Editorial

We cordially invite you to attend the International Conference on Global Economy in Business, Management, Social Science and Humanity Perspective (GEMSH-19), which will be held in Istanbul, Turkey on June 09th, 2019. The main objective of GEMSH-19 is to provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in Global Economy in Business, Management, Social Science and Humanity Perspective. This conference provides opportunities for the delegates to exchange new ideas and experience face to face, to establish business or research relations and to find global partners for future collaboration.

These proceedings collect the up-to-date, comprehensive and worldwide state-of-art knowledge on Global Economy in Business, Management, Social Science and Humanity Perspective. All accepted papers were subjected to strict peer-reviewing by 2-4 expert referees. The papers have been selected for these proceedings because of their quality and the relevance to the conference. We hope these proceedings will not only provide the readers a broad overview of the latest research results on Global Economy in Business, Management, Social Science and Humanity Perspective but also provide the readers a valuable summary and reference in these fields.

The conference is supported by many universities and research institutes. Many professors played an important role in the successful holding of the conference, so we would like to take this opportunity to express our sincere gratitude and highest respects to them. They have worked very hard in reviewing papers and making valuable suggestions for the authors to improve their work. We also would like to express our gratitude to the external reviewers, for providing extra help in the review process, and to the authors for contributing their research result to the conference.

Since March 2019, the Organizing Committees have received more than 70 manuscript papers, and the papers cover all the aspects in Global Economy in Business, Management, Social Science and Humanity Perspective. Finally, after review, about 23 papers were included to the proceedings of GEMSH-19

We would like to extend our appreciation to all participants in the conference for their great contribution to the success of International Conference 2019. We would like to thank the keynote and individual speakers and all participating authors for their hard work and time. We also sincerely appreciate the work by the technical program committee and all reviewers, whose contributions make this conference possible. We would like to extend our thanks to all the referees for their constructive comments on all papers; especially, we would like to thank to organizing committee for their hard work.
Acknowledgement

ITAR is hosting the International Conference on Global Economy in Business, Management, Social Science and Humanity Perspective this year in month of June. Technical advantage is the backbone of Global Economy in Business, Management, Social Science and Humanity Perspective has become the platform behind all the sustainable growth International Conference on Global Economy in Business, Management, Social Science and Humanity Perspective will provide a forum for students, professional engineers, academician, and scientist engaged in research and development to convene and present their latest scholarly work and application in the industry. The primary goal of the conference is to promote research and developmental activities in International Conference Global Economy in Business, Management, Social Science and Humanity Perspective and to promote scientific information interchange between researchers, developers, engineers, students, and practitioners working in and around the world. The aim of the Conference is to provide a platform to the researchers and practitioners from both academia as well as industry to meet the share cutting-edge development in the field.

I express my hearty gratitude to all my Colleagues, Staffs, Professors, Reviewers and Members of organizing committee for their hearty and dedicated support to make this conference successful. I am also thankful to all our delegates for their pain staking effort to travel such a long distance to attain this conference.

Dr. Albert Munroe
President
Institute for Technical and Academic Research (ITAR)
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The Conceptual Framework: Effect of Expectations, Quality of Service and Perceived Values towards Satisfaction of Tourists Visiting National Parks in the Upper Northern Region of Thailand


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Abstract:
The purpose of this research was to examine the expectations and level of satisfaction with the quality of service and perceived value of national parks in the upper northern region of Thailand. The research framework was drawn from theories about customer satisfaction and tourists' views on national parks, which were regarded as pristine and ecologically-diverse. It was thought that these parks should have been preserved as sanctuaries and by doing so, it would help create jobs for people in the local community by attracting local and international tourists.

This research employed mixed methods with 500 Thai and foreign tourists visiting 31 national parks in 8 provinces in the upper northern region of Thailand that acted as research participants. The research tools were questionnaires and interviews developed from perceived values and image theory. The data were analyzed by using descriptive statistics, inferential statistics and path analysis, and the results were disseminated for academic and commercial purposes.

Keywords:
Effect of Expectations, Quality of Service, Perceived Values, Satisfaction of Tourists Visiting

1. INTRODUCTION

The tourism industry is a large industry which is related to many businesses according to the research of World Travel and Tourism Council (WTTC) who stated that in 1998, the tourism industry caused approximately 231 million direct and indirect employments around the world. Thailand is a country which has been generating a lot of income since 1982, especially the northern region of the country could generate 190,558 million baht in 2018 with the amount of 53,593.6 million baht (28.12%) from foreign tourists and 136,964.4 million baht (71.88%) from Thai tourists (Ministry of Tourism and Sports, 2018). The survey found that as Thailand is a center for economic and social development, there is a large number of both Thai and foreign tourists that come into the country every year including visits and staying at various national parks. As a result, it leads to a better economic system of Thailand, such as high rate of employment and resources usage to benefit societies. In addition, the Department of National Parks implied that more and more tourists came to visit national parks from 2014 to 2018 at the number of 19,640,382, generating the income of 2,664.35 million baht (Department of National Parks, 2019)

Thailand has national park areas, both land and sea, at a total number of 148 sites equaling to approximately 60,000 square kilometers or about 11 percent of the country area (Year 2018 data). The national park system of Thailand has determined that a national park with a territory covering coastal areas, islands, waterways, and sea as marine national park which has gathered ecosystems of various living organisms on land, near the coast, and in the sea. This type of park also has beautiful natural resources that are suitable for relaxing and studying for knowledge. At present, there are 19 national marine parks in Thailand with a total area of approximately 5.34 square kilometers, covering areas along the coastline in the central region, eastern region, and southern regions and there are still 5 national parks that are being prepared for supporting Thai tourism.

However, the northern region of Thailand has 8 provincial parks among them are Chiang Rai, Mae Hong Son, Chiang Mai, Lamphun, Lampang, Phrae, Nan, Phayao, and Uttaradit. These provinces are rich in biodiversity resources starting from the diversity in ecosystem with some resources occur naturally, the uniqueness as one in the world, or resources that are unique to the landforms because the role of national park is to preserve natural environment
including plants and wildlife which are living things in nature that are genetically diverse. These parks may benefit people in the aspects of agriculture, medicine and other factors of life, and education as students and researchers can study through making experiments endlessly. At the same time, people can go to study nature by doing different activities, such as trekking, bird-watching, butterfly-watching, etc. because there are nature study paths for people to walk around and easily study nature as well as being a recreation and stress relief from everyday life. Tourism in national parks also contributes to the tourism business and services that can distribute money to both public and private sectors, especially to local people.

