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Happy New Year 2023 to you all.

With best wishes,
Manit Boonprasert, Ed.D.
Association of Private Higher Education Institutions of Thailand
Under the Patronage of HRH Princess Maha Chakri Sirindhorn

CONTENTS

APHEIT INTERNATIONAL JOURNAL

Vol. 11 No. 2 July – December 2022

RESEARCH ARTICLE

Perceptions of Challenges of Online English Language Learning and Teaching of Students and Teachers at a Chinese Middle School

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ABSTRACT

The objectives of this study were 1) to identify the challenges faced by the students towards online English language learning, 2) to identify the challenges faced by the teachers towards online English language teaching, and 3) to propose a workable online course for English language learning and teaching. The study was designed with a mixed method approach. Quantitative data were collected from 340 questionnaire respondents from the population of 1,340 by random sampling and all 21 teachers were purposively selected from Chengnan Middle School, Yunnan Province. The validity and reliability of the research tool, the questionnaire was tested with IOC and Pilot-Test. The score for IOC of the teacher questionnaire was 0.91, while the student questionnaire obtained a score of 0.85. The results of Pilot-Test, (α) of students questionnaire was 0.981, for teachers questionnaire was 0.984. For qualitative data, two groups of 10 teachers and 10 students volunteered to be interviewed. The IOC scores of the semi-structured interview were both 0.97, indicating both instruments were acceptable in this study. Descriptive statistics were utilized to analyze quantitative data, while interviewed data were content analyzed into themes. Analysis of quantitative data revealed that 1) for the teachers, the top three challenges in online learning and teaching were "Teaching Techniques and Preferences", "School Facilities and Support" and "Roles of the Teachers and the Students". 2) for the students, the top three challenges were "The Student Self", "Learning Techniques and Preferences" and "Roles of Teachers and the Students". 3) A workable online English learning and teaching course was proposed to focus on reliable network and facilities, teachers' skills in using software, students' self-control, interaction between the students and teachers as well as among students and appropriate supervision of students both at home and in class. Qualitative data collected from the teachers showed that they were not skillful in software use and teaching management. For the students, they admitted a lack of supervision and a need for self-control. Both groups suggested the needs for reliable network and facilities as well as enhancement of classroom interaction.

KEYWORDS: Perceptions of challenges in online learning and teaching, Chinese Middle School

Introduction

Currently, the globalized world has faced a serious threat from the spread of the Covid-19 pandemic, forcing many organizations introduce the familiar work from home (WFH) lifestyle (Samat, Chaijaroen & Wattanachai, 2019). Cema (2019) found that increasing inadequacies and inequities in the educational systems. According to the United Nations Educational Scientific Cultural Organization (UNESCO) statistics, COVID-19 pandemic has caused 1.53 billion students worldwide to suspend classes and accounting for 87.6% of school students (Li, 2019). Students must stay home and study online (Wang, 2020). Besides, "the teachers had to adapt to new pedagogical concepts and modes of delivery of teaching, for which they may not have been trained." (OECD, 2020, p.4).

China also faces the effects of COVID-19 pandemic. To remedy the situation, the Department of Education encouraged middle schools and teachers to promote and use online communication applications (such as Ding Talk, MOOC, Tencent Video) to ensure more effective communication between teachers to students and between students to students. However, there are still challenges in online learning and learning processes for involved parties (Zhou, 2020).

Against this background, the study investigated the perceptions of the students and teachers at a Chinese Middle school towards challenges in online learning and teaching. Although a number of similar studies (Bakieva &Muradkasimova, 2019) have been conducted and the problems and difficulties in studying during the COVID 19 have been identified, it is hoped that the could be offered experience in the field of English language learning and teaching they have been through in this particular situation. The findings will hopefully reveal how to best cope with the force of the COVID-19 pandemic circumstance and still maintain quality of provided for their students.

Research Objectives

In this study, the following research objective were explored.

1. To identify the challenges faced by the students towards online English language learning.
2. To identify the challenges faced by the teachers towards online English language teaching.
3. To propose a workable online course for English language learning and teaching.

Conceptual Framework of the study

Figure 1 below shows how the study was conducted. The questionnaire respondents in this study were divided into two groups, teachers and students respectively, to gather the challenges of online English learning and learning from both stakeholders' perspectives as well as to collect the corresponding suggestions from the two groups of research participants who have experienced the situation so that a workable online course for English teaching and learning can be proposed.

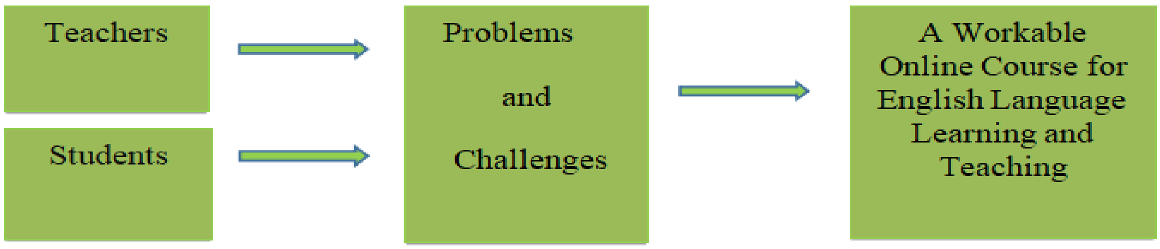

Figure1. Conceptual Framework of the Study

Significance of the Study

The study benefited the following groups.

Firstly, for students, the advantages and disadvantages of online English education can be obtained through research. The findings can help students find ways to improve their learning of online English and learn from the findings the good methods for learning and suggestions for improvement.

Secondly, for teachers, the study of the advantages and disadvantages of English education in the information age will help English teachers recognize, understand and design their online English to their advantage and avoid the disadvantages of their techniques.

Thirdly, the findings of the study can be used by administrators of the school. With these findings, they can plan how the teachers and the students of the schools can be appropriately supported.

Definitions of the keywords

Perceptions of Challenges of Online English Language learning and teaching

'Perceptions of Challenges' in this study refers to the personal opinions or ideas about the problems and challenges of online English learning and learning of 340 students and 21 teachers in Chengnan Middle School. These opinions come from students and teachers of different grades for middle one to middle three. They used online English teaching methods during the outbreak from 2020-2022, so their perceptions of challenges on online English teaching came from their personal experiences. Chinese Middle School

In this study, "Chinese Middle School" refers to the Chengnan Middle School of Yunnan Province, China, All of students and teachers have had experience of learning and teaching online during the COVID-19 Pandemic.

Literature Review

Shao & Bai (2021) believed that online learning was an innovative application of internet programs in the education industry. Students could use the Internet to take courses on their computers, which was an unprecedented way of learning. Tao (2020) believed that online learning refered to the formation of a shared learning platform for learning contents and materials on the Internet to achieve the effect of long-distance face-to-face learning. Zhang (2020) explained that online learning was a way to make use of online platforms, where teachers and students could freely interact for knowledge exchange. Hazaymeh (2021) stated that "online learning is a new social process that is beginning to act as a complete substitute for both distance and the traditional face-to-face class.

During the current COVID-19 pandemic, teachers combined resources and teaching methods to conduct online teaching in various ways because there were many possible formats to be adopted as a result of the necessity to cope with the situation at hand. Compared with the traditional teaching, online teaching was mainly based on the network, which changed the situation that teachers led conventional education in making students the main learning body. (Wingo, Ivankova & Moss,2017). In traditional teaching classrooms, some teachers maintained discipline, but online teaching required more self-consciousness (Simamore, 2020). There were many problems and challenges, such as unstable network teaching conditions (Zeng, 2020), lack of timely feedback in teaching, and no specific evaluation standards (Wang & Ma, 2020). Anderson (2008) defined online learning as a complete network learning system, which consisted of teachers' teaching and students' learning, rich knowledge storage, learning habits and methods, media and paths, and management of learning resources.

Some related studies in this section proposed a number of online platforms to support the teachers which indicated that the teaching format of online classes must be modified to suit the changing situations.

In the design of online learning and teaching for maximum effectiveness, six major areas that need to be studied are: 1) Content (Yang, Wang, Yan & Liu, 2020), 2) Teaching Materials and Techniques (Guo, 2020), 3) The Teachers' Roles and Activities (Li, 2021), 4) The Students' Roles and Activities (Wang, 2021), 5) Resources (Wang, 2021), and 6) Assessment (Phipps & Merisotis, 2020). Thus, it was worth studying what would be the perceptions of challenges of online English language learning of the students and teachers at the school in the study. The findings of the study could be used to improve online teaching and learning of this school.

Methodology

Research Site

The study was conducted at Chengnan Middle School, Yunnan Province in China. This school is a medium-sized school very well known for it's teaching philosophy, especially in concept of internationalization of students' development, English as a significant subject to make the students be highly proficient in English as much as possible. In early June 2020, in response to the huge impact of the COVID -19 pandemic on school teaching, the Chinese Ministry of Education issued "Suspending Classes without Stopping Learning" to require schools to carry out online teaching with information technology facilities based on local conditions during the pandemic, Yunnan Provincial Education Bureau. In order to ensure the smooth progress of online teaching, proficient teachers were mobilized from each district to conduct workshops on collective lesson planning, unified use of "Ding Talk APP for online teaching. This means the Government is also training teachers to cope with online learning and teaching.

At this school, before the outbreak of the COVID-19, the English teaching method was still the traditional face-to-face classroom teaching. Most of the teaching were lecture-based. The primary learning content is the "New Curriculum Standard" English books (Yang, 2012). Writing on the blackboard for related knowledge or multimedia courseware were used. The teachers prepared courseware Power Point Program (PPT), video, audio, and so on, then played the media for students to watch and discuss in class. During the COVID 19 pandemic, all classes especially English language classes, automatically turned online, The teachers and the students were not well prepared to deliver online classes, so they have to face lots of challenges.

Research Instrument

The study adopted mixed methods of quantitative and qualitative research, first, quantitative data from the questionnaires for the students and the teachers. Secondly, qualitative data were collected by semi-structured interviews from volunteering teachers and students. The data required for this study came from two sets of the questionnaires: one for the students and the other for the teachers as well as interviewed data from 2 groups of data sources, the teachers and the students. The items for this part came from what was suggested by the literature review. This part listed several problems in topics such as Content, Teaching Techniques, Activities and Assessment This part adopted the five-Likert scale format. Modification resulted from the Item-Objective-Congruence (IOC) Step when three experts were invited to evaluate the two questionnaires and the individual interview questions for both groups. Some changes were suggested. The students' and teachers' questionnaire consisted of three parts:1)

Personal Characteristics (Items 1-4), 2) Perceptions about online teaching/learning (Items 5-41), 3)One Open-ended Question (Item 42).

Validity and Reliability

To ascertain the validity of the research instruments, the questionnaires and interview questions were sent to three content experts from Rangsit and other Thai government universities for Item Object Congruence (IOC). From the calculation, the score for IOC of the Teacher questionnaire was 0.91, while the student questionnaire obtained a score of 0.85. The semi-structured interview questions for teachers and students got the same score, 0.97. which means both instruments were acceptable in this study. The questionnaire item score was above 0.67 and so was an individual interview question score.

With the content validity ascertained by experts, the questionnaires were sent out for pilot testing to ensure reliability. A pilot test was conducted with a convenience sample of 30 students and 30 teachers from another middle school. The responses were collected and Cronbach's alpha (α) was employed to check the coefficient of reliability of the questionnaires Using SPSS to calculate the alpha coefficient for the student's questionnaire (41 items) was 0.981, and the teacher's questionnaire (42 items) was 0.984, which means both instruments were acceptable in this study.

Data Collection

1) 340 questionnaires were distributed to the students of Grade Three using simple random sampling techniques by QQ group and 21 questionnaires were sent to 21 teachers using the same channel.

2) 10 teachers and 10 students were invited to participate in semi-structured interviews through We chat APP. During the interview, the author carefully noted down the useful information provided by the interviewees. At the same time, the author recorded the conversation with the consent of the participants. In this way, the author could transcribe the content of the recording into words, check and supplement the information omitted in the recording process, and ensure the integrity of the interview content. The purpose of this exercise was to provide the author with more information and confirmation of the other sets of the data

Data analysis

For the quantitative data, SPSS 19.0 was used to process the collected data. Descriptive analysis revealed the analyzed data by percentage, mean and standard deviation, For the qualitative data, content analysis was used to summarize and report data in descriptive format (Cohen & Manion, 2018). The MAXQDA program was used to analyze qualitative data in terms of codes, themes and categories.

Ethical considerations

In this study were shown in the following:

(1)A certificate of ethical protocal of the study was obtained from the Ethics Committee of Rangsit University (Certificate No: RSUERB2022-059).

(2)The researcher took great care to protect the students' privacy by not revealing their real names and referring to them only by numbers. All information relating to the students is kept confidential at all times.

(3)In addition, the researcher obtained permission from Chengnan Middle School to conduct the research.

Findings

Analysis of Quantitative Data

(1) Personal Characteristics

The online questionnaires were

administered to 340 students, selected from grades 7-9, at the numbers of 121(35%), 115(34%) and 104 (31%), respectively. Regarding to their gender, the majority of the respondents (N=180, 52%) were female, The number of male respondents was (160, 48%), with different years of studying English. The majority of students in this study have studied English between 4 to 6 years (N=164/48%). For the teachers, the online questionnaires were administered to 21 teachers from grade 7-9, at the numbers of 7(35%), 10(52%), and 4 (14%) respectively. Regarding their gender. The majority of respondents (N=11, 57%) were females, while the number of the male respondents were 10 (43%), with different years of teaching English. The majority of teachers have taught English for 3 years (N=6, 28%). However, with the combination of the respondents who have been teaching English for more than three years, it was found that 80% of the teachers have been teaching English from 3 to more than 5 years.

(2) Perceptions about online learning / teaching

The questionnaire was administered to 340 students and 21 teachers from ChengNan Middle school. The results of the analyzed questionnaire data are presented in the following table. The mean and SD were computed for all the statements.

Table1. The Results of Questionnaire of Students and Teachers

Category	Students' (Mean)	CD	Level	Teachers' (Mean)	CD	Level
School Facilities and Support	3.54	1.124	High	4.51	.551	Very High
The Student /Teacher Self	3.67	1.162	High	4.4	.557	Very High
Teaching Techniques and Preferences	3.64	1.126	High	4.63	.796	Very High
Roles of the Teachers and Students	3.61	1.208	High	4.46	.564	Very High

Comparison of the data analysis from the questionnaires between the student and the teachers revealed that perceptions of the teachers on online English teaching are different. The students perceived that the most significant factor affecting their online English learning was "The Students Self", but the least significant one was the "School Facilities and Support", On the other hand, the teachers perceived that "The Teachers Self" was the least significant factor, whereas the most significant is erences "Teaching Techniques and Preferences". "Roles of Teachers and Students" was both perone was "Teaching Techniques" and Prefceived as thirdly significant.

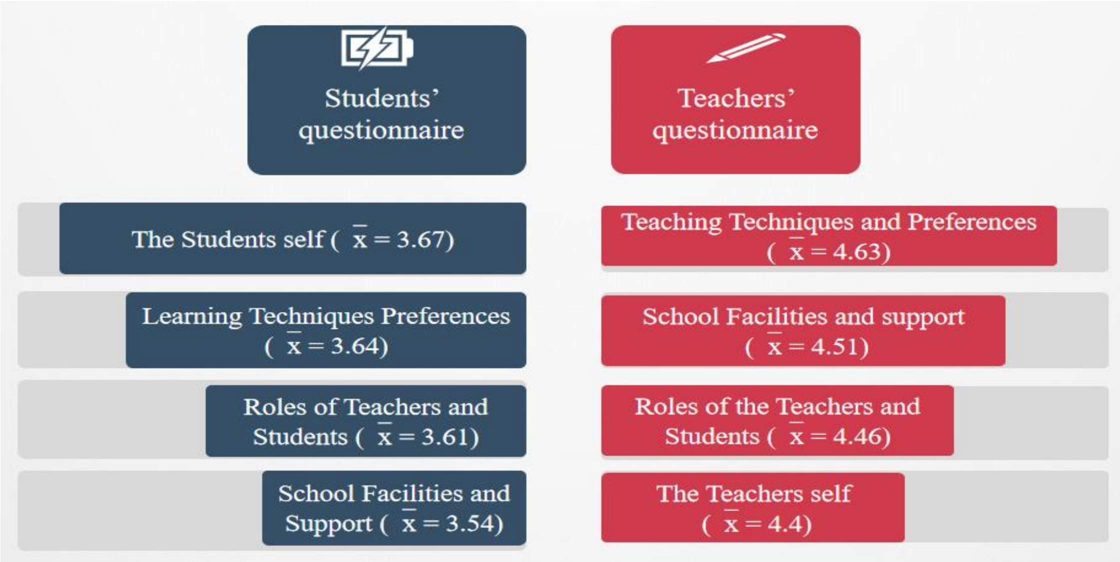

Figure 1. Comparison the Students and Teachers
Perceptions about Online Learning/Teaching Questionnaire

According to the students , they perceived that contacting the teachers online was convenient (x =3.77/S.D. =1.161), and they maintained good IT skills. They were confident and willing to study online for their learning achievement and improvement. They were trained to be responsible for their own learning, while working in online classes with good atmosphere. Although online classes were different from the onsite ones, they could still interact with their classmates and maximize their learning.

According to the teachers, they perceived that network system was reliable (x =4.80/S.D. =.512). Besides, they have been trained on how to use online platform and access to the system for online courses in order to schedule the class was to be more convenient. Based on the responses, the teachers were satisfied with the facilities and support facilitated for their for online teaching. They perceived that students were very active. It can be assumed that the teachers' perceived that they handled online teaching, how they saw themselves performing and how they saw their students doing in positive ways.

(1) Open ended question

This is the last part of the teachers' questionnaire requesting more information from the respondents, which they could write on their own. "Please give additional comments and suggestions about online teaching and learning". The suggestions were shown in table 2.

Table 2. Suggestion from Students and Teachers Open Ended Question

Suggestion from students	Frequency	Suggestion from teachers	Frequency
Explain frequently encountered exercises	3	Increase interaction	4
Use variety of online teaching tools	2	More parental supervision of the students	4
Precise language expression	2	Ask lots of questions	3

The open ended responses from the teachers revealed that top responses in terms of frequency were “Increase interaction”, “More parental supervision of the students”, and“Ask lots of questions”. respectively, whereas students expected the teachers to “Explain frequently for the encountered exercises” and “Use a variety of online teaching tools.

Analysis of Qualitative Data

The students responses were analyzed in terms of themes showing the problems and the suggestions of the Online English Teaching and Learning, According to the codes. The responses were categorized into 6 themes shown in Table 3.

Table 3. Codes-Themes-Category From Students' Interview

Codes	Themes	Category
Not skilled in software (16)	The teacher self	Problems
Prepare the lessons with new knowledge (6)		
Enrich teaching mode and method (2)		
Difficult to grasp the situation of the students (12)	Teachers' teaching management	
Students' exam plagiarism (7)		
Increase regulatory methods (2)		
Lack self-control (7)	The student self	
Low enthusiasm (5)		
Increase interaction (7)	Interaction	
Less communication (6)		
Affected by the network (6)	Network facilities	
Affected by the network (3)	Supervision	
Lack Parental supervision (5)		

Table 3.Examples of the teachers' responses for the theme of “The Teacher Self”.

The Teacher Self

Especially some software, I am not particularly skilled. (Teacher 1)

We are just starting to use some software in online courses and some features are not very easy to understand. (Teacher 2)

I am not particularly familiar with some functions when they first used these software. (Teacher 3)

School has given a special training on the use of relevant teaching software.(Teacher 3)

I firstly used online teaching software, so I was not familiar with functions and operations. (Teacher 5)

Most of our teachers have not been provided such a training in online teaching. (Teacher 5)

Because I firstly went to online teaching mode because of the pandemic, and I have not been provided any training. (Teacher 6)

I would not use this live broadcasting equipment from the very beginning, and I was not very skilled in using this online teaching equipment. (Teacher 7)

A little training has been provided by the school, but we are not particularly skillful in the use of teaching equipment. (Teacher 10)

In summary, six areas have emerged from a combination of the qualitative findings of the students' and teachers' groups:1) Students' self; 2) Interaction; 3) Teacher's teaching management; 4) Teachers' self; 5) Supervision; 6) Network facilities

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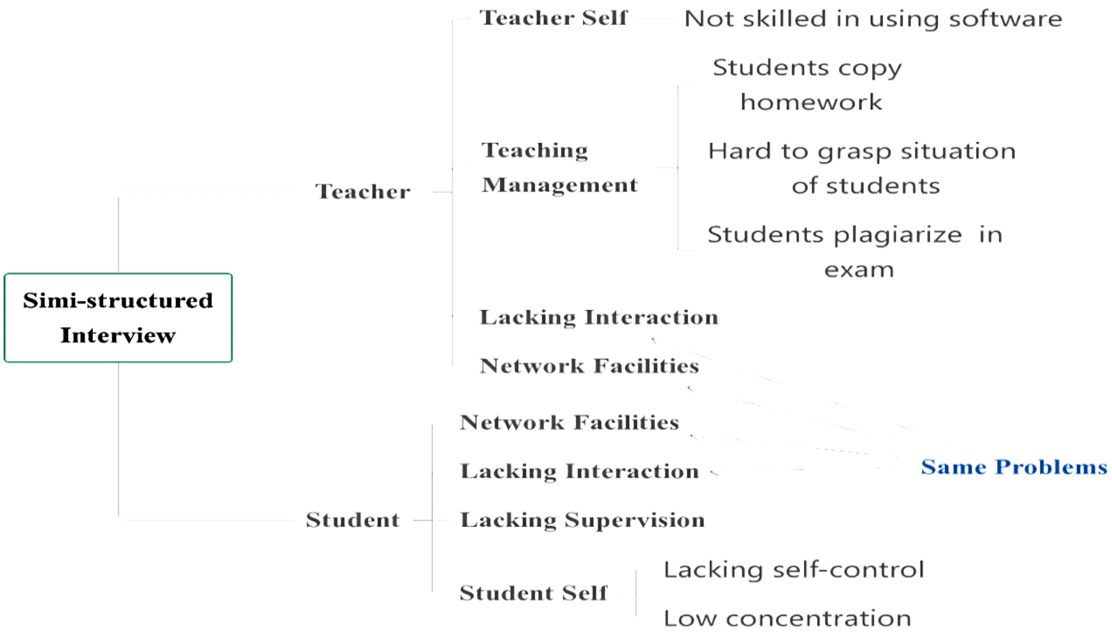

Figure 2. Comparison between the Students and Teachers Interviews

Regarding to the teachers' interviews, it was found that the students perceived they have problems in supervision and student self, and teachers have problems in teacher self and management. Both the students and teachers agreed that network facilities and the interaction between teachers and students were important factors affecting online English teaching. The teachers' teaching skills were considered as an important factor affecting teaching in the questionnaire, while parents' or teachers' supervision is very important in the interviews.

Discussion

Responses to Research Objective 1

Combined analyzed findings from both the questionnaires and the interviews revealed that the challenges affecting students' online learning were mainly in the following aspects:

1) Students' lack of self-control

Similar findings were claimed the Luo, Ma & Yao (2020), that online teaching directly affected children's own self-control and management ability to a large extent .

2) Lack of interaction between the teachers and the students

This finding supported the study of (Yang, Wang & Yan 2020) that the separation of teaching under the pandemic made it difficult for teachers and students to interact with each other in terms of emotion, language and body language.

3) Lack supervision

This finding was also stated by Luo, Ma & Yao (2020). In the long run, the students without initiative and autonomy would learn less and ineffective ways. Due to their lack of goals and motivation, and their parents' lack of supervision ability, students did not listen to the lecture, were lazy, and did not really participate in online teaching.

4) A need for a reliable IT network and more modern facilities

This finding was supported by Wang and Ma (2020) who found that the correlation between the platform used in online teaching and the overall satisfaction of online teaching was higher than other factors, and nothing could be accomplished without the support of hardware devices.

Responses to Research Objective 2

Combined analyzed findings from both the questionnaires and the interviews revealed that the challenges affecting teachers' online learning were mainly in the following aspects:

1) Insufficient skills of the teachers in using the online software

Wang (2020) found in his research on difficulties encountered in online teaching that teachers' unskilled use of equipment greatly affected online teaching. Sometimes, teachers could not deliver the teaching content efficiently due to their unfamiliarity with the use of the software. As a result, students would slowly lose interest in learning (Zhang, 2018). Wang & Ma (2020) found that the correlation between the platform used in online teaching and the overall satisfaction of online teaching was higher than that of other factors, including teaching methods, teachers' working attitude, teachers' ability and learning resources (Hiltz & Turoff, 2005).

2) Lacking interaction between the teachers and the students

Teachers find it difficult to mobilize students' learning enthusiasm and enthusiasm (Dhuli & Arora, 2019). Moreover, online teaching leads to a decrease in cooperation and communication between students, believing that nobody would see and know what they are doing in front of the computer screen. Students who study in a face-to-face classroom can collaboratively work in groups under the supervision of the class teacher.

3) Teachers cannot supervise the students

In online teaching, usually, teachers cannot grasp the participation of students in online teaching, and they cannot clearly understand whether the after-class exercises are completed on time, how much time each student devoted to practice, and whether the hands-on practice is carried out (Wang, 2020).

Responses to Research Objective 3

The following figure was presented to show the significant components of a workable online course.

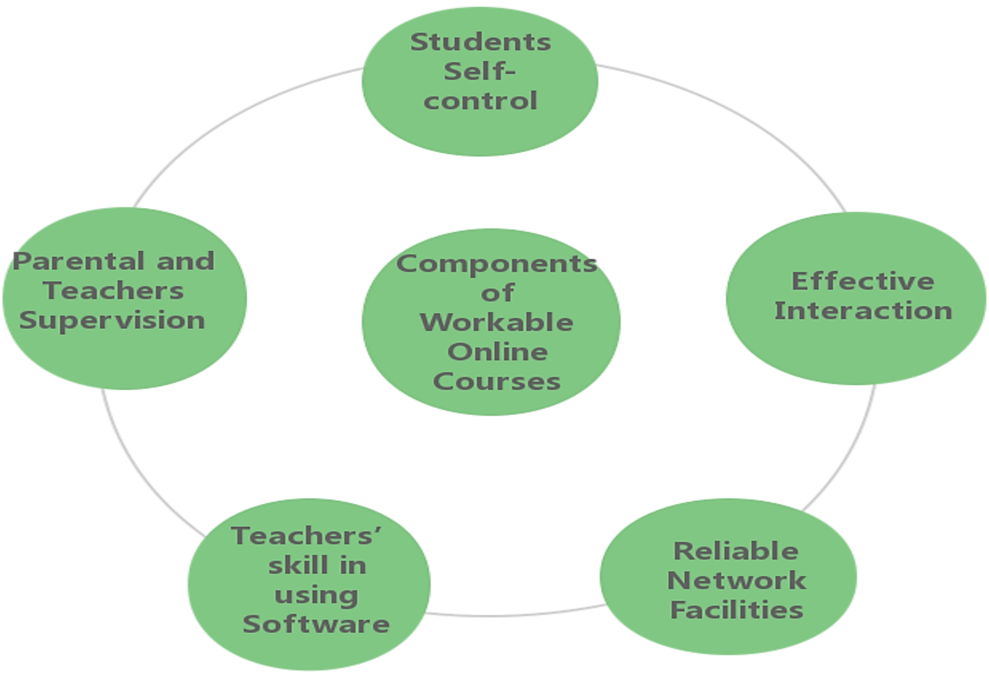

Figure3. Workable Online English Course

In order to achieve a workable online English course, the students and teachers should do the following.

For students

1) Self-learning ability and self-control should be improved and strengthened.

Students should find ways to solve difficulties by themselves first, and then find parents and teachers to cultivate the ability of self-learning (Wang, 2021). Students should make plans for their own study and can form groups with classmates to supervise each other's study (Ba & Yang, 2021).

2) Effective communication should be increased.

According to Guo)2020(, in the process of online teaching, students should follow the teacher's teaching pace, answer the teacher's questions actively, ask the teacher if they do not understand something, and exchange their feelings and difficulties in online learning. In other words, online classes should be more interactive.

For Teachers

1) Teacher training should be developed to enhance their online teaching ability

Schools should choose suitable teaching platforms and provide teachers with centralized training to use computer technology to process pictures, text, audio and other multimedia information ability (Phipps and Merisotis ,2020).

2) Online interaction should be enriched.

Teachers should be able to use modern technology means to communicate and share in network teaching so that students have the opportunity to show their thinking results. (Geng Luo & Niu, 2019). Teachers could interact with students through the communication platform so that students can timely feedback the problems encountered in the process of autonomous learning, and then adjust the design of online teaching (Codyaniu, 2020).

3) Varieties of teaching techniques and assessment formats should be established

In the student-centered network teaching, teachers need to establish a scientific and diverse assessment system (Karecaoglu, 2018). Various methods, such as teacher assessment, student mutual assessment, or group and within-group assessment should be utilized. (Anderson, 2008). Establish a joint supervision mechanism between parents and teachers

4) A joint supervision mechanism between parents and teachers should be initiated

Teachers should organize online parents' meetings regularly to strengthen communication with parents and know how students study at home (Gu, 2021).

Conclusion and recommendation

The research findings could bring benefits to the professional work of other researchers who are interested in the same topic areas, however they have to be aware that the findings from this study can only be applied to other similar contexts. For future studies, it is recommended to study with the sample from more than one school or a larger population and sample size. In addition, various instruments or methods can be adopted to investigate other aspects of online learning and teaching such as appropriate techniques and activities for the students learning achievement.

Limitation of the study

A limitation is seen in the scope of the study which only investigates online teaching and learning at only one school. Another limitation is the study focuses on the challenges of online learning and learning from the perspectives of the two major groups that experience this situation. The findings from this study, thus, can be used only for similar contexts.

