meet the needs of tourists from the country and the staff organizing the service system makes the tourists reliable at a high level.

Fiduciary in overall, at a high level considering the sequence of issues in descending order, it is found that when tourists have problems while traveling, staff can always help tourists and tourists were impressed with the services provided by the company at a high level.

Security in overall, at a high level when considering the issues in ascending order, it is found that tourists receive good services, are convenient, safe and fast. Accommodation selection companies are safe for tourists and the tourist attraction supply company is safe for tourists ranked at the high level respectively.

Responding to customers in overall, at a high level when considering the issues in ascending order, it is found that tourists are always provided with their needs. Staff are willing to work and serve tourists all the time and the staff are ready and willing to provide services to tourists continuously ranked at the high level respectively.

Concrete aspects of the service in overall, at a high level when considering the issues in ascending order, it is found that the tourist attractions have attractive designs, are strange and suitable for foreign tourists. The tourist places are well taken care and kept clean and the company coordinated with tourist attractions to have beautifully decorated places and services ranked at the high level respectively.

Customer awareness and understanding in overall, at a high level when considering the issues in ascending order, it was found that the staff were able to answer questions for tourists who would like to know very well. Tourists are well cared for and attentive by the staff and the staff are able to understand the needs of tourists in each country at a high level respectively.

In conclusion, the service management for Middle Eastern tourists in tourism business in Thailand overall, all aspects in the overview are at a high level. When considering in descending order, it was found that the performance, reliability in customer perception and understanding and for the friendliness is at a high level in order of detail as in Table 2.

**Table 2:** Mean and standard deviation of opinions on service management for Middle Eastern tourists of tourism businesses in Thailand

Service Management for Middle Eastern Tourists in Tourism Business in Thailand	$\bar{X}$	S.D.	Interpret
1. Service access	4.26	0.50	very
2. Communication	4.25	0.50	very
3. Performance	4.37	0.51	very
4. Goodwill	4.28	0.48	very
5. Reliability	4.29	0.54	very
6. Fiduciary	4.26	0.55	very
7. Security	4.18	0.51	very
8. Responding to customers	4.23	0.56	very
9. Concrete aspects of the service	4.16	0.56	very
10. Customer awareness and understanding	4.29	0.52	very
<b>Total</b>	<b>4.26</b>	<b>0.41</b>	<b>very</b>

## 5. Conclusions

The perception of cultural dimension in all aspects in overall is at a high level. Considering each aspect in ascending order, it was found that the dimension of emotional expression dimension to see long-term results and the dimension to avoid uncertainty at a high level, respectively, and finally, the dimensions of individual and group differences at a high-level. Consistent with the research of Maneewan Chat-u-thai (2015). Conducted studies on "A comparative study and survey of cultural dimensions in the context of Thailand and the Asia-Pacific countries, which found that Malaysia is the most accepting power dimension. Ekkasit Khem-nguod (2014). Researching to compare the differences in cultural dimensions between people. Thai and Japanese people working in Japanese companies in Thailand the result of the research shows that inequality in power the most different.

The service management is for Middle Eastern tourists in tourism business in Thailand. Overall, all aspects in the overview are at a high level. When considering in descending order, it was found that the performance, reliability in customer perception and understanding and for the friendliness is at a high level. Consistent with the research of Thanakrit Sangchoei (2012) is conducting studies on cultural differences and tourists' behavior the results of the study studied the comparative relationships between tourists' behaviors and various cultural dimensions such as dimension, distance, power, individualism / collective dimension, importance of men and women, avoiding uncertainty and dimension of long-term and short-term plan formulation in the future. The analysis results show that tourists with cultural differences the various aspects of tourism have different tourism behaviors, such as seeking tourist information, giving importance to service quality, gift giving, tourism style, traveling characteristics, service feedback, loyalty to products, and satisfaction per product and service. Suthira Dejnakin and Suthinee Rerkkam (2015). The impact of cultural dimensions on high efficiency management systems: Integrating literature review, Journal of management science. Organization involvement and performance evaluation is a component of a highly effective management system that is influenced by cultural dimensions. Training and development are components of a highly effective management system that is not influenced by cultural dimensions. The results of the study provide knowledge about the application of resource operations. Humans in different cultures that is to say, although the concept of a highly efficient

management system which is a universal principle but the study found that there are some components of a highly effective management system that are influenced by cultural dimensions. Therefore, the ideas obtained from this study can be used as a guideline for further research. Siyathorn Khunon (2016). Cultural Dimension and Commenting on Hotels in Koh Samui District via the Online Reseller Website for Thai and other National Customers. The results showed that cultural dimension, avoidance of uncertainty, no relationship with satisfaction and opinions, both positive and negative, individualism and importance of women in relation to satisfaction and opinions. It is only the positive spacing relates to both satisfaction and positive and negative opinions.

### **Managerial Implications**

1) The operator is of the opinion that the company has organized the service system to suit the different power differentities of tourists in each country. Employees in the company can build relationships with tourists from each country and the company understands the dimensions of the power of tourists in each country.

2) The operator is of the opinion that employees in the organization can arrange the service system to suit tourists with personal and group dimensions appropriately. Employees of the company can understand the services of tourists with a personal dimension to understand and the company understands that the cultural dimensions of tourists are different for individuals and groups.

3) The operator is of the opinion that company employees can arrange services for tourists with cultural dimensions that provide equality for men and women. Company employees can arrange services for tourists with cultural dimensions that value men and the company arranges the service system for tourists according to the dimension of importance between professional women.

4) The operator is of the opinion that staff are able to provide appropriate services for tourists with cultural differences in avoiding uncertainty. The company can provide a service system suitable for tourists with cultural differences in the avoidance of uncertainty and the company understands about the dimension to avoid the uncertainty of foreign tourists

5) The operator is of the opinion that Employees are able to provide services that are appropriate for tourists with cultural differences in terms of long-term results. The company understands about the dimension of long-term results of foreign tourists and the company can provide a service system that is suitable for tourists with cultural differences in terms of long-term results.

6) The operator is of the opinion that the company understands about the emotional dimension of foreign tourists. The company is able to provide a service system suitable for tourists with cultural differences in terms of emotional expression and the staff are able to provide services appropriately for tourists with cultural differences in terms of emotional expression.

### **Limitation and Recommendation for Future Study**

#### *1) Suggestions for utilizing research findings.*

1.1) Should develop employees to have good personality dress in an orderly manner to enhance good image for the organization. To develop employees in the company to be able to use foreign languages to communicate with tourists. There should be potential development of the employees to have knowledge and ability to support the tourists in each country.

1.2) Should develop and improve services including various management in order for tourists to be served and impressed.

#### *2) Suggestions for conducting further research.*

2.1) Further research should be conducted with a qualitative study, with in-depth interviews. To apply the results of the study to guide the tourism business services in Thailand with

maximum efficiency and effectiveness. This is for the benefit of organizational development and administration of the tourism business organization in Thailand.

2.2) Other factors should be studied which affects the management of Middle Eastern tourist services of tourism businesses in Thailand.

## References

- Chaiwat Chansiri Bunmee (2013). **Satisfaction of Thai tourists with 3-star hotels in Bangkok.** Independent Study, Master Degree, Hospitality and Tourism Industry Management, Bangkok University.
- Thanakrit Sangchoei. (2012). **Analysis of service quality of the guest house industry in Thailand.** Srinakharinwirot Business Administration Journal Year 3 Issue 2.
- Boonchom Si Sa-at. (2002). **Preliminary research.** 2nd edition. Bangkok: Suwiriyasa San.
- Patcharapa Uaamornwanit. (2017). **Communication under the concept of cultural diversity.** Academic journal Faculty of Management Science Secret University Burapha. Year 25, Issue 47.
- Maneewan Chat-Uthai. (2015). **Application of concepts, motivation and personal factors of learners in the design of human resource development activities.** Nida Business Administration Journal, 9, 22–39.
- Siyathorn Khun On. (2016). **Cultural Dimension and Comments on Hotel in Koh Samui District via Online Reseller Website for Thai and Other National Customers.** Journal of Thai Hospitality and Tourism Year 11 Issue 1 (January - June 2016).
- Suthira Dech Nakarin and Suthinee Roekkam. (2015). **The impact of cultural dimensions on highly effective management systems: integration of literature review.** Management journal Faculty of Management Science Prince of Songkla University Year 32, Version 2 (July - December).
- Supitchaya Adisai Rattanakun (2013). **Study of organizational culture factors that affect employee work motivation in the industrial estate area Chonburi province.** Master of Business Administration Program Graduate school Sripatum University Chonburi Campus.
- Ekaphos Sitthiwathana (2013). **Cultural Dimension of Death in Modern Hospitals: National Wanna Study in a Hospital in the Northeast.** M.Ed. (Medical and Health Sciences), College Mahidol University.
- Strictly Exclusive. (2014). **A Comparative Study of Cultural Dimension Between Thai-Japanese Case Studies of Japanese Companies in Thailand.** Faculty of Business Administration Thai-Japanese Institute of Technology.
- Hofstede, G. (1988). **Dimensionalizing Cultures: The Hofstede Model in Context.** Online Reading in Psychology and Culture. International Association for Cross-Cultural Psychology, 3-26.
- Hofstede, G & Hofstede, G.J. (2005). **Cultures and Organizations: Software of the mind.** Revised and Expanded (2nd edition). USA.: McGraw-Hill
- Yamane, Taro. (1973). **Statistics: An Introductory Analysis.** Third editio. Newyork: Harper and Row Publication.



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## DATA AUGMENTATION TECHNIQUES FOR IMAGE CLASSIFICATION ON SMALL DATA SET

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### ABSTRACT

To increase the capability of image classification to be more accurate, it needed the image file with high resolution. In fact, the set of images obtained for classification was consisted of low resolution files which made it harder to be classified. Eventually, the accuracy rate was also low - unable to be used for work. We studied to find the way to fix this problem. The answer to the problem was to do data augmentation which was consisted of Affine Transformation and Super Resolution.

Affine Transformation are all linear transformations which can be represented by a matrix and combined into a single overall including rotation, scaling, translation and shearing where all points in an object are transformed in the same way.

Super Resolution is the process of increasing the resolution and quality of image. This method has been shown that it outperformed the basic interpolation method. In this case, we studied whether Super Resolution is able to enhance the discriminative features of the image and such transformed image is more amenable to classification process.

It was obvious that the said methods were helping us to classify low resolution image files accurately and precisely. In addition, we adopted a transfer learning method which was designed and developed for the task. It has been reused as the starting point for a model on the second task which could help us classify the type of image more accurately and precisely.

**Keywords:** Image Classification, Data Augmentation, Affine transform, Transfer Learning, Convolutional neural network, Machine Learning, Image Super Resolution.

### Introduction

Now Computer Vision is highly popular since it can process images so that the computer would understand the image or be able to distinguish objects as similar as the human brain. There are 4 types of Computer Vision including 1) image classification, 2) object detection, 3) semantic segmentation and 4) instance segmentation.

Each type has its own function. The one matched to our experiment is Image Classification. Recently it has been interesting to do image classification whose objective was that the computer is able to classify the type or character of image precisely with minimum error. The experiment was separated into 2 sections. One was to teach the computer to test the prepared data for classification before inputting the actual set of data for classification. It found that we could well classify the dataset with the big size or a lot number of images in the testing set and actual set.

The problem found was that we could not know if how many actual images were obtained. In some case, there might be the situation that the actual data obtained was consisted of small-sized image or less number of images. After conducting classification, the outcome was unable to be adopted to actual work because of many factors.

Therefore, we suggested that Data Augmentation and Image Super Resolution were applied to do image classification in order to increase quality of the image to its highest. This would also help us

to do classification easier and increase the level of accuracy in image classification. The technique of image augmentation or affine transform was applied for minimizing the loss and diversity of data because the more testing data it has, the more accurate it would be. The basic techniques were consisted of Flip, Mirroring, Scale Image, Translation, Crop and Rotation.

Meanwhile, Image Super Resolution was used to increase resolution and quality for the image. According to the research, it found that high resolution image was more eligible and efficiently for classification. After the dataset was managed, Transfer Learning was additionally applied to do classification so that the dataset could be classified faster. Besides, Convolutional Neural Network was also used for classification.

## Objective

1. To classify the images according the category which belong from a small dataset of different images from different categories
2. To propose a solution to use with small data set for Classification
3. To develop a Data Augmentation Techniques for the good accuracy

## Literature Review

Before we conducted this research, we had been researching similar work with the corresponding objective including problems. The subject we studied more was related literature with the details as follows:

For image classification, most of the research concerned about detection and object categorization segmentation. These techniques were basic techniques adopted to the research.