However, when conducting an eco-tourism at national parks in the north, it found out that some places were not as ready as they should have been especially in the quality of service provided by employees because these parks had insufficient wildlife and plant species. As a result, both Thai and foreign tourists were not satisfied and at the end there was no loyalty in tourist attractions of the national parks. Therefore, creating satisfaction in service is a success and national parks must preserve nature to maintain its beauty to impress tourists. The researchers then became interested in finding ways to study the satisfaction and the patterns of tourists’ loyalty to the national park tourism for the benefits of those interested and involved.

2. RESEARCH OBJECTIVES

A. To study expectations, perceived values, quality of service, and satisfaction of tourists visiting national parks in the upper northern region of Thailand.

B. To study effects of expectations, perceived values, quality of service towards satisfaction of tourists visiting national parks in the upper northern region of Thailand.

3. RESEARCH SCOPE

In this research, the researchers determined the scope of the study in 4 aspects: (1) content: emphasize on education, service quality, satisfaction, image, and attitude towards loyalty and behavioral loyalty. (2) population: both Thai and foreign tourists who come to use the service of the national parks in the northern region of Thailand [2] (Bureau of National Parks, 2562, online). (3) area: tourist attractions in 8 the upper northern provinces: Chiang Rai, Mae Hong Son, Chiang Mai, Lampang, Phrae, Nan, Phayao, and Uttaradit [2] (National Park Office, 2562, online), and (4) duration: one year from November, 2018 to October, 2019.

A. Tourist Expectations

Vroom (1964) stated that whatever a person will do, there is an expectation of success in return, as a result, he proposed the concept of expectancy theory which implied that what a person will do depends on 4 following factors: (1) the appropriation of the return regarding the situation

(2) Satisfaction or dissatisfaction with the results to be obtained (3) when compared to others, it must be a beneficiary (4) service recipients will have the opportunity to receive returns as expected because expectations of people are the motivations that make them try to do what they want to fulfill their expectations. Therefore, expectation is an idea or imagination of tourists prior to their visits by themselves, with the different expectations towards the environmental management at each tourist attraction according to their experiences and quality of service received and personal factors as hypothesized in H1 and H2

H1: Expectations influence the service quality.

H2: Expectations influence the perceived value.

B. Quality of Service

Service is an act or activity that cannot be tangible, but happens between the service provider and the service recipient which may further lead to satisfaction. Service is therefore an abstract activity which requires a seller and a buyer who does not possess those services in a concrete form. The service process may be provided with the sale of products or not, [4] (Kotler, 2000, p.36) and can create satisfaction for the customers or consumers [5] (Stanton, Etzel and Walkenr, 1976, p. 537). When there is a need of service recipient, service provider must be ready to service at all time and do not evade to provide services [6] (R. Nuanchawee, 2000, p.43). Service is to provide assistance or take action for the benefit of others or for the convenience of the clients, but after receiving the service, they may be satisfied or not impressed with the service received depending on the service provider whether the service is done quickly, conveniently, accurately, or not taking any advantage and seeking benefits from clients in every situation. The service provider should also be willing to comply with the conditions as promised with the service recipient, resulting in the perceived value of tourists which will be important in the re-purchase of the client in the next time 7] [8] (N. Chittinan, 2008, p.13; T. Danai, 2000, p.26) as hypothesis 3.

H3: Service quality influences the perceived value.

C. Perceived Value

Perception of customer is important because different customers have different evaluations regarding the value of service or product, in addition, they agree to pay for products/service differently. Entrepreneurs must use marketing tools, such as advertising, packaging, continuous public relations until they are well-known and become famous which help them have more value to be perceived than a service without marketing. If the value is presented to the customers, they may consider the benefits to be received and re-purchase as stated by Kotler and Keller in 2009 [9] that “the perceived value or the value received by the customer is occurred from the difference between the total benefit received by the customer and the total cost”, Lovelock also said that the perceived value may be a good
indication of a re-purchase which could be more than a satisfaction or perceived value quality rather than the satisfaction and the purchasing behavior [11] (Cronin, Brady and Hult, 2000, pp. 193-218) as shown in the hypothesis 4.

H3: Perceived value influences the satisfaction.

D. Satisfaction

In the present, satisfaction is the level of feelings of the service users resulting from the comparison between the benefits received and the impression that occurs after being served with the expectations of customers [12] (Kotler, 2000, p.553). These expectations are occurred from the attitudes, experiences, and feelings from the past of the customers as the service providers try to create satisfaction for customers through value creation by working with various parties according to the principle of total quality and competitive differentiation. The value delivered to customers must be greater than the cost spent by the customers since the cost of most customers is price. When customers are satisfied with products and services they receive, it will greatly affect the repeat purchase [13] (Ostrom and Iacobucci, 1995, pp. 17-28) and they may continue to spread to other people which leads to loyalty as shown in the hypothesis 4.

H4: Perceptual value influences the satisfaction.

4. METHODOLOGY

This research is a mixed-methods research using both quantitative research and qualitative methods by collecting data from the questionnaires filled out by Thai and foreign tourists who came to visit the national parks in the northern region of Thailand. The qualitative research method was applied to support findings after obtaining the results from the quantitative research done by conducting an in-depth interview. The researchers have reviewed the literature to develop a conceptual framework and related theories which can be divided into 2 types of research as follows:

A. Quantitative Research: there is a sequence of steps to develop the measurement of relevant variables by using research tools, such as questionnaire, descriptive statistical process, and structural equation model (SEM). Then, the results were discussed, summarized, and received additional suggestions from the research after the interviewees had completed the close-end questionnaires. Lastly, the qualitative research was used to compare with the quantitative one.

B. Qualitative Research: the semi-structure in-depth interview was used according to the literature reviewed in order to cover the research on the relationship between expectations, perceived values, quality of service, and satisfaction of tourists who had visited national parks in the northern region of Thailand. The researchers conducted an examination of the completeness of the data with a triangulation [14] (Denzin, 1970) and finally, the results from the structural equation analysis were discussed, summarized, and received additional suggestions.