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Factors Influencing Behavior Intention on Air Pollution Prevention Management of the Students in a Thai Private Higher Education Institution

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ABSTRACT

This research aimed to study the influencing factors on air pollution prevention management of the students in a Thai Private Higher Education Institution. Five independent variables of the influencing factors consisted of air pollution attitude, awareness, knowledge, health consciousness, and health knowledge. Dependent variable was intention on air pollution prevention management. The questionnaires were created with Google forms and distributed to collect the data from 482 students by using convenience sampling. Descriptive analysis, and multiple linear regression were utilized by statistics package program for data analysis. It was found that all factors influenced intention on air pollution prevention management at 47.70 percent (R^2 = 0.477). It was recommended that Thai Private Higher Education Institution should create campaign or cooperate with the government sector to make students more aware of air pollution problems, and make them realize how to protect themselves by air pollution prevention management.

KEYWORDS: Behavior intention, Air pollution prevention management, Thai Private Higher Education Institution

Introduction

Global warming significantly impacts on the environment and it also refers to climate change that rise average temperature to world. Higher temperatures caused by fossil fuel industrial agricultural processes that increase greenhouse gas emissions (carbon dioxide methane nitrous oxide), due to the burning of fossil fuel, wood waste and etc. Global warming occurs when carbon dioxide and other greenhouse gases and air pollution that is stored in the atmosphere to absorb sunlight and radiation from the sun. The problem of global warming should be taken seriously and reduce its impact on the environment. Based on the rules and regulations in the planning and implementation of policy aim to continue and the possibility of living a healthy life. Also, having the simple life to keep the atmosphere up to standard so that ecosystem without incurring any negative impact and also encourages and promotes behavior in the surrounding area to get fresh air and still decrease the amount of pollution. Recently, the PM2.5 has become a very serious topic in Thailand, especially in Bangkok. The whole city seems to covered with the thick fog. Actually, this fog is a very tiny and dangerous particle that can enter to human’s body and harm human’s health. According to Thailand's dry season, lacking of rain increases chance of the particles to flow in the air instead of staying on the ground and being washed by rain. Lacking of wind in the dry season tends to make air stay still and not flow off from the city. The Bangkok PM2.5 situations in 2022 is still in the serious condition, measured by air quality monitoring app Air Visual showed that the daily average level exceeded the limit for more than half of a month. The highest level recorded during the period was on Jan 20, 2022 with 79 micrograms per cubic meter.

The main intent of this research is to examine factors influencing the behavior Intention on air pollution prevention management of the students in a Thai Private Higher Education Institution.

Research Objectives

1.To study the behavior intention on air pollution prevention management of the students in a Thai Private Higher Education Institution.

2.To study factors influencing the behavior intention on air pollution prevention management of the students in a Thai Private Higher Education Institution.

Scope of Research

In this study, the target respondents were the students in a Thai Private Higher Education Institution in Bangkok only. The questionnaire was distributed by Google Form sending out to the sample group by using the convenience and snowball sampling. In the questionnaire, the researcher used the Five Point Likert Scale which is one of quantitative analysis method.

Literature Review

Behavior Intention

Ajzen and Fishbein (2000) described that "the degree to which an individual plan to perform or not to perform some specific behavior in the near future can be termed as behavioral intentions". For Ali et al. (2013) implied that "the favorable behavioral intentions refer to the positive word-of mouth, more spending with the service provider, paying a price premium and remaining loyal while the unfavorable behavioral intentions refer to leaving these vice providers, less spending with the company, along with negative word-of-mouth". Jani and Han (2011) studied that "behavioral intentions as revisit and word-of-mouth intentions". According to Downhan (2013), behavior describes to "the processes that people go through, and reactions they have towards something". Szwacka-Mokrzycka (2015) also stated that "behavior is to do with something, and the processes consumers go through their action". Firstly, the people recognize their needs, and then go through a process to satisfy these needs. For example, the consumer behavior is the process they go through as customers, including types of products they buy, amount of money they spent, frequency of purchasing they made, and what factor influences them to make them buy or not buy.

Air Pollution Attitude

According to Wood (2000), attitude is "a justification of an attitude object, possibly to range from extremely pole to another extremely pole, negative to positive". Some perspectives on attitudes explain that people could be conflicted or complicated on an object by having both negative and positive attitudes on the same object. This explanation has point to the discussion about could it possibly that the individual can have different attitudes on the same object. Eagly and Chaiken (1998) explain the attitude as "a psychological state that is expressed by justifying a particular object with some degree of like or dislike". In the other hand, some researcher commonly defines it as "an affect toward the object, affect is normally interpreted as an evaluative process used to form attitude object", (Ajzen, 2001). Vogel, Bohner, and Wanke (2014) explained that “attitude might influence the attention to attitude objects, the use of categories for understanding information and the interpretation, evaluation and recall of relevant information”. The influences of attitude are more effect for strong attitudes which are accessible and based on related supportive knowledge structure. The durability and impact of influence depend upon the strength formed from consistency of heuristics. Attitudes can guide encoding information, attention and behaviors, even if the individual is pursuing unrelated goals.

Air Pollution Awareness

According to Locke (2002), awareness is “an analogous to sensing something, a process distinguished from observing and perceiving, which involves a basic process of acquainting with the items we perceive”. Awareness is a relative concept. “It may be focused on an internal state, such as a visceral feeling, or on external events by way of sensory perception” (Hussain et al., 2009). Woodside and Wilson (1985) explained that “consumer awareness refers to the awareness of the consumption of goods formed by consumers in the long-term shopping environment and purchasing activities”. The change in life concept is the most important factor of the change in consumer awareness. Because people's living standards and incomes increase continually, people's life concepts are significantly changed. Differences in consumers’ personality are also the important factor for changing of consumer awareness.

Air Pollution Knowledge

According to Zhao et al (2019), “information on the effects of haze on health and corresponding knowledge, attitudes, and practices (KAP) will improve self-care ability against the ill effects of haze pollution and make environmental health policies more targeted and effective”. Moreover, the awareness rates are affected by the differences of the levels of knowledge of haze. According to Ngo, Kokoyo, and Klopp, (2018), they found that “participation in conducting and interpreting air quality studies helped residents improve their understanding of air pollution and also helped them develop responses to it”. Basically, people related air pollution with a dirty, discomfort or bad smelling rather than harm to their health, but when the people can connect air pollution to their health condition, they become interested in searching more for information about air quality data and its effects on human health. Some people came up with plans for managing their environment and how to reduce risks from air pollution.

Health Consciousness

Becker et al. (1977) defined that “health consciousness is an assessment of the level of readiness to have health actions”. Jayanti and Burns (1998) explained health consciousness as “the integrating of health concerns into an individual’s life activities”. Iversen and Kraft (2006) also defined that health consciousness refers to “how individuals pay attention to one’s health”. In order to understand and conclude its definitions, Hong (2011) combined the meaning from the previous researches together and explained the definition of health consciousness, based on a personal health perception dimension, as “individual’s attentiveness, responsibilities, and motives to be healthy”. Thus, the health conscious consumers are the people who tend to do something to make their health in a good condition together with actions that healthy (Ling-Yu and Shang-Hui, 2013), such as buying and using healthy foods (Mai and Hoffmann, 2012).

Health Knowledge

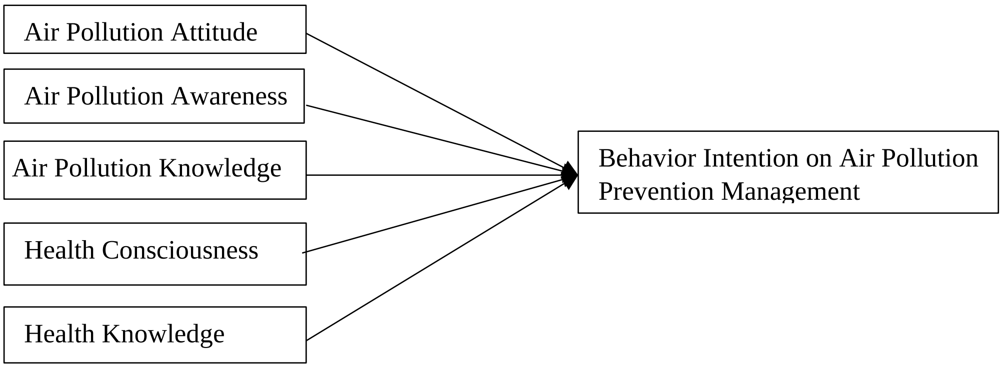
Health knowledge is explained as “an individual’s stored information regarding health” (Jayanti & Burn, 1998).

Health knowledge is believed to be the most important factor toward health consciousness, if one doesn't have health knowledge, individuals cannot access to related information, he or she only has the consciousness or concerns toward health issues or health related behavior. In the other hand, health knowledge and health motivation are significant factors in persuading health promoting behaviors and to interesting in searching health information (Moorman & Matulich, 1993).

Research Framework

The conceptual model (Figure1) was adapted from the previous studies relevant to the Student's Behavior Intention on Air Pollution Prevention Management. There were five independent variables that were chosen to study in this research which were Air Pollution Attitude, Air Pollution Awareness, Air Pollution Knowledge, Health Consciousness, Health Knowledge.

Figure 1: Conceptual framework



Research Hypothesis

According to conceptual model, five hypotheses were formulated as follows;

H1: Air pollution attitude influencing Thai Private Higher Education Institution student's behavior intention on air pollution prevention management.

H2: Air pollution awareness influencing Thai Private Higher Education Institution student's behavior intention on air pollution prevention management.

H3: Air pollution knowledge influencing Thai Private Higher Education Institution student's behavior intention on air pollution prevention management.

H4: Health consciousness influencing Thai Private Higher Education Institution student's behavior intention on air pollution prevention management.

H5: Health knowledge influencing Thai Private Higher Education Institution student's behavior intention on air pollution prevention management.

Research Methodology

This study examined the influencing factors of the behavior intention on air pollution prevention management of the students in a Thai Private Higher Education Institution in Bangkok, Thailand. In the proposed conceptual model, five factors were chosen to focus on. They were air pollution attitude, awareness, knowledge, health consciousness and health knowledge that influenced student's behavior intention on air pollution prevention management. The researcher set the target respondents to be a Thai

Private Higher Education Institution students in Bangkok. The sample size was 482 respondents. After that, the questionnaires were created via Google form and send the link to the respondents by applying convenience and snowball sampling as the researcher has limited time for the research. The questionnaire comprised of three parts which were Screening, Demographic information, For the last part, it was separated into six parts. The questions in each part referred to each variable of air pollution attitude, awareness, knowledge, health consciousness, health knowledge, and behavior intention on air pollution prevention management. Thus, the total questions in this questionnaire (~~is~~) were 30 questions. The researcher collected the data by distributing the questionnaire to 35 respondents in order to find out the reliabilities by Cronbach's Alpha Coefficient Analysis. The reliabilities were shown in Table 1

Table 1: The values of reliability analysis (n = 35)

Variables	Number of Items	Cronbach's Alpha	Reliability
Air pollution attitude	5	0.851	Good
Air pollution awareness	5	0.868	Good
Air pollution knowledge	5	0.819	Good
Health consciousness	5	0.743	Acceptable
Health knowledge	5	0.797	Acceptable
Behavior intention	5	0.831	Good

Results of the Study

It was shown from the demography that the percentage of female were 48.00% and male 52.00. The 3rd years was the highest as 38.25 %, followed by the 4th years as 33.45%, the 2nd years as 16.60%, and the 1st year as 11.70%, respectively.

Table 2: Summary of mean and standard deviation of all variables

Variables	n	mean	Std. dev.	interpretation
Air pollution attitude	482	4.27	0.542	Highest
Air pollution awareness	482	4.71	0.384	Highest
Air pollution knowledge	482	4.33	0.546	Highest
Health consciousness	482	4.39	0.487	Highest
Health knowledge	482	4.43	0.463	Highest
Behavior intention	482	4.46	0.496	Highest

According to Kim (2019), the mean score of all variables results were interpreted as highest because the mean score of all variables were in the range 4.27 – 4.71. The mean values were 4.27, 4.71, 4.33, 4.39, 4.43, and 4.46, respectively. For the standard deviation, the values of all variables (was) were 0.542, 0.384, 0.546, 0.487, 0.463, and 0.496, respectively.

Hypothesis Testing

Table 3: Model Summary from Multiple Regression Analysis

Model	R	R Square	Adjusted R Square	Std .Error of the Estimate
1	.691a	.477	.469	.75307
a .Dependent Variable :Behavior intention b. Predictors : (Constant) air pollution attitude, air pollution awareness, air pollution knowledge, health consciousness, health knowledge.				

According to table 3, adjusted R square equals to 0.469 or 46.9 %. which indicated that the Thai Private Higher Education Institution student's behavior intention on air pollution prevention management could be described by the five independents variables in this study which were air pollution attitude, air pollution awareness, air pollution knowledge, health consciousness and health knowledge.

Table 4: ANOVA from Multiple Regression Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	195.394	5	32.566	57.423	$.000^{b}$
	Residual	214.372	478	.567		
	Total	409.766	482			
a .Dependent Variable: Behavior intention b. Predictors : (Constant) air pollution attitude, air pollution awareness, air pollution knowledge, health consciousness, health knowledge.						

It can be seen from the ANOVA table that the values of the behavior intention of the students on air pollution protection management were statistically significant.

Table 5: Model Summary from Multiple Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std .Error	Beta			Tolerance	VIF
(Constant)	.170	.205		-.829	.408		
Air pollution attitude	.175	.034	.196	5.082	.000	.927	1.078
Air pollution awareness	.169	0.34	.192	4.962	.000	.925	1.081
Air pollution knowledge	.112	.036	.124	3.129	.002	.884	1.131
Health consciousness	.252	.035	.281	7.252	.000	.920	1.087
Health knowledge.	.240	.035	.272	6.930	.000	.899	1.112
a .Dependent Variable :Behavior intention							

According to Table 5, the significant values of the five variables which are air pollution attitude, air pollution awareness, air pollution knowledge, health consciousness, health knowledge were less than 0.05, indicating that all variables were statistically significant. Besides, the beta of standardized coefficient or (β) of five independent variables. Firstly, 1 addition unit Air pollution attitude showed that the influence toward student's behavior intention would increase by 19.6% at β= 0.196. Secondly, 1 addition unit is Air pollution awareness shows the influence toward student's behavior intention will increase by 19.2% at β=0.192. Thirdly, 1 addition unit is Air pollution knowledge shows the influence toward Second, 1 addition unit is Air pollution awareness shows the influence toward student's behavior intention will increase by 12.4% at β= 0.124. Fourthly, 1 addition unit is Health consciousness shows the influence toward student's behavior intention will increase by 28.1% at β=0.281. Lastly, 1 addition unit is Health knowledge. Shows the influence student's behavior intention will increase by 27.2% at β=0.272.

Variance Inflation Factors or "VIF" was the statistical method that was applied to detect the multicollinearity. According to Kim (2019), the problem of multicollinearity occurred if the VIF value was greater than 5. Based on the table 5 it indicated the variance inflation factors of all independent variables which were air pollution attitude, air pollution awareness, air pollution knowledge, health consciousness, and health knowledge. The VIF of all variables were 1.078, 1.081, 1.131, 1.087, and 1.112 respectively, which all less than 5. It means that all independent variables are not correlated to each other in a sense, and there is no multicollinearity problem.

Table 6: The summary results from hypothesis testing

Hypothesis	**Significant**	**Standardized Coefficient Beta**	**Results**
H1: Air pollution attitude influencing student's behavior intention on air pollution protection management	.000	.196	Supported
H2: Air pollution awareness influencing student's behavior intention on air pollution protection management	.000	.192	Supported
H3: Air pollution knowledge influencing student's behavior intention on air pollution protection management	.002	.124	Supported
H4: Health consciousness influencing student's behavior intention on air pollution protection management	.000	.281	Supported
H5: Health knowledge influencing student's behavior intention on air pollution protection management	.000	.272	Supported

Recommendations

According to the result of hypothesis testing, Health consciousness and Health knowledge are the two strongest factors toward influencing student's behavior intention on air pollution prevention management. The researcher would like to recommend the Thai Private Higher Education Institution to focus on providing the information on air pollution crisis situation and educate the students about how it is harmful to their health, wellness, and quality of life, not only to the individual but also how it will influence their family and surrounding people. The Thai Private Higher Education Institution should create campaign for this issue, or may cooperate with the government sector to create campaign to make students more aware of air pollution problem and educate them how to protect themselves carefully from air pollution. This implementation should be done together with providing Health consciousness and Health knowledge and air pollution prevention management to the students because the more Health consciousness and Health knowledge, the higher air pollution prevention management. On the other hand, the Thai Private Higher Education Institution should keep on focusing on air pollution attitude, air pollution awareness, air pollution knowledge which are significant in hypothesis testing. These factors still influence air pollution prevention management in the long-term. The Thai Private Higher Education Institution should not ignore the importance of them, but should make deeper understanding about changing of air pollution prevention management by students toward these factors when crisis has occurred.

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Students Affairs Administration on Student's Mental Health Development for the Public Art Vocational College of Guangdong Province

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ABSTRACT

The objective of this research was to propose guidelines for Student Affairs Administration on development of students' mental health for the Public Art Vocational College of Guangdong province under the people's republic of China. The research was a qualitative research. The key informants were 33 administrators obtained by purposive sampling method. The instruments used for data collection was an in-depth interview and analyzed by content analysis. The research findings revealed that guidelines for student development of mental health for the Public Art Vocational College of Guangdong province should focus on upgrading the learning environment in the college, which consists of 1) promoting high level teaching and learning 2) cultivate new curriculum 3) shaping student activities 4) College action and Evaluation 5) enhancement of personality charm and moral feeling 6) develop individual personality and socialism, and 7) improve students' mental health to organization expression.

KEYWORDS: Students' affairs, Mental health development, Public Art Vocational College

Introduction

The Outline of National Medium - and Long-term Education Reform and Development Plan (2010-2020) clearly regards "the improvement of the quality of higher education" as the core task of China's higher education development, that is, the quality of talent cultivation as the core educational development task with National education plan from China Central Government (2010) to according to the international classification of Education standards, higher vocational education is a special higher education with strong professionalism and applicability from the perspective of education attributes.

From the perspective of policy considerations of mental health education in colleges and universities, mental health education has experienced of three stages to conclude by Yu Guoliang & Ju Yunting (2018: 40-48) that *the first stage*: the preparatory period from 1978 to 1999. After nearly 10 years of gestate and preparation, mental health education has been established from the name of "mental health education", proposed the concept of "mental health" (Lin Congde,1983: 290) and advocated mental health education, and then started to play different roles in the educational decision-making of the government. The landmark achievement was the establishment of the Expert Advisory Committee on Mental Health Education in Primary and Secondary Schools by the Ministry of Education in 1999, which issued several Opinions of the Ministry of Education on Strengthening Mental Health Education in Primary and Secondary Schools. *Second stage*: the initial and integration phase of mental health education policy (2000-2010) to according to the mental health education in this period was rooted in the social education system, which was internally integrated and self-contained.

The study of college students' affairs in mental health learning results can help us further understand the formation process of education quality, provide scientific basis for improving the quality of talent training in art vocational colleges, and has important theoretical significance for the construction of high-level art vocational colleges. As the main body of education, college students are the participants, experiencers, and main evaluators in the educational process. The quality evaluation of higher vocational mental health education in art has changed from the former input "hard index" to output, and from teachers to students to study and discuss the evaluation of education quality (Sun Erjun, 2010: 64-67). The reform of university curriculum and teaching has become a common concern of the theoretical and practical circles of higher education in the world (Lu Linhai & Gong Fang, 2012:43-49).

For students in higher vocational colleges, the learning outcome of mental health education is the result of the matching effect of environment and individual characteristics. Among them, college students at higher vocational colleges of art are different from students of other kinds of colleges in terms of majors. In addition to the common characteristics of ordinary college students, they also have obvious artistic personality characteristics.

This paper attempts to process of the formation of students’ affairs development in mental health education quality by deeply studying the connotation, influencing factors and paths of higher vocational students' learning outcomes. Astin (1984) mention in the effective to master students’ self-perception of classroom environment on the impact of learning behavior, to examine learning resources, opportunity of providing sufficient, explore the factors influencing students' learning effects and functions as well as the path, to student's ability and potential to play better development has a certain practical value. Hopefully this research paper to benefit for how to provide the best management and guidelines the model for development students’ affairs in mental health management for the public art vocational College of Guangdong province, the people’s republic of China.

Purposes

To propose guideline for students’ affairs development in mental health in the public art vocational college of Guangdong province

Benefit of Research

Administrator and Educators or peer practitioners that how-to policy reform and effective management to students’ affairs development in mental health include organization management, and student activities.

Research Process

Step1: To study the policy and current situation for students’ affairs development in mental health by content analysis from literature reviews and related research.

Step2: Create a question by content analysis of component

Step3: In-depth interview by purposive sampling, with 33 key informants are administrators

Population and Sample

1. The population are the administrators and senior teachers who worked in academic year 2022, The sample of three public art vocational art college are Key informants for in-depth interview total 33 administrators and senior teachers by purposive sampling., The Selection of key informants with more than 3 years of management experience and Focus group discussion total 11 experts to guidance.

Instruments

1. Interviews in semi-structure
2. Focus group

Data analysis

(1) Content analysis was performed on the data from in depth-interviews with frequencies.

(2) The focus group was moderated by the researcher on , this discussion is about "guidance and suggestions on improving the learning results of college students' mental health education".

(3) The experts spoke freely in the discussion on a free and voluntary basis.

Conclusion and discussion

The interview results, the researcher summarizes the contents obtained from the interviews in order the top of 3 frequencies of 33 administrators as follows:

1. The college to drive the policy, strategy by administrators to development of student mental health.

1.1 University policy to promoting mental health of psychology classes University policy to promoting mental health of psychology classes (33)

1.2 The Ministry of National Education and the Provincial Department of Education issued a series of documents on mental health to urge universities to implement the promotion of mental health. (33)

1.3 The college's psychological centre carries out a series of activities (lectures, public promotion, peer counselling, etc.) and participates in the series of competitions (30)

2. Combined with work experience, in the teaching methods do you use to motivate students to participate in class.

2.1 Using multimedia teaching methods, network high-tech classroom interaction, online and offline courses (31)

2.2 Hot topics of interest to students, confusing issues, and issues of interest to students in the design of teaching content selection (30)

2.3 teacher-student interaction, student-student interaction, classroom teacher-student role (27)

3. In the classroom teaching, to manage and organize the classroom by learning community in the classroom to facilitate effective teaching.

3.1 Improving to increase student interaction and making the condition together in class to improve interaction and create conditions in class (33)

3.2 Equal dialogue, democratic interaction, teaching, and learning (33)

3.3 Talent teaching with pedagogy to important for classroom management (32)

4. To understand the concept of "classroom teaching environment, to adjust teaching emotion, implement classroom regulation, and guide the classroom environment from negative to positive.

4.1 The classroom environment includes: hard environment (physical environment, teaching equipment, facilities, etc.) and soft environment (33)

4.2 Classroom capacity (number of students) and classroom interaction (33)

4.3 Teacher-student relationship and student-student relationship (33)

5. Good teacher-student relationship can encourage students to become active learning leaders in class, to

handle the relationship between teachers and students in your classroom teaching.

5.1 Equal dialogue in the classroom, respectful, fair, trusting, teacher and friend relationship (33)

5.2 Acceptance, holding, caring and encouragement (33)

5.3 Clarify students' learning tasks in the classroom (32)

6. To improving students' affairs in mental health education outcomes, improve the teaching quality of mental health class.

6.1 The leadership does not pay enough attention to it. The school has not fully implemented the policy. It is recommended to raise awareness of health education among top management staff, macro management concepts, and participation in mental health training, lectures, etc. Implementation of enhanced faculty and equipment improvement. (32)

6.2 Lack of venues for student mental health activities (31)

6.3 Classroom environment equipment that does not meet the needs of students' psychological environment

7. The guideline for student's affairs in mental health development in university life? What would you like to need collaboration with student family to drive mental health development (Psychological, Emotional, Behavioural)

7.1 components of leadership attention, macro development management concept most important, improve the curriculum, strengthen the teacher faculty, funding (funds available), teacher quality, campus environment. (33)

7.2 classroom teachers should be familiar with students' daily and mental health conditions (31)

7.3 the community collaborate with participating families to enhance mental health maintenance. (30)

Comparison the content from literature review, related research, and in-depth interview to create the model of students, affairs in mental health development as Table 1 below

Table 1: The component to create model for students' mental health development

Item	Content Analysis to create model		
	Input	**Process**	**Outcome**
1. Literature review and related research	The components of mental health as 1) Cognitive health 2) Emotional health 3) Behavioural health	1.Instructional design 2.high level teaching 3.New curriculum 4.Student activities 5. Ssolving problems	1.Knowledge of mental health acquisition 2.Cognitive thinking 3.Learning outcome
2.In-depth interviews (27 administrators and teachers)	1. Focus in relations between college-student-home-society 2. Classroom environment 3. Learning input 4.Teaching support and high-level teaching and learning	1. classroom interaction 2. Tteaching support has the highest impact on cognitive thinking 3. Effective management 4. Shaping new curriculum & activities	1.Behavioral outcome 2.Oganization expression 3.Specific risk factor 4. cognitive thinking 5.Cognitive thinking 6.Well-being

Item	Content Analysis to create model		
	Input	**Process**	**Outcome**
3.Focus group discussion with 11 experts	1.Policy reform 2.Provide a good environment 3.Management 4.Shapping academic system 5. Instructional designed and curriculum to improve	1.Relations between college-student-home and society 2. Iimprove ability & solving problems 3.Create Learning engagement 4. Learning motivation, happiness. 5. Emotional focus	1.Emotional outcome 2.Oganization expression 3.Specific risk factor 4.Quality of life 5. knowledge of mental health acquisition

From Table 1 to create the model for students' affairs in mental health development in the concept of this model the detail as below.

1. The classroom environment and the relationship between college students' learning outcomes. Classroom environment has an important impact on college students' learning outcomes.

1) The three dimensions of classroom environment, teaching preparation and regulated teaching, have different effects on students' mental health, The three dimensions of classroom environment have different effects on knowledge acquisition and cognitive.

2) Teaching support and regulatory teaching have significant effects on organizational expression. Moreover, from the analysis of interpretation interview data, teaching preparation has the highest impact on knowledge acquisition, teaching support has the highest impact on cognitive thinking, and regulatory teaching has the highest predictive power on organizational expression.

3) This result shows that in the classroom teaching link, the use of flexible teaching methods, stimulate students' thirst for knowledge, inspire students to think, carry out classroom interaction, is conducive to the training of students' thinking ability and knowledge acquisition of the harvest, and then improve the harvest of students in cognitive thinking.

4) In the stage of classroom preparation, by enriching the teaching content, combining the characteristics of students and the topics that students are interested in, teachers can arrange the teaching schedule reasonably with the existing knowledge level, which can effectively improve students' interest and arouse students' enthusiasm, so that students can benefit from knowledge acquisition and transformation into ability.

5) Interaction in class, asking students to make group reports, submitting course papers and other ways can not only improve the ability of analyzing and solving problems, but also play an important role in improving students' achievements in organizing and expressing.

2. Learning, and the relationship between college students' learning outcomes. Learning engagement is one of the important indicators to measure students' learning process, which has a direct positive impact on learning outcomes. With below.

1) Cognitive, emotional input and behavioral investment on knowledge acquisition and knowledge have a significant impact on cognitive thinking, emotional input and behavioral input have significant predictive power on tissue expression. Specifically,

2) Learning motivation, happiness, educational value, and regular behavior can predict knowledge acquisition, learning motivation and security.

3) Regular behavior and active behavior can predict cognitive thinking and belonging, and active behavior can predict organizational expression.

4) The data analysis results of learning outcomes from the three dimensions of learning engagement show that the effective ways to improve students' knowledge acquisition and application include:

(1) Encourage students to adopt a positive motivation to meaning construction of knowledge.

(2) To develop interest in learning, and curriculum to improve students' awareness of the value of psychological health education.

(3) Encouraging students to actively participate in classroom interaction, so that the students finish the homework on time and at the same time, can report classroom, classroom questioning and class, discuss exercise the students' ability of expression.

3. Relationship between learning engagement in classroom environment.

(1) Emotional engagement has a mediating effect on the relationship between classroom environment and college students' learning outcomes. The three dimensions of classroom environment have a very significant impact on emotional engagement, and emotional engagement has an effective impact on the three dimensions of learning outcomes. The effects of classroom environment mediated by emotional engagement on learning outcomes, in addition to the direct effects of classroom environment mediated by emotional engagement on learning outcomes, teaching preparation has a direct impact on knowledge acquisition and regulatory teaching has a direct impact on cognitive thinking.

(2) Cognitive engagement plays a mediating role in the relationship between classroom environment and college students' learning outcomes. The three dimensions of classroom environment have a significant impact on cognitive engagement, and cognitive engagement has an effective impact on the three dimensions of learning outcomes. Among the effects of classroom environment mediated by cognitive input on learning outcomes, classroom environment mediated by cognitive input has indirect effects on learning outcomes, while teaching preparation has direct effects on knowledge acquisition and regulatory teaching has direct effects on cognitive thinking and organizational expression

(3) Behavioral engagement plays a mediating role in the relationship between classroom environment and college students' learning outcomes. The three dimensions of classroom environment have significant effects on behavioral engagement, and behavioral engagement has effective effects on the three dimensions of learning outcomes. Among the effects of classroom environment mediated by behavioral input on learning outcomes, in addition to the indirect effects of classroom environment mediated by behavioral input on learning outcomes, teaching preparation has direct effects on knowledge acquisition, teaching support and teaching on cognitive thinking.

Cognitive input, emotional input and behavioral input were put into a general model to analyze. The results show that classroom environment has an indirect effect on college students' learning outcomes through the mediating effect of learning engagement. From the perspective of the internal influence process of the three dimensions of learning engagement, classroom environment first acts on emotional engagement, and then promotes cognitive and behavioral engagement through the role of emotional engagement.