For data augmentation, we included many forms such as image super resolution, using of GAN and Affine Transform in both basic form and applied form for 3D transformation which transform image from Transform Version to Original Version. The technique of Affine Transform jointly applied with other Classification technique.

For Convolution Neural Network, it applied CNN to help in classification process to be more precise.

For Transfer Learning, it studied on adopting Transfer Learning to classification process to be most precise and accurate. The details of research were listed in Table 1.

**Table 1:** Summary of related Image classification surveys since 2000

No	Survey Title	Year	Content
1	Toward Category Level Object Recognition	2007	Representative papers on object categorization, detection, and segmentation
2	Detecting Faces in Images : A Survey	2009	First survey of face detection from a single image
3	Transformation Pursuit for image Classification	2014	Classification via transformed versions of the original images
4	Transfer Learning for Visual Categorization : A Survey	2015	Survey of Transfer Learning for Visual Catagory
5	Deep Residual Learning for image Recognition	2015	Residual learning framework via image regconition
6	Adaptive data Augmentation for image classification	2016	new automatic and adaptive algorithm for choosing the transformations
7	Super-Resolution to Improve Classification Accuracy of Low-Resolution Images	2017	use Super resolution as a pre-processing step to improve image classification accuracy



No	Survey Title	Year	Content
8	Research on Data Augmentation for Image Classification Based on Convolution Neural Networks	2017	Data augmentation techniques and CNN
9	An image augmentation method using convolutional network for thyroid nodule classification by transfer learning	2017	Transfer learning via image augmentation and convolutional neural network
10	Underwater image classification using deep convolutional neural networks and data augmentation	2017	Classification accuracy via data augmentation technique and convolutional neural network
11	Smart Augmentation Learning an Optimal Data Augmentation Strategy	2017	Smart Augmentation has the potential to increase good accuracy
12	Research on data augmentation for image classification based on convolution neural networks	2017	Image classification via performance deep convolutional neural networks and data augmentation

### Related work

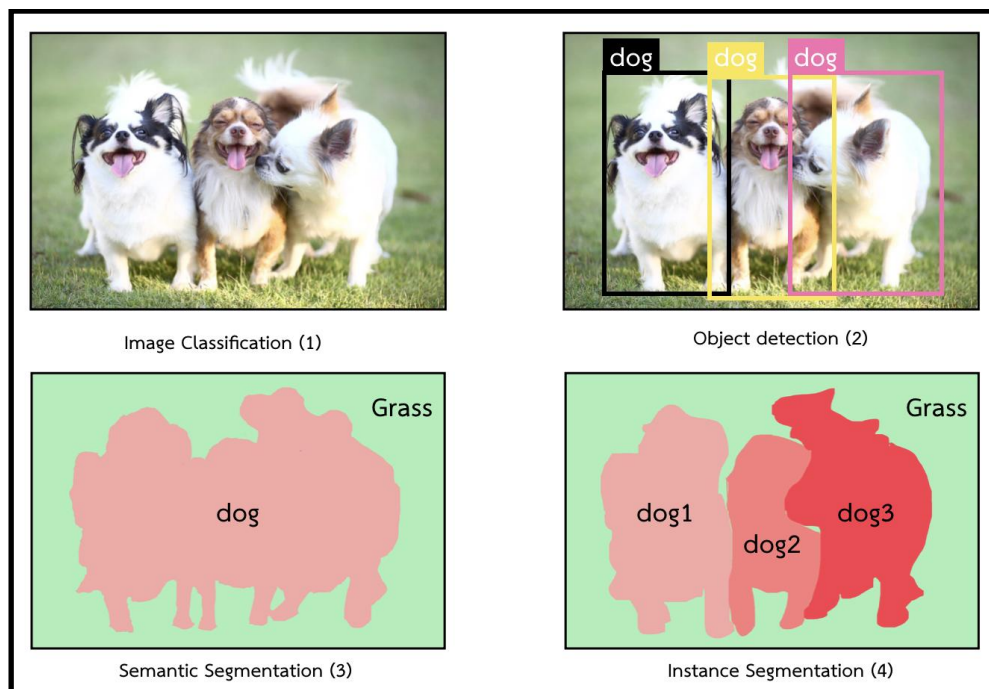
To do image classification, the model's resolution must be high enough so that it can be classified easier. It also prevents Overfitting. When a model is trained with a small training set, the trained model tends to overly fit to the samples in training set. Moreover, there was another problem that images in a small training set were usually incomplete and low quality – it could not be classified. It also worsened the results in generalization.

However, Data Augmentation has been widely used to avoid this overfitting problem by enlarging the size of the training set which increased the number of data by Crop, Translation, Scale Image, Mirroring, Flip and Rotation. Even though the image could be adjusted and improved, the existing Hyper Parameter did not help improve the image resolution as the data was small and it was possible that the image with low quality would be mixed up in the same set. Therefore,

We adopted the technique of Image Super Resolution to help fixing this problem. Image Super-resolution methods attempted to recover a high-resolution image from one or more low-resolution input images. The disadvantage of Image Super Resolution in some cases was that the image would be distorted from the original. Eventually, there would be a mistake in classification process.

### Computer vision

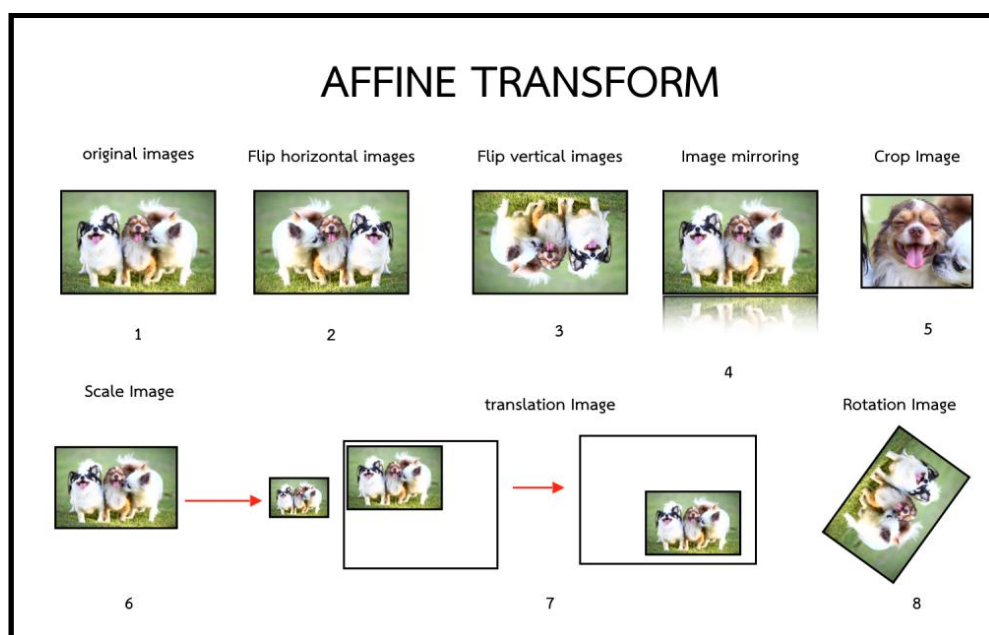
Computer vision is the field of computer science that focuses on replicating parts of the complexity of the human vision system and enabling computers to identify and process objects in images and videos in the same way that humans do. Until recently, computer vision only worked in limited capacity.[10]



**Picture 1:** Computer vision Tasks

### Data Augmentation

Data augmentation is a strategy that enables practitioners to significantly increase the diversity of data available for training models, without actually collecting new data. Data augmentation techniques such as cropping, padding, and horizontal flipping are commonly used to train large neural networks.[6]

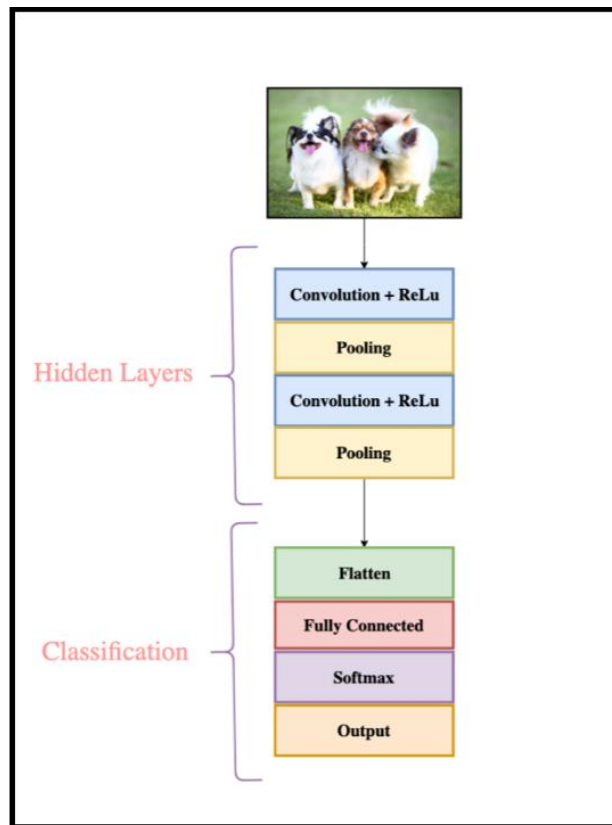


**Picture 2:** Affine transform



## Convolutional Neural Network

Convolutional Neural Network is a Deep Learning algorithm can take in an input image, assign importance to various aspects/objects in the image and be able to differentiate one from the other. The pre-processing required in a ConvNet is much lower as compared to other classification algorithms. While in primitive methods filters are hand-engineered, with enough training, ConvNets have the ability to learn these filters characteristics.[3][4][12]



Picture 3: CNN Layers

Table 2: Architecture of CNN

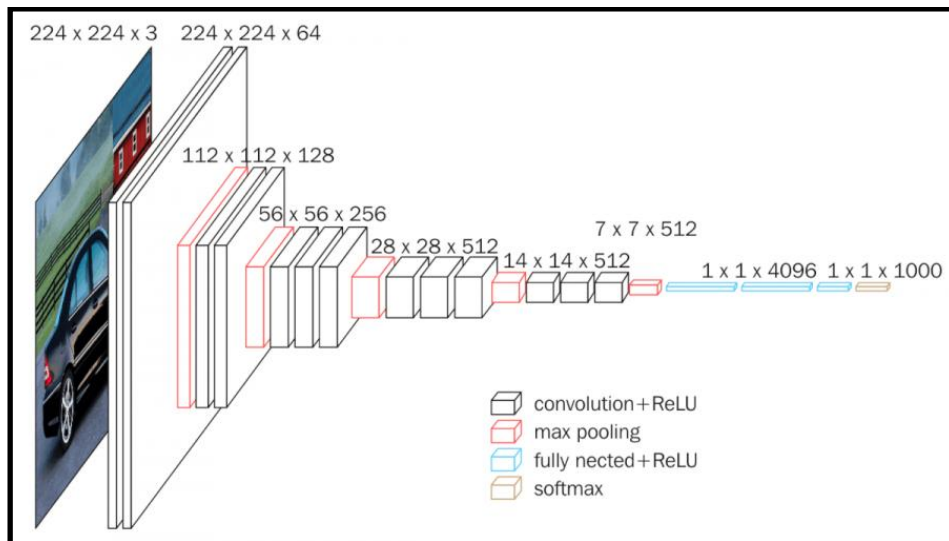
No.	Architecture Layers	Details
1	Convolution	that extracts features from a source image. Convolution helps with blurring, sharpening, edge detection, noise reduction, or other operations that can help the machine to learn specific characteristics of an image.
2	ReLu	Applies the function $f(x) = \max(0, x)$
3	Pooling	that reduces the image dimensionality without losing important features or patterns.
4	Flatten	Flattening is converting the data into a 1-dimensional array for inputting it to the next layer
5	Fully Connected	also known as the dense layer, in which the results of the convolutional layers are fed through one or more neural layers to generate a prediction.
6	Softmax	Softmax function can be interpreted as a probability. softmax layer is typically the final layer used in neural network functions. It is important to note that a softmax layer must have the same number of nodes as the output later.
7	Output	Show Accuracy

**Table 3:** Architecture of CNN II

No	Year	CNN	Developed by	Top5-Error Rate (Image net)	No. of parameters
1	1998	LeNet (8)	Yann LeCun	-	60 thousand
2	2012	AlexNet (7)	Alex Krizhevsky	15.3%	60 million
3	2013	ZFNet ()	Matthew zeiler	14.8%	tweaking the hyper parameters ( Alexnet )
4	2014	GoogLeNet (19)	Google	6.67%	4 million
5	2014	VGG Net (16)	Simonyan, Zisserman	7.3%	138 million
6	2015	ResNet (152)	Kaiming He	3.6%	over 30 million