5. CONCEPTUAL FRAMEWORK

After reviewing the literatures, the researchers could summarize the conceptual framework as below:

![Figure 1: Conceptual framework]

6. SUMMARY AND CONCLUSION

This research is an integrated research which was done to support both quantitative and qualitative data under the concept of resource base theory of Barney (1991) [15] which concluded that if any organization has readiness of resources in the organization those are important factors and are being possessed, it can bring competitive advantage or the operation of the tourism industry. Therefore, the park administrators should consider the resources available in each area that have potential to create value-added products or attractions and readiness of communities instead of considering the cost of competition of the products that would be different from others. Wernerfelt (1984) [16] agreed that the resource base concept meant assets, capabilities, organization process, firm attributes, information, knowledge, wisdom, way of life, and culture of community. Consequently, the national park administrators should have a strategic plan to enhance service quality and develop a plan on existing resources with employees in order to properly respond to changes in the environment through job creation and income generating for people in the communities to support the economic foundation of Thailand.

REFERENCE

The Conceptual Framework: The Relationship between Organizational Image, Perceived Value, and the Satisfaction and Loyalty of Tourists at Thai OTOP Nawatwithi Community


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Abstract:

The purposes of this research were 1.) To examine the level of importance in terms of organizational image, perceived values, level of satisfaction and loyalty of the tourists visiting Nawatwithi OTOP community and 2.) To study the relationship between organizational image, perceived values, satisfaction, and loyalty of the tourists visiting Nawatwithi OTOP community. This research followed the Nawatwithi OTOP community tourism project, which integrated community identity and lifestyle with tourism through the application of new innovations. This project was established to highlight the attractions of the local community's wisdom, lifestyle, culture and creativity with the aim of increasing the income of individuals in the community and thus obviate the need to look for work elsewhere.

This research employed the mixed method with a number of 500 tourists as the participants in 50 Nawatwithi OTOP communities, and the research tools were questionnaires, which were constructed based on customer satisfaction and organizational image theory in order to examine relationships or factors that affected tourist loyalty. The resulting data were analyzed using the AMOS program to produce descriptive and inferential statistics, and structural equation modeling (SEM). The results were disseminated for both academic and commercial purposes.

Keywords:
Organizational Image, Perceived Value, Satisfaction, Loyalty, Nawatwithi OTOP Community

1. INTRODUCTION

At present, the national strategy has been defined for 20 years (2017-2036) with a conceptual framework for creating competitiveness that focuses on the development of the manufacturing and service sectors to be able to compete in the long run, people have better quality of lives, and generate higher income including the 12th National Economic and Social Development Plan (2017-2021). Strategy 3: Strengthening economic competitiveness and sustainable competition has guidelines to strengthen the business competitiveness of the service sector as well as the Ministry of Interior. Strategy 4: Focus on strengthening communities and economic foundations by the participation of every sector under the philosophy of sufficient economy. In addition, the promotion of learning and participation of people in order to develop the community for stability and become consistent [6].

Nawatwithi OTOP community is a new OTOP development concept of the Department of Community Development with the goal of allowing people in the area to sell products within the community so as to generate more income to the community by demonstrating charm, local wisdom, lifestyle, dressing culture, local food, and creative thinking and transform them into income resulting in spreading the income within the community. The community can also become consistent where everyone is ready to be a good host and it is not necessary for children to go to work outside of the community. This method is different from the previous one according to the OTOP campaign which products used to be sold outside of the community and everything was up to the government agency, however, the government has supported the budget of 10,000 million baht with the Nawatwithi OTOP tourism community project in each area of Thailand by selecting from prominent and potential communities in 76 provinces and 878 districts with 3-5 tourist destinations per district. Local people in these communities will be working with a group of agencies in both the public and private sectors that are ready to create the understanding with communities in those areas to help find information through the survey in...
each area context analysis, charm of the community, way of life, wisdom and culture of that community by determining a participatory travel route for all sectors. This OTOP development concept focuses on analyzing consumer needs and developing products as well as packaging to be unique in each area which is regarded as a preparation for attracting tourists.

In order to consider the potential of the community, it can be measured by the number of tourists in each area, natural and environmental costs, and art and culture, etc. The operation of Nawatwithi OTOP in each area can be extended from the OTOP villages for tourism or there may be an extension of the villages that have been supported by the Special Area Development Administration for Sustainable Tourism (Public Organization). Moreover, there must be a focus on selling OTOP products with a selling point of their charms or identities of the communities, such as natural features of rivers or mountains, histories and myths in cultures and traditions, and the strength of the communities. Therefore, a business plan and community travel calendar are necessary which require a reasonable budget according to the reform plan for driving the government policies into action by positioning people as the center coupled with valuable innovation in response for the goals of development to Thailand 4.0 with a focus on enhancing the cooperation between public and private sectors under the concept of “Pracharat State”. The project named “Thai Popular Sustainable Project” is one of the most significant projects that aims at driving the development from the village level to the district with integrated assistant supported by government and private sectors to achieve concrete development results [6] through the images of tourist attractions of each region. This results in tourists being recognized after visiting these tourist attractions, consequently, they are satisfied at different levels. If they are very satisfied, they may suggest other people to visit the places that they have been to, leading to the loyalty of tourists.

2. RESEARCH OBJECTIVES

A. To study the importance of corporate image, perceived value, satisfaction, and loyalty of the tourists who come to visit the Nawatwithi OTOP communities in Thailand.

B. To study the relationship between corporate image, perceived value, satisfaction, and loyalty of the tourists who come to visit the Nawatwithi OTOP communities in Thailand.

3. RESEARCH SCOPE

This research is a survey and qualitative research which the analysis unit is both Thai and foreign tourists who are loyal to the Nawatwithi OTOP communities in Thailand with the scope of study in 4 areas as follows:

1) Content: Focus on the relationship between corporate image, perceived value, satisfaction, and loyalty of the tourists who come to visit the Nawatwithi OTOP communities in Thailand.

2) Population: Both Thai and foreign tourists who intend to visit 50 prototype Nawatwithi OTOP communities in Thailand that have been awarded as models of the Community Development Department in 2018.

3) Region: Nawatwithi OTOP tourism communities in 5 regions in Thailand with a number of 50 communities that have been awarded as models of the Community Development Department.

4) Duration: This research takes 1 year to complete from January 2019 to December 2019.

4. LITERATURE REVIEW

In this research, the researchers have reviewed literatures, concepts, theories, and related researches as follows:

The context and situation of Nawatwithi OTOP

The past government policies have encouraged the entrepreneurs in the communities to push their OTOP products to be sold from only one side leading to increasing demand-based revenue channels (Demand Driven Local Economy). Their products are made from charm, wisdom, way of life, culture, and creativity to generate revenue, moreover, families in these communities can live together in the communities without competing with others by selling products outside the communities. It also includes the linking of tourist routes at the community level whether it is a tourist attraction, tourism activity, accommodation or homestay, restaurant, and souvenir shop. These mentioned businesses can generate income that will be distributed to people in the community because they help strengthen the community and truly develop the economic foundation as well.