Discussion in the process from model for students’ affairs in mental health for guideline as below.

1) Three elements for students’ mental health development to importance for learning environment

(1) College learning environment to

shaping policy reform and mechanism

(2) Home learning environment to increasing trust, collaboration, and monitoring

(3) Society learning environment to provide a good environment and risk factor control

2) Mental health components for students' affairs development

(1) Psychological (Cognitive health). Intellectual health, Spiritual health, Integrity of personality, Understanding and accepting oneself, Happiness, Ethical spirit, and Positive understanding

(2) Emotional health Confidence and honest and Emotional stability

(3) Behavioral health (Social well-being). Social health, Personal health, Good social adaptation, Harmonious interpersonal relationship, and Coordination individual and society.

3) Management mode and strategies for vocational college to drive students' affairs in mental health development of students consists 7 aspect as below.

1) High level teaching and learning

2) Cultivate new curriculum

3) Student activities development

4) Personality charm and moral feeling

5) College, student and home relations

6) Develop individual personality and socialism

7) Organization expression in mental health development for students

4) Key success factors

(1) Policy reform both macro level and implementing level

(2) Management mode and mechanism

(3) The trust from family and participate in collaboration and monitoring

(4) Provide a good environment from societies

(5) All stakeholder to risk factors control

The detail of model for students 'affairs in mental health development for students from figure 1 as below.

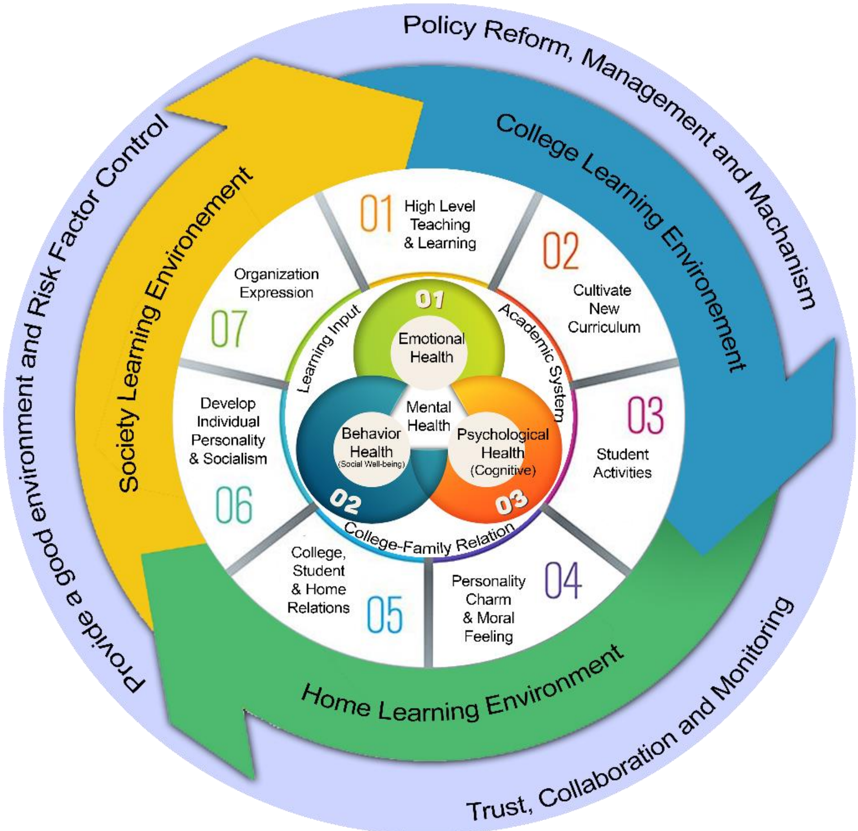

Figure 1: Jinyan' action model to achieve students' affairs in mental health overarching goal.

The key to improving students' affairs in mental health development of students in the process process full of efficiency, on the one hand, must through the design and plan in advance as much as possible to make the teaching process to be more perfect, on the other hand, also need to real-time supervision and management of the process in the same pointed of Reynolds (2014: 197-230) a complex organization, and it is very important for each organization to formulate a policy that links organizational vision and goals with internal operations. The policy refers Higgins & Simpson (2011) to action effective college policy is likely to have a positive impact on improving students' affairs outcomes, emphasizing the importance of establishing an effective vocational college policy to related with the research of Erina (2019) pointed about good learning environment and out-of-school learning environment for students' affairs in mental health development from both college, home and society includes three factor that (1) Physical (2) Psychological. and (3) Emotional that the same according from Ding, Minjiang (2019) to analysis of students' mental health education development in the vocational college. The learning environment in this paper focuses on the external factor as the college ecological environment where students live affects the development of students' cognition, emotion, behavior, and other aspects related with Estelle Palacios (2022) and Great Lakes Psychology Group (2021) to provide the 3 Components of Mental Health both emotional, behavior and cognitive and Reynolds (2014: 197-230) to propose emotion regulation for control themselves, Through the self-awareness of learning engagement, it plays a major role on the basis of subject perception.

To build a harmonious relationship between college, teachers, students, family and society with the creating an open and trusting atmosphere for coherent and continuous interaction and cooperation. Good teacher-student relationship is not only the necessary guarantee to complete the teaching task smoothly, but also the strong support for students to get stable growth and development, this results the same concept of Pascarella & Teenzine (2005) put forward that college students' mental health development with the factors of campus interpersonal interaction (teacher-student interaction and peer interaction). And the students' background and the characteristics of school organization structure jointly shape the campus environment variables, and at the same time, these three factors jointly affect the frequency and content of campus interpersonal interaction, while the quality of students' efforts is mainly directly affected by the students' background, campus environment and campus interpersonal interaction the same pointed from Reisser (1995) interaction and relations between college-student-home-society.

4) Key success factors

(1) Policy reform both macro level and implementing level in the pointed of Yu Guoliang & Ju Yunting (2018) to analysis on the process policy reform of Mental health education in China and its enlightenment

(2) Management mode and mechanism to related in the referred of

Guo Ailian. (2016) pointed on mental Health Status and Guidance management mode of Students in Art Vocational Colleges efficiency.

(3) The trust from family and participate in collaboration and monitoring in the same referred from Liu Yangyang. (2020) to collaboration with the creating strategies of counselors' Carrying out college students' mental health Education.

(4) Provide a good environment from societies the same focus of Ryff, & Keyes (1995) to provide the structure of psychological to enhance well-being revisited and the college should shapping the same pointed from Ling Yuqiong (2019) to guideline in the teaching reform of college students' mental health.

(5) All stakeholder to risk factors control

Recommendation

1. Recommendation for Policies

1) The strong point for system of external security for government to cultivation of promoting the development of students' affairs in mental health includes formulating and perfecting the development policy.

2) The college's psychological center carries out a series of activities

3) Provide the learning environment for teacher-student interaction, student-student interaction, classroom teacher-student role

2. Recommendation for Practical Application

1) Teacher should improve to increase student interaction and making the condition together in class to improve student interaction and create common conditions in class.

2) Teacher to design dialogue, democratic interaction, teaching, and learning

3) Talent teaching with pedagogy to important for classroom management

4) Teacher-student relationship (respect, equality). and student-student relationship

3. Recommendation for Further Research

1) Components have leadership attention, macro development management concept most important, improve strengthen on university level

2) Up the area based for study in the community collaborate with participating families and society to enhance mental health

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A Study of Fear and Anxiety of COVID-19 in Relation to Purchasing Involvement of University Students in Thailand

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ABSTRACT

The objective of this study was to discover the correlation of fear and anxiety of COVID-19 as antecedents of purchasing involvement of students in a Thai context. This quantitative study collected data online from 350 students from two universities located in an urban area of Bangkok as the sample. To measure fear of COVID-19, the Scale developed by Ahorsu, Lin, Imani, Saffari, Griffiths and Pakpour, was used. The Coronavirus Anxiety Scale developed by Lee, S. A. was used to measure COVID-19 anxiety. To measure purchasing involvement, the Purchasing Involvement Scale developed by Karaatli was used. The Pearson's Correlation Coefficient and t-test for data analysis found that all five hypotheses were supported by the analysis results, indicating a moderate correlation between fear and anxiety of COVID-19 and purchasing involvement. Moderate correlation between genders were found in fear and anxiety of COVID-19, and purchasing involvement. The findings could provide information to marketers and advertisers regarding purchasing involvement to promote and sell products especially during future crisis, albeit needs to be extended to other contexts.

KEYWORDS: Fear of Covid-19, Coronavirus anxiety, Purchasing involvement of students

1. Introduction and Research Problem's Significance

"Life is 10% of what you experience and 90% of how you respond to it." (Neddermeyer, n.d.)

The **"**Psychology of Pandemics", emerged as a priority during the COVID-19 pandemic, for treating pandemic-associated psychopathological problems as well as for the general public health (Taylor, 2019). Psychological stressors that incorporate fear, anxiety, phobia and panic were manifested substantially during and succeeding the COVID-19 outbreak (Mertens et al., 2020). While checking regularly for symptoms of the Coronavirus as well as conducting their own offline and online investigations (Cao et al., 2020), often information regarding the virus was misconstrued and incorrect (Hashemi et al., 2020). Ultimately, this resulted in experiencing fear and anxiety about the prospect of their families and themselves contracting the Coronavirus (Asmundson & Taylor, 2020; Pakpour &

Griffiths, 2020).The transformation of daily living routines radically to coincide with the external environment, caused fear and panic in several persons (Huang & Zhao, 2020; Rajkumar, 2020; Qiu et al., 2020). Social distancing, isolation, lockdowns and working from home mandatorily compelled people to create a cyber-world and communicate via social media and communication devices (Elhai et al., 2021). Excessive technology usage could result in stress and anxiety but to alleviate stress and anxiety people often revert back to the using technology (Brand et al., 2016).

The Concept of Fear and Anxiety

Heshmat (2018), in Psychology Today, stated that fear and anxiety are closely related to having knowledge of danger or a possibility of injury. Barlow (2002) specified that fear is largely perceived as reaction to a specific, foreseeable danger, whereas anxiety is perceived as an unclear, aimless, future-oriented fear. Hence, fear and anxiety are both associated with specific factors, situations or contexts (Horwitiz, 2013). According to the American Psychological Association (2020), fear is "a basic, intense emotion aroused by the detection of imminent threat, involving an immediate alarm reaction that mobilizes the organism by triggering a set of physiological changes". Several pandemic related stressors like fear, anxiety, trauma, mood disorders, fatalities etc. are related to a person's psychopathology (Taylor et al., 2020).

In the General Adaption Syndrome (GAS), Selye (1936) suggested that the body has a certain capacity of energy to deal with stressors, irrespective of whether the stressors are physical or psychological, in the following stages:

1.Alarm/Mobilization (Fight/Flight): The body becomes aware of the existence of the stressors and reacts by activating the nervous system. If stressors prolong the body enters the second stage.

2. Resistance (Adaptation): The body collects all the energy to fight with stressors in order to recover. If new stressors are encountered or the previous stressors continue, the body enters the third stage.

3. Exhaustion (Burnout): Finally the body is consumed of all energy and lacks potential to deal with the stressors. Exhaustion works best for emergencies but if prolonged and lead to **"*emotional exhaustion*"**.

The stages enumerated above could apply to pandemics since it impacts emotions, cognitions and behaviors negatively (Schaller& Park, 2011). If the pandemic is perceived as an external threat, people may need a way to cope by engaging in buying impulsively (Campbell, Inman, Kirmani & Price, 2020). Shigemura et al., (2020), posited that the reactions of COVID-19 in the general population impact well-being, leading to escalated levels of fear and panic behaviors like storing for the long-term. Consumers who make purchases online or offline could make decisions without much thought or involvement, in response to the environmental circumstances.

The Concept of Purchasing Involvement

Consumer behavior emerged in the 1940s is a sub-discipline of marketing (Tadajewski, 2009). Earlier consumer behavior focused on classical schools with priority given to economics, but today it blends ideas from many different social sciences like psychology, social anthropology, anthropology, ethnography, marketing, and behavioral economics

(Sheth, 1985). Consumer behavior is related to all activities concerned with purchase, as well as emotional, cognitive and behavioral responses that proceed or follow all activities (Kardes, Cronley & Cline, 2011). Consumer involvement is the motivation (involves the psychological and physiological effort) to search for different classes of products before the selection and decision to buy a product (Schiffman & Hansen, 2011). Mittal (1989), agreed that analogous to motivation, involvement requires a goal or destination. The goal is the product, hence the term product or purchase involvement (Antil, 1984; Mittal & Lee, 1989).

Purchasing involvement can be defined as the interest, energy and thought exhibited by people while buying a product, once a drive has been triggered by the need for the product (Quester, Pettigrew & Hawkins, 2011). Purchasing involvement is regarded as an individual difference variable since it is a self-relevant activity of purchasing activity of an individual (Slama & Taschian, 1985). Facets determining purchase involvement are:

1. Attitude, lifestyle, needs, interest and price- A judicious consumer will most often evaluate and explore several alternatives before a purchase decision (Bezenco & Blili, 2011).

2. The utility and characteristics of the product- can determine the degree of purchase involvement (Harari & Hornik, 2010) but brand loyalty may lead to low involvement

3. Situational factors-like buying for a loved one and social pressures or the presence of colleagues can affect purchase involvement accordingly (Ozdipciner, Li & Uysal, 2012).

The question that needs to be answered was, ***"Can fear and anxiety of COVID-19 impact online purchasing involvement of students?***

2. Review of Related Literature

Consumer behavior is concerned with an enduring individual difference rather than a situation (Mina &Campos Jr, 2018). A consumer's decision to buy a product can be implemented using three strategies (Quester, Pettigrew & Hawkins, 2011), which are:

1. Habitual Decision-making- the consumer hardly uses any cognition regarding a purchase but selects a product based on past habits.

2. Limited Decision-making -the consumer searches for little information before making any decision to purchase.

3. Extended Decision-making-the consumer searches for a vast amount of information before making any decision to purchase. This implies high purchase involvement.

The concept of purchase involvement is confused with other concepts in marketing, like shopping enthusiasm or need for cognition. According to Babin, Darden, and Griffin (1994), shopping enthusiasm can include feelings of pleasure and excitement experienced while gathering and processing information about products. Need for cognition is an individual's tendency to be involved in activities that require higher mental ability or thinking (Caccioppo & Petty, 1982). For habitual and limited decision-making, the individual may use limited cognitive agility or may not be enthusiastic to shop, but could still be involved with the purchasing process. On the other hand, the amount of involvement could be higher for extended decision-making. A person can be involved with the purchase, to increase happiness or to decrease risks but not necessarily experience need for cognition or high shopping enthusiasm. Kassarjian (1981), viewed differences in intensity or effort people invest with shopping irrespective of the product or situation. Some people are more invested in the decision process, like search and effort (Bloch, Sherell & Ridgway, 1986; Bloch & Richins, 1983). Purchasing involvement may be initiated by several factors.

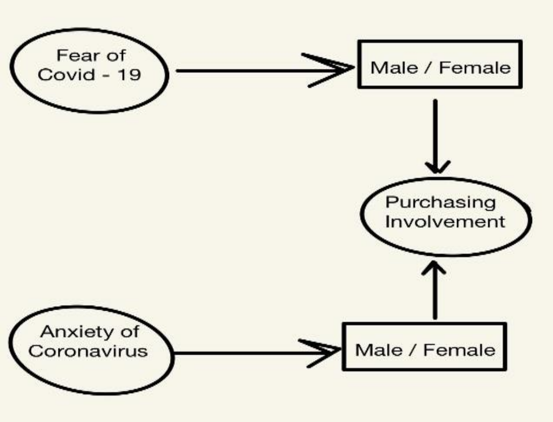
The degree of uncertainty and fear that pursued during the COVID-19 pandemic resulted in psychological changes regarding consumer's behaviors (Duan & Zhu, 2020; Meyer et al., 2020). Studies in the field of marketing have incorporated fear and anxiety as psychological disorders, which positively and negatively trigger preventive defense mechanisms amid consumers, consequently causing a connection with their purchase involvement and the behavioral changes such as the degree and extent of required information search, shopping habits, purchase preferences and spending patterns. (Di Crosta et al., 2021; Ang et al., 2000; Duan & Zhu, 2020; Meyer et al,, 2020; Green & Murphy, 2014). The level of involvement with regards to a purchase is contingent upon decision-making (Hawkins et al. 2020). This simply means that the decision to buy an expensive item involves more decision making than vice versa. Hawkins et al. (2020), agree that often consumers may not be rational with purchases and use emotions when buying. Viser-Keiser et al., (2016), asserted that the sense of fear is a powerful negative emotion which thereafter weakens rational decision-making causing illogical consumer behavior. When making decisions during several points in time, fear can induce impatience and individuals are likely to forgo greater future returns for less immediate returns (She et al., 2016). Zeelenberg et al. (2008), viewed emotions as assisting the right decisions and evaluations as well as evicting a person from situations that are potentially dangerous so as to reduce and avoid risks that is important for making judgments. Emotions can impact product appraisal by the target (i.e. being elated after getting a discount) or the situational factor (i.e. shopping after a stressful incident) (Pham, Cohen, Pracejus & Hughes. 2001). Frijda et al., (1989), indicated that anxious persons manifested high uncertainty and stronger motivation to purchase in order to reduce risk. Manyande et al., (1992), viewed moderate levels of anticipated fear and anxiety as essential tools for coping behaviors for motivation to adapt to a situation.

Stress can also initiate compulsive shopping (Roberts & Jones, 2001), anxiety and pleasure and fun (Trotzke et al., 2015). A report by the Big Commerce platform indicated that the COVID-19 pandemic rapidly changed how, when and why people purchase (Meyer et al., 2020), which could result in daily habits being replaced with substitute and competent methods of buying as well as utilizing particular products (Sheth, 2020). Taylor et al., (2020), discovered that fear of infection during COVID-19, is the basic phenomenon of the syndrome and stress is perceived as an adjustment ailment which can vacillate in accordance to the degree of perceived threat (Asmundson & Taylor 2020). Weber (2006), posited that fear can trigger motivation to eliminate risk and take measures accordingly. A person's emotional, utilitarian or hedonistic motivations can impact both planned and impulse buying (Leverin & Liljander, 2006; Yu & Bastin, 2010). During a crisis consumers are more utilitarian and switch to economical products with the intention of procuring as much benefit as they can to satisfy basic needs (Ang et al., 2000).

Research on panic buying or impulsive buying during a crisis is ubiquitous in contrast to research on purchasing involvement. Shou et al., (2013) and Tsao et al., (2019) perceived that panic buying is not the result of supply scarcity but rather high levels of fear and anxiety. Furthermore, this fear and anxiety are experienced because of perceived lack of time or quantity that occur due to natural disasters, pandemic and strikes (Badgaiyan & Verma, 2015; Wu et al., 2020) which could eventually lead to obsessive purchases.

Atkin et al., (2007) discovered gender differences in the search frequencies and buying behaviors of men and women. Kacen (2000) believed that consumption has been gendered since early times. Women prefer excess information during the interaction process of buying in comparison to men who wish to have quick answers. Thus, men are hunters and women are gatherers. Women tend to exert more time and energy in detailed searching and hence possess a better sense of risks for a product than men who focus on the most relevant cue. Although males and females have similar purchase goals, each gender displays different purchase involvement depending on the product involved, promotional offers and desires in fulfilling the satisfaction. (Kotler & Keller, 2016). Subsequently, the socialization process of men and women coupled with other physiological and psychological and social factors can be responsible for different behaviors (Meyers & Maheswaran, 1991). The greater degree and extent of fear and anxiety of COVID-19 among females are higher than males even though the death rates and the serious illness among males are much higher (Bhopal & Bhopal, 2020; Gebhard et al., 2020; Jin et al., 2020; Peckham et al., 2020). Additionally, women are more prone to emotional states (Fujita et al., 1991), especially negative reactions like fear more often (Brebner, 2003; Fischer et al., 2004) Tokgozoglu and Canpolat (2020), stated that women manifested higher anxiety then men in social situations. Exploration in countries like China, United States and Cuba discovered that fear, anxiety and stress related to the pandemic were much higher for women than men (Broche-Pérez et al., 2020; Fitzpatrick et al., 2020; Liu et al., 2020; Park et al., 2020). The pandemic resulted in fear, panic and decreased wellbeing (Shigemura et al., 2020), which consequently affected purchase involvement intensity. Stress, anxiety and depression were common symptoms experienced by students in Malaysia, Thailand, Indonesia and China during COVID-19 (Lyon & Matson, 2020).

The literature review indicated that fear and anxiety play a prominent role in consumers' buying behaviors. Purchasing involvement is a general construct, concerned with the absorption in purchasing activities during a critical and indefinite crisis (Veryzer & Karaatli, 2008). Persons residing in urban areas with better internet facilities, often shop online (Zhen et al., 2018).Hence, the research framework was proposed as follows:



3. Objective and Hypotheses

Objective

The objective of this study was to find the correlation of fear and anxiety of COVID 19 as antecedents of purchasing involvement.

Hypotheses

H1: There is a significant relationship between Fear of COVID-19 and purchasing involvement of students.

H2: There is a significant relationship between Coronavirus anxiety and purchasing involvement of students.

H3: There are significant differences between male and female students on fear of COVID- 19.

H4: There are significant differences between male and female students on Coronavirus anxiety.

H5: There are significant differences between male and female students on purchasing involvement.

4. Methodology and Data Analysis

To measure fear of COVID-19, the scale developed by Ahorsu et al., (2020) was used, consisting of 7 items on a five-point Likert scale from 5, strongly agree to 1, strongly disagree. The Cronbach Alpha was α =.950 for the total scale. To measure anxiety of COVID-19, the Coronavirus Anxiety Scale developed by Lee, S. A. (2020) was used consisting of 5 items on a five-point Likert scale from 5, strongly agree to 1, strongly disagree .The Cronbach Alpha was α =.956 for the total scale. To measure purchasing involvement, 21 items from the Purchasing Involvement Scale developed by Karaatli (2015) were used. The Cronbach Alpha was α =.820 for the total scale.

The simple random sampling technique targeted 350 Thai and foreign students online from two international universities over a period of 2 months, yielding a final sample of 304.

For the first and second hypotheses, Pearson's Correlation Coefficient was utilized to find out the relationship between fear of COVID-19 and purchasing involvement and between Coronavirus anxiety and purchasing involvement. The t-test was used for testing the third, fourth and fifth hypotheses to investigate differences among the male and female students on fear of COVID-19, Coronavirus anxiety and purchasing involvement.

5. Findings and Discussion

Table 1 The Correlation between Fear of COVID-19 and Purchasing Involvement of Students

Fear of COVID-19 and Purchasing Involvement	n=304	Pearson's Correlation Coefficient (r)	Significant value (p)
Significant		.511**	0.000

***Remarks**: ** Correlation is significant at the 0.01 level (2-tailed).*

Table 1 showed that the Pearson Correlation Coefficient between fear of COVID-19 and purchasing involvement was significant at a 0.01 level. The Pearson correlation coefficient value of ($r= .511$, $p < 0.01$), indicated a moderate positive correlation between fear of Covid-19 and Purchasing Involvement of students. Therefore, Hypothesis 1 was supported by the data and revealed that when students experienced fear of COVID-19, it had a moderate impact on their purchasing involvement.

The moderate correlation of fear and purchasing involvement could be attributed to differences in intensity or effort students invested with shopping irrespective of the product or situation as the literature review points (Kassarjian, 1981). Some students may be more invested in the decision process, like search and effort, while others may not (Bloch, Sherell & Ridgway, 1986; Bloch & Richins, 1983). Viser-Keiser et al., (2016) asserted that the sense of fear is a powerful negative emotion which thereafter weakens rational decision-making causing illogical consumer behavior. The COVID-19 pandemic itself resulted in fear, panic and decreased wellbeing (Shigemura et al., 2020), which could consequently affect purchase involvement intensity. Ang et al., (2000), discovered that during a crisis consumers are more likely to assess products with the intention of procuring as much benefit as they can and shopping during a crisis is often planned so as to avoid excess buying (Hampson & McGoldrick, 2013). Emotions can impact product appraisal under the target (i.e. being elated after getting a discount) or the situational factor (i.e. shopping after a stressful incident) (Pham, Cohen, Pracejus & Hughes. 2001). In this study, only half of the students were actually absorbed in the process of buying as a consequence of fear of COVID-19.

Table 2 The Correlation between Coronavirus Anxiety and Purchasing Involvement of Students

Coronavirus Anxiety and Purchasing Involvement	n=304	Pearson's Correlation Coefficient (r)	Significant value (p)
Significant		.377**	0.000

***Remarks**: ** Correlation is significant at the 0.01 level (2-tailed).*

Table 2 indicated that the Pearson Correlation Coefficient between Coronavirus anxiety and purchasing involvement was significant at a 0.01 level. The Pearson correlation coefficient value of ($r= .377$, $p < 0.01$), indicated a moderate positive correlation between Coronavirus anxiety and Purchasing Involvement of students. Therefore, Hypothesis 2 was supported by the data and showed that when students experienced Coronavirus anxiety, it had a moderate impact on their purchasing involvement.

Heshmat (2018), agreed that anxiety is related to emotional states of having uncertainty, rational conflict, dissatisfaction, and nervousness. Anxiety can include some types of fears that are related to the future rather than the present. Subsequently, during natural disasters, pandemics and strikes, panic buying is a common phenomenon. Panic buying does not occur as a result of supply scarcity but rather high levels of fear and anxiety owing to lack of time or quantity (Shou et al., 2013; Tsao et al., 2019). The moderate level of involvement in purchasing of students could be an outcome of panic which positively and negatively triggers preventive defense mechanisms among consumers, consequently causing a connection with their purchasing involvement and the behavioral changes such as the degree and extent of required information search, shopping habits, purchase preferences and spending patterns. (Di Crosta et. al, 2021; Ang, 2000; Duan & Zhu, 2020; Meyer et al., 2020; Green & Murphy, 2014). Manyande et al., (1992), reiterated that moderate levels of anticipated fear and anxiety are an essential tool for coping behaviors and can be regarded as motivation to adapt to a situation. A person's emotional, utilitarian or hedonistic motivations can impact both planned and impulse buying (Leverin & Liljander, 2006; Yu & Bastin, 2010). Consequently, Coronavirus anxiety leads to moderate levels of purchasing involvement of students.

Table 3 The Comparisons between Male and Female Students on Fear of COVID-19

Mean *(SD)*			Levene's Test of Equality of Variance	
Male n=122	Female n=174	t-value	F-Value	p-value
2.49(*.73*)	3.16 (*1.20*)	-5.42**	141.017***	0.00

Remarks: *SD is shown as italic in the brackets; independent sample t-test is performed*
*** Significant difference of the mean at p < 0.05 level*

Table 3 indicated that there was a significant difference in fear of COVID-19 between males (M=2.49, SD=.737) and females (M=3.16, SD=1.20) under the conditions t =-5.42 and p=0.00. Therefore, the hypothesis was supported, as female students revealed more fear of COVID-19 in comparison to male students.

Several pandemic related stressors like fear, anxiety, trauma, mood disorders, fatalities etc. are related to a person's psychopathology (Taylor et al., 2020). Subsequently, the socialization process of men and women coupled with other physiological and psychological and social factors can be responsible for different behaviors (Meyers & Maheswaran, 1991). The greater degree and extent of fear and anxiety of COVID-19 among females is higher than males even though the death rates and the serious illness among males are much higher (Bhopal & Bhopal, 2020; Gebhard et al., 2020; Jin et al., 2020; Peckham et al., 2020). The female students in this study as with other studies manifested more fear than male students for fear of COVID-19, considering the fact that women are more prone to emotional states (Fujita et al., 1991), especially negative reactions like fear (Brebner, 2003; Fischer et al., 2004). In addition women displayed more fear of natural disasters and agonized more about consequences of environmental changes (Sundblad et al., 2007).

Table 4 The Comparisons between Male and Female Students on Coronavirus Anxiety

Mean *(SD)*			Levene's Test for F Equality of Variance	
Male n=122	Females n=174	t-value	F-Value	p-value
1.76 *(.79)*	1.10 *(1.12)*	-2.870**	46.942***	0.04

Remarks: *SD is shown as italic in the brackets; independent sample t-test is performed*
*** Significant difference of the mean at p < 0.05*

Table 4 indicated that there was a significant difference of Coronavirus anxiety between male (M=1.7, SD=.793) and female students (M=2.10, SD=1.12) under the conditions t = -2.870 and p=0.04. Therefore, the hypothesis was accepted as there were significant differences between male and female students in relation to Coronavirus anxiety.

Heshmat (2018), elaborated that anxiety is related to emotional states of having uncertainty, rational conflict, dissatisfaction, and nervousness. The COVID-19 pandemic may cause future oriented fear, often referred to anxiety (Heshmat, 2018). The COVID-19 pandemic itself resulted in fear, panic and decreased wellbeing (Shigemura et al., 2020). Stress, anxiety and depression were common symptoms experienced by students in Malaysia, Thailand, Indonesia and China during the COVID-19 pandemic (Lyon & Matson, 2020). Tokgozoglu and Canpolat (2020) stated that women are more anxious than men, scoring higher especially in socially related situations. In this study the long-term impact of the COVID-19 pandemic could impact female students' more than male students' as previous studies enumerated. Research in countries like China, United States and Cuba discovered that fear, anxiety and stress related to the COVID-19 pandemic were much higher for women than men (Broche-Pérez et al., 2020; Fitzpatrick et al., 2020; Liu et al., 2020; Park et al., 2020).

Table 5 The Comparisons between Male and Female Students on Purchasing Involvement

Mean *(SD)*			Levene's Test for Equality of Variance	
Male n=122	Females n=174	t-value	F-Value	p-value
3.17 *(.52)*	3.46 *(.31)*	-5.77**	46.979***	0.00

Remarks*: SD is shown as italic in the brackets; independent sample t-test is performed*
*** Significant difference of the mean at p < 0.05*

Table 5 indicated that there was a significant difference in purchasing involvement between male (M=3.17, SD=.58) and female students (M=3.46, SD=.31) under the conditions t = -5.77 and p=0.00. Therefore, the hypothesis was accepted, as there were significant differences between male and female students in relation to their purchasing involvement.