### VGGNet.

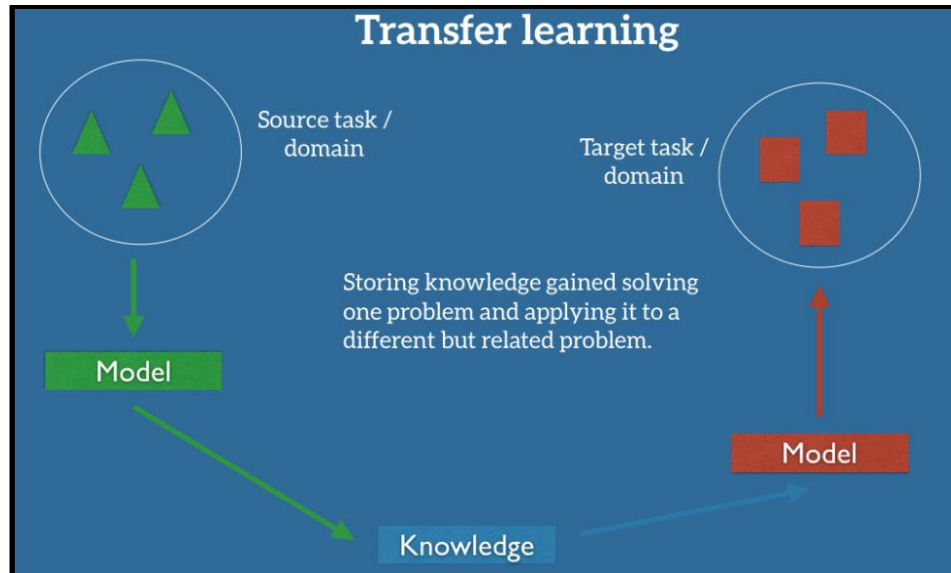
The runner-up in ILSVRC 2014 was the network from Karen Simonyan and Andrew Zisserman that became known as the VGGNet. Its main contribution was in showing that the depth of the network is a critical component for good performance. Their final best network contains 16 CONV/FC layers and, appealingly, features an extremely homogeneous architecture that only performs 3x3 convolutions and 2x2 pooling from the beginning to the end. A downside of the VGGNet is that it is more expensive to evaluate and uses a lot more memory and parameters (140M). Most of these parameters are in the first fully connected layer, and it was since found that these FC layers can be removed with no performance downgrade, significantly reducing the number of necessary parameters.[11]



**Picture 4:** VGGNet

## Transfer Learning

Transfer learning is a machine learning method where a model develop for a task is reused as the starting point for a model on a second task.[9]



**Picture 5:** Transfer Learning

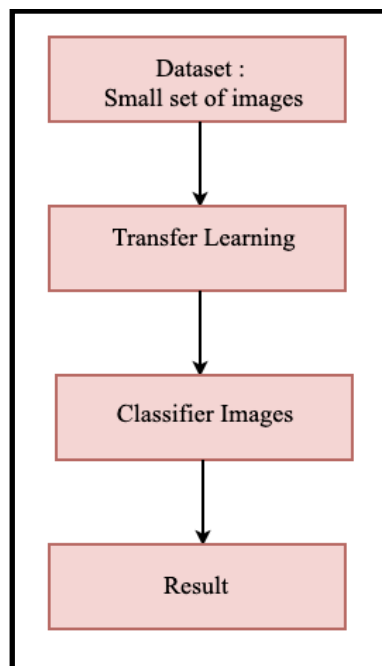
## Image Super Resolution

Image super-resolution methods attempt to recover a high-resolution image from one or more low-resolution input images [1]. Super-resolution methods can be classified in two main families: Multi-image Super Resolution methods, and Single Image Super Resolution methods (SISR). Multi-image Super Resolution methods attempt to use several low-resolution images of the same scene to determine new details in the high-resolution image, In addition, these methods tend to be limited to small increases in resolution.[1][2]

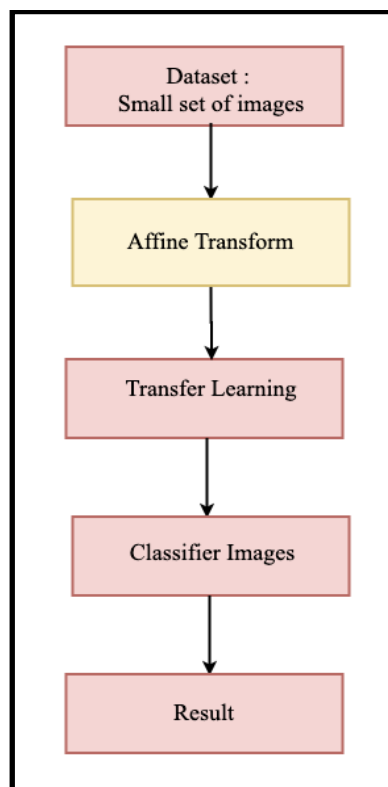
## Methods

The goal of the project was to determine whether Image Super-resolution and Data Augmentation can be used as a pre-processing step to improve classification accuracy. Experiments were carried out by using general image classification datasets.

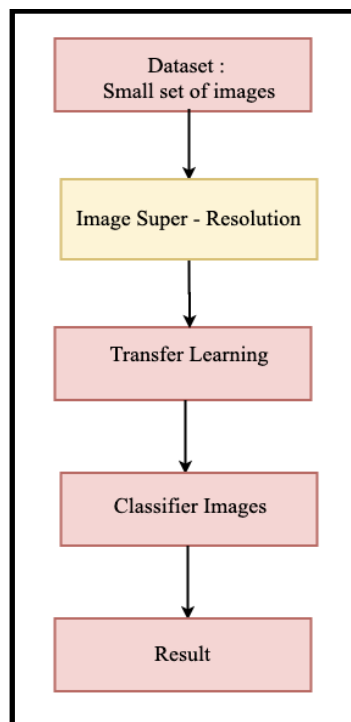
In this experiment, the main pattern was consisted of CNN which we used VGG NET and Transfer Learning. In the subsection, we divided into 3 patterns including: 1) Image Classification via CNN and Transfer Learning without using Data Augmentation and Image Super Resolution, 2) doing Image Classification via CNN, Transfer Learning and using Data Augmentation but not using Image Super-resolution, 3) doing Image Classification via CNN, Transfer Learning and using Image Super-resolution but not using Data Augmentation, and 4) doing Image Classification via CNN, Transfer Learning and using Data Augmentation and Image Super-resolution. From the experimen



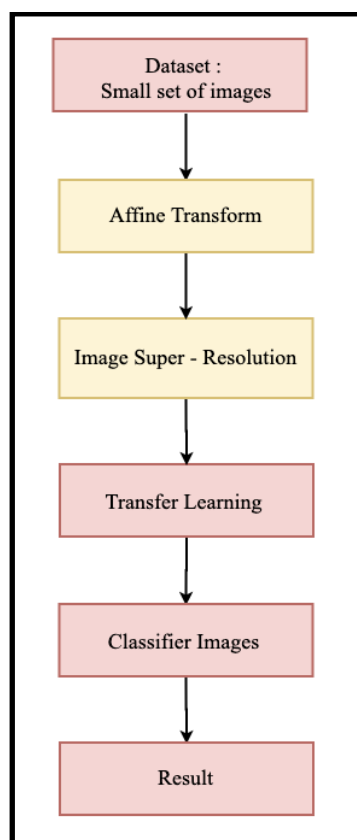
**Picture 5:** Methods 1 Image Classification via Transfer Learning



**Picture 5:** Methods 2 Image Classification via Affine Transform and Transfer Learning



**Picture 6:** Methods 3 Image Classification via Image Super - Resolution and Transfer Learning



**Picture 7:** Methods 4 Image Classification via Affine transform , Image Super - Resolution and Transfer Learning

## Experiment

A variety of Data augmentation techniques Transfer learning and classification Experiment were conducted involving both general and specific datasets.

**Table 4:** Result of methods

Methods	Details	CNN-Model	Accuracy (%)
1	Image Classification via Transfer Learning	VGGNet.	69
2	Image Classification via Affine Transform and Transfer Learning	VGGNet.	70
3	Image Classification via Image Super - Resolution and Transfer Learning	VGGNet.	70
4	Image Classification via Affine transform , Image Super - Resolution and Transfer Learning	VGGNet.	72

## Results and Conclusion

Our experiments showed that adopting the new and existing technique to create a process of enhancing quality to the image file for image classification had no meaning that all processes would worked out well as expected. There might be mistakes during the experiment. The mistake was learnt and improved for the future work so that we can manage to increase accuracy and resolution to the datasets for the perfect outcome.

## References

- C. Dong, C. C. Loy, K. He, X. Tang. " Image Super-Resolution Using Deep Convolutional Networks,," IEEE transactions on Pattern Analysis and Machine Intelligence 38 (2) (2016): 295-307.
- Chesnokov, Zhao Gao ; Eran Edirisinghe ; Slava. "Image Super-Resolution Using Cnn Optimised by Self-Feature Loss." 2019 IEEE International Conference on Image Processing (ICIP).
- CS231N.karpathy@cs.stanford.edu. "Cs231n Convolutional Neural Networks for Visual Recognition." <http://cs231n.github.io/convolutional-networks/#conv>
- Borman, Sean, and Robert L. Stevenson. "Super-Resolution from Image Sequences-a Review. ." IEEE, 1998.
- Glasner Daniel Shai Bagon and Michai. "Super-Resolution from a Single Image." . *IEEE 12th International no. Computer Vision*, 2009 (2009).
- J. Krause, H. Jin, J. Yang, L. Fei-Fei. " Fine-Grained Recognition without Part Annotations." *IEEE Conference on Computer Vision and Pattern Recognition* (2015): 5546–55.
- J. Yang, J. Wright, T. S. Huang, Y. Ma. " Image Super-Resolution Via Sparse Representation." *IEEE transactions on image processing* 19 (11) (2010): 2861-73.
- Joseph Lemley, Shabab Bazrafkan, Peter Corcoran. "Smart Augmentation Learning an Optimal Data Augmentation Strategy." *IEEE Access* ( Volume: 5 ) (2017): 2169-3536.
- Li, Ling Shao ; Fan Zhu ; Xuelong. "Transfer Learning for Visual." *IEEE Transactions on Neural Networks and Learning Systems* 26, no. 5 (2014): 1019 - 34.
- Schmid, Mattis Paulin ; Jérôme Revaud ; Zaid Harchaoui ; Florent Perronnin ; Cordelia. "Transformation Pursuit for Image Classification." *2014 IEEE Conference on Computer Vision and Pattern Recognition* (2014).



Saha, Sumit. "A Comprehensive Guide to Convolutional Neural Networks."

<https://towardsdatascience.com/a-comprehensive-guide-to-convolutional-neural-networks-the-eli5way-3bd2b1164a53>

Siping, Jia Shijie ; Wang Ping ; Jia Peiyi ; Hu. "Research on Data Augmentation for Image Classification Based on Convolution Neural Networks." 2017 Chinese Automation Congress (CAC) (2017).

## FACTORS AFFECTING CONSUMER'S PURCHASE INTENTION OF PASSENGER CARS IN YANGON, MYANMAR

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### ABSTRACT

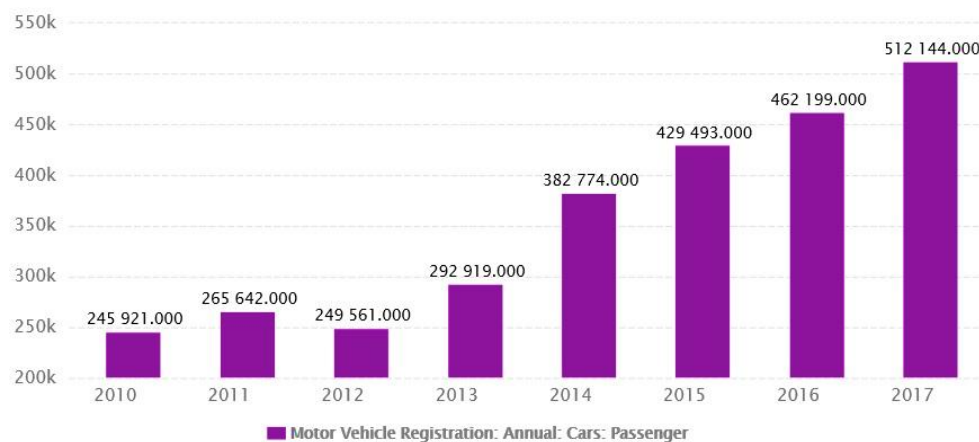
This study aims to analyze the factors that affect consumer's intention to purchase the passenger cars in Yangon, Myanmar. Factors consists of brand awareness, brand association, perceived quality, brand loyalty, product, price, promotion, social influence, and environmental concern toward the purchase intention. The quantitative research was approached by using the multiple regression analysis to interpret the hypotheses. The convenience sampling was used to collect the data from 450 respondents who lived in Yangon and were adults from different professions. According to the results of the demographic analysis, the majority of the respondents are male with age range between 18 to 25 years old. Moreover, most of the respondents are government employees. The main intention of purchasing the car is to go to work. From the results of the study, some of the hypotheses are consistent with the previous studies but some are not. Five out of nine hypotheses significantly affect consumer's purchase intention of passenger cars for this research. Among them, brand loyalty has the most significant impact on consumer's purchase intention.