After reviewing the literatures, the researchers summarize the variables related to the research as follows:

A) Tourism image

Tourism image is a link of faith, knowledge, and feeling of people towards a tourist destination as a result of tourist awareness [3] which has been built in advance to suit reality or may be a clear image of each individual’s feeling [8]. The tourism image has a relationship between imagination and feeling towards expectations and reality [13] with distinctive features in the landscape / surrounding environment[7] and the exposure of local people (hospitality of people in the area). It is also believed that the image is one of the most important and influential factors in making a decision to choose a tourist destination [17][16], among them are (1) Experience (2) Attraction (3) Price and Environment (4) Rest and Relaxation (5) Excitement and Adventure (6) Learning (7) Social (8) Famous [19]. Therefore, those who are involved in the tourism industry
must maintain the tourist feelings in every way in order to make the reputation and tourist attractions in Thailand as hypotheses 1, 3, and 4:

H1: Tourism image affects the perceived value.
H2: Tourism image affects the satisfaction.
H4: Tourism image affects the loyalty.

B) Perceived Value

Recognizing value by customers is important because different customers actually evaluate the value of product or service differently as well as the willingness to make a payment too. Entrepreneurs must use marketing tools, such as advertising, packaging, and continuous public relation until they are well-known and have enough value to be perceived than those who do not have marketing communication. If the value is presented to the customers, they will consider the benefits to be received leading to the repeated purchase according to the concept of [10] which stated that the perceived value or the received value are the results of the difference between the total customer value and the total cost. In addition to Kotler and Keller, the concept of [12] also stated that the perceived value maybe a good indicator of re-purchase which can be more than just a satisfaction or perceived value of the quality or the result of perceived value occurred prior to the satisfaction and buying intention behavior [4] as hypotheses 2 and 3

H3: Perceived value affects the satisfaction.
H5: Perceived value affects the loyalty.

C) Satisfaction

Satisfaction is the level of customer’s feeling that is resulted from the comparison between the benefits from the properties or work of the product as seen or understood (product perceived performance) and the expectations of the customer [9] caused by the experience and past feeling of the buyer. The entrepreneurs seek to create customer satisfaction with value added by working with various parties based on the principle of total quality, value derived from competitive differentiation, and the value delivered to the customer that must be greater than the cost paid by the customer. Accordingly, cost of most customers is the price as when they are satisfied with products and services, it can greatly lead to the re-purchases. However, the characteristics of the required products and services are not always satisfiable [15] because when customers are satisfied with products and services, they tend to repeat their purchases and tell others leading to loyalty in those products and services as mentioned in the hypothesis 3.

H6: Satisfaction affects the loyalty.

D) Loyalty

Copeland [2] offered a concept of customer loyalty with a view that it was a behavior which reflected the consumer’s specific insistence towards brands. However, such definitions have been evolved along the era; for example, building up brand loyalty mainly focuses on the relationship with consumers for long-term success although rapprochement has to do many different things according to the customer groups but it is considered a financial value added, social benefit, and making the business structure stable[11] The process of creating loyalty and retaining customers must be based on the understanding of the decision making process as well as consumer behavior.

Oliver[14] stated that loyalty level consisted of 3 sequences: (1) satisfaction with brand elements (beliefs), (2) feeling of satisfaction with products (attitude), and (3) the unwavering determination to buy everything else about the product (conation) which will ultimately bring long-term loyalty and will be further told to those who are close to the customers.

5. METHODOLOGY AND MODEL

This research is a mixed-methods research that used both quantitative and qualitative research methods by collecting data from the questionnaires done by the Thai and foreign tourists who visited Nawatwithi OTOP communities in Thailand. Then, the qualitative research method was used to support findings from the quantitative research by conducting an in-depth interview given by those tourists who came to visit OTOP communities. According to the information collected based on the review of travel-related literature in Chapter 2 as well as the development of relevant theoretical frameworks, the research can be divided into 2 types as follows:

1) Quantitative research: There was a sequence of steps to develop the measurement of relevant variables by using research tools such as descriptive statistical processing questionnaire and structural equation model (SEM). The results obtained were discussed, summarized, and provided with some additional suggestions from the close-end type of questionnaire. Finally, The qualitative research was used to compare with the quantitative research once more.

2) Qualitative research: There was a semi-structure in-depth review created according to the literature reviewed to cover the research on the relationship between corporate image, perceived value, and satisfaction towards the tourists’ loyalty who visited Nawatwithi OTOP communities in Thailand. The researchers then conducted a complete examination of the data by using triangulation [5] and lastly, the results from the structural equation analysis was discussed, summarized, and provided with some additional suggestions from the research.
6. THE CONCEPTUAL FRAMEWORK

According to the literature, the conceptual framework can be summarized as the figure below:

![Conceptual Framework Diagram]

Figure 1: Conceptual Framework

7. SUMMARY AND CONCLUSION

This research is an integrated research to support both quantitative and qualitative data under the concept of resource base theory of [1] who stated that “if any agencies have the availability of resources in the organization which is an important factor and is the factor that brings about competitive advantage or the operation of the tourism industry, they should consider the resources available in each area that have potential, the need to create value added products, or tourist attractions availability instead of considering the cost competition with the product to be different from the competitors. [18] supported the concept of resource that it had the same meaning as assets, capabilities, organization process, firm attributes, information, knowledge, wisdom, way of life, and community’s culture. Thus, tourism operators in the communities should develop and plan on existing resources in order to properly respond to changes in the environment through job creation which helps generate income for people in the community as well as the creation of new products to support Thailand’s economic basis.