Kacen (2000), believed that consumption has been gendered since early times. The involvement of female students in purchasing involvement was higher than that of males as the search frequencies of women is higher as reported by Atkin et al., (2007). Women prefer excess information during the interaction process of buying in contrast to men who wish to have quick answers. Thus, men are hunters and women are gatherers. Women tend to exert more time and energy in detailed searching and hence possess a better sense of risks for a product than men who focus on the most relevant cue. Although males and females have similar purchase goals, each gender display different purchase involvement depending on the product involved, promotional offers and desires in fulfilling the satisfaction. (Kotler, 2016).

Data for this study was conducted during the COVID-19, when buying goods online was a trend especially in urban areas (Zhen et al., 2018).

6. Conclusions and Recommendations for Future Research

The data for this study relied on online questionnaire responses from students during the COVID-19 pandemic, hence, could not obtain responses from the entire sample owing to lack of proximity from students. The qualitative measures used to measure fear and anxiety of COVID-19 were in their early stages but nevertheless obtained high reliability and were robust. Qualitative data like surveys, interviews, and focus groups to gather data were impossible on account of different variations of the COVID-19 being rampant. The data were collected online from students in an urban context, albeit needs to be extended to other contexts like a rural setting.

To make a generalization, procuring a larger sample from other universities is essential. Further research can consider more consumers from diverse cultural backgrounds for an in-depth study.

A broader study on the antecedents, moderators and mediators of purchasing involvement can improve the precision of future studies. This study like previous studies, confirmed that emotions can impact purchasing involvement at least moderately, with scores being higher for females. A replication of this study could provide marketers with more information about purchasing involvement of different genders and various types of consumers so as to search different strategies to increase relevance of products. Irrespective of situational factors, individual differences on purchasing involvement can provide the variations that exist regarding buying behavior and the decision-making process. On this basis, segmentation can be implemented. Genders can also be a crucial variable for segregation of needs and advertising using fear appeals accordingly. Further demographic factors like socio-economic status, age groups and genders can be given priority for a larger study.

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Engagement Program of Public Health Volunteers and Caregivers in Home Care Service for Stroke Patients

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ABSTRACT

This research aimed to evaluate the engagement program of public health volunteers and caregivers in home care service for stroke patients. The study adopted a quasi-experimental design, The subjects of 120 were recruited, consisting of 60 public health volunteers and 60 caregivers. Each group was divided into 30 participants as the intervention group and 30 participants as the control group by simple random sampling. The intervention group participated in the engagement program which consisted of 4 task components: 1) improving the movement for the body balance, 2) improving the mental health, 3) improving the environment at home, 4) preventing the complication of disease. The stroke knowledge for caring stroke patient and stroke care practice in public health volunteers and caregivers were measured at the beginning of the engagement program (baseline) and at a 12-weeks follow-up, and the Barthel ADL index by the questionnaire. Data were analyzed by descriptive statistics, pair-sample t-test, and independent-sample t-test. The results found that after program implementation, the stroke knowledge for caring stroke patient and stroke care practice of health volunteers and caregivers were significantly higher than the control group ($p < .05$). The Barthel ADL index of stroke in the intervention group was significantly higher than the control group ($p < .001$). When comparing the results before and after program implementation, the stroke knowledge for caring stroke patient and stroke care practice in public health volunteers and caregivers were significantly higher than before program implementation. ($p < 0.05$). The study showed that the engagement program of public health volunteer and caregiver in home care service for stroke patients enhanced their knowledge in their real-life practice. This program was suitable for promoting the public health and caregiver to provide home care service for stroke patients at the community level.

KEYWORDS: Caregiver, Engagement program, Public health volunteer, Stroke patients, Home care

1. Introduction

Stroke is a serious life-threatening medical condition that occur when the blood supply to part of the brain is interrupted. Annually, the number of strokes and deaths increased continuously until to the present. This disease affects to physical, cognitive, quality of life and social participation (Kristine K.Miller & Susan H. Lin ScD, 2019)

Early treatment and rehabilitation can improve recovery brain and body function to increase the survival of the patient.(Kristine K.Miller &Susan H. Lin ScD, 2019) One study showed The need of stroke patients and caregivers about the transition of care from hospital to home should be suitable considered. They needed to receive the stroke caring service after discharging at home. (Coleman ER & Moudgal R, 2017) Healthcare professionals, public health volunteers, family members and caregivers were the important people to improve survivors' activities of daily living (ADLs) and quality of life of patients. (Hsiang-Chu Pai & Yi-Chen Tsai, 2021) Especially, public health volunteer and caregivers who closed to stroke patients were an essential part of the primary health care model in community. Those people had positive effects on the management of stroke that enhanced the stroke patient' well-being including stroke survivors. (Chinchai P& Sirisatayawong P,2020) Previous study presented the problems of public health volunteer and caregivers for caring stroke patients at home such as lacking of stroke knowledge, caring and the process of home care service. (David H Saunders 1& Mark Sanderson, 2020).Moreover, previous evidence showed that public health volunteer and caregivers should receive stroke care training to understand the roles in health promotion and the rehabilitation support in their community. (Elton H. Lobo & Mohamed Abdelrazek, 2017) The engagement programs for non-communicable diseases such as diabetes mellitus and hypertension were contributed to many areas in primary care system to increase health promotion and prevention for patients.(Pindus DM, Mullis R & 2018) There has been little research on the public health volunteers and caregivers' engagement for caring stroke patients in home care service by assisting stroke survivors in self-management to enrich existing stroke rehabilitation programs. Therefore, the aimed of this study was to evaluate the engagement program of public health volunteer and caregiver in home care service for stroke patients. Finding of this study can increase the collaboration between public health volunteers and caregivers to best support stroke patients during rehabilitation in home care and to enhance stroke survivor 'recovery outcomes.

The Purpose of the Study

The aim of this study was to evaluate the engagement program of public health volunteer and caregiver in home care service for stroke patients.

2. Methods

Research design

This study was a quasi-experimental research design, two group pretest posttest design. The purpose of this study was to evaluate the engagement program of public health volunteer and caregiver in home care service for stroke patients. The intervention group receives a 4-week intervention program, whereas the control group receives usual care. The outcomes in both groups were measured at the baseline, and week 12 after the baseline measurement.

Population and sample

The population in this research was public health volunteers and caregiver who lived in Bo Thong District Chonburi

Province. Based on data from a previous study [9] sample size calculation was made with a computer software G*power 3.1.9.4. Set the power of test at 0.80, the effect size of 0.8 and set the confidence at .05. Therefore, 120 participants were recruited that consisted of 60 public health volunteers and 60 caregivers. Each group was divided 30 participants as the intervention group and 30 participants as the control group by simple random sampling. Inclusion criteria for public health volunteers was 1) register with Bo Thong hospital as the member of public health volunteers, 2) able to read and communicate in Thai language 3) willing to participate in the study. Inclusion criteria for caregiver was 1) currently, taking care stroke patients after discharge from hospital, 2) able to read and communicate in Thai language 3) willing to participate in this study. Participants who had problems about cognitive impairment were excluded.

Research instruments

The research instruments were divided into two types, the first was the engagement program of public health volunteer and caregiver in home care service for stroke patients as an intervention instrument. The second was the questionnaire about stroke knowledge and caring for data collection.

1. The intervention instruments

The engagement program of public health volunteer and caregiver in home care service for stroke patients was developed by literature review from previous studies. This program consisted of four components of 1) improving the movement for the body balance, 2) improving the mental health, 3) improving the environment at home, 4) preventing the complication of disease. The intervention group receives a 4-week intervention program, whereas the control group receives usual knowledge and practice. The outcomes were measured at the beginning of the engagement program (baseline) and at a 12-weeks follow-up. The first weeks, participants were trained about specific balance exercises for stroke patients by practicing balance rehab exercises to improve the movement for the body balance after stroke. The second week, the mental health program focused on management for common mental health problems, such as anxiety, depression, and social isolation, during post-stroke period. The third week, the built good environment and facilities at home such as the bathroom, the bedroom, a kitchen, and the natural environment around home. The last week, preventing the complication of disease, for example, stroke patients had bedsores because of immobility. Participants were trained about the prevent and treatment about the stroke complication.

2. The instrument of data collection

The questionnaire about stroke knowledge and stroke care practice was used to be the instrument of data collection basing on the literature reviews and the standard questionnaire of the Department of Mental Health. This questionnaire consisted of three parts, firstly, the demographic such as gender, age, education level, career, marital status, income, and the Barthel Index of stroke patient. Secondly, the questionnaire for stroke knowledge related to the improving the movement for the body balance, the mental health, the environment at home, and preventing the complication of stroke. Overall, 40 items. Finally, the questionnaire for stroke care practice, 10 scores in each component, totally 40 scores.

The quality of all research instruments was tested to explore the content validity and the reliability. The content validity was judge content validity by three experts. The content validity index (CVI) presented 1.00. For the reliability of the questionnaire was tested using Cronbach's alpha for internal consistency reliability. The results of Kuder Richardson 20 and Cronbach's alpha showed 0.86 and 0.88, respectively.

Data collection

Prior to beginning the engagement program, this study was approved by the Human Research Ethics Committee, Faculty of Medicine Thammasat University received a certificate number MTU-EC-ES-0-110/63. All participants were fully informed and signed consent for this study. The researcher spent 30 minutes to explain about the purpose of the study, procedures, methods, and the concern for protection of the participants. The participants in the intervention group received the 4-weeks intervention (improving the movement for the body balance, the mental health, the environment at home, and preventing the complication of stroke) while the control group received usual care. Participants spent a total time approximately 180 minutes in each week. The outcomes in both groups were measured at the baseline, and week 12 after the baseline measurement by the questionnaire about stroke knowledge and caring.

Data analysis

The demographic data was tested by using the descriptive statistic comprising frequency, percentage, mean, and standard deviation. The stroke knowledge scores, the practice of caring for stroke patients and the Barthel ADL index were analyzed by independent t-test and Paired sample t-test to compare the outcomes within and between group. A p-value < 0.05 was considered statistically significant.

3. Results

The 120 participants were divided into 60 public health volunteers and 60 caregivers. Each group was divided into 30 participants as the intervention group and 30 participants as the control group. The demographic data indicated the majority of both groups predominantly females, age 60 years and lower, married, in agriculture and business owner, universal health coverage insurance and income. The result showed that there were no significant differences of demographic characteristics of public health volunteers and caregivers between both groups (p value $\geq .05$)

Before the program implementation, the average score of stroke knowledge of public health volunteer and caregiver, for caring stroke patients at home related to the improving the movement for the body balance, the mental health, the environment at home, and preventing the complication of stroke of participants were not statistically significant difference between the intervention and the control group ($p < .05$). After the program implementation at week 12, the average score of the stroke knowledge for caring stroke patients at home of public health volunteer in the intervention group (38.86 ± 7.61) was significantly higher than the control group (11.04 ± 11.87) ($p < .05$). For caregiver, the average score of the stroke knowledge for caring stroke patients at home in the intervention group (34.64 ± 5.45) was significantly higher than the control group ($17.44 \pm .87$) ($p \leq .05$). as shown in table 1.

Table 1 Comparisons of stroke knowledge for caring stroke patients at home related to the improving the movement for the body balance, the mental health, the environment at home, and preventing the complication of stroke between the intervention and control group.

	The intervention (n=30)		The control group (n=30)		t-test	df	p-value
	Mean	S.D.	Mean	S.D			
Public health volunteers							
Before program	11.04	8.71	9.96	7.01	0.56	58	0.96
After program	38.86	7.61	11.04	11.87	-11.61	58	<0.05*
Caregiverห							
Before program	7.90	3.15	7.65	4.02	1.28	58	0.95
After program	34.65	5.45	17.44	6.87	-14.12	58	<0.05*

* p-value < 0.05

Before the program implementation of public health volunteer and caregiver, the average score of the stroke care practice including the improving the movement for the body balance, the mental health, the environment at home, and preventing the complication of stroke of participants were not statistically significant difference between the intervention and the control group (p < .05) (Table 2)

After the program implementation at week 12, the results of public health volunteer revealed that, the average score of the stroke care practice in the intervention group such as improving the movement for the body balance (8.96±2.41), the mental health (9.61±2.38), the environment at home (9.78±2.55), and preventing the complication of stroke (9.22±2.66) was significantly higher than the control group (improving the movement for the body balance (6.06±2.48), the mental health (7.55±2.64), the environment at home (6.64±3.14), and preventing the complication of stroke (7.50±2.25) (p < .05). For caregiver, the average score of the stroke care practice in the intervention group such as improving the movement for the body balance, the mental health, the environment at home, and preventing the complication of stroke were (8.66±2.43), (8.07±2.25), (9.06±2.45), (8.92±2.27), respectively. While the control group, the average score of the stroke care practice in the intervention group such as improving the movement for the body balance, the mental health, the environment at home, and preventing the complication of stroke were (4.13±2.82), (3.04±1.54), (3.98±2.67), (4.15±2.75), respectively. All components of the stroke care practice in intervention group was significantly higher than the control group ($p < .05$). As showed in table 3.

Before the program implementation, the Barthel ADL index of stroke patients who were cared by participants in the intervention group was 63.55 while the Barthel ADL index of stroke patients who were cared by participants in the control group was 59.83. The comparison between the intervention group and the control group were not statistically significantly different ($p= 0.74$).

After the program implementation**,** the Barthel ADL index of stroke patients who were cared by participants in the intervention group was 80.21 while the Barthel ADL index of stroke patients who were cared by participants in the control group was 63.30. The Barthel ADL index of stroke in the intervention group was significantly higher than the control group ($p < .001$). The results presented in Table 4.

Table 2. The comparison of stroke care practice scores between the intervention group and the control group before the program Implementation (baseline).

	The intervention group (n=30)		The control group (n=30)		t-test	df	p-value
	Mean	S.D	Mean	S.D			
Health volunteer							
-Improving the movement for the body balances	6.45	3.21	6.65	2.84	0.86	58	0.46
-Improving the mental health	7.44	2.11	7.33	2.54	0.72	58	0.58
-Improving the environment at home	6.12	2.95	6.55	2.74	1.93	58	0.72
-Preventing the complication of disease	7.64	2.21	7.84	2.95	1.17	58	0.45
Caregiver							
-Improving the movement for the body balances	4.76	2.23	4.43	2.02	1.28	58	0.52

	Mean	S.D	Mean	S.D	t-test	df	p-value
-Improving the mental	3.24	1.25	3.34	1.34	0.56	58	0.18
-Improving the environment at home	3.56	1.58	3.64	1.66	0.67	58	0.47
-Preventing the complication of disease	4.25	2.47	4.15	2.35	1.64	58	0.55

* p-value < 0.05

Table 3. The comparison of stroke care practice scores between the intervention group and the control group after the program Implementation, follow-up at week 12.

	The intervention group (n=30)		The control group (n=30)		t-test	df	p-value
	Mean	S.D	Mean	S.D			
Health volunteer							
-Improving the movement for the body balances	8.96	2.41	6.06	2.48	0.84	58	< 0.05
-Improving the mental health	9.61	2.38	7.55	2.64	0.52	58	<0.05
-Improving the environment at home	9.78	2.55	6.64	3.14	0.78	58	<0.05
-Preventing the complication of disease	9.22	2.66	7.50	2.25	1.37	58	<0.05
Caregiver							
-Improving the movement for the body balance	8.66	2.43	4.13	2.82	- 6.97	58	<0.05
-Improving the mental health	8.07	2.25	3.04	1.54	-4.66	58	<0.05

-Improving the environment at home	9.06	2.45	3.98	2.67	-5.1	58	<0.05
-Preventing the complication of disease	8.92	2.27	4.15	2.75	-4.14	58	<0.05

***** p-value < 0.05

Table 4. The outcome of the Barthel ADL index of stroke patients before and after program implementation by caring from public health volunteers and caregivers, follow-up at week 12

	The experimental group (n=30)		The control group (n=30)		t-test	df	p-value
Barthel ADL index	Mean	S.D.	Mean	S.D			
Before program	63.55	26.22	59.83	23.72	16.21	58	0.74
After program	80.21	9.78	63.30	21.12	-18.12	58	<0.001*

***** p-value < 0.001

Discussion

The engagement program of public health volunteer and caregiver in home care service for stroke patients was designed to help public health volunteers and caregivers for caring post stroke patients after discharge from hospital to their home. This program focused on four components such as improving the movement for the body balance, improving the mental health, improving the environment at home, and preventing the complication of stroke. The outcomes were followed up at 12-weeks. The finding revealed that the stroke knowledge for caring stroke patient and stroke care practice of health volunteers and caregivers were higher than the control group. Additionally, the Barthel ADL index of stroke in the intervention group was higher than the control group. This engagement program in in home care for stroke patients have more benefit to support stroke patients during rehabilitation in home care and to enhance stroke survivor. Public health volunteer and caregiver have the crucial role to care stroke in community after discharge from hospital to their home. (Ho Yu Cheng 2018 ,Harrison M. 2020). Public health volunteers and caregivers should improve the knowledge of stroke patient care, for example, the body balance, the mental health, the environment, and preventing the complication. In addition, they can coordinate between the stroke patients, health care team and the health workers in the community to reduce the problems and severity of stroke patients at home. (McCurley JL, Funes CJ 2019, Alexander H Nave 2019) Refer to this program, Public health volunteers and caregivers were trained about the movement for the body balance for stroke patients including grooming, moving, bathing, walking, and exercise to recover muscle and prevent bone injury. The body balance affects to improvement of motor functions in patients after stroke. Besides, Psychological stress appears to negatively impact the stroke recovery and caregivers may experience stress and anxiety while they take care patient at home. The mental health improvement was an essential part of stress management. (McCurley JL, Funes CJ..2019,Alexander H Nave 2019) For the environment management in home such as bathrooms, beds, and walking areas of stroke directly related to a stroke-survivor. Some stroke patients use wheelchairs and they have a limitation for movement. Therefore, the environment design both inside and outside of the home should improve to support continuing recovery and safety for the survivor. (Patrick Kitzman, Keisha Hudson 2017,Patrick Kitzman, Keisha Hudson 2017) For preventing the complication of stroke, the most common complications of stroke are bedsores that were pressure ulcers that result from decreased ability to move and pressure on areas of the body because of immobility. Prevention of pressure sores was very important by minimizing the risk to progress of other complications of stroke. (Saunders DH, Sanderson M, Hayes S, Johnson L,2020) This study has shown that in stroke patients, the Barthel ADL Index scores increased after the engagement program implementation. Public health volunteer and caregivers played an important role to support the health care team to perform the Barthel ADL assessment. (Stinear CM, Lang CE,2020) The engagement program of public health volunteer and caregiver in home care service for stroke patients was a promising strategy that has had positive effects on the management of stroke in home care. Public health volunteer and caregivers who close to stroke patients (Tung YJ, 2021) and can enhance the stroke survivor' well-being via health education and promotion. (Belagaje SR 2017,Saunders DH,2020) This engagement programs built the coordination of people in community to support stroke survivors and self-management in home by health volunteer and family.

Conclusions

The engagement program of public health volunteers and caregivers in home care service for stroke patients can improve the movement for the body balance, the mental health, the environment at home, and preventing the complication of stroke, including the Barthel ADL index of patients, public health volunteers and caregivers had a crucial role to support the rehabilitation of stroke patients at home in the community. The findings suggested that health care professionals should apply this program to promote the public health volunteers to care for stroke patients at home.

Article Information

Conflicts of Interest

Ethical consideration

The study was approved by the Human Research Ethics Committee of the Human research ethical consideration of Thammasat University number of COA 236/2020.

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The Study and Analysis of Mental Health Structure of College Students with Good Interpersonal Orientation: Case Study of Weifang Vocational College of Nursing

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ABSTRACT

This study aimed to investigate the mental health structure of college students, including psychological problems, interpersonal problems, methods of solving psychological problems. A questionnaire survey was conducted on 120 students from Weifang Nursing Vocational College by random sampling. All statistical analysis was carried out by SPSS26.0 statistical software. The results of SCL-90 scale showed that the overall average score of mental health problems of college students was high, but it did not reach the level of psychological pathology. There were gender and grade differences in psychological problems. The results of Zheng Richang's Comprehensive Interpersonal Relation Diagnosis Scale showed that 39.20% of college students had mild and moderate interpersonal distress, while 6.70% of college students had serious interpersonal distress. Moreover, this study clearly showed that the total score of interpersonal distress decreased from freshman year, sophomore year to junior year. Solutions to psychological problems summarized from the interviews: the school should encourage more departments and more levels to focus on students' mental health problems; the Mental Health Education Center should provide orderly moral guidance to all students; and students should learn to use internal and external resources to solve their psychological problems.

KEYWORDS: College students, Psychological problems, Social relationships, ERG theory

Introduction

The World Health Organization (WHO, 1948) stated in its charter that health is not only the absence of disease, it is a state of perfect harmony in all aspects of the body, mind and society. With the acceleration of social modernization process, new things emerge one after another. When we are given the opportunity to enjoy a rich material life, we also pay attention to the quality of spiritual life.There is a constant need to run around and be busy in order to meet all kinds of competition and challenges, as well as to cope with school, work and other pressures. Therefore, the contemporary people's psychological condition needs to pay more attention.

In recent years, China's psychological educators have conducted a lot of research on the mental health of college students, and found that the current state of mental health of college students in China is not optimistic, there are quite common problems. Mental health problems such as stress, anxiety, and depression are common among college students worldwide (Douce & Keeling, 2014).

Mental health plays an important role in the daily life of college students. It is closely related to the learning ability, interpersonal relationship and various emotions of college students. This study will address the psychological characteristics and various psychological problems of college students and propose some problem-solving strategies, which are of positive practical significance in promoting the psychological health development of college students and in helping them to complete their studies and adapt to society.

Purposes

The mental health of college students not only affects the development of college students themselves, but the college student group also bears a great responsibility to promote the construction and development of society. Therefore, it is very important to grasp the characteristics of youth, analyze and study the mental health condition of college students, discover the types of common psychological problems and their dynamic changes, explore their influencing factors, and actively and healthily carry out youth mental health education. Based on the view that human beings are always communal animals, interpersonal problems are ubiquitous in the daily life of college students, and it is obvious that interpersonal relationships of college students profoundly affect the mental health of college students.

Based on the above concept and current situation, this paper discusses and analyzes the main types of psychological problems of college students and interpersonal problems of college students from the perspective of structural problems of college students' mental health, and proposes suggestions to alleviate the psychological problems and interaction problems of college students based on the research results.

Research Objectives

1. To explore specific mental health problems of college student such as anxiety, depression and differences in gender and grades.

2 To explore interpersonal communication problems of college students and differences in gender and grades.

3. To explore the methods of helping college students to relieve their psychological and interpersonal problems.

Literature Review and Concept

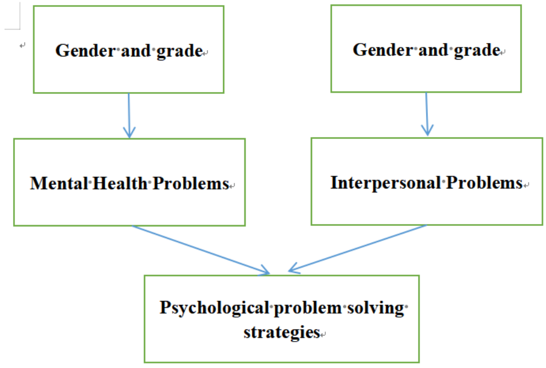
In order to better analyze and explore the research problems, this paper refers to a variety of psychological theories, three representative theories are introduced: ERG theory, attribution theory and positive psychological capital theory.

ERG theory was put forward by Clayton Alderfer in 1969 (Arnolds,2002). ERG theory is short for existence, relatedness and growth. Clayton Alderfer, based on Maslow's five-level theory of needs, makes a more empirical study and puts forward this new humanistic theory of needs. Although ERG theory is based on Maslow's famous work, it differs from Maslow's in three ways: (1) it allows for the simultaneous pursuit of different levels, (2) it allows different people to have their needs in different order, and (3) it allows for the pursuit of different levels at the same time (3) when the highest-level needs are not met, a person may regress to lower-level needs that are relatively easy to satisfy (Nagar,,2016).

Attribution theory refers to how people explain the causes of their own and others' actions. It is a cognitive process by which people draw conclusions about the factors that influence or explain their actions (Mccabe & Dutton, 1993) . The attribution of the reasons, will further affect people's response to the behavior. Attribution theory is a theory that describes how people reason or interpret someone's behavior or any event. In our everyday lives, attributions occur in our own assumptions, or inferences, and we make many attributions without realizing the underlying biases. Attribution theory deals with how social perceivers use information to derive cal explanations of events. It studies what information is collected and how it is combined to form a cal judgment (Fiske & Taylor, 1991) .

Positive psychological capital is defined as" an individual's positive mental state of development" (Luthans, et al. , 2007). Positive psychological capital is a theory of positive organizational behavior , which focuses on developing individuals to their full potential to improve organizational performance and well-being. psychological capital outlines a combination of four key resources (Luthans & Morgan, 2017), representing hope, efficacy, resilience, and optimism. This combination is a state that can change and evolve with the intervention, rather than a fixed feature. Psychological capital is a combination of high-level resources which have a greater impact than each resource individually (Hodgkinson & Ford, 2014)

Conceptual Framework



Research Methodology

The data on psychological and interpersonal problems came from a questionnaire survey of college students in Weifang Nursing Vocational College. The questionnaires were conducted anonymously and in groups. Also, participants were asked to fill in all personal information to obtain general demographic information, such as grade and gender. Psychological problem solving strategies were used to collect data using semi-structured interviews with students and teachers with the informed consent of the interviewees. Face-to-face interviews were primarily used.

Population and Sample

Questionnaire survey: 150 questionnaires were distributed to randomly selected college students in Weifang Nursing Vocational College, and 120 valid questionnaires were obtained after eliminating invalid ones. 52 male students and 68 female students were surveyed. The survey subjects ranged from freshmen to juniors, including 43 freshmen, 47 sophomores and 30 juniors.

Interviews: a full-time teacher of the Mental Health Center, two counselors of

Weifang Vocational College School of Nursing and two students of Weifang Vocational College School of Nursing.

Instruments

Symptom Checklist 90 (Scl-90) was used in this study. R. Based on his list of Hopkin's symptoms (1975). This scale has been used in clinical research both at home and abroad, not only for patients with mental diseases, but also for mental health examination. SCL-90 includes 90 items, which can reflect the feeling, thinking, feeling, behavior, interpersonal relationship, diet and sleep, and can reflect the psychological symptoms, existing problems and their severity of the subjects. The scale consists of 10 factors, each factor contains several different items, each factor reflects the pain of a symptom, so we can understand the distribution of different symptoms by the score which mean the higher the score, the more serious the symptoms.

A 28-item, four-dimensional comprehensive diagnostic scale of interpersonal relationship, compiled by Zheng Richang and his Beijing Normal University, was used in this study. This paper measures the perplexity of interpersonal relationship behavior from four aspects: Talking Behavior, communication and making friends, dealing with people, and heterosexual communication. The table adopts “Yes” or “No” two options to choose, according to their own actual situation.

This study used a self-designed questionnaire on psychological problems and interpersonal problem solving. According to the purpose, the outline of the interview was compiled, and through the review of literature, the intervention programs of contemporary college students' psychological problems were explored and summarized, and the related problems were compiled, including: (1) the existing intervention programs; (2) the advantages and disadvantages of existing intervention programs; (3) the intervention methods that can be used at school level; (4) the intervention methods that can be used at psychological center level; (5) the intervention methods that can be used at individual student level. The aim is to invite full-time psychological teachers, counselors, college students from three points of view, and to collect effective ways of intervention.

Data Analysis

Questionnaire: all statistics are carried out by SPSS26.0 statistical software, the survey data input, collation and statistical analysis of the basis. Interview: data analysis uses Content analysis to form a theoretical framework through continuous classification and enrichment of data.

Results

Mental Health Problems

1. The SCL -90 scores of college students and Chinese youth norm were compared by independent sample t test. Table 1 showed that there are significant differences in interpersonal sensitivity ($t=5.086$), anxiety ($t=4.439$), hostility ($t=-3.573$) and paranoia ($t=-1.983$) between the two groups. The average scores of interpersonal sensitivity and anxiety of college students are higher than that of the Chinese youth norm, the mean scores of hostility and paranoia were lower than the Chinese norm. There were no significant differences in somatization, obsessive-compulsive symptoms, depression, phobia and Paranoia between them and Chinese youth norm, the mean scores of obsessive-compulsive, phobic anxiety and Paranoia were lower than that of Chinese youth norm, and the mean scores of somatization and

depression were higher than that of Chinese youth norm. According to the average scores of SCL-90, the top three norm scores of Chinese youth from high to low are interpersonal sensitivity, obsessive-compulsive symptoms and depression, the scores of the severity of psychological problems of college students in the author's school were ranked as interpersonal sensitivity, obsessive-compulsive symptoms, depression and anxiety.

2. The SCL -90 scores of male and female college students in this study were compared by independent sample t test. Table 2 the results showed that the average scores of interpersonal sensitivity (t=-4.129), depression (t= -3.985), anxiety (t= -4.660), hostility (t= 2.953), phobia (t= -2.293) and Paranoia (t= -2. 105) were significantly different between male and female college students, in addition to the hostile factor, the average score of male students is higher than that of female students. There was no significant difference between male and female college students in the scores of somatization, obsessive-compulsive symptoms and paranoid ideation.

3.Three grades of college students on the SCL-90 score analysis of variance. The results of table 3 showed that there were no significant differences in the mean scores of somatization (t=-0.857), obsessive-compulsive symptoms (t=-0.118), phobia (t=-1.101) and psychosis (t=-0.122) among the three grades, but significant differences in the mean scores of other factors.