**Keywords:** passenger cars, purchase intention, brand loyalty.

### 2. Introduction

The number of automobiles used in Myanmar had rapidly increased as the result of the automobile's import liberalization later 2012 and the number of automobiles registered improved 712,000 vehicles in 2015 while the numbers of automobiles registered were 365,000 vehicles in 2011 (Ministry of Industry, 2019). According to Automotive Policy (2019), there were 721,324 registered vehicles and approximately fifteen vehicles per 1,000 persons at 2016. The ownership of automobiles in Myanmar relates with the distribution of population density through the country. The more populated area has a stronger economic activity which has an advantage to a larger number of cars used on the roads (Ipsos, 2013). According to Department of Population (2015), Myanmar had 51,486,253 people in total population in 2014. Among them, the male population was 24,824,586 people and female population was 26,661,667 people. Yangon Region was the population of 7,360,703 people with 70.9 % of economically productive and represented nearly 14 % of the whole population of Myanmar. Yangon is the highest density of automobile usage and the most traffic region and can occur more than 66 % of automobile use of the whole (Ministry of Industry, 2019). The following figure shows Myanmar motor vehicles registered: passenger cars annually.





**Picture 1:** Myanmar Motor Vehicles Registered: Passenger Cars.

**Source:** <https://www.ceicdata.com/en/myanmar/motor-vehicle-statistics>.

It is convinced that everybody wants their lives to be better and convenient. So, purchasing a car is the important thing besides the basic needs of daily living things (Thanomsub, 2015). It is also the significant need of the people in Yangon. People use cars for many reasons for; work, school, travel, pick up, shopping etc. Cars can also bring the convenience in their daily life. It can reach a journey and arrive to the destination on time. Moreover, car could show their social status like the personality, the occupation, and the lifestyle of the car's owners (Thanomsub, 2015). While Myanmar was still influenced by the used vehicle sales market, after the economy opened up, many global automotive manufacturers are entering into Myanmar automobile market to get their brands and market shares. Myanmar government encouraged the growth of automobile industry by allowing the automobile manufacturers to import the essential automobile parts in making vehicles inside the country. It aimed to encourage the transport sector and automotive-related businesses through the sustainable development and to get more investments of foreign companies (Kim, 2019).

There are many global car company competitors in the passenger car market, which have an updated manufacturing facilities and technologies. According to Automotive Policy 2019, there are some strategies to increase the brand-new automobile usage like 200,000 brand-new cars sales per year in short-term (5 years) period, 400,000 brand-new cars sales per year in medium-term (5 years) period, and 1,200,000 brand-new cars sales per year in long-term (5 years) period in the future. Thus, Myanmar automotive market is a lucrative market for the international automobile manufacturers and companies. To be successful in the automobile industry, any passenger car companies should improve and update their performance of cars to maintain competitive in the automobile industry. And the car companies should not focus only on the physical appearance of the cars but also on the image of a car brand, customer perceived value and pricing of the cars (Thanomsub, 2015).

Because of changes of the government policies, regulations, and taxation on cars, wide varieties of global car brand choices in the car markets, the consumers' purchasing behaviors also change. As the results, every global car brand companies have to compete with each other and to offer the best option and service for consumers. But every consumer has different opinions and intention to purchase the passenger cars and this research is to find out the factors influencing the consumer's purchase intention towards the passenger cars in Yangon, Myanmar.

## **2.4 Significance of Research**

The contribution of this study is to understand the factors that affect consumer's purchase intention toward the passenger cars of the automobile industry in Yangon, Myanmar. To be a successful business, the company should understand how to leverage the various factors that affect on consumer's purchase intention to effectively market their products and maximize their sales. The research carefully reviewed and used key significant variables try to test the purchase intention of passenger cars in Myanmar automobile market. This research will explain about the information how the brand association, brand awareness, brand loyalty, perceived quality, product, price, promotion, social influence, and environmental concerns affecting consumer's purchase intention of passenger car.

## **2.5 Research Questions**

The research questions in this study are as follow:

- (1) Do brand awareness, brand association, perceived quality, and brand loyalty affect consumer's purchase intention?
- (2) Do product, price, and promotion affect consumer's purchase intention?
- (3) Do social influence and environmental concern affect purchase intention?

## **2.6 Objective of Research**

This study aims to investigate the factors that affecting on consumer's purchase intention of passenger cars in Yangon, Myanmar. The detail objectives are:

- (1) To examine the brand awareness, brand association, perceived quality, and brand loyalty affect consumer's purchase intention of passenger cars.
- (2) To examine the product, price, and promotion affect consumer's purchase intention of passenger cars.
- (3) To examine the social influence and environmental concern affect consumer's purchase intention of passenger cars.

## **1.4 Hypotheses**

Hypotheses in this research are as follows:

- H<sub>1</sub>: Brand awareness positively affects consumer's purchase intention of passenger cars.
- H<sub>2</sub>: Brand association positively affects consumer's purchase intention of passenger cars.
- H<sub>3</sub>: Perceived quality positively affects consumer's purchase intention of passenger cars.
- H<sub>4</sub>: Brand loyalty positively affects consumer's purchase intention of passenger cars.
- H<sub>5</sub>: Product positively affects consumer's purchase intention of passenger cars.
- H<sub>6</sub>: Price positively affects consumer's purchase intention of passenger cars.
- H<sub>7</sub>: Promotion positively affects consumer's purchase intention of passenger cars.
- H<sub>8</sub>: Social influence positively affects consumer's purchase intention of passenger cars.
- H<sub>9</sub>: Environmental concern positively affects consumer's purchase intention of passenger cars.

## **2. Literature Review**

### ***Purchase Intention***

The intention of behavior is a symbol of an individual or group's willingness to do a specific action (Ajzen, 1991). Purchase intention is a preference of consumers to buy the products or services that they want or need. Keller (2001) mentioned that there were various factors that affect consumer's

purchase intention when selecting the service or product. Wu, Yeh, and Hsiao (2011) expressed that purchase intention is like the possibility of consumer's willingness and readiness to purchase a specific product or service in the future. Psychological, cultural, personal, and social factors are the external factors that can influence and affect consumer's behavior on buying the products or services (Armstrong, Kotler, Harker, & Brennan, 2009). Purchase intention was a significant perception in marketing and most of the companies applied the purchase intention as the forecaster of the new products' sales and the repurchasing of present products (Ali, Khan, Ahmed, & Shahzad, 2011).

The probability of consumers to purchase a product can be forecasted by classifying the intensity of the purchase intention. The higher the intensity of purchase intention, the higher the probabilities of purchasing the products (Schiffman & Kanuk, 2000). Purchase intention takes into account all the cases when the customer has an ambition towards trying to buy the products or services and also very useful measurement for forecasting consumer behavior of the targeted customers for the marketers (Dodds, Monroe, & Grewal, 1991). The primary concept of consumer behavior is the purchase intention which in most cases in the previous literatures, are defined as the examples where a customer has a favorable attitude to do the transaction with the vendor (Heyvaert, Coosemans, Mierlo, & Macharis, 2015). Generally, purchase intention linked the attitude and perception of consumer to form the buying behavior (Bilal & Ali, 2013).

There are a lot of previous studies on the automobile consumer's purchase intention of not only in the developed countries but also in the developing countries. But a few studies on the investigation of automobile consumer's purchase intention for Myanmar. Amir and Asad (2018) used the price, after sale service, product, brand loyalty and brand product quality as the independent variables to investigate the consumer's purchase intention in their study. Jalilvand, Samiei, and Mahdavinia (2011) made a research on the brand equity components (brand awareness, perceived quality, brand association, and brand loyalty) affect intention of consumer's buying vehicles in automobile industry by using Aaker's model. Another previous study conducted on the effect of marketing mix, personal, social, cultural and psychological influences to consumers' purchase intention of Brand "W" in the cosmetic industry (Nugroho & Irena, 2017). Neizari, Nikandish, and Samadi (2017) considered and studied the factors (promotion and sensitivity of price, environmental awareness, green trust and green perceived value) that affecting the consumer's purchasing intention on the hybrid cars.

In this study, theory of planned behavior (TPB) were used to predict the consumer's purchase intention of passenger cars in Yangon, Myanmar. This study makes an effort to develop the theory of planned behavior by taking into account the nine independent variables (brand awareness, brand association, perceived quality, brand loyalty, product, price, promotion, social influence, and environmental concern) and to investigate the effects on the intentions of consumer's buying behavior. TPB made the modification on the reasoned action theory by dealing the perceived behavioral control (Ajzen, 1991).

### ***Brand Awareness***

Generally, brand equity has four dimensions, namely brand loyalty, brand awareness, perceived quality of brand, and brand associations (Aaker, 1991). These dimensions can be used to examine the results and findings of relationship of marketing and consumer behavior research. Brand awareness states that the power of a brand's occurrence in the consumers' minds and is an important component of brand equity (Aaker, 1991; Keller, 1993). The consumers without the knowledge of a brand would not have the purchase intention of the product (Yaseen, Tahira, Gulzar, & Anwar, 2011). Grewal, Monroe and Krishnan (1998) stated that the strong awareness of the brand can impact the purchase decision of the vendors or resellers.

### ***Brand Association***

A brand association is all the links in the mind to that brand (Aaker, 1991). Aaker (1991) explained that brand associations are all the relations that occur between the products and brand that enhances the impressions of a particular brand. It can refer to persons, lifestyle, personality, and attitude that creating a reason to purchase of those potential customers who are finding the specific associated physical or emotional components of the product. Aaker (1991) recommended that brand associations might give the advantage to the consumers by contributing a reason for consumers to buy the brand, and by generating the positive attitudes among the consumers.

### ***Perceived Quality***

The decision of purchase can also be influenced by perceived quality that can make consumers pay for the products or services (Zeithaml, 1988). The quality associated with the brand can be a strong influence of comparison and perception (Aker, 1991). When the brand is intangible and the way to proving consumer perceived quality, perceived quality can support a reason to buy (Thanomsub, 2015). Norman (2004) mentioned that the perceive quality by means of the responses from the consumers' emotion to a specific design. Perceived quality can also lead to consumers' satisfaction, if the perceived product performance on the customer's expectation of product quality meets with perceived performance of the brand and intention of product quality (Chaudhuri, 2002). Other previous study mentioned that the perceived quality is a special form of association because it can partially influence the brand associations in many backgrounds and it has been experimentally proven to affect profitability (Aaker & Joachimsthaler, 2000).

### ***Brand Loyalty***

Aaker (1991) defined that brand loyalty by means of a condition which can shows how the customer will be to switch to other brand, particularly when that brand changes in the features of the product or price and a main component of brand equity (Jalilvand et al., 2011). Many researchers found out that brand loyalty makes a sense of attachment between the consumers and the brand builders (Pedeliento, Andreini, Bergamaschi, & Salo, 2015). According to Lu, Gursoy, and Lu (2015), brand loyalty can be influenced by the consumer's brand appreciation, brand awareness, and the image of brand. Brand loyalty expresses the strongest condition of desire to purchase the product (Hussain et al., 2017).

### ***Product***

According to Kotler, Keller, and Burton (2009) described that combined marketing is an integrating of marketing activities to increase their individual and collective efforts (Morel & Kwakye, 2012). Marketing mix can be defined as a set of tools used for marketing to assist the marketers in converting their marketing strategies into practices (Bennett, 1997). Blackwell, Miniard, and Engel (2006) stated that product contains the full package of services or benefits gained by consumers in the exchanging process. It can be observed that the ability of a product or service to satisfy consumer's need is the fact that effect purchase intention (Nugroho & Irena, 2017).