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Scope of International Human Resource Management

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Abstract:
In past decades business organizations are intensely expanding their functions globally. This research focuses on managing people on a multinational context. The objective of the research is to give a brief introduction on international human resource management (IHRM), concept, recruiting and staffing for international assignments, training and development on international platform and their compensations which is successfully completed with support of references from previous researchers on this very area of study. IHRM as a discipline cuts across all other business operations in the international context and plays a vital role in the success or failure of a business venture since, businesses are essentially driven by people. In this form of global business, international human resource management (IHRM) is emerging as a crucial factor since organizations are run by people. What is interesting in thus phenomenon is, not only that there are differences in people across the country but even within a country or regions within it. MNC’s are realizing a need for developing a heterogeneous workforce for delivering the business result keeping in view the changed realities of business. In order to develop such a competent workforce, global companies now need to create new ways to select, motivate, and retain international management talent. International human resource management must, therefore, focus not only on business issues, but on business relationship as well, which are partly, economic and, partly socio-cultural in character. Ability to strike a healthy balance in creating policies addressing both the issues will ultimately determine the success or failure of an operating firm in a foreign land.

Keywords:
IHRM: The Functional Aspect, Organizational Dynamics and IHRM, Special Issues in IHRM

1. INTRODUCTION

International human resource management is the process of procuring, allocating, and effectively utilizing the human resource in a multinational co – operation. These co – operations have functional work forces in various geographical area , managing these work forces to attain organizational goals in the objective of international human resource management.

International human resource management is concerned with identifying and understanding how Multinational Corporation manage their geographically dispersed work force in order to leverage their human resources for obtaining local as well as global competitive advantages. The function of human resource managers in these organizations have to integrate human resource policies and practices across a number of subsidiaries spread in several countries so that the organization goals can be achieved at the same time they have to make these policies and practices sufficiently flexible to allow significant differences in these policies in different countries.

2. P.V MORGAN MODEL OF IHRM

Recruiting and staffing for International Assignments

Hiring people and placing them in positions where they can perform effectively is a goal of most organizations whether it is domestic or international. The recruitment is the process of identifying and attracting potential job candidates in sufficient numbers from within and outside an organization. The process of gathering information for the purpose of evaluating and deciding who should be
employed in particular job is called staffing. The major differences between domestic and international staffing are firm’s decision towards who should hold key positions in headquarters and subsidiaries. It can be ethnocentric, polycentric, regiocentric or geocentric. International recruitment and selection processes should be carefully undertaken as they should reflect the real needs of the organization. The existing staff should be given an opportunity for taking up foreign assignments. At the same time, the needs of the subsidiaries must be carefully assessed before deploying parent/third country nationals in host country locations.

**Recruitment Methods**

- Using head – hunters
- Cross national Advertising
- E- Recruitment
- International Graduate program

**Selection Criteria and Techniques**

- Technical Competency
- Personal Attributes
- Ability to cope with Environmental Variables
- Family Situation
- Country – Specific requirements
- Company- specific requirements
- Language

**Selection Techniques**

- Screening the applicants background
- Testing the candidate’s ability to adapt to the new culture and environment
- Investigate the family situations of the potential candidate vis-à-vis, the foreign cultures and the environment
- Assessing the capacity of the manager to adjust in foreign culture
- Using psychological tests to investigate the overall personality of the manager
- Using international graduate program
- Using assessment centre

**International staffing: Other Issues**

- Expatriate adjustment process
- Transfer archetypes
- Expatriate failure
- Impartation
- Alternative assignment

**Women Expatriates**

“Meritocracy – letting talent rise to the top regardless of where it is found and whether it is male or female is becoming essential to business success”. MNCs today retain employees irrespective of their gender. During the 1980’s and early 1990’s there was a great deal of speculation about whether women could even be effective in global business, particularly as expatriates in environments which were typically hostile towards women. The evidence today shows that women can and do succeed at working abroad even in unwelcoming environments. Organizations have realized that they cannot compete in global environment without using women. Female expatriates are appreciated for their social and communicative competencies as well as their language skills.

**Training and Development in international context**

The subject of training of employees with regard to international operations is always a complex one both from the point of view of the individual employee as well as from the point of organizational policies. The key people who need to be trained are: Expatriates, spouses, children to get the general knowledge of the new country’s demographics, history, politics, business practices, education system, and socio – cultural norms.

**The Goal of Expatriate Training**

- To maximize the cultural sensitivity of relocating employees, in preparing them to conduct business with colleagues from other cultures.
- To learn how to communicate verbally and non-verbally with colleagues in other cultures.
- To understand the historical, political, educational and economic background of the host country well enough to interpret current news, events, and economic policies and social problems.

The attributes needed for expatriate managers: Leadership skills, initiative, Emotional stability, Motivation, Ability to handle relationships, Cultural sensitivity.

**Training and development of international staff**

It includes:

- Identification of training needs
- Training cycle
- Levels of training
- Different training methods

**Identification of Training Needs**

Training needs analysis must consist of three predominant interrelated aspects

- **Organizational Analysis:** Analysis of the organizational variables which might result in potential training needs. For eg: a certain organizational culture which an expatriate manager should endorse.
- **Task Analysis:** Analysis of the job that is to be carried out in terms of behavior and specifies the tasks involved in carrying out the job.
- **Individual Analysis:** Analysis of the required efficiency of the individual to perform the task assigned.
Training cycle

With the support and commitment of the parent country organization, the following cycle can be followed. The components of deployment cycle are as follows:

- Selection of the candidates/employees, who will be deployed for the international assignments
- The training needs to be identified
- Country – specific (i.e., the country of posting) training needs are identified and expatriates are trained accordingly.
- Once the employee is posted in the host – country, there needs to be an orientation programme to make the staff familiar with the new environment. Regular monitoring and support should be provided by the parent country.
- Once the assignment is completed there is complete support provided during the re-entry process.
- The former expatriate (repatriate) resumes a position in the parent/home country.

Levels of Training

The different training levels that ensure the success of the overseas assignments are as follows:

- **First Level:** Learning about the host country – Their culture, Language, politics, business, geography, religious values and history. (Through seminars, videos, meeting with citizens of the country before assignment begins)
- **Second Level:** Understanding the requirements of the assignment – technical skills, managerial knowledge
- **Third Level:** Preparation for the new job: at the new location
- **Fourth Level:** Providing assistance – to adjust and adapt to the new environment.
- **Fifth Level:** Re-entry – contact with family, visit to home during vacations.

Different Training Methods

- Several methods are used in expatriate training
- Short lectures
- Perspective – taking exercises
- Role plays
- Simulation game
- Self – reflection and assessments
- Small group discussion
- Group problem – solving and card – sorting activity
- Question and answer period
- Action planning

Types of Expatriate Training

Training programmes given to parent country Nationals (PCN) or Third Country Nationals (TCN)

- Cultural awareness programme or cross cultural training
- Language training
- Diversity training
- Other related issues in training

To succeed in an international assignment, expatriate managers have to work and live in a different cultural context. Therefore, the cross – cultural reconciliation has to be met and a better understanding of the cultural diversity is needed. It has been found that, more the expatriate managers can match their attitude, managerial style, with host country culture, more effective they are in international assignments. Thoughtful selection and training of the expatriates is required considering the cultural context of the host country in this context.