Table .1 The scores of SCL-90 were compared with Chinese youth norm (mean ± SD)

Factors	The subjects were college students (N = 120)	The norm of Chinese youth (N = 781)	t
Somatization	1.39 ± 0.67	1.34 ± 0.45	0.791
Obsessive-compulsive symptoms	1.68 ± 0.46	1.69 ± 0.61	-0.211
Interpersonal sensitivity	1.99 ± 0.42	1.76 ± 0.67	5.086 * *
Depression	1.63 ± 0.54	1.57 ± 0.61	1.113
Anxiety	1.63 ± 0.49	1.42 ± 0.43	4.439 * *
Hostile	1.37 ± 0.33	1.50 ± 0.57	- 3.573 * *
Phobia	1.32 ± 0.53	1.33 ± 0.47	-0.195
Paranoia	1.42 ± 0.50	1.52 ± 0.60	-1.983 *
Psychotic	1.36 ± 0.50	1.36 ± 0.47	-0.215

*Note: * p < . 05 * * p < . 01 * * * p < . 001 the following tables are the same*

Table 2 The gender difference of SCL-90 factor scores (mean ± SD)

Factors	Female (N = 52)	male (N = 68)	t
Somatization	1.27 ± 0.69	1.48 ± 0.64	-1.722
Obsessive-compulsive symptoms	1.60 ± 0.44	1.74 ± 0.46	-1.683
Interpersonal sensitivity	1.82 ± 0.41	2.11 ± 0.38	-4.129 * * *
Depression	1.42 ± 0.53	1.79 ± 0.50	-3.985 * * *
Anxiety	1.42 ± 0.49	1.80 ± 0.42	-4.660 * * *
Hostile	1.47 ± 0.27	1.30 ± 0.35	2.953 * *
Phobia	1.16 ± 0.50	1.44 ± 0.53	-2.293 * *
Paranoia	1.40 ± 0.50	1.44 ± 0.50	-0.411
Psychotic	1.25 ± 0.49	1.44 ± 0.49	-2.105 *

Table 3 The grade difference of SCL-90 factor scores (mean ± SD)

Factors	Freshman (n = 43)	Sophomore year (N = 47)	Junior year (N = 30)	F
Somatization	1.41 ± 0.69	1.46 ± 0.63	1.26 ± 0.70	0.857
Obsessive-compulsive symptoms	1.66 ± 0.43	1.70 ± 0.49	1.69 ± 0.47	0.118
Interpersonal sensitivity	2.13 ± 0.36	1.96 ± 0.43	1.81 ± 0.40	5.964 * *
Depression	1.80 ± 0.47	1.54 ± 0.57	1.54 ± 0.55	3.536 *
Anxiety	1.80 ± 0.45	1.45 ± 0.45	1.67 ± 0.50	6.630 * *
Hostile	1.48 ± 0.26	1.34 ± 0.33	1.25 ± 0.37	5.418 * *
Phobia	1.40 ± 0.51	1.31 ± 0.56	1.22 ± 0.51	1.101
Paranoia	1.29 ± 0.52	1.54 ± 0.47	1.43 ± 0.47	3.107 *
Psychotic	1.39 ± 0.49	1.34 ± 0.50	1.34 ± 0.52	0.122

Interpersonal Problems

1. The descriptive statistics in table 4 showed that 54. 20% of the 120 college students have no interpersonal problems and 39.20% have mild or moderate interpersonal problems, the proportion of students with serious interpersonal problems is 6.70% , which shows that the severity of interpersonal problems should be paid attention to.

2. As shown in table 5, there was a statistically significant difference between male and female college students in the

dimension of communication and friendship on the comprehensive diagnostic scale of interpersonal distress. There is no significant difference between male and female college students in the aspects of conversational behavior, social interaction and heterosexual interaction, but there are some differences in the degree of heterosexual interaction.

3. As can be seen from table 6, the average total scores of interpersonal distress decreased gradually from freshman, sophomore to junior, which were 8. 95 ± 3. 79,8. 74 ± 4. 05,6. 37 ± 3. 77 respectively. There were no significant differences among freshmen, sophomores and juniors in the degree of interpersonal distress, conversational behavior distress, interpersonal distress and heterosexual communication distress.

Table 4 Descriptive statistics of the degree of interpersonal distress

Factors	No interpersonal problems	Mild to moderate interpersonal distress	Serious interpersonal problems
The act of talking	78 65%	41 34.20%	1 0.80%
Make friends	48 40%	70 58.30%	2 1.70%
Be Nice to people	104 86.70%	16 1330	0 0
Heterosexual intercourse	80 66.70%	39 32.50%	1 0.80%
Total score of interpersonal distress	65 54.20%	47 39.20%	8 6.70%

Table 5 The gender difference of interpersonal distress

Factors	Male (N = 52)	Female (N = 68)	t
The act of talking	1.98 ± 1.63	1.96 ± 1.77	0.079
Make friends	2.52 ± 1.58	3.18 ± 1.56	-2.272 *
Be Nice to people	1.35 ± 1.55	1.24 ± 1.36	0.417
Heterosexual intercourse	2.33 ± 1.68	1.90 ± 1.78	1.344
Total score of interpersonal distress	8.17 ± 4.21	8.26 ± 3.87	-0.124

Table 6 The grade difference of interpersonal distress

Factors	Freshman (n = 43)	Sophomore year (N = 47)	Junior year (N = 30)	F
The act of talking	2.14 ± 1.67	2.02 ± 1.76	1.63 ± 1.65	0.821
Make friends	3.40 ± 1.59	3.19 ± 1.24	1.7 ± 1.53	13.738 * *
Be Nice to people	1.21 ± 1.30	1.53 ± 1.65	1.00 ± 1.23	1.348
Heterosexual intercourse	2.21 ± 1.58	2.00 ± 1.82	2.03 ± 1.74	0.176
Total score of interpersonal distress	8.95 ± 3.79	8.74 ± 4.05	6.37 ± 3.77	4.593

Problem Solving Outcomes

From the university level, it should make more departments cooperate with each other to establish a more comprehensive mental health intervention system and pay more attention to students' mental health from more dimensions. At this stage, in many cases only with the psychological departments are taking measures, and other departments are not linked to it, Therefore, one-way breakthrough effect is not often obvious. Moreover, psychological problems have complicated factors, and the ways of intervention should be varied, which need to be carried out by different subjects.

From the Mental Health Education Center level, it should establish a sound psychological counseling work security system, under the orderly guidance of psychological education work. At present, the initiative of mental health education is not strong, most of them only serve the university students who come to seek help on their own initiative, and many students who need help may not dare to seek help because of the stigma, therefore, mental health education center which involved in students was too narrow, mental health knowledge should be popularized to a single student level. In fact, the whole process of counseling should be grasped to help students more effectively, and the ethics of the center should be strengthened, and pay attention to the principle of confidentiality.

From the individual point of view of students, as the main body to alleviate their problems, should learn to use appropriate methods, use external resources to help themselves out of the quagmire, better accept themselves. Now when students encounter problems, they often keep the problems to themselves and don't want to ask for outside help. It's easy to worsen the problem. Students should make use of external resources timely, such as parents and friends' support, will be of some help. At present, the academic pressure is great, many students are only concerned about the results, and ignore other aspects. Students should understand to all round development, pay attention to quality improvement, in order to become a complete and healthy person.

Conclusion and Discussion

This paper discusses the psychological health, interpersonal distress and psychological intervention program of college students, and draws the following conclusions:

(1) Mental Health Problems of college students: the mental health problems of college students generally exist, although the overall average score is high, but it is fortunate that the average score of college students has not reached the level of psychopathy. The scores of the severity of psychological problems of the college students were ranked as interpersonal sensitivity, obsessive-compulsive symptoms, depression and anxiety. The average scores of somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, phobic anxiety, paranoid ideation and Paranoia in female students were higher than those in male students, the scores of interpersonal sensitivity, depression, anxiety, phobia and Paranoia were significantly different, but the score of male was higher than that of female only in hostility. This study clearly showed that there were no significant differences in the mean scores of somatization, obsessive-compulsive symptoms, phobia and psychosis among the three grades.

However, there were significant differences in interpersonal sensitivity, depression, anxiety, hostility, terror, and with the increase of grade, the average score was relatively lower, psychological problems changed into a relief trend.

(2) The problem of interpersonal communication of college students: the problem of interpersonal perplexity is common among the college students. 54. 20% of the college students have no interpersonal perplexity, and 39.20% of the college students have mild or moderate interpersonal perplexity, the proportion of students with serious interpersonal problems is 6. 70% , which shows that the severity of interpersonal problems should be paid attention to. According to four-dimension scores, the most serious problem is the problem of communication and friendship, follow by the problem of heterosexual communication, then the problem of communication behavior, and finally the problem of dealing with people. There are gender and grade differences in interpersonal problems. There is a significant difference between girls and boys in communication and making friends, and the average value of girls is 3.18. It can be seen that women have more trouble in communication and maintaining relationships. This study clearly showed that the average of the total scores of interpersonal distress in three grades gradually decreased from freshman, sophomore to junior, which were 8. 95 ± 3.79,8. 74 ± 4. 05,6. 37 ± 3. 77 respectively. There are significant differences in the average scores of interpersonal factors among different grades, and the average values gradually decrease, so the interpersonal problems in the lower grades are relatively more, with the increase of age, interpersonal problems will gradually become harmonious.

(3) The intervention program to alleviate the psychological and interpersonal problems of college students: the University should make more departments cooperate to establish more comprehensive mental health intervention system, and pay more attention to students' mental health problems from more dimensions. The mental health education center should establish a sound psychological counseling work guarantee system and carry out psychological education work under the guidance of orderly and ethical, facing all students. For instance, from the early stage of free assessment of psychological tests, mental health knowledge popularization lectures and publicity, mental health education activities, to the mid-term personal counseling, group counseling, crisis intervention, and all follow-up records need to be fully covered. Students themselves should learn to use resources to solve some psychological problems caused by the reality, usually take part in a variety of sports, actively develop interests, to help them exercise a healthy body, transfer attention, and so on. These are all good aids in solving psychological problems.

Based on the ERG theory, when one or more needs of college students are satisfied, they may have a positive psychological state because of motivation, while when one or more needs of college students can not be satisfied, it may lead to psychological imbalance, resulting in negative psychology, which is the frustration of demand. Frustration will have different effects on different individuals, and college students will have different psychological problems. If a college student is affected by the economic situation and living conditions, tight life and heavy burden. It is easy to produce too much pressure, anxiety, and problems for a long time to somatization. If college students’ need for belonging and Love are thwarted, they will easily flinch or act aggressively in interpersonal relationships, and then have problems in interpersonal communication, communication and so on, they may end up depressed or paranoid.

Attribution bias refers to the tendency to make certain mistakes or cognitive distortions in explaining the causes of an action. One of these biases is the actor-observer effect, which has been supported by empirical evidence suggesting which we tend to find reasons for our actions in different ways. The way we do depends on whether we are talking about our own actions or the actions of others. The actor-observer effect is a psychological phenomenon studied in social psychology, which was proposed by Edward Jones It refers to the tendency of people to attribute their own behavior to circumstances or external factors, while attributing the behavior of others to stable personal tendencies (i. e. internal factors) . It is worth mentioning that the actor-observer effect occurs when the action or the outcome of the action is negative. In other words, this effect implies the fact that we tend to“ Blame” others for their negative behavior, while we“ Excuse” our own behavior, look for an external or situational factor to explain the negative consequences of our actions. In other words, to some extent, this will be a way of“ Shirking” our responsibilities, so the effect, while occasionally protecting ourselves, is to throw relationships out of balance, causing interpersonal difficulties.

Based on the perspective of positive psychology, we should pay attention to the mental health intervention and education of college students in order to form good self-awareness and self-evaluation as well as improve their mental health level and problem-solving ability. It is the great significance to explore the intervention program of college students' mental health based on the perspective of positive psychology, and it is also the important way to improve the level of college students' mental health.

Deficiencies and outlook

This study has some deficiencies. Due to the geographical constraints, 120 college students from Weifang Nursing Vocational College were selected. The number of participants was small and the representation of participants was not strong, so the generalization of the results was limited. In the research method, although this article uses the empirical research to carry on the research to the university student psychological distress and the interpersonal distress present situation, however, because of short research time, we can only do the horizontal research, unable to follow up and do further research.

In the future, we can improve the representativeness of the sample and increase the sample size. We can use the online questionnaire to collect the information from the students in different areas, and improve the generalizability of the research conclusions. The longitudinal study was added to the study to track the changes of mental health and interpersonal distress of college students, and to compare the results of different time periods to improve the data validity. Moreover, we can discuss the changing rule of the mental health problem and interpersonal perplexity of college students.

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Financial Return Crowdfunding in Thailand and Investor Motivation Mechanism

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ABSTRACT

Crowdfunding is new to the Thai Financial markets. However, it has growth potential from existing unserved demand of entrepreneurs for funding and from investors who need investment alternatives. This research drew from international works, to understand development of the crowdfunding market in Thailand. The researcher conducted an online questionnaire survey with 402 Thai investors and performed an analysis of variance (ANOVA) to better understand the characteristics of prospective investors. Also, partial least squares structural equation modeling (PLS-SEM) was used to validate a model to predict investors' investment intention. The findings indicated a low level of awareness in crowdfunding among Thai investors. Age, gender, familiarity with crowdfunding and risk attitudes had significant effects on investment intention. Millennial males with positive attitudes in risk taking were the potential investors. Most Thai investors tended to invest less than 15% of their portfolio in crowdfunding, employing crowdfunding as an alternative investment for risk diversification to target higher total returns. Using PLS-SEM, the researcher found that Thai investors conducted their evaluation of the business characteristics before going through evaluation of financial return, social benefits, and trust in crowdfunding platforms, which in turn led to emotion based investment decisions. This research provided a conceptual model of how Thai investors may be motivated to invest in crowdfunding. The results provided useful information for entrepreneurs who are considering crowdfunding as a means to fund their projects, and crowdfunding platforms developing fund raising campaigns.

KEYWORDS: Crowdfunding, Thailand, Investors, Characteristics, Investment intention

1. Introduction

Entrepreneurs who run SMEs and startup businesses in Thailand are facing difficulties getting financial support from banks due to sufficient track records and lack of fixed assets as collateral for loans. Even though the Bank of Thailand has been helping with cheaper sources of financing through the SME Development Bank, there still seem to be costly hurdles for entrepreneurs to obtain funds. On the other side, investors with excess funds are dissatisfied with low interest rates on deposits and look to channel funds to higher-return financial instruments such as corporate debentures, mutual funds, and higher risk stocks. Progress in internet technology, worldwide online social media networks, and the relaxation of regulations of online business transactions, entrepreneurs can raise funds from ‘the crowd’ via online marketplaces. Entrepreneurs who need funding and investors who seek higher return investment can now meet each other on a managed crowdfunding portal, which acts as the intermediary.

1.1 Overview of Crowdfunding

There are four types of crowdfunding: donation-based, reward-based, equity-based, and debt-based crowdfunding. Donation-based and reward-based are considered non-financial return crowdfunding, whereas equity-based and lending-based crowdfunding are categorized as financial return crowdfunding. Financial return crowdfunding is raising funds by collecting a small amount of money from a large number of people to fund a project or venture through an Internet funding portal. It is another channel for SMEs and startups to access funding through issuance and offering for sale equity or debt securities to ‘the crowd’ (European Investment Bank, Thai SEC). The World Bank estimates that global crowdfunding market potential could reach between $90 billion USD and $96 billion USD by 2025.

Even though crowdfunding in Thailand is relatively new, it has been spotlighted as a promising type of alternative financing for Small and Medium Enterprises (SMEs), which may play a significant role for Thailand economic development. Crowdfunding also provides access to startup capital for individuals with a compelling innovative business. As a result, supporting entrepreneurs’ access to financial resources from ‘the crowd’ is one of the Thai SEC’s missions. The Thai SEC is playing an important role in promoting crowdfunding to the funding market. Up to the present, the Thai SEC has given license to eight fin-tech companies to run crowdfunding portal services.

1.4 Research Purpose

This research aim was to study the current financial return on the crowdfunding market in Thailand, investors’ degree of market awareness, and the factors that motivate investors when making investment decisions. The results of this research provides suggestions to stakeholders for the future development of crowdfunding markets in Thailand. This report is divided into five main parts. The first part is the introduction. The second part is the literature review exploring previous studies. The third part explains the research design and methodology. The fourth part provides a detailed analysis of the results of a questionnaire given to Thai investors to identify their motivation mechanism in investment decisions. The final part is the summary, conclusion, and recommendations.

2. Literature Review and Hypotheses Development

2.1 Current situation of financial return crowdfunding in Thailand

The financial return crowdfunding industry in Thailand is in its infancy stage, and has a lot of room to expand. As of October 2021, two companies received authorization from the Thai SEC to operate crowdfunding platforms; Sinwattana Crowdfunding and Dream Maker Equity Crowdfunding. Six other companies received authorization to operate both debt and equity crowdfunding platforms: PeerPower, Siam Validus, Funding Societies, Invest Tree Thailand, Krungsri Securities, and Trustender. The entrance of newcomer platforms in recent years confirms the growth potential of the crowdfunding industry in Thailand and it is predicted that more participants will come from traditional banks expanding their business into those markets. According to the Thai SEC, up to the second quarter of 2021, debt-based crowdfunding equivalent to 570 million THB was raised by 75 SMEs.

Wahjono et al. (2018) analyzed the readiness of crowdfunding to finance SMEs in the ASEAN countries of Indonesia, Malaysia, Philippines, Thailand and Vietnam, in terms of entrepreneurial culture and network readiness. They asserted that crowdfunding can be implemented successfully given current social norms and a culture in ASEAN that is willing to accept new forms of financing. Except for Malaysia, ASEAN countries are not ready to use crowdfunding as an alternative financing for SMEs because of the lack of internet infrastructure and mobile network coverage. Colobong (2018) investigated the maturity of crowdfunding platforms in Thailand, using the models that focus on five main performance indicators: the amount of money raised, the total number of successful SMEs funded through the platform, platform partnership, risk management, and government involvement. They determined Thailand was at maturity level 2, one step above the Philippines. However, it is worthwhile to take note of recent developments in the crowdfunding industry, such as a government's implementation of regulations to create a sustainable crowdfunding ecosystem, the increasing volume and number of successful campaigns on crowdfunding platforms, and measures to protect retail investors. Taking these recent developments into account, Thailand's maturity may be elevated to level 3, one step below Malaysia. Public awareness, risk understanding, and supportive legislation are all important factors in the growth of the crowdfunding sector. The relevant authorities should work to support an environment that addresses and mitigates the risks associated with crowdfunding (Colobong, 2018)

2.2 Previous Study on Factors that influence an investor’s decision to invest in a crowdfunding campaigns

The researcher performed a review of previous research to develop a basis for conducting an explorative research on Thai investors. The findings of previous studies is summarized in the following sections.

2.2.1 Characteristic of a crowdfunding majority participant

According to previous studies, crowdfunding investors come from a wide range of backgrounds, with varying levels of professional and educational experience, and the majority of them have no prior investment experience. Males are the most common investors, however female investors are on the rise. Typical investors vary in age from 20 to 40 years old, and their familiarity with other types of investing ranges from zero to comprehensive (Baeck et al. 2014; Hornuf & Neuenkirch 2017; Lukkarinen et al., 2019). Isabell (2021) discovered that the average supporter of a crowdfunding project is a young, well-educated person with more liberal and less conservative values.

2.2.2 Investors' Extrinsic (cognitive) V.S Intrinsic (affective) motivation aspect.

Investors' reasons for investing in equity crowdfunding are diverse, and they vary with investors and campaigns (Lukkarinen et al., 2017). Investors or funders might be motivated to participate in a crowdfunding platform for different reasons, including: 1) access to investment, 2) community participation, 3) support for an idea of product or service, and 4) formalization of contracts, especially for money raised from family and friends (Agrawal et al., 2015). Some researchers suggested that investors tend to be motivated mainly by extrinsic financial returns (Baeck et al., 2014; Cholakova & Clarysee, 2015). In contrast, others suggested that the emotion and social criteria are more important to the investors than financial ones, and the motivation is mainly by intrinsic reasons such as obtaining personal satisfaction, the ability to receive recognition, to influence campaign outcomes, or to create an online image, since equity crowdfunding is not particularly appealing to financial investors due to lack of liquidity, long term-outlook, dividends and voting rights (Schwienbacher & Larrlde, 2012; Lukarinen et al., 2016). Some researchers advocated a mix of both extrinsic and intrinsic reasons. Altruistic motivation, such as the desire to promote global sustainable growth, has been proposed by some researchers (Collin & Pierrakis, 2012; Brescheider & Leimeister, 2017). According to Krystallia, Moysidou and Sebastian (2016), the decision-making process is not the same with equity and debt crowdfunding. Cognitive value (perceived financial and informative benefits) is the most important factor in equity-based crowdfunding. Debt-based crowdfunding, on the other hand, is influenced by cognitive as well as affective factors (such as emotional value). In both types of crowdfunding, novelty, aesthetics, and social importance were found to be insignificant as motivating factors. Whereas Daskalakis & Yue (2017) asserted that investors seem to be motivated more by higher returns in debt-based crowdfunding and by interest and excitement in equity crowdfunding. Ferretti et al. (2021) discovered that the presence of competing campaigns in a platform influences the investment decision. The lack of consensus regarding investor motives in equity crowdfunding, according to Lukkarinen (2020), is attributable to the industry's inherent heterogeneity and rapid development of crowdfunding.

2.2.3 Investor's perceived risk

According to Guenther et al. (2015), investors spend less time analyzing risks, instead they assume the platform invested considerable time and effort to ensure high quality of the offerings before launching each campaign. Investors in debt-based crowdfunding often make investment decisions based on the risk rating offered by the platform rather than performing their own assessment, and they prefer projects with a higher risk rating, aiming for a higher return, over projects with a lower risk rating, aiming for a lower return (Moreno & colleagues, 2019). Crowdfunding is an alternative investment that investors invest in, in limited amounts compared to their overall portfolios, and with a shorter tenure, for the purpose of risk diversification. According to Estrin et al. (2018), most investors characterize their equity crowdfunding investments as "tiny" and "representing a small part of their total investment portfolio," and according to Moreno et al. (2019), debt-based crowdfunding investors seem to prefer small loan amounts and shorter loan terms.

2.3 Hypothesis Development

This research studied the level of market awareness of crowdfunding, and the characteristic of prospective investors. Additionally, this researcher examined other factors that may determine investors' intention to participate in crowdfunding activities. The results would provide useful information for entrepreneurs who are considering crowdfunding as a means to fund projects, and crowdfunding platforms in developing effective fund raising campaigns.

The hypotheses are made based on the following theories that explain the motivation for an individual in making decisions.

Rational choice theory (Becker, 1976) asserted that individuals use self-interest to make choices that will provide themselves the greatest benefit, depending on availability of information, the cognitive limitation of the mind, and the time available to make a decision.

Self-determination theory (Deci & Ryan, 1985), focuses primarily on intrinsic motivation related to autonomy (perceived sense of self-determination), competence (perceived goal achievement) and relatedness (perceived sense of belonging). In contrast, rational choice theory, focuses on extrinsic motivation, suggesting that people tend to be driven by a need to grow and gain fulfillment and feel more motivated to take action when they feel that what they do will have an effect on the outcome.

According to consumption value theory (Sheth et al., 1991), the factors that contribute to consumer decision-making are classified into five values: 1) functional value - whether or not a product is able to perform its attribute-related, utilitarian or physical purposes, 2) social value - social and symbolic benefits offered by a product; 3) emotional value - related to various affective states, experiential or emotional benefits deriving form a product, 4) epistemic value - a desire for knowledge, whether motivated by intellectual curiosity or the seeking for novelty, and 5) conditional value - reflects the fact that some market choices are contingent on the situation or set of circumstances faced by the consumers. The 19-item Perceived Value (PERVAL) scale, an extension of consumption value, consists of four different dimensions: emotional perceptions, social perceptions, quality/performance perception, and price/value for money.

According to Cognitive-affective model (Holbrook & Hirschman, 1982, Foxall & Goldsmith, 1994), when an individual is exposed to alternatives, two processes are likely to occur; the first produces cognition about the given alternative, while the second provokes affective reactions. In cognitive decision-making, the process is affected by data-driven, rational, and price-quality relationships. In contrast, the second process entails feelings and affective behaviors such as joy, excitement, love, happiness, pride, sympathy, lust, ecstasy, fear, bewilderment, etc. and information processing and decision-making is feeling-driven and intuitive

Crowdfunding is perceived by some scholars as an emerging and critical form of social commerce, where the relationship between crowdfunding investors and entrepreneurs involves not only mutual benefits, but also emotional interaction and social engagement. According to social exchange theory, trust and commitment are essential to exchange relationships, and communication and shared values are significant influencing factors in building exchange relationships, and strongly affect partnership (Yang et al., 2019)

This researcher assumes that in the context of crowdfunding decision-making, the cognitive components (business characteristics and financial return), and the affective components (social and emotion) plus communications (media and channel) and trust, play fundamental roles in explaining investors' behavior. Specifically, the six variables considered key drivers of investment intention are: business characteristics, financial return, perceived social benefit, trust in platform, emotion, and media and channel. Hypothesizes based on these variables, are illustrated in the following sections.

2.3.1 Business characteristics

According to the cognitive-affective model, investors make their cognitive evaluation of types and characteristics of a business before making an investment decision. Products and service characteristics such as usefulness, innovativeness, extent of digitalization, uniqueness, and environmental friendliness provide investors with novel experience and arouse curiosity which appeal to investment intention (Agrawal et al., 2011; Giudici et al., 2013).

2.3.2 Financial return

From traditional investment theory, investors are rational and make decisions based on risks and returns, therefore they make cognitive evaluations of their investment by weighing costs and benefits, and make decisions to optimize financial benefits. Since the risks associated with crowdfunding investment are expected to be higher than those of other traditional investments, rational investors will be motivated to invest in crowdfunding ventures if they consider the returns high. (Wasiuzzaman et.al, 2021)

2.3.3 Perceived social benefits

*As well as being financially motivated, c*rowdfunding may also be affectively motivated by social interest. Crowdfunding creates social interactions that makes the crowd feel connected to those with similar interests and ideas. Fundseekers and crowdfunders can form a special community comprised of individuals who are inclined to help each other, from feelings of sympathy and encouragement (Zhao et al., 2019) Interactions in the crowdfunding community can lead to social identification and also to the creation of social capital, which enhances the intention to participate in crowdfunding and contributes to the project's success (Gerber & Hui, 2012). Social benefits derived from establishing and maintaining contact with other people such as social support, friendship and intimacy, the desire to interact in social network site and become part of the community is an important motivation behind individuals' participation in crowdfunding platform (Saxton & Wang, 2014).

2.3.4 Trust in platform

Crowdfunding platforms act as intermediary agents, leveraging resources by bringing entrepreneurs and the crowd together, making financing campaigns more welcoming and available to the general public. Since crowdfunding takes place online, crowdfunding platforms perform an important role in overcoming information asymmetries and minimizing financial transaction costs between fundraisers and funders (Hournuf & Schwienbacher, 2018). Where funders have a higher degree of trust in a platform, they believe the platform has set up mechanisms to review the proposers and restrain opportunistic behavior. Thus, they express confidence in the quality of the products and the punctuality of delivery, which, in turn, increases their funding intention. Consequently, trust in the crowdfunding platform can be converted into overall trust for funders in the crowdfunding proposal and increase crowdfunding campaign success rate. (Ordanini et al., 2011)

2.3.5 Emotion

The emotional value derived from the crowdfunding project includes the feeling of satisfaction and enjoyment in taking part of the entire process of a crowdfunding project, the emotional desire to experience success in the project, a sense of achievement, self-efficacy, self-esteem, and ego-boosts are linked to the intrinsic motivation, which may drive investment intention (Deci & Ryan , 1985)

2.3.6 Media and channel

When obtaining capital from the crowd through the internet, information asymmetry exists. Therefore, it is important to strengthen communication between fundraisers and investors. Thus, it is critical for the media to provide pertinent information that conveys relevant, informative, and clear messages. If a fundraiser frequently communicates with investors, provides helpful information, and arranges accessible channels for Q&A, then the investors' trust in the fundraiser could be enhanced. Frequent communication and perceived usefulness of obtaining updated

Information through the internet channel are considered positively related to investors' investment intention (Mollick, 2014b; Yang et al., 2020)

2.4 The Hypothesis

H_1: Business characteristics are positively correlated with financial return

H_2: Business characteristics are positively correlated with perceived social benefit

H_3: Business characteristics are positively correlated with trust in platform

H_4: Financial return is positively correlated with emotion

H_5: Perceived social benefits are positively correlated with emotion

H_6: Trust in platform is positively correlated with emotion

H_7: Emotion is positively correlated with investment intention

H_8: Media and Channel is positively correlated with investment intention

3. Method

3.1 Procedure

To achieve the objective of this study, primary data was collected via questionnaires. The t-test and one-way analysis of variance (ANOVA) were employed to determine if there exists significant between-group differences with the characteristics of prospective-investors at a 95% confidence interval in investment intention. The partial least squares structural equation modelling (PLS-SEM) was employed to empirically validate the model to predict the influence of six independent variables (business characteristics, financial return, social interest, trust in platform, emotion, and media and channel) on crowdfunding investment intention.

3.2 Sample size

Crowdfunding is new to the Thai financial markets. However, investors potentially can be a crowdfunder regardless of their previous participation. This researcher identified the determinants of participation not only for current participants but also for potential participants who are retail investors. The population is represented by 2.09 million Thai investors who have security trading accounts (as of Oct 2021, Stock Exchange of Thailand). The sample size of 400 was calculated by using the Taro Yamane (Yamane, 1973) formula with a 95% confidence interval. Thus 402 individuals were recruited for the current research.