### ***Price***

A competitive pricing would happen that consumers would have more purchase intention toward the product particularly when the consumers became more sensitive on price (Kotler & Armstrong, 2016). The effective pricing strategy can advantage to determine the consumer's choice. According to Jacoby and Olson (1977), pricing is a sign to stimulate consumers' perceptions prior to the purchase of particular products and then pricing could affect the emotional responses of consumers toward the purchase intention (Kowang, et al., 2018). Kotler and Armstrong (2016) defined that price is the sum of money used or the amount of value that consumers are eager to

expense in transaction for the product or service. The competitiveness of price is about the modest pricing of the manufacturer while affordability is about consumers' buying power of the product (Nugroho & Irena, 2017).

### ***Promotion***

Promotion is the companies' activities to market the products and attract the consumers to purchase the products (Kotler & Armstrong, 2016). With the effective and accurate promotional strategies, companies could get the better market for their products and could influence the potential consumers to have purchase intention on the products (Nugroho & Irena, 2017). Yang and Lee (2016) mentioned that the promotional strategy can be enhanced effectively when the promotion strategies meet the consumer's expectations (Adnan et al., 2018). Promotion is a crucial component of a company's marketing strategy. Promotion can be applied to communicate with consumers to the product offerings, and it might be a means to persuade the purchase intention or sales of the products or services that the company offered (Khraim, 2011).

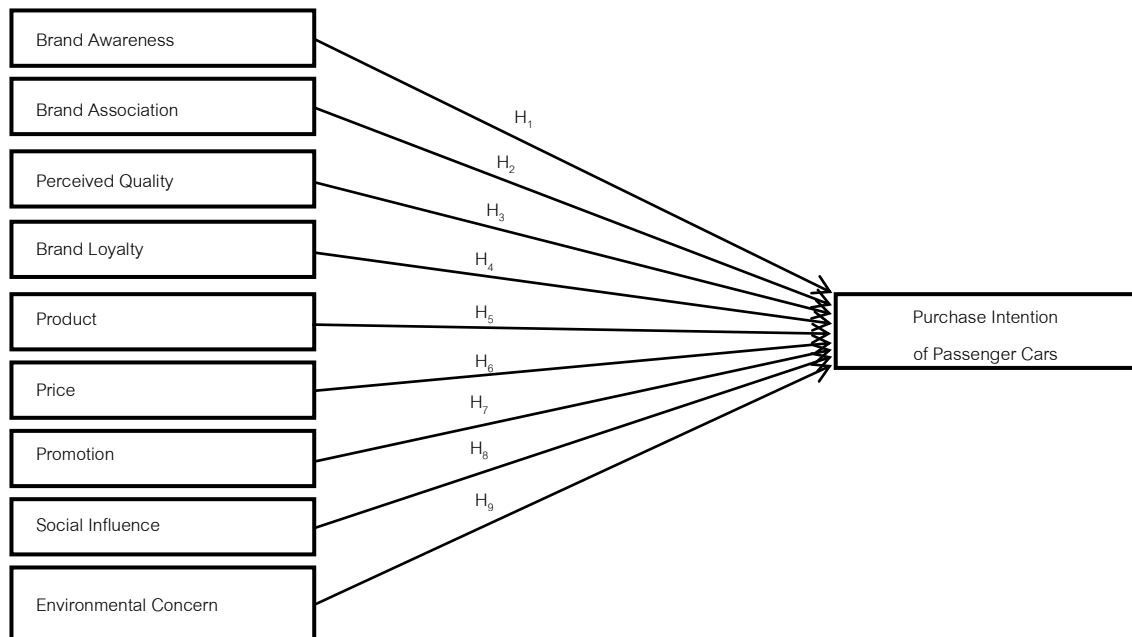
### ***Social Influence***

Social influence occurs when a person's emotions, opinions, or behaviors are affected by others. According to Kotler and Armstrong (2008), the action of consumers had been influenced by the surrounded people. Social influence is the changing in a person's opinions, moods, attitudes, or actions that outcomes from communication with another individual or group (Rashotte, 2007). Furthermore, people also learn to behave in the way they are expected to according to their role and status (Nagarkoti, 2014). Social influence is the process by which individuals make real changes to their feelings and behaviors as a result of interaction with others who are perceived to be similar, desirable, or expert (Rashotte, 2007). Moreover, social influence could impact an individual's choices (Ajzen, 1991).

### ***Environmental Concern***

Neizari, Nikandish, and Samadi (2017) mentioned that the environmental concern became the key consideration of customers in making purchase decisions. Environmental concern is grounded on the eco-knowledge, which is the basic knowledge about the ecosystem of the earth and environment and the consumers with this knowledge had a significant impact on their behavior. Indriani, Rahayu, and Hadiwidjojo (2019) conducted the study to investigate the influence of environmental knowledge and concern on purchasing intention of green product and found the significant impact. Environmental concern is the level of emotional involvement in the problems of environment (Lee, 2008). Kahn (2007) studied and indicated that people who had more environmental concern had more intention to purchase hybrid vehicles than people who had no environmental concern. Ellen, Wiener, & Cobb-Walgren (1991) identified the key factors that motivate environmentally conscious behaviors. These factors consist of personal values, such as a concern for the environment and a belief that an individual could make a difference.

## Conceptual Framework



**Picture 2:** Conceptual Framework.

**Source:** (Jalilvand, Samiei, & Mahdavinia, 2011), (Nugroho & Irena, 2017), (Neizari, Nikandish, & Samadi, 2017).

## 3. Methods

This research based on quantitative approach and used the survey method to collect the data from the respondents by using questionnaires. Quantitative approach tends to be a highly trusted method in using numbers to represent the opinions or ideas (Amaratunga, Baldry, Sarshar, & Newton, 2002). According to Nau (1995), this approach is suitable to investigate the behavioral component like the customer purchase intention. The questionnaire was distributed to the targeted respondents through online and self-administered survey to get the responses. Before the actual survey, the researcher conducted the pilot survey of 31 respondents to ensure the questions for each construct was consistent with the theory used in this study. For the final survey, the researcher made a survey with a sample size of 450 respondents and then the data collected were analyzed by using multiple regressing analysis to test the hypotheses developed in this study.

Generally, there are two types of data collection for this research. Primary data was the data that got from the questionnaire by doing the research survey through the respondents who are living in Yangon. A questionnaire is a set of questions prepared by researchers that must be answered by respondents (Sekaran & Bougie, 2016). The five-point Likert scales ranging from strongly disagree to strongly agree were used in all the scaled items for each variable. Secondary data is the data collected from books, tables, articles, previous researches, and internet that are related to the automobile, consumer's purchase intention to narrow the scope of research and using as a reference.

The unit of analysis of this study is the consumers of passenger cars market in Yangon, Myanmar. In this study, a set of questions was prepared that could be accessed by respondents via a website link, social media, and some can be made by self-administered questionnaire. The process of collecting the primary data started from 1 December 2019 to 31 January 2020. Then the researcher



used the complete set of questionnaires to evaluate the demographic analysis and descriptive statistics of variables by using SPSS program and then analyzed by using multiple regression analysis to test the hypotheses and summarize in table format with descriptions.

#### 4. Results and Discussion

Generally, the demographic factors that considered in this study are age of the respondents, gender of the respondents, occupation, education, and monthly income of the respondents, and then purpose of purchasing a car and car brand name that want to buy of the respondents. The demographic factors of 450 respondents of the sample size are analyzed by descriptive statistics. According to the results of the study, the majority of the respondents is male 356 persons (56.9 %), followed by female 194 persons (43.1 %). This result shows that normally male is more interested in buying car than female does. For the age factor, the respondents 176 persons (39.1 %) with the age range between 18 to 25 years old have more intention to buy car than other age range of respondents. Most of the respondents are bachelor's degree holders with 198 persons (44 %) out of total respondents. Moreover, most of the respondents are government employees followed by students and the third is the company employees. Over half of them have a monthly income less than 300,000 kyats. The main intention of purchasing the car is to go to work. The most popular car brand name is Toyota with the response of 203 respondents.

Descriptive statistics can be used to analyze the data by using measures that can represent the data collected throughout the research (Rodrigues, Lima, & Barbosa, 2017). Descriptive statistics can also summarize some measures of data like dispersion and central tendency (Twycross & Shields, 2004). Mean score and the standard deviation were used to interpret the measurements of dispersion and central tendency of the data in this research. Table 4.2 displays the mean and standard deviation of constructs (independent variables - brand association, brand awareness, perceived quality, brand loyalty, product, price, promotion, social influence, environmental concern, and purchase intention - dependent variable) and their interpretation. The Likert scale used in this research is the 5-point Likert scale (starting from strongly disagree, disagree, neutral, agree, and strongly agree). To determine the range of the value of the 5-point Likert scale,

$$\text{Range between level of agreement} = (5 - 1) / 5 = 0.8$$

This value is the range between each of the 5-point Likert scale as the agreement level. And then the measurements of the variables can be separated as strongly disagree (1-1.8), disagree (1.81-2.6), neutral (2.61- 3.40), agree (3.41-4.2), and strongly agree (4.21-5.00). The results of the mean scores and standard deviation of all variables (brand association, brand awareness, perceived quality, brand loyalty, product, price, promotion, social influence, and environmental concern, and purchase intention) and its interpretation for this research. In summary, the results of mean scores of all variables are higher than 3.40. Brand association (Mean = 4.08, Std. Dev. = 0.60), perceived quality (Mean = 4.13, Std. Dev. = 0.60), brand loyalty (Mean = 3.86, Std. Dev. = 0.70), product (Mean = 4.09, Std. Dev. = 0.56), price (Mean = 4.00, Std. Dev. = 0.57), promotion (Mean = 3.72, Std. Dev. = 0.70), social influence (Mean = 3.87, Std. Dev. = 0.67), and purchase intention (Mean = 4.14, Std. Dev. = 0.55) are in 'Agree' as the level of agreement. Brand awareness (Mean = 4.21, Std. Dev. = 0.57) and environmental concern (Mean = 4.33, Std. Dev. = 0.59) have the highest mean score at the level of agreement respectively. It means that the majority of the respondents agree the survey questions of the research. Brand loyalty and promotion have the highest deviation at 0.7 and purchase intention has the lowest deviation at 0.55 respectively. Thus, most of the respondents answered the agree to the survey questionnaire.

Cronbach's alpha test should be performed by the reliability analysis before hypotheses testing to make sure the internal consistency and validity of all scaled items of variables (Tavakol & Dennick, 2011). Cronbach's alpha value can suggest how the scaled items of the constructs are related to each other in the survey. According to the results of Cronbach's alpha analysis (pilot test), all of the Cronbach's alpha value of the variables is higher than 0.7 and the condition is accepted. All scaled items of variables are reliable and consistency and could apply in the final survey. For the final survey, Cronbach's alpha values were tested on all independent variables of brand association, brand awareness, perceived quality, brand loyalty, product, price, promotion, social influence, and environmental concern including one dependent variable of purchase intention. The overall Cronbach's alpha value of all constructs of the research framework is 0.915.

Multiple linear regression analysis was employed to test the relationship between the independent and dependent variable. There are nine research hypotheses ( $H_1$  to  $H_9$ ) developed in this research and were tested by using multiple linear regression analysis with a 95 % confidence intervals level. Table 1 shows the results of multiple linear regression analysis of hypotheses testing. The research found out that there were five significant hypotheses out of nine hypotheses as the outputs of the research.

**Table 1:** Regression Coefficients of Variables

Model	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.	Results
	B	Std. Error	Beta			
Constant	0.735	0.188		3.920	0.000	
BL	0.278	0.030	0.354	9.143	0.000	Supported*
Pr	0.202	0.041	0.209	4.913	0.000	Supported*
EC	0.216	0.034	0.235	6.303	0.000	Supported*
SI	0.086	0.032	0.105	2.679	0.008	Supported*
Pm	0.071	0.031	0.090	2.284	0.023	Supported*

Independent Variables: Brand loyalty, Price, Environmental concern, Social influence, Promotion

Dependent Variable: Purchase intention,

$R^2 = 0.455$ , Significant level at 0.05, p-value < 0.05,

**Source:** Author's Calculation.

From the results of Table 4.7, brand loyalty ( $\beta = 0.354$ , Sig. = 0.000), price ( $\beta = 0.209$ , Sig. = 0.000), promotion ( $\beta = 0.090$ , Sig. = 0.023), social influence ( $\beta = 0.105$ , Sig. = 0.008) and environmental concern ( $\beta = 0.235$ , Sig. = 0.000) significantly affect to consumer's purchase intention of passenger cars for this research. Because these predictors (independent variables) have the p-value less than 0.05. Brand awareness, brand association, perceived quality, and product do not significantly affect to consumer's purchase intention of passenger cars in this research.