Compensation Management in International Context

Managing compensations in international context is a very complex and crucial activity of Multinational Corporations. There is a gap between wages/salaries paid for comparable positions in different countries due to different economic systems, development levels, political factors, traditions and culture. It is, thus, imperative for MNC’S to understand the elements that comprise an international compensation system, the complex nature of international compensation etc…

Objectives of International Compensation

- Attract and retain employees qualified for service abroad.
- Facilitate transfers between foreign affiliates and between home country and foreign affiliates.
- Arrange reasonable compensation, in various locations, in relation to the practices of leading competitors
- Be cost effective
- Establish and maintain a consistent and reasonable relationship between compensation of all of the employees of any affiliate, whether posted at home or abroad, and between affiliates.

Components in Expatriate Compensation

**Base salary:** Base salary denotes the amount of cash compensation that serves as a benchmark for other compensation (bonus, benefits). Base salary may be paid in local or home currency or a combination of two.

**Allowances:** MNC’s offer various kinds of allowances to their managers

The most common allowances are:

- Cost-of-living Allowances
- Relocation allowances
- Housing allowances
- Home leave allowances
- Education allowances
- Hardship premium
- Incentives
- Variable pay
Bonuses: Bonus can be of various forms. One form is a percentage added to base pay, ranging from 10% to 30% of base pay. It is seen as a part of base pay and when repatriated, it is withdrawn resulting in a pay cut. A second approach is a lumpsum payment at the beginning of the foreign assignment.

Forms of compensation

Intrinsic and Extrinsic compensation: It is a non-financial compensation which is related to the nature of the work, interest in work and career prospects. Extrinsic compensation is a compensation of financial nature. These forms of compensation are also referred to as primary and secondary terms of employment.

Direct and Indirect Compensation: Direct compensation is an employee’s fixed and variable annual income. Indirect compensation consists of all kinds of deferred income, such as, pension and insurance and of benefits, like a company car, expense allowance. The sum of direct and indirect compensation make up the organization’s total compensation program.

Factors influence compensation policy

- Internal Business Factors
- Purchasing power and Prosperity Social factors

Compensation Management is indeed a complex issue which MNCs need to address with care. The MNC must be able to maximize the gain for the expatriate employees in a foreign country by adjusting his/her compensation package in a way so that the tax burden and other expenses are not only taken care of but at the same time allow savings for the expatriates which would be an additional incentive for both expatriation and repatriation.

3. CONCLUSION

International trade is not a new phenomenon. No longer can nations ignore each other and seek to remain isolated, as interdependence is the key to survival today. Here, we portray the various factors or elements that are connected with managing human resources in international business. Any organization aspiring to participate as a player in international business, must develop the knowledge, skills, and acumen to perceive the subtle nuances that govern the rules of game. International human resource management as a discipline cuts across all other business operations in the international context and plays a vital role in success or failure of a business venture since, business are essentially driven by people.

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The Conceptual Framework: Causal Relationship of Standard and Service Quality of Thai Traditional Massage Business that influences Satisfaction and Customers’ Loyalty in the Upper Northern Region of Thailand


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Abstract:
This research aimed to 1) Study opinions on standard of Thai massage service quality, satisfaction, and customer’s loyalty and 2) Analyze the causal relationship of the standard Thai massage and service quality of the Thai massage business that influences the satisfaction and customer’s loyalty in the upper northern region of Thailand. This research consists of both quantitative and qualitative research methods with questionnaires and interview forms as the research tools. The participants were 400 people who had experienced the massage service in the upper northern region of Thailand including 8 provinces. The data were then analyzed using the structural equation with the Lisrel technique.

The Thai government announced a policy to develop the country to be the “Capital Spa of Asia” by pushing the development of standards and identity of the spa business as well as Thai massage to international standards. The government also focused on proactive marketing within the country and abroad to strengthen the Thai economy, but this business had been facing some problems, such as a shortage of staff to provide Thai massage service and weak in the management that could affect the customer’s satisfaction. Therefore, the researchers were interested in studying the causal relationship of Thai massage standard, service quality of the massage business, and the customer’s loyalty in the upper northern provinces of Thailand. The results of this research will be a guideline for determining strategies to improve service quality to be able to compete further.

Keywords:
Thai massage standard, service quality, satisfaction, customer’s loyalty

1. INTRODUCTION
Thai traditional massage has been the most natural healing method since ancient times with high market value as compared to other types of business. According to the data provided by the Director of Wat Pho Traditional Medicine School, Thai massage market in 2017 was worth over forty billion baht, however, it is believed that the total value of the market has increased along with the growth of the tourism industry. When classifying the health service business in each category, especially Thai traditional medicine, one of the most popular businesses is Thai massage or traditional massage or officially called “Thai Traditional Therapeutic Massage and Manipulation”, it is a science of Thai traditional medicine which has been used for health care for a long time and known to be a world-famous wisdom of Thailand. Thai massage is actually processed by examining the symptom and giving therapy by pressing, squeezing, rolling, compressing or any other massaging methods regarding the pattern of the art of healing. The data in 2018 implied that Thailand’s GDP from the service sector was 5,804,920 million baht, accounting for 40.7 percent of the total GDP and created employments of more than 6 million people. From the statistics of the establishment of service businesses, both juristic and ordinary persons in the group that the Department of Business Development provided support, found that Thailand had 13,514 spa and massage businesses [2]. The benefit of massage is to relieve the body in both physical and mental conditions with the practice of Thai massage profession that helps generate income in the massage service for health in the country as well as abroad, which is expected to have more than 20 countries, such as Norway, Sweden, the United States, Japan, Germany, China, and Australia, etc. In addition, there was a concept to promote the value of Thai massage to be unique; for
example, the government has tried to push Thai massage into a world cultural heritage as well [9].