3.3 Research instruments and questionnaire design

Online questionnaires were used as the research instrument. The questionnaire consisted of check-list questions and 5-point Likert scale questions, divided into four parts as follows: PART1 was the demographic information of the respondents that consisted of check-list questions including age, gender, education, occupation, monthly income, year of investment experience, and familiarity with crowdfunding. PART2 was the check-list items on respondent' risk attitudes. PART3 was the 5-point Likert scale questions ranging from 1(strongly disagree) to 5 (strongly agree) on determinant factors of investment intentions. PART4 was the check-list items on respondent's investment intention and percentage of portfolio allocation to crowdfunding investment. The measurement items in this study were adapted from prior researches and used with some modification to suit the study context. The questionnaires were written in the Thai language. A small number of investors (n = 30) were given the questionnaire as a pilot test, and the researcher refined the wording, readability, and clarity of the measures after checking the reliability and validity before conducting the final survey.

3.4 Data Collection

The empirical data was collected from investors by distributing the questionnaires through investor communities in online social networks such as LINE and facebook. Since the crowdfunding concept is new to the Thai markets, a summarized introduction of crowdfunding, its meaning and mechanism were provided at the beginning of the questionnaire. The survey was conducted over a three-month period from September to November, 2021. A final completed sample of 402 respondents were attained for data analysis

4. Results

4.1 Preliminary Analysis

Frequency analysis was carried out based on the demographics of the respondents to understand the characteristics of the sample. Additionally, for each demographic category, t-test and One-way ANOVA was performed to determine if there were any significant between-group differences in the mean of investment intention at the 95% confidence interval, with the aim to verify systematic relationships between the characteristics of investors and their intention to invest in crowdfunding. The results showed that the majority of the respondents were 50-60 years of age whereas most of those interested in crowdfunding investment are millennial (age 35 or younger) which is in line with the previous studies. Baby boomers (age older than 60) are second to millennial in showing interest in crowdfunding investment. The proportion of male and female respondents are nearly balanced, whereas the male respondents were more interested in crowdfunding than the female. 58.71% of the respondents had a master's degree and those 2.74% whose education were less than bachelor's degree tended to be more interested in crowdfunding . 40.55% of the respondents were company employees, whereas students (3.48%) showed the highest interest in crowdfunding. 34.83% of the respondents had income more than 100,000 THB (around 2,900 USD) and those whose monthly income was less than 30,000 THB (around 860 USD) showed more interest in crowdfunding investment. 51.49% of the respondents had more than 5 years in investment experience, and those who had less experience showed more interest in crowdfunding investment. 62.44% of the respondents were not familiar with crowdfunding, and those 37.56% who were familiar with crowdfunding showed more intention to invest. 48.26% of respondents had moderate to high risk taking attitudes, and the more risk the respondents preferred, the more willing they were to invest in crowdfunding. A *t*-test and One-way ANOVA were performed to compare between-group differences of each demographic on investment intention. The results showed that differences in age, gender, familiarity with crowdfunding, and risk profile had significant between-group differences in investment intention. However, no significant differences were found in the investment intention mean based on education, occupation, monthly income, and investment experience.

Out of 402 respondents, 262 (65.2%) showed willingness to invest in crowdfunding. Out of respondents who decided to invest, 54.48% were willing to invest in both equity and debt crowdfunding. Among them, 34.48% were willing to invest in equity crowdfunding, while 11.03% were willing to invest in debt crowdfunding. For portfolio allocation, more than 60% of the respondents reported they were willing to allocate less than 15% of their portfolio to crowdfunding investment (equity crowdfunding (68.8% of respondents) and debt crowdfunding (78.82% of respondents)).

4.2 Structural Model

Figure 1. *The Hypothesized Model in the PLS-SEM*

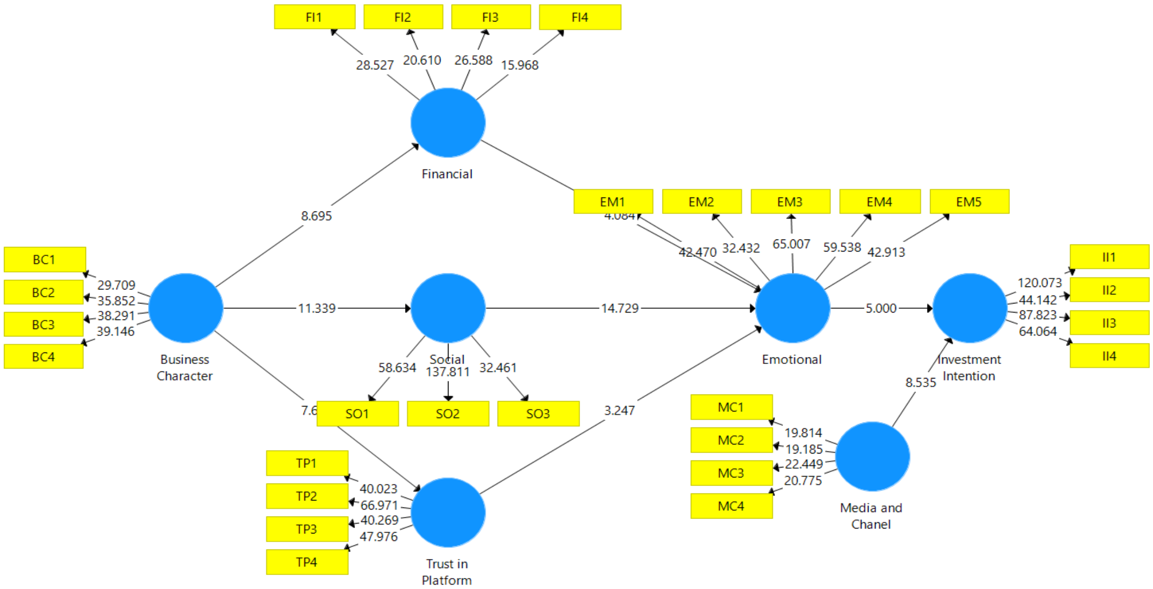

Table 1. *Final Results*

	β	*M*	*SD*	*t*	*p*	95% BCa *CI*	
						LB	UB
Business characteristics -> financial return	.427	.431	0.048	8.822	.000	.332	.524
Business characteristics -> social benefits	.461	.461	0.042	11.084	.000	.375	.540
Business characteristics -> trust in platform	.378	.382	0.049	7.646	.000	.283	.477
Emotion -> investment intention	.249	.249	0.049	5.081	.000	.154	.343
Financial return -> emotion	.171	.173	0.042	4.087	.000	.089	.254
Media and channel -> investment intention	.444	.447	0.052	8.628	.000	.345	.547
Social benefits -> emotion	.588	.588	0.039	15.030	.000	.509	.660
Trust in platform -> emotion	.148	.151	0.046	3.218	.001	.060	.241

4.3 Assessment of the structural models

This researcher evaluated the PLS-SEM results and assessed the structural model. The standard assessment criteria considered included the coefficient of determination (R^2), the effect size of f^2 for the relevance of the construct, the blindfolding-based cross validated redundancy measure Q^2, and the statistical significance and relevance of the path coefficients. The results of the measurement model assessment was satisfactory. The blindfolding results showed that emotion had the largest predictive relevance (Q^2 = .414) while trust in platform had the smallest predictive relevance of .136.

Table 2. *RMSE MAE and Predictive relevance (Q^2)*

	RMSE	MAE	Q^2_{predit}	Predictive relevance
Emotion	.770	.619	.414	medium
Financial return	.918	.712	.173	small
Investment intention	.822	.642	.333	medium
Social benefits	.894	.707	.208	medium
Trust in platform	.937	.745	.136	small

5. Conclusion and Managerial Implication

5.1 Conclusion

In this research, 62.44% of the respondents were unfamiliar with crowdfunding, and only 5% knew and had experience with crowdfunding investment, implying low levels of Thai investors' awareness in crowdfunding as an investment alternative. Even though crowdfunding offers investors access to a financial market where they can purchase stocks or lend to novel startups and SMEs, they had to assume long-term risks due to the lack of a secondary market alternative. The current research found that differences in age, gender, and risk attitudes of investors resulted in different patterns of investment decision, and male investors of millennial age (younger than 35 years old) with high risk profiles tended to invest in crowdfunding. Moreover, those familiar with crowdfunding showed stronger intention to invest. In total, 65.2% of respondents showed intention to invest in crowdfunding. And more than two thirds of prospective investors decided to allocate less than 15% of their portfolios to crowdfunding investment, implying that the investors intended to limit their exposure and diversify portfolio risks.

This research explored a cognitive-affective model that incorporated business characteristics, financial return, perceived social benefit, trust in platform, emotion and media and channel as the possible predictors of investment intention in crowdfunding in Thailand. The current research efforts were chosen because of the theoretical assumption that investors' investment intention could be enhanced by three influence mechanisms: 1) through the latent impact of business characteristics on financial return, perceived social benefit and trust in crowdfunding platform; 2) through the latent impact of financial return, perceived social benefit, and trust in crowdfunding platforms on emotion leading to intention to invest; and 3) through the direct effect of media and channel to intention to invest.

The proposed model in this research indicated structural and progressive relationships among each independent variable that influence investment intention. The results supported that the proposed mechanism involved, as its key role, investors' initially make cognitive evaluation of the extent in which the projects deliver product/service that are useful, novel, environment friendly, and matching with their interest. Arguably, this cognitive evaluation of business characteristics initiates the mechanism of investment intention. Secondly, this researcher argues that investors will go through evaluation of financial return, social benefits, and trust in crowdfunding platforms, which, in turn lead to emotion. Emotional evaluation of the crowdfunding investment then theoretically leads to investment intention. Additionally, the results indicated that attractive and interesting campaign presentation, frequent communication, and trusted channel also have positive support on investment intention. The model could imply there is a foundation for a platform to promote crowdfunding in Thai financial markets.

5.2 Managerial implication

Crowdfunding could be a tool to help close the funding gap for SMEs and startups. Although the awareness of crowdfunding among Thai investors is low, it has potential for growth. Crowdfunding platforms play significant roles in educating both Thai entrepreneurs and investors to understand the crowdfunding mechanism. Additionally, it can also support entrepreneurs in building a campaign to enhance fundraising success. From the entrepreneurs' point of view, crowdfunding not only provides an alternative channel for fundraising, but also provides non-financial benefits such as demonstrating a proof of business concept, raising brand awareness, collecting inputs for product development, and market validation. Evaluating business characteristics seems to be the initial process of investment decision, through which innovative product/services are examined for attractiveness for investment. From the investors' point of view, crowdfunding offer financial return and intrinsic rewards such as perceived social benefit and emotional value evoked by the investment decision. Therefore, to successfully form strong social relationships within the crowdfunding community, crowdfunding platforms should convey cognitive and affective advantages that entrepreneurs and investors will gain in order to recruit a pool of entrepreneurs (startups and SMEs) as well as a pool of investors. Thai SEC licensing of platforms should create trust with Thai investors, and creating and strengthening trust is crucial for future growth of crowdfunding markets.

5.3 Research Limitations

The limitations on this research included:.

1) The researcher used a non-probability convenience sample as the sampling method, where respondents were recruited through online investor networks.

2) Since crowdfunding is new to the Thai market, even though an explanation of crowdfunding is provided in the questionnaire, it cannot ensure that all respondents clearly understand the written contents of the questionnaire.

3) The respondents who reported that they would invest in crowdfunding were prospective investors, but self-reported intention did not guarantee its truthfulness and actual investment action.

4) The researcher faced limitations on availability of previous papers in the same research domain in Thailand, and therefore, had to review data primarily from non-domestic articles, which might have produced different outcomes than from Thai society.

Although the presented model's predictive power may be moderate at best, this research can provide a conceptual idea of how investors may be motivated to invest in crowdfunding and as a resource for future studies.

5.4 Suggestion for future study

This research sample covered general retail investors; future research could target existing crowdfunding investors to find more concrete motivation factors that affect investment decision. A potential focus of longer term research may include the impact of investors' personality traits and perceived risks on investment intention, which were outside the scope of this study. A comparative study of successful versus unsuccessful campaigns would also provide useful lessons to entrepreneurs in running future fundraising campaigns. Finally, this research studied financial-return crowdfunding in general. New research could focus specifically on equity, and debt crowdfunding.

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Analysis of the Profitability of the Shipbuilding Industry through Market Economy Theory

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ABSTRACT

This study focused on analysis of the profitability of the shipbuilding industry through market economy Theory. The objectives were to study 1). the development cycle of the shipbuilding industry. 2) the development status of the shipbuilding industry. 3). how to enhance the capital strength of China State Shipbuilding Group. 4) the significance of asset restructuring of China State Shipbuilding Group. This paper discussed the characteristics of the industry development cycle, the current status of industry development, and the significance of the restructuring of China State Shipbuilding Group. This study adopted an empirical research method. During the study period, a large amount of data was collected mainly from the online platform. Based on the analysis and comparison of the company's historical operating data, the conclusion could be inferred that China State Shipbuilding Group will usher in great development. The conclusions can provide a reference for future decision-making for the management and investors of the Chinese Group.

KEYWORDS: Cyclical industries, Profitability, Market economy, Shipbuilding Industry

1. Introduction

Since the global economic crisis in 2008, the shipbuilding industry has been oversupplied. As a result, the shipbuilding industry entered a downturn. So that China's shipbuilding industry has been in a state of loss or small profit for more than a decade. As a result, China State Shipbuilding Group has undergone a major asset restructuring. In summary, we have noted the problem of profitability of Chinese ships.

The purpose of this research is to explore the profitability of China State Shipbuilding Corporation. The main content is the cyclical nature of the shipbuilding industry. There is also the current state of the shipbuilding industry. Major asset restructuring of China State Shipbuilding Corporation. In terms of the significance of major asset restructuring, a comprehensive exploration has also been made. Give a clearer outline of the profitability analysis of Chinese ships.

In the past, research in this area mainly focused on the discussion of the development of enterprise scale. Wenlong.Hu (2019) made a study titled "70 Years of China's Shipbuilding Industry:

History, Achievements and Enlightenment". Yixing.Zhang (2017) has done research on the current situation and development prospects of China's shipbuilding industry. In addition, Fu. Guang (2021) has done research on the "Brief History of Chinese Shipbuilding". Other than that Wenjie.Liu (2022) also made good progress in the research of "The Development of the Global Shipbuilding Industry is in the Rising Period of the Industry". The development prospects of China's shipbuilding industry have a clearer outline.

Although there are so many research results, there are still many unsolved problems.

First is the research and development and investment problems in the shipbuilding industry. Second is the decarbonization of the industry. In addition, the issue of decarbonization paths in the shipbuilding industry deserves our attention. And the construction of port infrastructure is also a place that cannot be ignored. Therefore, it can be seen that there are still many places worth in-depth research in this field.

This study explores the following aspects: 1. The development cycle of the shipbuilding industry. 2. The development status of the shipbuilding industry. 3. How to enhance the capital strength of China State Shipbuilding Group. 4. The significance of asset restructuring of China State Shipbuilding Group. Through qualitative research and quantitative method, the answers to the above research questions are obtained.

This study has made the following contributions to academic research.

First, we have adhered to the cyclical law of market economic theory. Second is to adhere to the market supply and demand mechanism and market price mechanism of the market economy theory.

This research mainly discusses the following questions. The first is to combine forecast data with historical ratios. The second is the similar citation of inter-period division reports.

The technology roadmap for this article is shown in Figure 1.

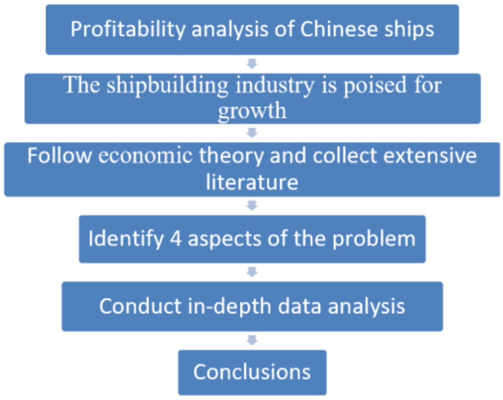

Figure 1 Study the technical route

2. Literature Review

2.1 Business cycle theory

The theory of the economic cycle was proposed by Schumpeter (1939) in the book "Theoretical, Historical and Statistical Analysis of the Economic Cycle of the Capitalist Process", and his content is mainly to say that there are cyclical laws of prosperity and depression in the process of economic development, and the economic cycles constructed by different theories are long and short, and the driving factors are different. According to the theory of economic cycles, economic development will present a cyclical change of expansion, contraction, and re-expansion, and this cyclical change has a certain regularity in terms of time sequence and duration. A 10-year economic cycle proposed by the French economist, a 3-4 year economic cycle proposed by the British economist Kitchin in 1923, and a 50-60 year economic cycle proposed by the Russian economist Kondratiev (1925) in "Long Fluctuations in Economic Life". In 1936, the famous modern British economist John Maynard Keynes discussed the theory of the economic cycle from the perspective of psychological factors in the book "General Theory of Employment, Interest and Money". In 1942 Schumpeter published Capitalism, Socialism and Democracy, which combined economics and sociology with the study of social institutions based on innovative theories. He made a comprehensive analysis of the phenomena of business cycles in human history (Schumpeter, 1934; 1939). The American economist Hubbert (1937) wrote a book on the business cycle, Boom and Bust, which extensively collected theories of economists in the capitalist countries at that time, found their common ground, and then made a comprehensive explanation of the occurrence and development of the capitalist economic cycle. It is precisely because the economic cycle in the modern capitalist market economy is constantly repeated, especially after the three major recessions of the world from 1873 to 1896, 1929 to 1933 and 2007 to 2008, that the economic cycle has become an important area of economic research in modern times. The economics community needs to draw nourishment from Schumpeter's theory of entrepreneurship and innovation in order to truly understand the essential characteristics of the operation of the market system and the causes of economic growth and fluctuations (Acemoglu, 2009).

2.2 The current state of practical use of cycle theory

Since its introduction, market economics theory has been applied in many fields, and Yi Li (2001) uses this theory in the field of administration. Xudong Li (2002) then used this theory in the field of law. In the field of higher education resource allocation, Zhihui Cai (2008) also used this theory. Xian Liu (2016) used this theory in the field of China's competitive sports market, which also made the level of this theory broader. Therefore, the current situation of applied research on this theory is in the ascendant.

2.3 Supply and demand theory

1776 Adam Smith (1723-1790) The Wealth of Nations Publication became the cornerstone of modern economics. The concept of economic freedom put forward by him has become the theoretical basis and operating principle of the market economy. In the 1870s, Carl Menger of Austria (1840-1921), Jevons (1835-1882) of England, and Walras of France (1834-1910) proposed the theory of marginal utility value almost simultaneously. They adhere to the idea of equilibrium analysis, use higher mathematical methods, carry out the revolution of research methods, regarding economic activity as a whole, emphasize that the market pricing of products and factors of production is related to the scarcity of resources, and oppose the labour theory of value, believe that the value of commodities does not depend on the amount of labour but depends on people's subjective evaluation of their utility, consumption increases, utility decreases, and it is the minimum utility that determines the value of commodities, which Menger's student Wiesel (1851-1926) called "marginal utility". In mainstream Western economics, mathematical models have since become indispensable. John Maynard Keynes (1883-1946). His representative work is "General Theory of Employment, Interest and Money". He argues against Saye's Law that demand is a function of supply (supply creates demand) and advocates that supply is a function of demand (demand creates supply). He pioneered the analysis of the total amount, and proposed that due to the role of the law of consumption tendency, the law of marginal returns of capital, and the law of flow preference, the economic crisis caused by insufficient effective demand and overproduction was triggered, theoretically explained the unstable factors and unbalanced trends of the market economy, advocated the close integration of the monetary economy and the physical economy, opposed "laissez-faire", and proposed state regulation and intervention. The role of the state in regulating and intervening in the economy is called the "visible hand".

2.4 Application status of supply and demand theory

Since its introduction, the theory of supply and demand has been applied in many fields. Hicks（1937, Modigliani（1944, Klein 1947, Chick（1983, Meltzer（1988, Coddington (2003) et al. have made their interpretations of the true meaning of the General Theory or the true meaning of the Keynesian Revolution. Sinong Jia， Qinglu Guo and Qun Zuo (2017) use this theory in the field of (medical health care). Then, Jinyuan Tao and Xinjun Wang (2020) applied the theory of supply and demand to the field of public cultural products, which also made the level of this theory broader. Brian, Howard and Peter (1995) in The Guide to Modern Macroeconomics Comparative studies of various schools of thought have found that the relevant research literature is still growing exponentially. Therefore, the applied research of theory is now in full swing.

2.5 Price Theory

Human exploration of price theory has a long history. As early as 2,000 years ago, Aristotle studied commodity exchange, and he believed that there must be something equivalent in the exchange of commodities. Ricardo used the term in his 1817 book Principles of Political Economy and Taxation as the title of one of the chapters, On the Influence of Demand and Supply on Price. He devoted himself to the study of hypotheses used to establish his theory of supply and demand. The French mathematician Gounod first developed a mathematical model of supply and demand, which was accompanied by related diagrams in Gounod's 1838 book Researches into the Mathematical Principles of Wealth. In the late 19th century, the marginal utility school emerged, led by the British economist Jevons, the Austrian economist Menger, and the French economist Vallas. What their theories have in common is that prices are determined by the marginal price of production decisions

2.6 Application status of price theory

Since its introduction, price theory has been applied in many fields, and the more representative articles are A. Myrck Freeman (1979), Palmquist （1980）， Butler（1982）, Smith & Huang （1995）, Nelson（2004）. Yanjing Zhao（2011）uses this theory in urban development research. Then, Qiuxia Li（2018）used this theory in the field of the stock market. In the field of aquaculture, Yao Wang, Yi Zhang and Yunhui Ai（2018）also used this theory. Jianhua Liu and Guihua Wu（2018）also use this theory in the field of hotel management, which also makes the level of this theory broader. Therefore, the current situation of applied research on this theory is in the ascendant.

2.7 Conceptual framework

Business Cycle Theory: Cyclical fluctuations in national income and economic activity. The economic cycle is a fluctuation seen in the overall economic activity of countries that organize activities mainly by commercial enterprises. The expansion of one cycle in many economic activities occurs almost simultaneously, followed by the same pervasive recessions, contractions, and recoveries linked to the expansion phases of the next cycle. The order of this change is repeated, but not timed. The duration of the economic cycle is more than one year to several years or decades. They are not divided into shorter periods with similar characteristics close to their own amplitude.

Supply and demand theory: it is a tool of microeconomic analysis, the main force that drives the market, determines the price of goods in the market, and determines the output of goods in the market. Buying determines the demand for an item, and the seller determines the supply of an item.

Price Theory: The price formation mechanism dominated by market formation prices. The prices of the vast majority of goods and services are formed by the market, and the prices of a few important goods and services（such as those provided by the public sector that are closely related to consumer goods）are set by the State. The prices of goods and services are determined by value and are affected by supply and demand. A reasonable price reflects both changes in value and changes in supply and demand.

2.8 Literature review

Taking the theory of business cycles, supply and demand theory, and price theory as the keywords, this paper collects and retrieves relevant works, literature, etc. in chronological order. Learn about the relevant theories and the current application status of each theory.

3. Research Methods and Design

3.1 Research Methods

This study uses Qualitative Analysis and Quantitative research. From 1950 to 2020, obtaining worldwide shipbuilding data from Clarkson Research; from January 1, 2020, to October 31, 2021, obtain the Shanghai Export Container Freight Rate Index and the Baltic Dry Bulk Index; from 2005 to 2020, obtain data on the number of single shipyards above the designated size of Clarkson Research; and from 2007 to 2020, obtain the annual report data of China Shipbuilding（stock code: SH600150）. Sampling is conducted by direct access to authoritative statistics and data audited and publicly disclosed by intermediaries. A total of 21 groups of samples in 4 categories were obtained. All samples are obtained and then compared and analyzed by financial analysis formula.

Financial analysis formula: total=I*PGross-R

Gross Margin=（operating income - operating cost）/operating income *100%

Gross profit margin: Gross margin is an important indicator of a company's profitability. Usually the higher the gross profit margin, the higher the profitability of the enterprise and the stronger the ability to control costs.

3.2 Study Design

This study is based on the analysis and design of market economic theory. Divide the content you want to explore into four categories, and then conduct targeted data acquisition.

The first category is mainly the cyclical exploration of the industry, and 1 set of statistics is obtained. The second category is mainly the exploration of the current situation of the industry, and 4 sets of statistics are obtained.

The third category is mainly to explore the restructuring of listed companies and obtain two sets of public financial data. The fourth category is mainly the comparative analysis of the financial data of listed companies, and 14 sets of public financial data are obtained.

4. Analysis of the Findings

4.1 Industry development cycle

The development cycle of the international ship market is affected by a combination of factors. The renewal and reinvestment cycle of about 25 years for ships is the main internal factor. Factors such as the prosperity or depression of the world economy, the great changes in international maritime rules, and large-scale wars are important external factors that will lengthen or shorten the ship market cycle.

The destruction of ship assets in World War II resulted in a newbuilding market cycle of fewer than 15 years. The shipbuilding cycle from the 1950s to the 1970s was largely unaffected by external factors. The single-hull tanker phase-out convention adopted by the IMO（International Maritime Organization）in 2003 and the rapid development of China's economy have superimposed, extending the market cycle of the last new building ship to more than 30 years（China Shipbuilding Industry Association website, 2021）. Since the financial crisis, the newbuilding market has undergone more than 10 years of adjustment, as shown in Figure 2.

Source: World new ship orders World new ship orders
New ship orders are 5-year average

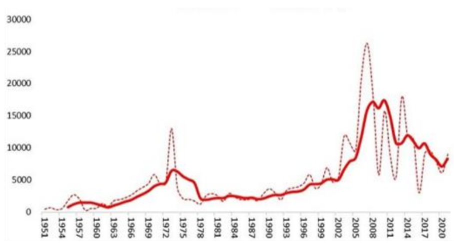

Figure 2 Order trends in the newbuilding market since 1950

Source: Clarkson Research

4.2 The current situation of industry development

4. 2.1 International shipping policies contribute to shipping demand

In recent years, IMO legislation on environmental protection has gradually accelerated, and relevant conventions on ballast water and carbon emissions have come into force.

The final installation deadline for ballast water treatment systems is September 2024, and middle-aged ships will choose to install additional equipment, and older ships will choose to update because it is difficult to recover their investment.

Under the carbon neutrality target, EEXI (Existing Ship Energy Efficiency Design Index) and CII (Carbon Intensity Index) will be officially implemented in 2023, and ships need to reduce the main engine power and speed, thereby reducing market capacity in disguise; the new building will quickly shift to alternative energy sources (LNG, hydrogen, ammonia) power. In addition, European countries are beginning to consider taxing carbon ships.

4.2.2 Shipping boom is rising

The existing shipping vessels include three main ship types: container ships, dry bulk carriers and oil tankers. At present, container transportation and dry bulk cargo transportation are in a period of rising prosperity, and the volume of new shipbuilding contracts has exploded. Because of the carbon emission problem of oil, the oil tanker market is in a downturn, and the demand for shipbuilding will gradually shrink in the future, but the installation of coastal wind power equipment is in an upward period, and the installation of wind turbines and ships is a new growth point.

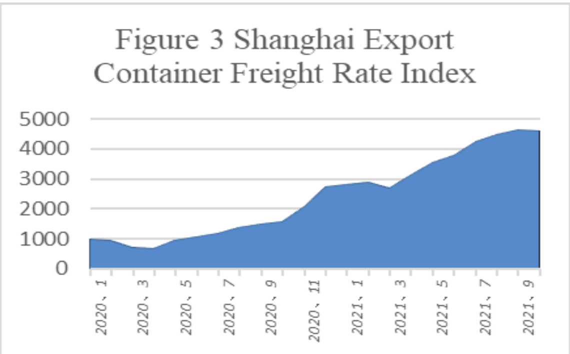

Figure 3 Shanghai Export Container Freight Rate Index

Source: Shanghai Shipping Exchange

4.2.3 Global shipyard bankruptcies and restructurings

Since the financial crisis, due to the sharp reduction in orders and the continuous decline in ship prices, there have been hundreds of bankruptcy liquidations and mergers and acquisitions of shipbuilding enterprises around the world. From 2012 to 2016, the capacity adjustment of the shipbuilding industry was mainly based on suspension, bankruptcy and liquidation, and gradually spread from small and medium-sized enterprises to large shipbuilding enterprises; From 2016 to 2020, the adjustment of the shipbuilding industry will shift to mergers and acquisitions between large and medium-sized enterprises, including the acquisition of high-quality shipyard assets by advantageous enterprises as well as mergers and reorganizations of large conglomerates.

After the above two rounds of production capacity adjustment, under the role of the market, the number of active monohull shipyards with more than 10,000 tons of ship orders or delivery records has decreased from 440 to about 180 in 2016, and has remained stable; in 2020, due to the impact of the epidemic and market correction, the number of shipyards receiving orders or delivering ships has fallen to about 150. It should be emphasized here that the competition of shipbuilding enterprises concentrated in the three countries of China, Japan and South Korea is still sufficient, and a market monopoly situation has not been formed.

At present, the global shipbuilding capacity is stable at about 120 million dwt, with an average annual completion volume of about 90 million DWT and a capacity utilization rate of 75% , which is at the normal level of industrial development.

Figure 4 Number of monohull shipyards with orders or delivery performance of ships of more than 10,000 tons from 2005 to 2020

Source: Clarkson Research

4.2.4 Global shipbuilding market patterns

In the past 10 years, the three major indicators of China's shipbuilding have long occupied the first place in the world, and the world shipbuilding industry has generally maintained a " three-legged" competitive pattern between China, South Korea and Japan. Baiquan Chen (2020) of the China Shipbuilding Industry Economics and Market Research Center, in the study "New Characteristics of the World Shipbuilding Industry Pattern", pointed out that the overall pattern remains stable, the new competitive situation and trends are constantly evolving, and the competition in the world shipbuilding industry has shown a series of new characteristics.