**Table 2:** Model Summary <sup>a</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin Watson
1	0.675 <sup>b</sup>	0.455	0.449	0.40627	2.022

a. Predictors: (Constant), Brand loyalty, Price, Environmental concern, Social influence, Promotion

b. Dependent Variable: Purchase intention

**Source:** Author's Calculation.



The value of R is 0.675 and has a good level of prediction of the dependent variable (purchase intention) in this research. Moreover, R square value is 0.455 which means that the dependent variable (purchase intention of the passenger car) can be explained by 45.5% of the nine independent variables; brand awareness, brand association, brand loyalty, perceived quality, product, price, promotion, social influence, and environmental concern in this research. The remaining 54.5 % can be influenced by other variables that were not considered in this study. The values of R square and adjusted R square are not much different and adjusted R square value is always lower than R square value. The value of Durbin Watson is 2.022 and means normal for the range 1.5 to 2.5 as a rule of thumb.

According to the results of hypotheses testing by multiple regression analysis, Table 4.8 summarizes the interpretation of all hypotheses in this research.

**Table 3:** Summary of Hypotheses Testing

Hypothesis	Path	$\beta$	t-value	Sig.	Results
H1	BAw $\rightarrow$ PI	0.030	0.773	0.440	Not Supported
H2	BAa $\rightarrow$ PI	0.040	0.953	0.341	Not Supported
H3	PQ $\rightarrow$ PI	0.065	1.448	0.148	Not Supported
H4	BL $\rightarrow$ PI	0.354	9.143	0.000	Supported*
H5	Pt $\rightarrow$ PI	0.028	0.563	0.574	Not Supported
H6	Pr $\rightarrow$ PI	0.209	4.913	0.000	Supported*
H7	Pm $\rightarrow$ PI	0.090	2.284	0.023	Supported*
H8	SI $\rightarrow$ PI	0.105	2.679	0.008	Supported*
H9	EC $\rightarrow$ PI	0.235	6.303	0.000	Supported*

**Source:** Author's Calculation.

After the analysis done by the researcher, it can be concluded that brand awareness ( $\beta = 0.030$ , Sig. = 0.440) has no relationship with intention of purchasing passenger cars. Regression coefficient beta of brand association ( $\beta = 0.040$ , Sig. = 0.341), perceived quality ( $\beta = 0.065$ , Sig. = 0.148), and product ( $\beta = 0.028$ , Sig. = 0.574) also have no significant relationship with intention of buying passenger cars. But five independent variables, brand loyalty, price, promotion, social influence, and environmental concern have a significantly impact on consumer's purchase intention of passenger cars in Yangon, Myanmar as already mentioned above. In summary, H4, H6, H7, H8, and H9 significantly affect consumer's intention of buying passenger cars whereas H1, H2, H3, and H5 not significantly affect consumer's intention of buying passenger cars in this study.

As a result, the multiple linear regression equation can be formulated as follows:

$$\hat{Y} = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_nX_n + \varepsilon,$$

Where  $\hat{Y}$ , = the predicted or expected value of the dependent variable,

$X_1$  through  $X_n$  = the independent or predictor variables,

$b_0 = \hat{Y}$  when all of the independent variables ( $X_1$  through  $X_n$ ) are equal to zero,

$b_1$  to  $b_n$  = the estimated regression coefficients of the independent variables,

$\varepsilon$  = the error term.

Therefore, consumer's purchase intention of passenger cars can be expressed by this model equation (based on unstandardized coefficients),

$$\text{Purchase Intention} = 0.735 + 0.278 \times \text{Brand Loyalty} + 0.202 \times \text{Price} + 0.071 \times \text{Promotion} + 0.086 \times \text{Social Influence} + 0.216 \times \text{Environmental Concern} + \varepsilon$$

The above equation mentions that these five independent variables (brand loyalty, price, promotion, social influence, and environmental concern) have positive relationship with dependent variable (consumer's purchase intention) of the study. The value of purchase intention will be 0.735 when all other independent variables in equation are zero in the unstandardized coefficient model equation. Purchase intention will be added by 0.278 if the brand loyalty were one and other variables remain constant. Similarly, purchase intention will be increased by 0.209, 0.071, 0.086, and 0.216 respectively if other variables remain constant. As a conclusion, brand loyalty, price, promotion, social influence, and environmental concern have significantly affected on consumer's purchase intention of passenger cars at the significant level of 0.05 and at the same time other variables such as brand awareness, brand association, perceived quality, and product have not significantly affected on consumer's purchase intention of passenger cars at the significant level of 0.05.

## 5. Conclusions

One of the significant factors on consumer's purchase intention of passenger cars in this research is brand loyalty. This factor has the most positively and significantly affected consumer's purchase intention. Most of the automobile consumers in Yangon have a strong perception on brand loyalty. The managers and marketers of car sales centers and showrooms should more focus on consumer's perceptions of perceived value and perceived quality received from the brand of passenger cars and make the effective branding strategies to persuade the customers. Another significant factor on consumer's purchase intention of passenger cars in this research is environmental concern. Nowadays, most of the people around the world aware more about environmental issues. Automobile consumers in Myanmar also aware and care more about the impact of environmental issues by using of passenger cars. Environmental concern has not only significantly affected consumer's purchase intention of passenger cars but also positively relationship toward purchase intention of passenger cars with Pearson correlation of 0.407 at the significant level of 0.01. Price and promotion also positively and significantly affect consumer's purchase intention of passenger cars according to the results of this study. The findings in this research showed that price is one of the factors that can affect purchase intention of automobile consumers. Thus, the marketers and managers of automobile company should pay attention on pricing of automobiles to get more consumers to buy the passenger cars. Effectiveness of the promotion strategy is mainly enhanced when the promotion strategy meets expectations of customer (Yang & Lee, 2016).

The automobile company and managers can understand how the promotional activities are important not only to attain the royal customers but also to get the new consumers for their businesses. Marketing mix is the one of the most important key factors to increase the purchase intention of consumers for the products and services. Social influence factor also positively and significantly affects consumer's purchase intention of passenger cars in this research. Lee and Green (1991) mentioned that social influence was a significant factor that influencing to form the behavior intention. Generally, most of the automobile consumers in Myanmar, they discuss with their family members and friends before they buy a car or other expensive things. The consumer's perception on passenger car brand and their influence are also key factors to take a consideration in making the marketing strategies of marketers and managers of automobile sales centers and showrooms. In

conclusion, there are short-term and long-term strategies to increase the use of the brand-new automobiles with reasonable prices each year in Myanmar according to Automotive Policy 2019. Thus, every automotive company, showroom and sales centers could get advantages in making their planning and strategies for sales and marketing from this situation.

### **Managerial Implications**

The results and findings in this study can contribute to making the branding and marketing strategies of managers and marketers of the automobile industry. Marketers and managers of automobile sales centers should emphasize on brand equity especially brand loyalty to increase the consumer's intention of buying passenger cars according to the results of the study. The automobile companies also have to concentrate on pricing strategy that should be competitive and affordable among competitors. The local and multinational automobile companies should offer more affordable and reasonable pricing passenger cars for the consumers. Because most of the consumers always find the suitable and affordable price for the cars with the brand-name that they want to buy. Promotion activities of the automobile company are also important for the automobile consumers from the result of the study. The marketers and managers should do more promotional activities like advertisements and public relations on brand equity and features of the product category to aware and persuade the consumers. As environmental concern is one of the significant factors of this study, the marketers and managers of the automobile company could apply the environmental system or features used in the automobiles as a promotional tool to encourage the consumers to purchase the passenger cars.

### **Limitation and Recommendation for Future Study**

There are some limitations to this research. One of the limitations of this study is that the research conducted the consumer's purchasing behavioral intention on Japanese brand-new passenger cars in the automobile industry in Yangon, Myanmar. The findings and results of the study can reflect only on the Japanese brand-new passenger car segment and will not cover for other brands and types of vehicle segments of the automobile industry in Myanmar. For the future study, the researchers can conduct the same study on other automobile brand names and segments of the vehicles not only in Myanmar but also in other countries. The researchers can also expand a study with this framework to other industry.

Another limitation of the research is the location of the study and the respondents who lived in Yangon region. So, the findings and results got in this study are based on 450 respondents who lived in Yangon and it cannot represent the whole population of the country and other parts of the country for consumer's purchase intention of passenger cars. For the recommendation of future study, the researchers can make research on other main cities of the country and can make a survey on the specific respondents who have more strong purchase intention and came to the place where automobile exhibitions held like International Motor Show.

The last limitation of the research is that the study considered only independent variables and dependent variable in the conceptual framework and did not take into account the mediating variables between the two variables. So, the future studies should conduct and put some mediating variables between independent and dependent variables in the conceptual framework. One more recommendation for future research is that the researchers can make a study on the comparison of brand-new and used Japanese brand cars for consumer's purchase intention because there is still a used car market in Myanmar.

## References

- Aaker, D. A. (1991). *Managing Brand Equity*. New York: The Free Press.
- Aaker, D. A., & Joachimsthaler, E. (2000). *Brand leadership*. New York : Free Press.
- Adnan, A., Idrees, M., & Jan, M. F. (2018). Relationship between Marketing Mix Strategies and Fashion Consumer's Purchase Intention. *International Journal of Scientific & Engineering Research*, 9(12), pp.262-274.
- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior And Human Decision Processes*, 50(2), pp. 179-211. doi:10.1016/0749-5978(91)90020-T
- Ali, A., Khan, A. A., Ahmed, I., & Shahzad, W. (2011). Determinants of Pakistani Consumers' Green Purchase Behavior: Some Insights from a Developing Country. *International Journal of Business and Social Science*, 2(3), pp. 217-226. Retrieved from <https://www.researchgate.net/publication/285663183>
- Amaratunga, D., Baldry, D., Sarshar, M., & Newton, R. (2002). Quantitative and qualitative research in the built environment: application of "mixed" research approach. *Work Study*, 51(1), pp.17-31.
- Amir, A., & Asad, M. (2018). Consumer's Purchase Intentions towards Automobiles in Pakistan. *Open Journal of Business and Management*, 6, pp. 202-213. doi:10.4236/ojbm.2018.61014
- Armstrong, G., Kotler, P., Harker, M., & Brennan, R. (2009). *Marketing an Introduction*. England: Pearson Education Limited.
- Bennett, A. R. (1997). The five Vs – a buyer's perspective of the marketing mix. *Marketing Intelligence & Planning*, 15(3), pp. 151–156.
- Bilal, M., & Ali, T. (2013). Factors Influencing Consumers Purchase Intentions towards Private Brands. *JISR-MSSE*, 11(2), pp. 17-28. doi:10.31384/jisrmsse/2013.11.2.2
- Blackwell, R. D., Miniard, P. W., & Engel, J. F. (2006). *Consumer Behavior*. Mason, OH: Thomson/South-Western.
- Chaudhuri, A. (2002). How Brand Reputation Affects the Advertising-Brand Equity Link. *Journal of Advertising Research*, 42(3), pp. 33-43. doi:10.2501/JAR-42-3-33-43
- Department of Population. (2015). *The 2014 Myanmar Population and Housing Census: Yangon Region*. Nay Pyi Taw: Ministry of Immigration and Population.
- Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. *Journal of Marketing Research*, 28(3), pp. 307-319. doi:10.2307/3172866
- Grewal, D., Monroe, K. B., & Krishnan, R. (1998). The Effects of Price-Comparison Advertising on Buyers' Perceptions of Acquisition Value, Transaction Value, and Behavioral Intentions. *Journal of Marketing*, 62, pp. 46-59. doi:10.2307/1252160
- Heyvaert, S., Coosemans, T. C., Mierlo, J. V., & Macharis, C. (2015). Electric vehicle attitudes and purchase intention: A Flemish case study. *International Journal of Electric and Hybrid Vehicles*, 7(1), pp. 83-100.
- Indriani, I. A., Rahayu, M., & Hadiwidjojo, D. (2019). The Influence of Environmental Knowledge on Green Purchase Intention the Role of Attitude as Mediating Variable. *International Journal of Multicultural and Multireligious Understanding*, 6(2), pp. 627-635. Retrieved from <http://dx.doi.org/10.18415/ijmmu.v6i2.706>
- Ipsos. (2013). *Automotive in Myanmar*. Ipsos Business Consulting.
- Jacoby, J., & Olson, J. C. (1977). *Consumer response to price: attitudinal, information processing perspective*. University Park, Pa: College of Business Administration, Pennsylvania State University.