Thai massage practitioners have also experienced various problems in many aspects, both in terms of standards that the number of service providers lacks basic education, Anatomy knowledge, Thai traditional medicine theory, understanding and skills in various types of massage practices in health service, use of speech, foreign language communication, body expressions, facial expressions, service etiquette and service responsibility, morality and ethics towards service recipients, including the cleanliness of the body, clothes of these health service providers [5]. In terms of service quality, it is considered that the competition is at a very high level and is facing many problems, such as the shortage of service personnel and personnel with expertise in business management, and service quality that affects customer satisfaction which most users give priority to cleanliness, atmosphere of the place, speech and integrity of service providers. Running a business abnormally including the insufficient number of service providers might affect the customers’ feelings of unsatisfaction and may not return to use the service again [11]. The current situation of business competition has become more intense, with the number of entrepreneurs increasing every day; therefore, building customer loyalty is one of the important factors of Thai massage business with sustainability.

Having considered the mentioned factors and problems, the researchers are interested in studying the relationship between quality of service of Thai massage enterprises that influences the satisfaction and loyalty of customers in the upper northern region of Thailand in order to find a casual relationship of loyalty. Then, the results of the research will be used as a guideline for the use of strategies to improve the quality of service of Thai massage practitioners in the upper northern region of Thailand and for those who are interested in running this type of business.

2. RESEARCH OBJECTIVES

A. To study opinions on standard Thai massage, service quality satisfaction, and loyalty of Thai massage customers in the upper northern region of Thailand.

B. To analyze the causal relationship of standard Thai massage and service quality of Thai massage business that influences customer satisfaction and loyalty in the upper northern region of Thailand.

3. RESEARCH SCOPE

In this research, the researchers determined the scope of the study in 4 aspects: (1) content: focus on the study of the relationship between Thai massage standards, service quality, satisfaction, and loyalty (2) samples: customers using Thai massage services in 8 upper northern provinces of Thailand (3) area: 8 provinces in the upper northern region of Thailand consisting of Chiang Mai, Lampun, Lamphang, Mae Hong Son, Chiang Rai, Phayao, Phrae, and Nan (4) duration: 1 year from December 2018 to November 2019.

4. LITERATURE REVIEW

The research mainly focuses on the causal relationship between Thai massage standards and service quality of Thai massage that influences customers’ satisfaction and loyalty in the upper northern region of Thailand.

A) The context of Thai massage

Department of Thai Traditional Medicine Development and Alternative Medicine (2018) [9] stated that Thai massage was affected by everyday life and the mental condition of Thai people in ancient times. Thai massage is not only to treat pain, but it is a healthcare process and alleviate sickness with the principle of touching between massage therapists and customers that directly affects body and mind. Consequently, this massage is considered to be the Thai wisdom of both science and art which has been continued until the present and has gained widespread popularity both from Thai and foreign people. There are a lot of Thai massage teaching courses and have increased the popularity abroad which helps generate income and reputation of the country. Thai massage can be established as a profession since there are massage establishments everywhere, so it is considered as a value from the wisdom of Thai massage in the present. The standards are for the control of the practice of Thai massage including examination, treatment, diagnosis, prevention of diseases, health support, and health restoration by using knowledge about Thai massage within the enterprises according to the announcement of the Ministry of Public Health in 2008. The announcement also mentioned that basic equipment and tools for providing Thai massage services including massage bed, mattress, pillow, linen for massage, clothes and changing room, massage compress, and personnel that has passed the Thai massage course for health according to the standards. These elements result in the confidence of users who make decision to use the service after having satisfied [2]. If the service has high quality and standard with good human relation, it will result in customer satisfaction [3] and loyalty as hypothesized in H1, H2, and H5.

H1: Thai massage standard Influences service quality.
H2: Thai massage standard Influences customer satisfaction.
H5: Thai massage standard Influences customer loyalty.

B) Service quality

The quality of service is the efficient operation according to the needs of customers with the products or service that can create satisfaction for customers and have appropriate operating costs that have an advantage over the
competitors, customers are satisfied and agree to pay for that satisfaction, and all the features of the service which demonstrate the ability to respond to expectations and requirements. It is important that the quality of service must be experienced directly by the customers so they can judge whether the service is good or not [6], [15], [16]. Quality of service is a secret of success in creating customer satisfaction as the goal of keeping your customers will not be achieved if your service quality and work efficiency decrease. Therefore, do not forget to focus on regular checking of employees’ service quality as the business can grow and become sustainable if your customers are happy [2], [10], [12], [14] as follows:

H3: Service quality influences customer satisfaction.
H6: Service quality influences customer loyalty.

C) Satisfaction

Satisfaction is an important factor in increasing attention towards various services, especially the more customers are satisfied, the more your business can achieve the ultimate goal, such as profits from the increasing number of customers and the growth of the business. The word “satisfaction” means the feeling that a person is pleased with any action of another party or satisfied with good service provided by the business. The results of good feelings after using products or service that meet customers’ needs or exceed expectations in various aspects, such as staff, service, and quality of service, etc. as hypothesis 4 [13], [19], [20].

H4: Satisfaction influences loyalty.

D) Customer loyalty

Loyalty is the intention and behavior of customers that are bound to purchasing products or services that they are satisfied with. This loyalty is related to both the buying behavior and the attitude of customers towards products and services, including service providers as well as organizations. When customers have a positive attitude and a long-term good relationship with the organizations, it can result in consistent repeat buying behavior, tell others to try, protect product and service, and the organization that they are satisfied with [4], [15].

5. METHODOLOGY AND MODEL

This research is a mixed research (mixed-methods research) using quantitative research mixed with qualitative methods and collected data by using questionnaires to ask customers who have used the Thai massage shops in the upper northern region of the country. The qualitative research method was used in order to support findings by conducting an in-depth interview after reviewing the literature to develop a conceptual framework. The related theories can be divided into 2 types as follows:

1. Quantitative research: There was a sequence of steps to develop the measurement of relevant variables including questionnaire as a research tool, descriptive statistical processing, structural equation model analysis (SEM) with AMOS technique, and discussed the results with the integration of concepts, related theories, and researches. Additional suggestions obtained from open-ended questionnaire could also be provided and after that, the qualitative research was used to compare with the quantitative research again.

2. Qualitative research: The semi-structure and in-depth interview created according to the literature review was adopted to cover the casual relationship of Thai massage standard and service quality of Thai massage business that influences customer satisfaction and loyalty in the upper northern region of Thailand. The researchers conducted a complete examination of the data with the triangulation [7]. Finally, the results from he structural equation model were discussed, summarized, and provided additional suggestions from the research.