From January to September 2021, the three major indicators of world shipbuilding are shown in Figure 5

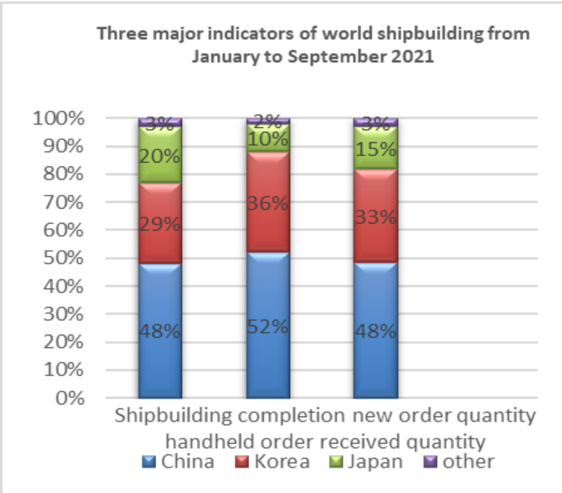

Figure 5 Three major indicators of world shipbuilding from January to September 2021

Source: Clarkson Research

4.3 Major asset restructuring of China State Shipbuilding Corporation

The formerly listed companies under China Shipbuilding Industry Group Co., Ltd. (commonly known as Beijing) include China Heavy Industries (601989 Shanghai), China Dynamics (600482 Shanghai) and China Emergency (300527 Shenzhen), etc., the former China State Shipbuilding Corporation Limited (commonly known as CSSC) listed companies include China Shipbuilding (600150 Shanghai), CSSC Defense (600685 Shanghai, 00317 Port) and CSSC Technology (600072 Shanghai) and so on. China Heavy Industries and China Shipbuilding corporations are the flagship listed companies of the two shipbuilding groups, respectively.

China Heavy Industries, China Dynamics, China Shipbuilding and China Shipbuilding Defense are four listed companies that undertake the military, civilian and engine business of North Ship and South Ship, of which China Heavy Industry undertakes the military ship and civilian ship business of North Ship, China Dynamics undertakes the engine business of North Ship, China Ship undertakes the civilian ship and engine business of South Ship, and China Shipbuilding Defense undertakes the military ship business of South Ship. The business segments of China Shipbuilding and CSSC Defense are not in line with the unified deployment of China Shipbuilding Group, and the asset restructuring since 2016 is to re-integrate the business segments of the two listed companies, intending to integrate the shipbuilding business of China Shipbuilding and CSSC Defense integrating the engine business of CSSC. At the same time, all 4 listed companies have completed the debt-to-equity swap work.

4.3.1 Major asset restructuring of China Heavy Industries

In 2018, the company completed the issuance of shares to purchase assets and acquired 42.99% of the equity of Dachuan Heavy Industry and 36.15% of the equity of Wuhan Shipbuilding Heavy Industry held by 8 counterparties, including China Cinda, China Orient, China Venture Capital Fund, Structural Adjustment Fund, Chinese Life, Huabao Investment, China Merchants Ping An and Guohua Fund. After completion, 3.8 billion new shares of common stock were issued for 5.78 yuan per share, the company's net assets increased by 21.963 billion yuan, and the total net assets attributable to the shareholders of the listed company were 84.436 billion yuan, an increase of 32.48% year-on-year.

As of the end of 2018, the company's total assets of 188.1 billion yuan, important subsidiaries, see Table 1

Table 1 subsidiaries of China Heavy Industries

Unit: 10,000 yuan

Company name	Major products or services	Registered capital	Total assets	Net asset attributable to the parent
Big Ship Heavy Industry	Ship, steel structure parts design, manufacturing, marine engineering	1,498,024.07	9,203,803.70	3,726,435.08
Wu Shipbuilding Heavy Industry	Ship, steel structure parts design, manufacturing, marine engineering	452,491.11	4,578,024.50	1,184,534.89
China Dynamics (20%)	Design of marine diesel engines and spare parts, casting and forgings、fabricate、sale	171,600.00	5,721,000.00	2,592,000.00

Source: Announcement of the results of the issuance of shares by China Shipbuilding Industry Corporation Limited to purchase assets and the change in share capital

4.3.2 Major asset restructuring of China Dynamics

In January 2020, the Company issued shares and convertible corporate bonds to purchase assets and raise supporting funds, and issued ordinary shares and convertible corporate bonds to 8 specific targets, including CSIC Group, China Heavy Industry, China Cinda, Taiping Guofa, China Huarong, Dalian Defense Investment, National Military-Civilian Integration Industry Investment Fund, and BOC Investment, respectively, to purchase 7.79% of the equity of its subsidiary Guanghan Power, 8.42% of the equity of Changhai Electric, 47.82% of the equity of China Shipbuilding Diesel, and 44.94% of the equity of Wuhan Shipbuilding Machinery. 26.47% equity of Hechai Heavy Industry, 35.29% equity of Shaanxi Chai Heavy Industry, and 48.44% equity of Heavy Tooth Company, the total consideration of the underlying assets is 10.063 billion yuan. The issue price of the common stock for the purchase of assets is

$20.23. A total of 465,685,657 shares and 6,425,000 convertible corporate bonds were issued.

4.3.3 Major asset restructuring of Chinese ships

In 2020, the company completed the work of issuing shares to purchase assets (step 1), acquired 36.2717% of Waigaoqiao Shipbuilding, 21.4598% of CSSC Chengxi, 100% of Jiangnan Shipbuilding, 51% of Guangzhou Shipbuilding International and 30.9836% of the equity of Huangpu Wenchong held by 20 specific objects such as China State Shipbuilding Industry Group, and after the completion of the transaction, Waigaoqiao Shipbuilding, CSSC Chengxi and Jiangnan Shipbuilding became wholly-owned subsidiaries of the company, and Guangzhou Shipbuilding International became the company's holding subsidiary. Whampoa Wenchong became an important shareholding company of company. After completion, 2.8 billion new shares were issued for 13.14 yuan per share, the company's net assets increased by 37.3 billion yuan, and the total net assets attributable to the shareholders of the listed company were 45.777 billion yuan, an increase of 196.94% year-on-year. In 2020, the company completed the establishment of the power group (step 2), with 100% equity of Hudong Heavy Machinery, and the controlling shareholder CSSC Group contributed 100% of the equity of CSSC Power, 51% of the equity of the Power Research Institute and 15% of the equity of CSSC Mitsui, and established CSSC power group in a joint venture. After the completion of the transaction, the company holds 63.77% of the equity of CSSC Power Group. Up to now, China Shipbuilding and CSSC Defense have not completed the third step of major asset restructuring, that is, China Shipbuilding has exchanged the equity of CSSC Power Group with the remaining equity of CSSC Defense holding Guangzhou Shipbuilding International and Huangpu Wenchong. The purpose of step three is to solve the problem of competition between China Shipbuilding and CSSC Defense. By the end of 2020, the company's total assets are 152.5 billion yuan, important subsidiaries, see Table 2

Table 2 Important subsidiaries of China Shipbuilding

Unit: 10,000 yuan

Company name	Major products or services	Registered capital	Total assets	Net asset attributable to the parent
Gangnam Shipbuilding	Ship, steel structure parts design, manufacturing, marine engineering	864,679.30	6,877,425.16	1,727,449.17
Waigaoqiao shipbuilding	Ship, steel structure parts design, manufacturing, marine engineering	448,780.23	2,732,299.50	809,320.50
Nakafushi Chengxi	Ship repair, dismantling, marine engineering equipment manufacturing, repair	122,230.23	1,152,295.70	416,663.75

Guangzhou Ship International	Ship, electrical machinery, general machinery, steel structure parts technical design, manufacture, repair	887,014.46	2,463,872.07	701,500.74
Power Group	Marine diesel engine and spare parts, casting and forgings design, manufacture, sales	520,000.00	1,464,424.18	761,410.47
Whampoa Wenchong	Railways, ships、Aerospace and other transportation equipment manufacturing	361,918.32	2,852,623.74	717,469.85
Chengxi Yangzhou	Shipbuilding, marine supporting equipment manufacturing, etc	130,283.62	248,301.35	130,908.69

Note: The source is the report on the issuance of shares by China State Shipbuilding Industry Co., Ltd. to purchase assets and raise supporting funds and related party transactions

4.3.4 Major asset restructuring of CSSC Defense

In 2020, the company completed the sale of major assets, selling 27.4214% of the equity of Guangzhou Shipbuilding International to China Shipbuilding, leaving only 46.3018% of the equity of Guangzhou Shipbuilding International. CSSC paid the transaction consideration by issuing shares and issued 217,494,916 A-shares to the Company. In addition, the Company holds 54.5371% of the equity of Huangpu Wenchong. China Shipbuilding and CSSC Defense have not yet completed the third major asset restructuring step, that is, China Shipbuilding has exchanged its shareholding in CSSC Power Group with CSSC Defense's holding of the remaining equity interests in Guangzhou Shipbuilding International and Huangpu Wenchong. The purpose of step three is to solve the problem of competition between China Shipbuilding and CSSC Defense. Based on the above, all 4 listed companies have completed the debt-to-equity swap work. However, the asset replacement work of China Shipbuilding and CSSC Defense has not yet been completed.

4.4 The significance of major asset restructuring

4.4.1 Reduce the debt burden of enterprises

Since the global financial crisis, the downturn in international trade has led to insufficient effective demand for new ships, the shipping market has fallen into a deep adjustment, and the three major shipbuilding indicators, especially the number of new orders and handheld orders, have continued to decline sharply. Shipbuilding enterprises have difficulty in receiving orders, production is facing huge challenges, profitability is declining, and the overall situation of the industry is more severe. Since the second half of 2014, international oil prices have continued to fall and are at a low level, affected of this, the offshore equipment industry has also fallen into a depression. Affected by the downturn in the civil ship and marine engineering equipment market, the asset-liability ratio of listed companies is relatively high and the financial burden is heavier. To effectively implement the structural reform of the supply side, effectively reduce the leverage ratio of enterprises, and support high-quality enterprises with good development prospects but temporary difficulties to tide over the difficulties. In October 2016, the State Council issued the Opinions on actively and steadily Reducing the Leverage Ratio of Enterprises (Guo Fa [2016] No. 54 Document), which encourages enterprises to carry out market-oriented debt-to-equity swaps, enhance their capital strength, and prevent corporate debt risks. With the help of favourable policies, the listed companies affiliated with China State Shipbuilding Group have implemented a market-oriented debt-to-equity swap, which has effectively reduced the debt level and enhanced the development potential of enterprises.

4.4.2 Realize the development of military-civilian integration

At present, under the background of China's significantly rising international status, continuous enhancement of economic strength, increasing overseas interests year by year, and continuous increase in military pressure, the national defense science and technology industry is generally facing a new round of industry development opportunities. On the basis of summarizing the history of the development of global military enterprises and closely combining with the actual situation in China, China's military industry is deepening the road of military-civilian integration development. In 2017, the State Council issued the Opinions on Promoting the In-depth Development of Military-Civilian Integration in the National Defense Science and Technology Industry, pointing out that the military-civilian integration of national defense science and technology industry should adhere to state leadership and market operation, improve and improve policies, break down industry barriers, promote fair competition, achieve survival of the fittest, and accelerate the formation of a pattern of in-depth development of all-factor, multi-field, and high-efficiency military-civilian integration. In order to deepen the reform of military enterprises and promote the comprehensive, coordinated and sustainable development of the national defense science and technology industry, the process of restructuring and listing of China's military enterprises and asset securitization is accelerating. The restructuring of the listed companies affiliated to China State Shipbuilding Group is a concrete deepening and continuous promotion of the requirements for the development of the national military-civilian integration.

4.5 China's ship profitability has increased

In 2020, China Shipbuilding completed a major asset restructuring, but the scope of the business has not changed. Judging from the annual reports of China Shipbuilding, the scale has become larger and the revenue has increased after the reorganization, and the gross profit margin has been at a low level in recent years, and the gross profit margin level in 2007 is the highest. According to the characteristics of the shipbuilding industry is a strong cyclical industry, based on the operating income in 2020, the gross profit margin of

2007 is applied to measure the profitability of the industry to reach a higher level of prosperity.

Table 3 Gross margin calculation table for 2020

Unit: 10,000 yuan

By product	Operating income	Operating costs	Gross margin（%）
Ship construction	4,320,076.92	3,931,483.38	9
Marine Engineering	392,374.44	351,841.49	10.33
Powered equipment	561,345.42	457,694.30	18.46
Electromechanical equipment	307,549.95	277,586.99	9.74
other	16,066.34	10,979.72	31.66
Internal offset	-201,908.31	-197,908.23	
total	5,395,504.76	4,831,677.65	10.45

Note: The above data is from the2020 annual report of China State Shipbuilding Industry Corporation Limited

Table 4Gross margin calculation table for 2007

Unit: 10,000 yuan

By product	Operating income	Operating costs	Operating margin（%）
Ship construction	1,243,981.94	933,538.98	24.96
Ship maintenance	193,907.37	141,466.53	27.04
Ship support	251,138.25	182,215.06	27.44
Other products	58,707.91	25,624.59	56.35
total	1,747,735.49	1,282,845.18	26.6

Note: The above data is from the 2007 annual report of China State Shipbuilding Industry Corporation Limited

Table 5 2020 Usingthe 2007 Gross Margin Increase Calculation Table

Unit: 10,000 yuan

By product	Operating	Operating costs	Gross	Gross	Higher than

	income		margin（%）	margin for 2007	gross profit
Ship construction	4,320,076.92	3,931,483.38	9	24.96	689,484.28
Marine Engineering	392,374.44	351,841.49	10.33	24.96	57,404.38
Powered equipment	561,345.42	457,694.30	18.46	27.44	50,408.82
Electromechanical equipment	307,549.95	277,586.99	9.74	27.44	54,436.34
other	16,066.34	10,979.72	31.66	56.35	3,966.78
Internal offset	-201,908.31	-197,908.23	12	27	-30,286.25
total	5,395,504.76	4,831,677.65	10.45		825,414.35

According to the above calculations, after the improvement of prosperity, the total profit of enterprises can reach8.25 billion yuan.

5. Conclusion

1. The development cycle of the international ship market is affected by a combination of factors. The renewal and reinvestment cycle of about 25 years for ships is its main internal factor, and it is currently in the downward phase of the fourth cycle and has basically bottomed out.

2. Since the outbreak of the new crown epidemic, container transportation and dry bulk transportation have been in a period of rising prosperity, and the number of newbuilding contract orders has exploded. Since the 2008 financial crisis, there have been hundreds of bankruptcy liquidation and merger and reorganization cases of global shipbuilding enterprises, and the shipbuilding capacity has been significantly cleared, which has substantially reduced the supply of the industry, and the current supply of the shipbuilding industry is short of demand.

3. With the help of the favorable policies introduced by the Chinese government, China Shipbuilding has implemented a market-oriented debt-to-equity swap work, which has effectively reduced the debt level. The restructuring of major assets of China Shipbuilding is conducive to the integration of military and civilian development of enterprises, and China Shipbuilding Group will surely usher in great development.

On the basis of the above three conclusions of this study, the following suggestions are proposed: First, the management of China State Shipbuilding Group should take the large cycle of the shipbuilding industry as an opportunity to study and judge the effective path of ship decarbonization, actively develop technical solutions suitable for it, and enhance the status of the industry in the development. The second is to suggest that investors should focus on the impact of carbon neutrality targets on the shipbuilding industry, with the formation of the industry upgrading trend, China Shipbuilding Group, as the industry's leading enterprise, its value will inevitably be revalued.

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The New Energy Vehicles Marketing Strategies: A Case Study of Li Auto Inc.

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ABSTRACT

This research aimed to explore how new energy vehicle enterprises optimized their marketing strategies and improved their competitiveness in the "Internet +" environment. In view of the fact that how to realize the stable development of the new energy vehicle industry from relying on Chinese subsidies to relying on production capacity is an important problem to be solved urgently by the current new energy vehicle enterprises, This study was carried out and the following questions were discussed: Taking the Li auto Inc as an example, what is the marketing situation of the Li auto Inc? What's the problem? What direction should the Li auto Inc's marketing strategy develop after it is perfected?. A questionnaire survey was adopted to analyze the marketing situation, and 144 electronic questionnaires were collected in China. The result showed that the Li Auto Inc. facing the fierce market environment, fixed pricing module, channel problems such as insufficient incentives need to be solved. It was recommended to solve the problems from the aspects of price strategy, channel strategy and promotion strategy.

KEYWORDS: Competitive strategy, Marketing strategy, New Energy Vehicle Company

Research Background

This study mainly discusses the rapid development of emerging Internet technologies represented by big data, cloud computing and mobile technology with the advent of the era of "Internet +", which has had a profound impact on all aspects of the economy and society. The widespread use of Internet technologies has fundamentally changed the marketing strategies of enterprises. The current academic research on the marketing strategy of new energy vehicles in the "Internet +" environment is still in the exploratory stage, and there is no literature for in-depth study. The Li Auto Inc. gradually emerged, and its marketing model has become the focus of attention and research scholars in the industry. To sum up, taking LEADING IDEA as an example, we have noticed how new energy vehicle enterprises optimize their marketing strategies in the " Internet +" environment.

Research Content

This study mainly discusses the problems existing in the current marketing strategy of LEADING IDEA, and puts forward the corresponding feasible countermeasures and suggestions combined with the background of "Internet + " . Based on marketing theory and questionnaire analysis as the information data source, the specific research content is as follows:

This paper mainly introduces the research background and significance of this paper, expounds on the conception and practical significance of this paper, as well as the research status in China and other countries. Research methods and questionnaire design. Research results analysis, reveal the Li Auto Inc. new energy vehicle marketing status quo and problems, from multiple perspectives to reflect the current the Li Auto Inc. new energy vehicle marketing status quo and the current bottleneck. Conclusion and discussion. Through STP strategy analysis, the future positioning is clarified, countermeasures and suggestions are put forward from product strategy, price strategy, channel strategy and promotion strategy. This paper summarizes the macro research, and puts forward the expectation and prospects of the development of new energy industry.

Research Achievements of Past Scholars

In the past, this aspect of research mainly focused on the new energy vehicle industry theory and related policy research, new energy industry promotion and technological innovation research, new energy vehicle marketing, consumer behavior research these three aspects. Li and Wang (2018) first proposed the green marketing mix model by integrating existing cases. They believed that the green marketing mix adopted by enterprises could achieve better marketing effects through government support and risk preference of senior decision-makers. Zhao (2019) made a comprehensive analysis of the factors restricting the current marketing of new energy vehicles, and pointed out that consumers should be guided to change their consumption concept from traditional fuel vehicles to new energy vehicles, and experience should be injected into the marketing process to help new energy vehicles become known to more consumers. Li (2020) pointed out that the current offline marketing methods make it difficult for new energy vehicles to be understood by more people. Diversified marketing methods and bold attempts at Internet marketing can help new energy vehicles achieve greater breakthroughs in marketing, and make the problem of optimizing marketing strategies for new energy vehicles have a clearer outline.

Table 1 References of past scholars' research achievements

Author(s)	**Present Situation and Exploration**	**Development Mode Perspective**	**Policy Research**
Cai and Wu (2019)	X		
Yang (2020)		X	
Li and Huang (2020)			X
Li et al. (2021)			X
Xiong et al. (2020)		X	
Li et al. (2020).	X		
Sun (2019)	X		
Ye (2019)		X	

Source: This study was organized

Problems That Have Not Been Noticed by Predecessors

Despite all these achievements, there are still many unresolved problems. First, from the perspective of research, most scholars focus on the study of macro industrial theory and macro policy, which tends to be theoretical and lacks the combination of theory and practice, qualitative analysis and quantitative analysis. Second, from the perspective of research objects, most studies on the marketing strategies of new energy vehicles are focused on international well-known brands such as Tesla and BMW, while there are few studies on the marketing strategies of domestic new energy vehicles. Therefore, it can be seen that the research in this field still has many places worthy of further discussion.

Main Issues Discussed in This Study

This study focuses on the following issues:

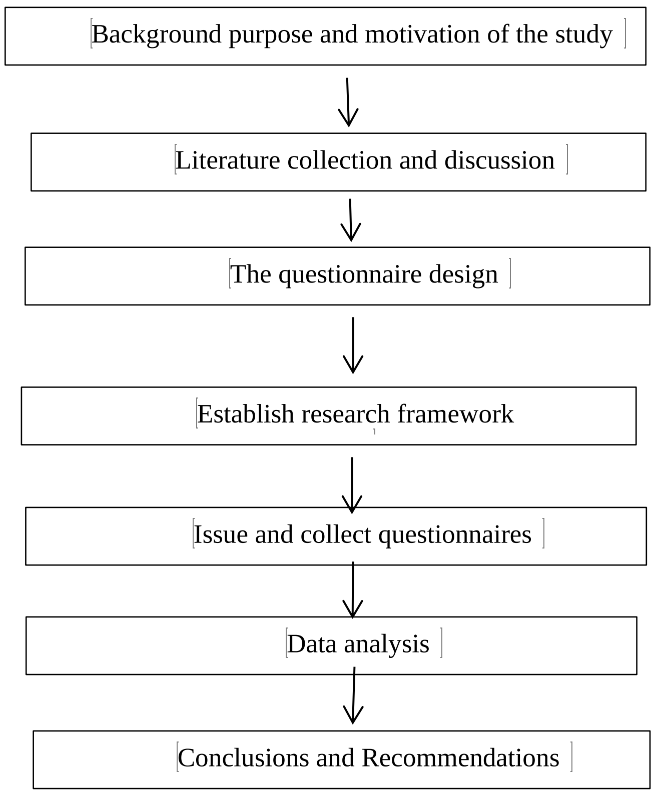
The first is to analyze the Li Auto Inc. new energy vehicle marketing environment, marketing strategy.

Second, it studies the problems existing in the marketing strategy of the Li Auto Inc. new energy vehicle.

Thirdly, suggestions for improving the marketing strategy of The Li Auto Inc. new energy vehicles are put forward to fill the gap in this research field in China to a certain extent.

Through the method of quantitative research, the answers to the above research questions are obtained.

Figure 1 Research technical route



Source: This study was organized**.**

Contribution and Innovation of This Study

This research has the following contributions to academic research:

First, the results of this study show that the LEADING IDEA is facing an extremely fierce market environment, and it has its own problems at the present stage, such as single product line, fixed pricing module, insufficient diversified channels and insufficient promotion and incentive effect, which need to be solved.

Second, this study suggests that the product strategy, price strategy, channel strategy and promotion strategy from the aspects of focus on solving the current problems. To a certain extent, it fills the gap in this research field in China, provides experience for similar domestic automobile brands and new power enterprises, and provides reference for promoting the rapid development of China's new energy automobile industry.

This paper has the following innovations:

One from a research perspective, most scholars focus on the theory of macro industry and macro policy research, preference theory research Angle, the lack of theory with practice, combining qualitative analysis with quantitative analysis, this study adopts questionnaire method, and through the PEST analysis, five model analysis and SWOT analysis LEADING IDEA marketing situation.

Second, from the perspective of research objects, most studies on the marketing strategies of new energy vehicles are focused on international well-known brands such as Tesla and BMW, while there are few studies on the marketing strategies of domestic new energy vehicles. The LEADING IDEA of China's new power of new energy vehicle manufacturing is gradually emerging. This study takes it as an example. This paper analyzes how new energy vehicle enterprises optimize marketing strategies and improve their competitiveness in the "Internet +" environment.

Application Status of STP Theory

STP theory has been applied in many fields since it was put forward. First, it is the study of new energy vehicle industry theory and related policies. Styczynski and Hughes(2018) , after comparing the industrial policy systems of new energy vehicles in Developed China, such as Europe, The United States and Japan, and China from 2006 to 2016, pointed out that despite differences in the industrial basis and market system of new energy vehicles in various countries, in the field of technology research and development, All have more or less learned from the government, enterprises and scientific research institutions combined this relatively general development system, the future should be to improve electric technology and the reduction of the cost of automobile battery to promote the industrialization process of new energy vehicles. Zhiwen (2021) to the current global new energy vehicle development present situation, the study found the new energy vehicles been recognized by more and more consumers and widely adopt preferential policies to help the new energy automotive industry rise, but after the new energy automobile industry development is to rely on their business, only better understand user needs, dig their advantages, And targeted amplification of advantages, so that new energy vehicle enterprises can better determine their positioning in the industry, avoid vicious competition, to achieve optimal allocation of resources. Second, it is the research of industrialization promotion and technological innovation of new energy vehicles. Zhang et al.(2018) estimated the use demand of ELECTRIC vehicles and believed that the market potential of pure electric vehicles was not ideal under the current charging technology and conditions, so improvements should be made in terms of technology and policies: Such as fast

charging, reducing production costs, improving public charging infrastructure, increasing purchase subsidies, and increasing battery capacity. Kendall Michaela (2018) started from the promotion of traditional fuel automobile industry and concluded that new energy vehicles should give full play to their advantages of environmental protection and energy-saving to
attract more green consumers to buy. In addition, more attention should be paid to technological innovation while promoting, so as to better realize " zero-emission" while solving the battery life problem and reducing the cost.

Application Status of 4P theory

The 4P theory, namely Product, Price, Place and Promotion, was first proposed by American marketing professor Jerry McCarthy and has become one of the classic theories in the field of marketing. And scholar Philip Kotler described it in detail in his book " marketing management: analysis, planning and control. The theory of 4P marketing mix has been applied in many fields since it was put forward. Roger Bennett, Rita and Stephen (2016) made a systematic content classification and semantic analysis of electric vehicle marketing information, explored its attractiveness to potential electric vehicle buyers, and pointed out that marketing activities of electric vehicles should not be "one-size-fits-all". Specific themes should be introduced into marketing messages tailored to the preferences of different driving groups. Panayotis and Caralampo (2019) comprehensively compared the data of two large-scale questionnaires in the European Union and found that the proportion of respondents considering buying hybrid or electric vehicles increased from 32% in 2014 to 37.4% in 2018. In addition, Differences in socioeconomic and income levels among EU member states are a major factor influencing car purchase intentions, and the marketing of hybrid or electric vehicles should take into account local conditions and regional differences. Ma et al. (2018) took industry chain research as the breakthrough point and concluded that China's new energy vehicle industry must be established from core technology research and development, industrial system construction, service quality improvement and other aspects.

Application Status of PEST Analysis Model

Michael E. Porter reviewed the progress of the strategy field towards developing a truly dynamic theory of strategy. PEST analysis model has been widely used. Li et al. (2020) comprehensively combed the incentive policies in the early stage of industrial development and the transition stage, pointing out that purchase subsidies, infrastructure improvement and financial support have become the three major factors affecting the promotion of new energy vehicles. In general, the effect of non-monetary policy stimulus is obviously better than that of monetary policy stimulus. Li (2019) points out that the current offline marketing methods make it difficult for new energy vehicles to be understood by more people. Diversified marketing methods and bold attempts at Internet marketing can help new energy vehicles achieve greater breakthroughs in marketing. Sun (2019) selected BYD as the research object, analyzed its deficiencies in marketing, infrastructure construction and after-sales service, and pointed out that under the current situation of government subsidy withdrawal and intensified external competition, only continuous improvement of the deficiencies in the above three aspects can help BYD occupy a better advantage in the market. Tan et al. (2020) examined and analyzed the relationship between the network search index and the actual demand for new energy vehicles by combining statistics and econometric theories and methods. By using the sales data of new energy vehicles and big data of Internet search in the first four months, we can accurately predict the demand of the next month, which not only improves the timeliness of prediction, but also provides a reliable basis for individuals, enterprises and governments to make decisions.

Related Research

This aspect of research mainly focused on these three aspects: the new energy vehicle industry theory and related policy research, new energy industry promotion and technological innovation research, new energy vehicle marketing, consumer behavior research. Li and Wang (2018) first proposed the green marketing mix model by integrating existing cases. Zhao (2019) made a comprehensive analysis of the factors restricting the current marketing of new energy vehicles, and pointed out that consumers should be guided to change their consumption concept from traditional fuel vehicles to new energy vehicles, and experience should be injected into the marketing process to help new energy vehicles become known to more consumers. Li (2020) pointed out that diversified marketing methods and bold attempts at Internet marketing can help new energy vehicles achieve greater breakthroughs in marketing, and make the problem of optimizing marketing strategies for new energy vehicles have a clearer outline.

Conceptual Framework

In literature, this aspect of research mainly focused on the new energy vehicle industry theory and related policy research, new energy industry promotion and technological innovation research, new energy vehicle marketing, consumer behavior research these three aspects in the past.

First, from the perspective of research, most scholars focus on the study of macro industrial theory and macro policy, which tends to be theoretical and lacks the combination of theory and practice, qualitative analysis and quantitative analysis. Second, from the perspective of research objects, most studies on the marketing strategies of new energy vehicles are focused on international well-known brands such as Tesla and BMW, while there are few studies on the marketing strategies of domestic new energy vehicles. Therefore, it can be seen that the research in this field still has many places worthy of further discussion

Research Methods and Design

In this study, 144 electronic questionnaires were collected in China. This questionnaire is mainly for an the Li Auto Inc., new energy vehicles currently brand awareness, product, price, promotion, channel status, and the effect factors of consumers to purchase new energy vehicles and consumer purchase intention is analyzed, in order to come to be used for reference the results of a survey to help enterprises better understand the consumers to purchase new energy vehicles will, In order to find the current marketing deficiencies, and targeted to develop more scientific marketing strategies. (See Appendix)

Research Methods

This study adopts quantitative method. The survey was conducted between January 1, 2022 and April 1, 2022. The survey was conducted in China, and 144 samples were collected by means of questionnaires. Most of the questionnaires were distributed randomly through the Internet, and the people who filled out the questionnaires were all Chinese, from all over China. The tool for distributing questionnaires is the Chinese software "Questionnaire Star". After all samples were obtained, they were analyzed by questionnaire.