- Jalilvand, M. R., Samiei, N., & Mahdavinia, S. H. (2011). The Effect of Brand Equity Components on Purchase Intention: An Application of Aaker's Model in the Automobile Industry. *International Business and Management*, 2(2), pp. 149-158.
- Kahn, M. E. (2007). Do greens drive Hummers or hybrids? Environmental ideology as a determinant of consumer choice. *Journal of Environmental Economics and Management*, pp. 129–145. doi:10.1016/j.jeem.2007.05.001
- Keller, K. L. (1993 ). Conceptualizing, Measuring, and Managing Customer-Based Brand Equity. *Journal of Marketing*, 57(1), pp. 1-22 . doi:10.2307/1252054
- Keller, K. L. (2001). Building customer-based brand equity : creating brand resonance requires carefully sequenced brand-building efforts . *Marketing management*, 10, pp. 15-19.
- Khraim, H. S. (2011). The Influence of Brand Loyalty on Cosmetics Buying Behavior of UAE Female Consumers. *International Journal of Marketing Studies*, 3, pp. 123-133. doi:10.5539/ijms.v3n2p123
- Kim, S. (2019, October 8). Automotive Industry. *Myanmar Insider*.
- Kotler, P., & Armstrong, G. (2008). *Principles of Marketing*. New Jersey: Pearson Prentice Hall.
- Kotler, P., Keller, K. L., & Burton, S. (2009). *Marketing Management*. Frenchs Forest, NSW: Pearson Prentice Hall.
- Kotler, P. T., & Armstrong, G. (2016). *Principles of Marketing, 16th Edition*. Boston: Pearson Education Limited.
- Kowang, T. O., Samsudin, S. A., Yew, L. K., Hee, O. C., Fei, G. C., & Long, C. S. (2018). Factors Affecting Car Purchase Intention among Undergraduates in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 8(8), pp. 80-88. doi:10.6007/IJARBS/v8-i8/4437
- Lee, K. (2008). Opportunities for green marketing: young consumers. *Marketing Intelligence & Planning*, 26(6), pp. 573-586. doi:10.1108/02634500810902839
- Lu, A. C., Gursay, D., & Lu, C. Y. (2015). Authenticity perceptions, brand equity and brand choice intention: The case of ethnic restaurants. *International Journal of Hospitality Management*, 50, pp. 36–45. doi:10.1016/j.ijhm.2015.07.008
- Ministry of Industry. (2019). *Automotive Policy*. Nay Pyi Taw: Ministry of Industry.
- Morel, M., & Kwakye, F. (2012). *Green marketing: Consumers' Attitudes towards Eco-friendly Products and Purchase Intention in the Fast Moving Consumer Goods (FMCG) sector*. Sweden: Umeå School of Business.
- Nagarkoti, B. (2014). Factors Influencing Consumer Behavior of Smartphone Users. *Arcada University*.
- Neizari, M. M., Nikandish, A., & Samadi, B. (2017). A Study on Hybrid Car Purchasing Intention. *International Journal of Business and Social Science*, 8(12), pp. 46-56.
- Norman, D. A. (2004). *Emotional Design* . New York: Basic Books, A Member of the Perseus Books Group.
- Nugroho, A. R., & Irena, A. (2017). The Impact of Marketing Mix, Consumer's Characteristics, and Psychological Factors to Consumer's Purchase Intention on Brand "W" in Surabaya. *iBuss Management*, 5(1), pp. 55-69. Retrieved from <https://media.neliti.com/media/publications/182962-EN-the-impact-of-marketing-mix-consumers-ch.pdf>
- Pedeliento, G., Andreini, D., Bergamaschi, M., & Salo, J. (2015). Brand and product attachment in an industrial context: The effects on brand loyalty. *Industrial Marketing Management*, pp. 194-206. doi:10.1016 /j.indmarman.2015.06.007

- Rashotte, L. (2007). Social Influence. *The Blackwell Encyclopedia of Sociology*, pp. 1-3.  
doi:10.1002/978140 5165518.wbeoss154
- Rodrigues, C. F., Lima, F. J., & Barbosa, F. T. (2017). Importance of using basic statistics adequately. *Rev Bras Anesthesiol*, p. 620.
- Schiffman, L. G., & Kanuk, L. L. (2000). *Consumer Behavior*. Upper Saddle River, N.J.: Prentice-Hall International.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, pp. 53-55.
- Thanomsub, M. (2015). Factors Affecting Consumer's Purchase Intention toward Japanese Car in Bangkok.
- Twycross, A., & Shields, L. (2004). Statistics make simple. Part 1 Mean, Medians and Modes. *Paediatric Nursing*, p. 32.
- Wu, P. C., Yeh, G. Y.-Y., & Hsiao, C.-R. (2011). The effect of store image and service quality on brand image and purchase intention for private label brands. *Australasian Marketing Journal*, 19(1), pp. 30-39. doi:10.1016/j.ausmj.2010.11.001
- Yang, D.-J., & Lee, C. W. (2016). In-Store Promotional Mix and the Effects on Female Consumer Buying Decisions in Relation to Cosmetic Products. *International Journal of Management, Economics and Social Sciences*, 5(2), pp. 35-56.
- Yaseen, N., Tahira, M., Gulzar, A., & Anwar, A. (2011). Impact of Brand Awareness, Perceived Quality and Customer Loyalty on Brand Profitability and Purchase Intention: A Resellers' View. *Interdisciplinary Journal Of Contemporary Research In Business*, 3(8), pp. 833-839. Retrieved from <https://journal-achievers13.webs.com/833-839.pdf>
- Zeithaml, V. A. (1988). Consumer Perceptions of Price, Quality and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing*, 52, pp. 2-22.  
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## FACTORS AFFECTING THE DECISION TO BUY HEALTHY FOOD AT JUNGLE CAFÉ

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### ABSTRACT

The purpose of this research is to study the factors affecting the decision to buy healthy food at Jungle café. By studying the marketing mix factors and buying decision behavior of healthy food at Jungle café consisting of the types of healthy food product that consumers choose to buy, reasons to buy healthy food, frequency of buying consumption of healthy food, estimated cost per visit and channels that customers are convenient to receive information. Therefore, the entrepreneurs can use the research results to analysis data for develop marketing strategies, new products development and sales promotion that meet the consumers needs. And also, create a competitive advantage for the company by collecting 400 samples. The methods used in this research are questionnaire which studied from the concepts, theories and related research. The information collected by descriptive statistics analysis. The statistics are frequency, percentage, mean, and standard deviation. After that, using quantitative statistics analysis in order to test the hypothesis by using compare mean and crosstab in hypothesis testing of each sample in demography.

The result of this research shows that marketing factors is important among the sample group of consumers at Jungle café. Product factors by choose raw materials that additives free. Price factors with a clear price tag. Location factors are appropriate location, convenient, near by school, workplace, community and also convenient to buy. Marketing promotion factors are regularly updating interesting promotions. For human factors, employees are treat equally to all customers. Process factors focus on speed and accuracy payment. Cleanliness is the most concern on physical factors. Information about consumption behavior found that most of the consumers of Jungle café will buy clean food; reasons to buy are good for healthy, healthy and complete nutrition. Frequency to consume healthy food 1-2 times a week, approximate cost per visit is between 50 - 100 baht. Consumers prefer and convenient to receive information online by used social media.

Therefore this research factors affecting the decision to buy healthy food at Jungle café location should operate in an area that is convenient for customers. Healthy food products must provide nutritional information for the confidence of consumers to buy. Food prices are not very expensive since target groups are students with lower incomes. Communication channel should use online media that suitable for consumer groups.

**Keywords:** Marketing Mix 7Ps, Healthy food

## Introduction

According to 2015 global food market report, consumers are turning their attention to food consumption. In order to maintain a more suitable proportion information from the research association in The United States states that in 2014, more than 60% of the American population, mostly consumers aged 15-30 years and consumers aged 55 and older, were mostly purchasing power consumers. Turn to prefer the specialty food or healthy food (Food Navigator – USA)

Healthy food very popular among consumers today. In addition, businesses that distribute healthy food continue to expand. Including other businesses that turn to pay more attention to healthy food such as coffee shops has more healthy food product to sell as an alternative for customers regarding from busy lifestyle of people these day but still gives importance to health. Affecting the consumption decisions healthy food or clean food increased. Healthy food business has a tendency to grow higher. Increased market demand leads to increased food selection principles. And one of the key factors that make a business successful is profit from sales that continuously increasing customer base healthy food business must be able to meet the needs of consumers as much as possible. by having to understand the behaviors and needs of different consumers and able to apply marketing ingredients to make the most use. By expanding more distribution channels that create convenience and more modern for consumer value or price suitability of the product preparation of interesting promotions adding food menus with flavors that consumers like including communication channels or providing information that creates a positive attitude towards healthy food consumers comply with the needs and lifestyles of consumers the most.

Therefore, spending on consumption in exchange for good health as well food, resulting in continuous healthy food consumption decisions. The trend of healthy food consumption or "clean food" is becoming a trend or the trend that is continuously growing throughout the world including Thailand according to a recent Euro Monitor International survey, the market value tends to increase with an average growth rate of 6-7 per year predicted that in 2017, the market value may be as high as 1 trillion US dollars, or about 33 trillion baht, with giants such as China, Brazil and the United States taking the top 1-3 of the countries that has highest level of healthy food intake respectively while Thailand is ranked 19th.

Information from the institute food ministry industry survey found that since 2010 onwards, the growth rate of the food and beverage market for health in Thailand interestingly, the value has grown. Food market numbers and Thai health drinks in 2010. The number touched to 90 billion baht and has grown continuously in 2015. The market value should be 200 billion baht in 2016 expected that the value of the Thai health food market in 2015 will grow by 6.1% from the previous year and the market is expected to grow at 6.0% per year until 2017, with the functional food market occupy the largest share of the health food market at approximately 60 percent.

In addition, the health food market share the second highest proportion at 30 and 8 percent respectively. Natural products market and the specific healthy food has the potential to grow compare to functional food market. Natural products market is less flavored food or no additives at all, such as 100% natural extracts and breakfast cereals.

For the health food market, specific groups are divided into children and infants that focus on additive products to enhance development and childrens health and the elderly focuses on easy-to-eat food can prevent disease to replace medicine herbal foods and supplements for the elderly clean food considered as an opportunity is an attractive market benefit for Thai entrepreneurs in this era (Kasikorn Thai Research Center, 2015)



Jungle cafe 'is one of the coffee shops that bring healthy food to sell, including clean food and healthy salad to meet the needs and expand the customer base. Therefore, it is an incentive for the researcher interested in studying the factors affecting the decision to buy healthy food at the Jungle café. For the relevant organization or business can use the results from this research to develop and expand more businesses in the future.

## Objectives

1. To study marketing factors such as products, prices, distribution channels, promotion of marketing, physical characteristics visible and the service process that affects the decision to buy healthy food at the Jungle café.
2. To study the behavior of consumers affecting the decision to buy healthy food at Jungle café.

## Literature Review

### *Consumer Behavior*

Theory of consumer behavior consumer Behavior means behavior that consumers do, find, buying, using evaluation usability, products and services which are expected to meet their need or want.

(Schiffman & Kanuk, 1994) Consumer behavior is the study of individuals, groups, or organizations and the processes they use to select, maintain, and eliminate things regarding products, services, experiences, or concepts. To meet the needs and the impact that the process. These are for consumers and consumer behavior society is a combination of psychology, sociology, social anthropology and economics. To understand the decision process of the buyer both individuals and groups of people.

Kotler (1999 refered Siriwan Serirat, 1998, page 124-125) Marketing Management defined the meaning of consumer behavior means the act of a person directly related to the procurement and use of goods and services, including decision making process and the actions of the persons involved in the purchase, and product use.

Solomon (1996 refered Dara Teerapan, 1999, page 3) Meaning that consumer behavior refers to the study of the processes in which a person or group is involved in order to select, purchase, use, and consume in connection with a product, service, idea or experience. To meet the needs and various desires to get attention.

Thongchai Santiwong (2003, page 27-28) said that consumer behavior means actions of any person involved in the acquisition and the use of the product and services. Refers to the decision-making process that already exists and which is involved in determining the said act.

Sukorn Serirat (2001, page 6) has said that consumer behavior refers to actions that are directly related to the procurement of consumption and spending on goods and services including the decision making process that occurred both before and after doing so.