Questionnaire Design

The questionnaire design is divided into four parts:

The first part of the basic information statistics, to accept the questionnaire object gender, age, income and other information to understand;

The second part studies the factors influencing the marketing of new energy vehicles, mainly studying the price range acceptable to consumers, consumers' purchasing motivation and other factors;

The third part studies consumers' cognition of the Li Auto Inc. new energy vehicle brand, mainly focusing on the analysis of brand awareness, marketing advertising promotion effect and brand understanding approach;

The fourth part studies consumers' purchase intention of new energy vehicles, mainly focusing on whether consumers have a new car purchase plan, the overall attitude towards the development of new energy vehicles and so on.

Analysis of Research Results

Through the statistics of the questionnaire results, the following analysis results are obtained, which show that the LEADING IDEA is facing an extremely fierce market environment, and has its own problems at the present stage, such as a single product line, fixed pricing module, insufficiently diversified channels and insufficient promotion and incentive effect, which need to be solved.

Basic Information of the Research Object

In the sample of this study, the basic data distribution of the interviewees is shown in Table 1

The age distribution is about 1:2:1,

The gender distribution is about 1:1,

The ratio of car owners to non-car owners is about 2:1,

It can be seen from the above data that the subjects investigated are representative and extensive.

Table 1 Basic data distribution table of the interviewees

Age	Subtotal	Proportion (approx.)
18-30 years old /30-50 years old/above 50 years old	41/60/43	1:2:1
Male/female	71/73	1:1
With/without a car	87/57	2:1

Analysis of Research Results

Based on the survey results, the distribution of responses in the first category is shown in Table 2

Table 2 Distribution of responses for the first category

The problem	Options	Subtotal	Proportion (approx.)
What is the number of people you prefer to carry when you buy new energy vehicles?	A: Traveling alone B: less than 5 people C: more than 5 people (inclusive)	30/44/60	Shows proximately 1:2:4 as
Which factor is your priority in buying new energy vehicles?	A: mileage B: safety C: after-sale service	20/44/80	1:6:13
Which factor is your biggest concern in buying new energy vehicles?	A: mileage B: safety C: after-sale service	80/24/40	7:2:3
What is your expected price range for new energy vehicles?	A: 50,000-150,000 B: 150,000-300,000 C: more than 300,000	50/70/24	2:5:1

Among them, 41. 6% of respondents chose to use new energy vehicles with more than 5 people. After-sales service (55.5%) is the most priority factor for respondents to purchase new energy vehicles. Range (55.5%) was the most worrying concern, 48. 6% of respondents expect the price of new energy vehicles to be 150,000-300,000 yuan.

Therefore, it can be inferred that most of the respondents use new energy vehicles to meet the travel needs of their families. The driving range is the most worrying concern of investigators, which is also the three aspects that new energy vehicle enterprises need to pay attention to in the future development, which is the key to whether new energy vehicle enterprises can obtain consumer trust. For the respondents, 48. 6% of the respondents expect the price of new energy vehicles to be 150,000-300,000 yuan. In terms of the current ideal price of LEADING IDEA at 328,800 yuan, the price is a little higher and less attractive for some respondents.

According to the survey results, the distribution of responses in the first category is shown in Table 3

Table 3 Distribution of responses for the first category

The problem	**Options**	**Subtotal**	**Proportion (approx.)**
Which of the following new energy vehicle brands do you want to buy most?	A: Tesla B: BYD C: LEADING IDEA	25/79/40	1:4:2
Is there a LEADING IDEA store near your work or residence?	A: Yes B: No C: Uncertain	20/43/81	1:6:13
Have you heard about the LEADING IDEA?	A: Yes B: No	112/32	9:1
Have you received any marketing promotion advertisements related to LEADING IDEA?	A: Yes B: No	23/121	The 2-0

Among them, the respondents most want to buy NEW energy vehicle brands are BYD (40.35%),

35% of respondents said there was no LEADING IDEA direct-sale car store near their work or residence.

While 22.22% of consumers have not heard of LEADING IDEA,

In addition, up to 84.02% of the respondents said that they had not received marketing promotion advertisements related to LEADING IDEA.

Therefore, it can be inferred that the visibility of LEADING IDEA still has room for improvement, and the marketing promotion of the Li Auto Inc. new energy vehicles is not enough. In addition, 34.21% of the respondents said that there was no LEADING IDEA car store near their work or residence, indicating that there was still room for improvement in channel promotion. Fortunately, 70.17% of respondents gave a high evaluation on the marketing service of LEADING IDEAL direct-sale stores.

Based on the survey results, the distribution of responses in the first category is shown in Table 4

Table 4 Response distribution for the third category

The problem	options	subtotal	Proportion (approx.)
Will low-carbon green and other environmental concepts encourage you to buy new energy vehicles?	A: Yes B: No	85/59	2:1
Do you support low-carbon green travel?	A: Yes B: No	81/63	3:2
What is your attitude towards the future development of new energy vehicles?	B: The competition is fierce. I don't think so	111/30	5-1

Among them, 59. 02% of respondents will be encouraged to buy new energy vehicles by the concept of low carbon and green. 56. 2% of respondents said they support green and low-carbon travel. In addition, as high as 77. 08% of the respondents hold a hopeful and promising attitude towards the future development of new energy vehicles.

Thus, can be inferred that the current China's low carbon green environmental protection idea, one of the main power is encouraged to buy new energy vehicles, more than half of the respondents expressed support for green, low carbon travel, most respondents to the development of China's new energy vehicles in the future's attitude is to think that is full of hope, the new energy vehicles in the future development of China.

Discussion of Research Results

Based on the survey results, the distribution of responses in the three categories is shown in Table 2, Table 3 and Table 4.

Based on the above results, we get the following answers: Consumers have a certain understanding of the Li Auto Inc. new energy vehicle brand cognition. In-depth study of the Li Auto Inc. new energy vehicle marketing problems, there are mainly fixed pricing model, sales channel construction is not diversified, promotion and incentive role is not enough.

As for the fixed pricing model, it can be seen from the survey results of question 11 of the questionnaire that 48.6% of respondents expect the price of new energy vehicles to be 150,000-300,000 yuan, which fully highlights the problems that need to be considered in the pricing of the Li Auto Inc. new energy vehicles. At present, the Li Auto Inc. new energy vehicle is a range-extended medium and large electric SUV, priced at 328,000 yuan. It is equipped with a range-extended hybrid system composed of a 1. 2T engine and a 40. 5kwh battery pack. There is no low-end or high-end configuration to choose from, and the pricing model is relatively fixed. On the one hand, for the potential consumers who choose to buy SUV models over 30W, if they do not have the idea of buying new energy vehicles, they will generally choose to buy luxury brand BBA (BMW, Mercedes, Audi) or second-tier luxury brand traditional fuel cars. At present, foreign and joint venture new energy vehicle manufacturing forces are rising. All Internet technology companies will also focus on the new energy market, the next 1-2 years will be the LEADING IDEAL facing the biggest impact. Therefore, in terms of pricing, if the product pricing is maintained above 300,000 yuan, only a few ordinary people will give up the opportunity to choose luxury fuel cars because of their preference for LEADING IDEAL services. As of February 2, LEADING IDEAL released the latest sales figures for LEADING IDEAL in January: The delivery volume was 5,379 units, 747 units less than that of 6,126 units in December 2020, with a sequential decrease of 12.2% . Therefore, considering the current LEADING IDEAL product pricing, it is difficult to achieve a significant increase in product sales. In addition, fixed pricing model will also lead to some users with more high-end needs cannot be satisfied. If the LEADING IDEAL cannot develop a new product in a short time, we can consider developing the Li Auto Inc. new energy vehicle by type, and pricing it differently for different types, so as to attract more consumers with more flexibility.

As for the lack of diversified sales channel construction, it can be seen from the survey results of question 19 of the questionnaire that 35% respondents said that there was no LEADING IDEAL direct-sale store near their work or residence. The current dealer promotion model is the traditional automobile sales channel construction model, while dealers establish connections with users through the 4S shop model. Therefore, to continuously consolidate and strengthen the connection with consumers, 4S shops often adopt intensive deployment strategy around the same city, thus forming a relatively fierce competition pattern. However, most of LEADING IDEAL's direct-sale stores are located in the city center, which has high maintenance costs, limiting the rapid expansion of direct-sale stores. Although LEADING IDEAL ensures service quality, it is easy to lose other customers. With the increasing number of LEADING IDEAL users, it is also worth checking whether ideal direct-sale stores can maintain service quality.

As for the insufficient promotion and incentive effect, a comprehensive analysis of the survey results of question 12, 13 and 24 of the questionnaire shows that consumers are sensitive to pricing of new energy vehicles and supporting government subsidy policies. Although the subsidy advantage of new energy vehicles in China is no longer obvious, Ideal Automobile has been adopting a uniform pricing strategy to ensure the interests and emotions of existing owners and maintain the brand, and is not prepared to adopt a price reduction strategy. In addition, LEADING IDEAL has been injecting more efforts into the system update of after-sales users, and has not taken special measures in promotion, which is not enough to stimulate consumers to buy. But at the same time, the traditional fuel automobile enterprises are sounding the horn to capture the market. In order to cope with the current situation of the reduction of subsidies in China, many manufacturers have launched enterprise subsidies to attract consumers. Gac New Energy, BYD, SAIC Roewe and other manufacturers have sounded the horn of enterprise subsidies, including GAC Xineng subsidy of 10,000 yuan, BYD Han replacement subsidy of nearly 20,000 yuan, SAIC Roewe subsidy of nearly as high as 40,000 yuan. However, LEADING IDEAL will only bear the subsidy difference of 8,500 yuan for new car buyers from the implementation of new energy vehicle subsidy policy in July 2020, and continue to maintain the price of The Li Auto Inc.328,000 yuan unchanged, which will be a very big test for potential users of The Li Auto Inc. car. In the future, with the continuation of China's new energy subsidy policy, If the LEADING IDEAL must adopt a more effective promotion way to attract consumers.

Research Conclusion

This research aims at the Li Auto Inc. marketing environment in the " Internet + " environment and draws the following conclusions. First, current consumers have a basic understanding of the willingness to buy new energy vehicles and the factors influencing their purchase decisions, and also have a certain understanding of consumers' cognition of the Li Auto Inc. brand. Second, the Li Auto Inc. has its own unique advantages in the core technology of new energy vehicles, and can achieve customer first in service. It has established a certain brand image in the consumer group of new energy vehicles, and has a good development prospect, but the Li car is facing an extremely fierce market environment. This conclusion can provide a reference for the Li Auto Inc. to make future decisions.

This study aims at what kind of problems the Li Auto Inc. marketing faces in the "Internet +" environment and draws the following conclusions. The first is to deeply study the problems existing in the marketing of the Li Auto Inc. There are several prominent problems such as single product line, fixed pricing model, not enough diversified sales channel construction, and insufficient promotion and incentive effect. Secondly, in the "Internet +" environment, the Li Auto Inc. marketing methods are not diversified enough, so it is necessary to further enhance brand awareness and product promotion, and focus on solving the problems of insufficient experience sites and high cost of directly operated stores. This conclusion can be a reference for the Li Auto Inc. to make marketing strategy.

Research Suggestion

This study aims at the improvement of marketing strategy of the Li Auto Inc. and draws the following conclusions. The Li Auto Inc., new energy vehicles should continue around the target user marketing products, continue to maintain the current market share, in addition to save for a rainy day, through more rich marketing to maximize expand market share, pay attention to TOB and personal automobile consumption market, to quickly grab market share, to cultivate loyal users. The second is to think about how to effectively transmit the advantages in the current market to the market under the current market saturation. Strengthen product research and development, develop products in line with market demand, and improve online and offline marketing channels. Third, in the case of limited product types, the possibility of price reduction of the Li Auto Inc. is not high, so the value of its high-quality after-sales service is highlighted as one of the factors to consider in pricing strategy. In the long run, only by constantly optimizing technology, reducing costs and striving for lower pricing can more consumers be attracted to buy. This conclusion can provide experience for similar domestic automobile brands and new power enterprises.

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Thai Generation Y Tourists’ Perception of Hotel’s Environmental Roles, Green Hotels and Green Practices

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ABSTRACT

‘Going Green’ has become an important issue for people and industries including hotel business. This preliminary study examined Thai Generation Y tourists’ perception of hotels’ environmental roles, green hotels and green practices. It also explored the interest of Thai Generation Y tourists in green hotels and their intention to stay at green hotels. For the research methodology, this study employed a survey method and accidental sampling technique to collect primary data from Thai Generation Y tourists (aged 21 – 41 years old) whose residences were based in Bangkok. Usable 387 questionnaires were analyzed using descriptive statistics. According to the findings, majority of respondents recognized green hotels. They considered that hotel business should establish policies and missions regarding environmental conservation and energy-efficiency. They also had a high level of positive perception towards most green hotel practices proposed in this study, especially “using automatic lighting system in guest rooms” and “encouraging employees to participate in energy saving and environmental conservation”. Among those practices, however, “room linen reuse for a multiple night guest” was the only one that was valued at moderate level. The respondents presented their interest as well as intention to choose green hotels as their accommodation.

KEYWORDS: Generation Y, Tourists, Green hotels, Green practices, Sustainability

Introduction

Over decades, sustainability and green practices have received a significant focus in the tourism and hospitality industry. According to United Nations World Tourism Organization (UNWTO, 2021), tourism sustainability involves the environmental, economic, and socio-cultural aspects of tourism development, and establishing the balance of those three aspects to ensure long-term sustainability. To support sustainability, green hotels have been developed and green practices have been implemented (Abdou et al, 2020).

Hotels that implements eco-friendly activities are likely to gain favor from tourists, especially those who are environmentally concerned. A study by Ogbeide (2012) showed that more than 50% of consumers surveyed would choose a green hotel over one that lacked green attributes. Environment was one of three influencing factors that tourists considered when choosing a hotel (Kucukusta et al, 2013). To respond travelers' expectation on environmental conservation, the world's leading hotel operators have increased green practices such as having waste recycling program and energy-efficient lighting, while some of them have set sustainability issue as one of their priorities (Kang et al, 2012).

As stated in United Nations' World Population Prospect 2019 (MSCI, 2021), Generation Ys or Millennials were about 1.8 billion people or 23% of total populations worldwide in 2020. In Thailand, Gen Y people have currently become the majority among 67 million populations. This generation counts around 19 million people or 28% of total population (Thansettakij, 2017). According to their age (about 21 – 41 years old), Generation Ys have made up a major manpower in the country with the estimated proportion of 50% of the entire workforce. They have also formed the largest consumer market that has potential purchasing power for all businesses including tourism and hospitality.

The reasons to conduct this research were as follows. First, as global warming problem has become more severe, environmental sustainability is now an urgent issue that all sectors must be concerned. Secondly, many hotels in Thailand are certified as green hotels and implement green practices, but a few studies have been carried out to examine what people think about those green practices. Lastly, the study on Thai Generation Y tourists' perception of environment is still limited particularly in the area of hotel business. Thus, this preliminary study aimed to explore what Thai Generation Y tourists perceive of the environmental roles of hotel business, green hotels and green practices. The result of the study would be beneficial to hotels in Thailand for planning the implementation of green practices and promoting them to the public.

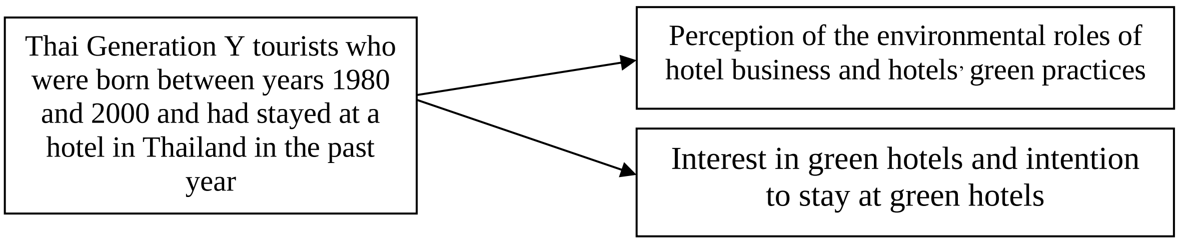
Research objectives

The objectives of this research were

1. To examine Thai Generation Y tourists' perception of the environmental roles of hotel business and hotels' green practices

2. To explore Thai Generation Y tourists' interest in green hotels and their intention to stay at green hotels

Research Framework



Literature Review

Definition of Green Hotel

The definition of a green hotel slightly various across authors and has not exactly been settled. ASEAN Green Hotel Standard (ASEAN Secretariat, 2016, p. 3) defined a green hotel as "a hotel which is environmentally-friendly and adopts energy conservation measures". Also called eco-friendly hotels and environmental-friendly hotels, green hotels are perceived by consumers to be about resources and energy saving, using eco-friendly materials and not using single-use or individually packed products (Han & Chan, 2013). Green practices that a green hotel can conduct are various, ranging from simple steps such as setting linen reuse program and waste separation to advanced steps such as installing occupancy sensor system (Abdou et al, 2020).

Significance of Green Hotel and Green Practices for Tourists

Customers of hotel business are currently more aware of sustainability and seek for hotels that conduct environmental practices (Karavasilis et al, 2015; Mehta & Sharma, 2019). Having green brand positioning becomes important in the hotel business because environmental issues have gained attention from hotel guests. To attract certain customer groups, hotels advertise their conducted sustainability as corporate social responsibility practices (Goh et al, 2017). The study of Chang and Fong (2010 in Mehta & Sharma, 2019) reported a positive impact of green corporate brand on customer satisfaction and loyalty. Cometa (2012) identified that consumers with strong beliefs of environmentally friendly practices had positive perceptions about the value green hotels offered and willingness to participate in environmentally friendly activities while saying at green hotels. Chan (2013) found that customers are pleased to pay more to buy green hotel products and services such as green rooms.

Generation Y Tourists

Despite some variations of literature in classifying specific start and end years of Generation Ys, also known as Millennials or Internet Generation, Gen Ys can be defined as people who were born between years 1980 and 2000 (Department of Mental Health, 2020). Generation Ys are discussed to possess unique characteristics in common. As they grew up in the era of technological development, they are strongly influenced by high technology and the Internet, using websites and social media to gain information, communicate to the others and entertainment (Bolton et al, 2013; Goh et al, 2017; MSCI, 2021). The Internet Users Profile conducted by Electronic Transactions Development Agency (2020) found that Thai Generation Ys have been the most frequent Internet users for five consecutive years, spending in average 10 hours 36 minutes per day in 2019.

Generation Ys are more educated, with college or higher degrees, than previous generations (Powers & Valentine, 2013; Kubickova, 2014; Goh et al, 2017; Department of Mental Health, 2020; MSCI, 2021). Other common characteristics of Gen Ys include being individualistic, independent, dynamic and self-confident (TAT, 2016). Although Gen Y people have some attributes and behaviors in common, their preferences may diverge as per their culture, gender, stages of life and personality types (Franzidis & Hritz, 2014).

With regards to sustainability area, this generation is seen to have high environmental concern. From the research of Karavasilis et al (2015), Generation Ys in Greece have a high environmental concern and positive attitude towards eco-friendly activities. Similarly, the study of Goh et al (2017) showed that half of the interviewed Gen Y students did eco-friendly activities particularly in the areas of water and energy conservation, waste reduction and recycling. Some of them had sustainable lifestyle such as using public transportation and had a strong viewpoint towards sustainability practices. The study of Tang & Lam (2017) also showed that the Gen Y respondents in Macao had positive attitude towards green hotels and attributes and tend to willingly pay to stay at a green hotel. However, tourists' perception of environmental significance may vary in countries. A high positive level of environmental awareness was found among the Swedish, Croatians and Turkish whereas studies showed that customers in India are not much active about green culture and practices (Mehta & Sharma, 2019).

Research methodology

Population

The population in this study were Thai Generation Y tourists who were born between years 1980 and 2000 (aged 21 – 41 years old) and had stayed at a hotel in Thailand in the past year.

Research Instrument

A questionnaire used as an instrument for the survey was developed from a review of previous studies such as Cometa (2012), Kang et al (2012) and Karavasilis et al (2015) and identified the content validity by three tourism academics. The Item-Objective Congruence (IOC) used to evaluate the questionnaire items was 0.8. The pilot test was then conducted with 30 respondents to obtain feedbacks on the relevance and clarity of questions. Cronbach's coefficient alphas were calculated and exposed the value of 0.92, showing a high level of reliability.

The first part of the questionnaire compiled respondents' demographic data including age, gender, marital status, education and income. This part also examined the respondents' awareness of green hotels and the sources of green hotel recognition. The second part of the questionnaire contained 16 items that used a five-point Likert scale, ranging from (1) 'strongly disagree' to (5) 'strongly agree'. It identified Thai Gen Y tourists' perception of hotels' environmental roles, as well as green hotel practices. The last part comprised three questions asking respondents whether they were interested in green hotels and intended to choose a green hotel for their trip accommodation.

Data Collection

This study collected quantitative data from a survey in Bangkok from September to October 2021. Accidental sampling technique was employed, in which the respondents were approached and asked their age to assure that they were in Generation Y. They were also asked whether they had stayed at a hotel in the past year.

Data Analysis

After the survey was completed, the usable 387 participants were selected. Then descriptive statistics including percentage distributions, mean and standard deviation were used to analyze the data. Mean scores were interpreted by a range of scores and levels as follows.

Mean score		Level
4.51 - 5.00	=	Very high
3.51 - 4.50	=	High
2.51 - 3.50	=	Moderate
1.51 - 2.50	=	Low
1.00 - 1.50	=	Very low

Findings

Profile of respondents

Of the 387 respondents, 57.62% were female and 42.38% were male. The age of respondents found 29.46% were 20-25 years old, followed by 28.68% were 31-35 years old and 23% were 26-30 years old. 51.2% of the respondents were single and 22.5% married and had kid(s). Regarding educational level, the highest category (62.5%) had Bachelor's degree, while lower than Bachelor's degree amounted to 30%. Those with Ph.D. level presented the minor group. In terms of income, 38.8% of the respondents marked their monthly income of 15,000-19,999 Baht, followed by lower than 15,000 Baht and 20,000-24,999 Baht (25.6% and 12.1% respectively).

Green hotels awareness

Majority of the respondents (67.4%) replied they had recognized green hotels or environment-friendly hotels, whereas 32.6% did not know green hotels. The key source of green hotel awareness was the Internet, followed by word-of-mouth and hotel advertising. The sources of green hotel awareness were shown in Table 1.

Table 1. Sources of Green Hotel Awareness

Newspaper	Internet	Television and radio	Word of mouth	Magazine	Hotel advertising	Education
10.1%	50.6%	12.9%	17.1%	8%	16.8%	12.4%

Perception of environmental roles and impacts of hotel business

This part examined Generation Y tourists' viewpoints on the environmental roles and impacts of hotel business. Shown in Table 2, most opinions gained high mean scores ranging between 3.14 and 4.36. The result highlights the point that the hotel business should have energy efficiency and environment-friendly policies ($\bar{x}$ = 4.36) and green hotel operations can contribute to conserving the environment and saving the energy ($\bar{x}$ = 4.22). Only the opinion "Hotel operations create impacts on the environment" gained the moderate mean level at 3.14.

Table 2. Perception of Environmental Roles and Impacts of Hotel Business

Item	Perception of Environmental Roles	$\bar{x}$	S.D.
1.	Hotel operations create impacts on the environment.	3.14	1.25
2.	Hotel business has a crucial role in environmental conservation.	3.98	0.94
3.	Energy efficiency and environment conservation is the mission of hotel business.	4.14	1.00
4.	Hotel business should have energy-efficiency and eco-friendly policies.	4.36	0.89
5.	Green hotel operations can contribute to conserving the environment and saving the energy.	4.22	0.91

Green hotel practices

The respondents were asked to what extent they agreed with 11 green practices that the hotel industry typically implemented, using energy-saving light bulbs, water-saving devices and glass water bottles, to name a few. Shown in Table 3, the study identified green hotel practices in general were positively evaluated.

Table 3. Green Hotel Practices

Item	Green Practices	$\bar{x}$	S.D.
1.	Reusing bedding set or towels for a multiple night guest	2.64	1.36
2.	Using automatic lighting system in guest rooms	4.62	0.90
3.	Sorting and recycling waste	4.40	0.94
4.	Providing a recycling bin in guest rooms	4.00	1.36
5.	Replacing plastic water bottles with glass bottles	4.20	0.91
6.	Using energy-saving light bulbs instead of conventional bulbs	4.16	0.91
7.	Using shampoo and soap dispenser in place of plastic bottles in guest rooms	4.10	1.08
8.	Using water-saving devices such as showers and taps with low flow	3.76	1.36
9.	Being a 100% smoke-free hotel	4.38	0.85
10.	Encouraging employees to participate in energy saving and environmental conservation	4.50	0.74
11.	Organizing eco-friendly activities and engaging guests in those activities	4.06	0.98

Nine green initiatives received mean value higher than 4.00. Among them, "using automatic lighting system in guest rooms" had the highest mean (4.62), followed by "encouraging employees to participate in energy saving and environmental conservation" ($\bar{x}$ = 4.50) and "sorting and recycling waste" ($\bar{x}$ = 4.40). On the other hand, "using water-saving devices such as showers and taps with low flow" was rated moderate score ($\bar{x}$ = 3.76). The lowest mean value of 2.64 fell to "reusing bedding set or towels for a multiple night guest".

Interest and intention to choose green hotels

Exhibited in table 4, the respondents exposed their interest in green hotels and intension to stay at green hotels for their trips as per the mean of 3.70 and 3.59 respectively. The respondents also identified that they would consider whether the hotel was environmental-friendly before choosing an accommodation ($\bar{x}$ = 3.48).

Table 4. Interest and Intention to Choose Green Hotels

Item	Interest and Intention in Green Hotels	$\bar{x}$	S.D.
1.	To what extent are you interested to stay at green hotels?	3.70	0.91
2.	To what extent do you intend to stay at green hotels for your trips?	3.59	0.90
3.	To what extent do you consider whether the hotel you will stay is environmental-friendly?	3.48	0.90

Discussion

This research survey showed that more than half of respondents had known green hotels, however, the percentage of those who recognized the existence of green hotels was not very high (67.4%). This finding is similar to the study of Karavasilis et al (2015) that although Gen Ys in Greece were environmentally concerned, they were not quite aware of green hotels.

Overall, the respondents agreed that environmental conservation and energy efficiency should be established as hotels' policy and mission, and green hotel operations helped create sustainability. This finding indicated positive disposition of Thai Gen Y tourists towards environmental protection and was in line with previous studies reporting Generation Ys' high level of sustainability concern (Kubickova, 2014; Karavasilis et al, 2015: Tang & Lam, 2017; Goh et al, 2017).

Most green hotel practices received high mean values. "Automatic lighting system in guest rooms" was scored the highest, which could reflect the respondents' favor for green practices that make their life convenient. The respondents also agreed that hotels should encourage employees to take part in sustainability practices. Employees' engagement contributes to the success of hotel's green initiatives. Many studies showed that the level of employees' commitment in green practices is allied with the organization's sustainability culture and supervisors' support (Goh et al, 2017).

Among those green practices, "using water-saving devices such as showers and taps with low flow" was rated lower than 4.00 mean value. This could imply that Gen Y tourists did not want green practices to negatively impact their comfort of stay at the property. Karavasilis et al (2015) presumed their Gen Y respondents were not prepared for inconvenience occurred from green practices. The practice of "reusing bedding set or towels for a multiple night guest" gained the lowest mean value. This could suggest that during the Covid-19 pandemic, cleanliness has become a priority for tourists despite their awareness of environment and energy-saving. Concerned about health and hygiene, Gen Y tourists may require the linen and towels to be changed daily to guarantee the sanitation.

This study revealed that Thai Gen Y tourists were interested to stay at green hotels at high level, however their intension to stay at green hotels gained lower score. This could indicate that besides green practices, tourists may consider other factors when choosing a hotel. There are many factors influencing tourists' hotel selection including safety and security, value for money, service quality, location, room and facilities (Tuan, 2019; Choorichom, 2011). The study of Bunrangsee & Pasunon (2018) also exposed that security, rooms and staff were rated the highest factors affecting hotel selection of Thai tourists in Bangkok.

Recommendation

Recommendation from this study

1. According to this study, Thai Generation Y tourists paid high attention to the environmental roles of hotel business. Hotel managers, therefore, should take action on energy-efficiency and eco-friendly policies as the organization's primary mission. This green culture should also be thoroughly communicated these to all levels of staff. The green policies will not only attract Gen Y and green tourists but also help the hotel business reduce operational costs such as electricity and water.

Moreover, related agencies, either government or public, should support the hotel business in various ways such as giving advice and incentives in order that hotels can achieve implementing green practices.

2. As level of consumer awareness on green hotels has an impact on attitude towards green hotels and intention to stay at green properties (Karavasilis et al, 2015; Mehta & Sharma, 2019), Thai hotel business should adopt green marketing strategies to create more awareness on green hotels. Hotel managers should have a greater increase in advertising green hotels and their practices to the public, particularly Generation Ys who are potential clients in the tourism industry. Also, communication

about benefits of eco-friendly initiatives to all stakeholders, especially customers, communities and the environment, should be boosted to attract Gen Y travelers and increase their intention to stay at green hotels. The Internet, websites and social media in particular, is suggested to be the major tool to promote green hotels and practices, as Gen Ys spend the most time online for both searching information and socializing. As reported by Franzidis and Hritz (2014), Generation Y tourists particularly in USA considered a prior-to-travel research of destination they would visit was important.

Recommendation for future research

Future studies are recommended to investigate other generations' perception especially Generation X tourists because they are high spending travelers (Munley, 2018). Understanding what Gen X tourists think about green practices is helpful for the hotel business to deliver what they need.

Besides, future research may examine tourists who stayed at green properties in order to understand their experience and perception towards eco-friendly practices implemented by green hotels. The hotel industry, therefore, will be able to enhance those practices to meet tourists' expectation and satisfaction.

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