Engel, Kollat and Blackwell (1968) defined consumer behavior as the act of a person directly related to the acquisition. And use of products and services, including decision making processes that already exist which has contributed to require that it be done.

The concepts of Thongchai Santiwong (2003, pages 27-28); Sukorn Serirat (2001, page 6), including Engel, Kollat and Blackwell (1968), are consistent in the process of decide on the product purchase and services. This decision making process already existed also important in determining consumer decisions.

### ***Consumer Behavior of Generation Z***

From the foregoing above, it can be concluded that the consumer behavior is a pre-existing decision process, or it may be a decision that occurs before and after the action, in which individual behaviors are related. Directly with the use of the product, including decision making process that affects individual expression which is different for a response to the needs of consumer behavior itself. Generation Z behavior that affects the world food market direction. They are love for health and interested in healthy food products. Generation Z is growing up in the world with awareness of their health, weight control and in the midst of the exercise trend has become a lifestyle of the new generation. According to a Tufts University health and nutrition letter survey in the United States, 41 percent of generation Z groups are willing to pay more if the food is healthy, while only 32 percent of the generation Y group. Who are willing to pay more. Currently most generation Z groups are still in childhood and teenagers who like to eat snacks food products such as snacks and beverages that are beneficial to health are likely to be popular. But should not exaggerate claims.

This information do not yet have scientific evidence to confirm because generation Z consumers have the skills to search for information. If the information is found to be inaccurate then the product will not be immediately trusted and may be spread quickly. Conserving the world, the source of food products is becoming more important. The generation Z group has grown with the trend of environmental preservation and social responsibility. Therefore pay special attention to this matter food products that the generation Z group buys for being healthy must not invade other life, the generation Z Group places great importance on the selection of products from manufacturers that are transparent, ethical, and fair trading. It also considers the sources of food products from the farm level to the hands of consumers about how each step impacts the environment and society. Such as using child labor in production or not, use chemicals that are harmful to the ecosystem or not. In addition, generation Z consumers may also consider the source of the food packaging used. Resulting in packaging that can be easily digested, such as a spoon that can be eaten, packaging made from bioplastic.

There is an opportunity to become more popular in the food industry in term of details on the packaging, to providing nutritional value and health benefits. Consumers are always looking for stories about products that are related to helping society or protecting the environment on the packaging. Nowadays, many products are starting to put QR Code on the packaging so that buyers can connect to read the product story or conveniently track the product source. Love online but do not throw away offline is more active. Although the generation Z group are familiar with the online world and like to order products online like the generation Y group, the generation Z group likes to browse the products at the store cecause wanting to experience the real product before making a decision.

The uniquely generation Z report, created by the US National Retail Federation in conjunction with the IBM institute for business value, found that 98 percent of generation Z surveyed people like to shop from the store, so the packaging design is beautiful. Arrange the shop to be visually appealing and have products to taste it is still something that entrepreneurs may not ignore. At the same time, the generation Z group loves to eat in restaurants. Because like face to face communication and saw that the restaurant is a great place to meet with friends. Therefore, the layout of the shop as well as the decoration of the premises can help to attract generation Z customers. In addition, the popularity of generation Z both online and offline, it is expected that omni channel or the variety of channels that can serve customers. Each channel can collect and transfer information completely will become more involved in the food business, because omni channel can create a good experience for customers, such as connecting information of all channels together, allowing the restaurant to retrieve food products.

Customers have ordered from the shop through available online, offering a menu promotion that customers tend to order on a regular basis and notify the customer of the food menu that contains ingredients that have been reported to be allergic to the customer immediately. Including adding services for customers to reserve tables and order food in advance through the page or line application, which helps increase convenience for customers when wanting to dine at the store. Generation Z consumers will soon become the world's largest consumer groups. Food industry operators should direct closely monitor the tendency of these consumer behavior regarding from the purchasing behavior of Gen Z products. It may not just affect the food industry trends discussed above. But may cause unexpected future changes in the food industry For example, a change in the livestock industry if generation Z groups turn to choose to eat meat, planted, and food products from plants to replace meat consumption seriously because they want to reduce the impact of livestock farming that causes global warming and animal abuse. Entrepreneurs should be prepared to handle in advance because many things need time to adjust, such as preparing the information for easy searching and traceability by use of technology to connect to the database and store in real time. In addition, good planning helps to make the transition more smooth.

## **Methods**

This research is quantitative research (survey research) by using survey questionnaire to collect data from target groups. To study the factors affecting the decision to buy healthy food at Jungle Café, in Bangkok y using questionnaires to a sample of 400 sets, the research process is as follows

### ***Sample population***

The population used in this research is the population of Kasetsart University with 42,898 people in campuses in some districts used to use the Jungle café cannot specify the exact population.

### ***Sample size***

Regarding to the number of people who experience the Jungle café exact number is not known. Therefore, using an unknown population size table opening with 95% confidence and a 5% tolerance to the sample size of 400 people using the sample size table of Taro Yamane.

### ***Research Methodology***

The tools used for collecting this data were questionnaires about factors affecting the health food purchase of the Jungle café collected by descriptive statistics analysis. The statistics are frequency, percentage, mean, and standard deviation. After that, using quantitative statistics analysis in order to test the hypothesis by using compare mean and crosstab in hypothesis testing of each sample in demography. This created from the study of concepts, theories, articles, journals, and other related research. The questionnaire is divided into 3 parts as follows

First part is a questionnaire about the characteristics of the population such as gender, age, occupation, income, education level, status, etc. The tool used is a check list.

Secind part is a question about marketing factors that affect purchasing decisions such as products, prices, distribution channels, promotion of marketing, personnel, physical characteristics, and service processes, etc. using measures by using the Rating Scale to choose the 5-level solution according to the Five-Point Likert scales method.

Third part is a question about health food buying behaviors such as types of food, healthy food, reasons to buy healthy food, frequency of purchase, average cost of buying healthy food per visit. Convenient way to get information about the health food of Jungle café by using the check list.

The researcher tested the content accuracy tool by letting the advisor to consider the content of the questionnaire. After that, revised to be suitable in terms of language usage, accuracy, and covering all content. After that, conduct questionnaires 30 sets to try out.

#### ***Data Collected***

This research is a survey research to study the factors affecting the health food purchase of the Jungle café in Bangkok. Are compiled from 2 sources as follows

1. Primary data is the data from the survey by using a questionnaire from a sample of 400 people who experience the Jungle café in Bangkok.
2. Secondary data is a study from academic works, research results, and various reference items related including internet resources to complete the questionnaire preparation.

#### ***Data Analysis***

In analyzing this research data, the researcher has analyzed the research data by taking the data from 400 sets of questionnaires to check the completeness and correctness, then take all the data to do data analysis processing by using SPSS program as follows.

Bring the questionnaire part 1 and part 3, which are questions about personal factors of respondents and healthy eating habits to calculate the frequency by percentage

Bring the questionnaire part 2, which is a question about marketing mix factors to calculate the mean and standard deviation

### **Results and Discussion**

From the data collection of 400 samples, the storage location is at the Jungle café in Bangkok found that most of the samples are female students between the age of 21-25 years, earning less than 10,00 baht who are studying at the bachelor degree level and single.

Table of marketing factors affecting the purchase decision

<b>Marketing factors</b>	<b>Factors that respondents value most</b>	<b>Average</b>
Product factors	The selection of raw materials that are free of additives and fresh	4.48
Price factors	The price tag is clear	4.45
Place factors	The store location is appropriate, convenient to travel (near the school, workplace, and community) and the place of sale is convenient to buy	4.28
Promotion factors	Product recommendations	4.17
People factors	Employees are attentive to all customers	4.45
Process factors	Speed and accuracy in payment	4.38
Physical evidence factors	Cleanliness of the store	4.50

The marketing factors that have influenced the decision to buy health food at Jungle café as follows. The selection of raw materials that are free of additives, sample group gives the most importance, the average value is 4.48. For the price, having a price tag clearly indicates. The sample group gives the most importance. The average value is 4.45. The store location is suitable, convenient to travel (near the school, workplace, community) and the place of sale is convenient to buy. The sample group gives the most importance average is 4.28 in terms of marketing promotion. There are regularly interesting promotions the sample group gives the most importance. The average value is

4.23 for staff or personnel in the shop. Employees are equally attentive to all customers. The sample group gives the most importance average is 4.45 in terms of service, speed and accuracy in payment. The sample group gives the most importance average value is 4.38 in terms of physical aspects of the store. Cleanliness of the store sample group gives the most importance by a 4.50 average value.

To study the behavior of consumers affecting the decision to buy healthy food at Jungle café from a sample of 400 people, it was found that most samples were interested in buying clean food. That is the reason for choosing to buy because it is a food that has good value and nutritional value completely. The sample will choose to consume healthy food 1-2 times a week. The price of food that can be purchased per time is between 50 - 100 baht. The store's information is received via online media.

From data analysis found that the sample is a group of generation Z or gen-Z are people born after 1997, born from a new generation of parents such as gen-X and gen-Y, a new generation born with facilities convenient all around, learn about life styles in a digital society, live life with wireless communication and various entertainment media modern technology era. People in this era may not be able to imagine how the world without the internet would exist. While also giving the smartphone a gen-Z organ until it is called digital in their DNA. This person is online and receives a lot of information which corresponds to the article on gen Z behavior that affects the world food market direction at gen Z. Therefore attaches great importance to the purchase of products from manufacturing companies that are transparent, ethical and fair trading. It also considers the sources of food products from the farm level to the hands of consumers about how each step impacts the environment and society. Marketing in selling health products to this group of people, paying attention to cleanliness and complete nutritional value, including providing complete information for customers.

## **Conclusion and Recommendation**

At the present Jungle café's healthy food has not yet been clearly determined by its product location. Therefore, there should be a clear product positioning. To make a difference to the product and make the product memorable for consumers, such as using raw materials that are 100% free of fresh ingredients every day, cholesterol free, 0% fat and etc. Should display nutrition information of the product clearly include energy received, necessary nutrients such as protein, fat, cholesterol, carbohydrate, dietary fiber, sugar, sodium, as well as various vitamins and minerals. Since it is essential that consumers want to know in order to make a purchasing decision.

In addition, differentiating products makes it a strong point for organizations to compete with more competitors. Regularly add interesting and variety promotions on healthy food products to meet the needs of different consumers. Matching healthy food menus with drinks in the store by focusing on beverages that are less flavored.

Increase activities that make products known and consumers are involved thoroughly, all ages. Such as giving out products for consumers to try before selling the real product. Use the information to improve develop healthy food products to meet the needs of customer.

Improve the marketing strategy through line, which is a combination of marketing communication, distribute store brochures, communication through public relations and online channels. Today's consumers are most convenient to receive news and information including facebook, instagram and twitter by creating an official page through that channel. Which will help to reach the target customers more precisely and able to expand the customer base more broadly and quickly.



To enable the results of this study to be expanded in a broader perspective the researcher would like to suggest for the next research. Conducting a population / sample study in other areas which will have a variety of consumer behavior resulting in receiving new educational results and should conduct a qualitative research in order to gain in-depth information on that study. Conducting a study of social media marketing strategies in the future there will be more development and progress which will be one factor that affects the decision to buy healthy food.

## References

- Chanokphan Woradilok. (2016). Communication Network and The identity of Clean Food Consumer, Master of Arts. Thammasat University. [in Thai]
- EXIM E-ews. (2018). World trend Gen Z of world food Transport statistics report in 2018. Retrieved March 15, 2019, from <https://kmc.exim.go.th/detail/20190927191211/20200204175008>
- Maitree Satarak. (2015). Marketing Mix and Consumes' Buying Decisions of Organic Food, Master of Business Administration. Thammasat University. [in Thai]
- Natthaphat Wattanathaworn.(2017). Factors Affecting the Decision of Consuming Clean Food of People in Bangkok, Master of Business Administration, Bangkok University. [in Thai]
- Patraraporn Tansansopin. (2015). Factors Affecting Purchasing Decision on Organic Beauty Products in Bangkok, Master of Business Administration Thammasat University. [in Thai]
- Ploypailin Khumkaew. (2016). Factors Positively Affecting Behavioral Intentions of Consuming Healthy Food of Consumers in Bangkok, Master of Business Administration, Bangkok University. [in Thai]
- Porranee Yampham. (2018). Factors Affecting Purchase Decision for Doi Kham Food Producuts Company Limited Processed Fruit and vegetables, Master of Business Administration. Thammasat University. [in Thai]
- Wiparada Pechyim. (2017). Marketing Factor Affecting Buying Decision Clean Food of Bangkok People, Master of Arts, Bangkok University. [in Thai]