6. THE CONCEPTUAL FRAMEWORK

The researchers could summarize the conceptual framework according to the results from the literature review as follows:

![Figure 1: Conceptual Framework](image)

7. CONCLUSION

This research is an integrated research which supports both quantitative and qualitative data through a literature review with variables relating to loyalty that links between business and service staff which stated that personal factors are part of the satisfaction of staff with the organization before turning into engagement and loyalty. According to Baron’s opinion (1996) [1] which concluded that customer loyalty is a commitment or attitude to business that reflects the relevance system that customers have confidence, faith, love, and cherish towards the business in which they are members or still use those services. High level of satisfaction has a relationship with the current business that consists of (1) high acceptance to the goals and values of the business (2) willingness to act on behalf of others and (3) desire to remain or use that service with the organization. Therefore, customers’ loyalty to the business...
is relatively a stable attitude in a long period of time that they are proud of and satisfied with the business and wish to remain the members of those enterprises. It can be said that customer loyalty is an essential feature that helps business become effective and be able to survive.

REFERENCE

Streamlining the Hospital Discharge Process in a Tertiary Care Hospital with a Holistic Approach

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Abstract:
There is an enormous need to improve the efficiency of the health care services to the best possible extent such that they can reach near perfection in their administrative activities. One such area that needs to be streamlined is the hospital discharge process, which has many sub processes. The time taken for discharge has always been a major factor while assessing the patient satisfaction in a hospital. A hospital discharge demonstrates the trouble of inter-organizational activities within a multifaceted health care structure which can be best solved by using multi-method innovative approaches.

Keywords: Hospital Discharge Process, Streamlining, Turnaround Time, Patient Satisfaction

1. INTRODUCTION

The required volume of health care services is almost the same size of the human population, as the need of healthcare services start from the moment they are born and continues throughout their life time. A healthcare system can be defined as “A set of facilities and organizations that participate in providing services that relate to individuals’ health and well-being.” [1] The total hospital experience of any inpatient can be alienated in three distinct phases, namely admission, intervention, and discharge. Hospital discharge is considered as one of the multiple changeovers within the drive of patient’s care [2].

1.1 Challenges in Hospital Discharge Process

Exclusively, hospital discharge demonstrates the difficulties of inter-organisational procedures within a multifaceted health and care structure. National policies suggest that [3] Inappropriate or weakly planned discharge processes can result in patient risks, additional resource costs, delayed recovery and readmissions. Hospital discharge is as a result understood as a ‘vulnerable stage’ in the care trail that exemplifies the prospects for ensuring patient safety situated between care positions.

1.2 Hospital Discharge Planning

Discharge planning is defined as “An ongoing process that facilitates the discharge of the patient to the appropriate level of care. It involves a multidisciplinary assessment of patient/family needs and coordination of care, services and referrals” [4]

The formation of a plan relies greatly on interaction between the physician, nurses, patient, family, and other healthcare experts and any essential long period care amenities. Discharge planning is afflicting from lack of information, poor contact and harmonization between sharp and long-lasting care [5].

1.3 Quality in Health Care

Hospital is a vital sector in the service industry. Today, everybody is anxious about the superiority of Health Care amenities and the term “Quality” becomes an indispensable element that is very much required in the health care atmosphere to keep the errors as minimal as possible. In the course of achieving Quality, each process in the Hospital wishes to be optimized to the fullest contentment of the patients [6].

There are numerous Quality tools, nevertheless, the most famous ones are “the seven basic quality tools” identified by Ishikawa (1976): “Histograms, Cause and Effect Diagrams, Check Sheets, Pareto Charts, Flow Charts, Control Charts and Scatter Diagrams”. These tools are sufficient for data compilation and scrutiny.

1.4 Patient Satisfaction - SERVQUAL

“SERVQUAL” was developed by Parasaraman et al. (1985; 1988), and has been widely accepted and made use of it as a common instrument that confines the multidimensionality of service excellence. The pragmatic testing which gave out five dimensions, which are: Tangibles, Reliability, Responsiveness, Empathy and Assurance.

This study aims to identify the gaps in the hospital discharge process by studying the existing discharge process and analysing those gaps by using quality control
tools to streamline the process and to assess patient satisfaction level during hospital discharge by using SERVQUAL model. Based on the analysis of these two parameters recommendations are given on how to streamline the entire discharge process such that the workflow is improved and turnaround time can be reduced and areas which need to be focused to elevate patient satisfaction.

2. METHODOLOGY

The research carried out was a cross-sectional study which was exploratory and post facto in nature for a period of six months, from January 2016 to June 2016 in a tertiary care hospital in Bangalore. The process mapping was carried out for a period of two months with a sample of 185 patients for the entire discharge process for planned as well as unplanned hospital discharges which brought out the core problem areas. The entire discharge process was stratified into 5 main areas where in key processes of discharge takes place. With these stratified areas real-time recording of the turnaround time (TAT) of the discharge process was carried out for a period of two months incorporating all the hospital discharges taking place from 8 AM to 6 PM, with a final population size of 185 patients. Secondly, patient satisfaction questionnaire which comprised of 13 questions in the form of 5 point likert scale, from strongly disagree (1) to strongly agree (5) was prepared. A pilot study was carried out to see the telephonic response for 30 samples, out of which 21 had responded. A factor analysis method, varimax (orthogonal rotation method) was carried out for the entire population in the SPSS where in 4 factors were eliminated to interpret the data better. Finally 9 variables were selected and the questionnaire (Appendix-1) was modified.

3. RESULTS AND ANALYSIS

The process mapping was done for a period of two months for 185 samples. The samples were followed throughout the process starting from the doctor’s order for discharge till bill clearance. After mapping the core problem areas were identified and based on the process mapping and the hospital HIS software, the stratification of steps was done for recording hospital discharge TAT. The entire hospital discharge process was broken down into 5 major steps which run down serially as follows; mark patient for discharge, discharge summary preparation time, return of medication, pharmacy clearance and bill clearance. The hospital discharge turnaround time has been segregated for self-pay and insurance patients; 136 patients for self-pay and 48 patients for insurance.

The total over all mean of TAT for insurance patients is 293 mins. By plotting a Pareto’s chart it can be observed that most of the time for insurance patients is consumed at the bill clearance area which is about 61% of the overall time consumed. It is a known fact that there is an involvement of external factor for insurance patients, where there is involvement of a third party administrator involved. The hospital currently does not have a TPA desk in their billing area which needs to be there to minimize the time and complications in bill payment. The next two areas which are considered to be important are the discharge summary preparation time and the time taken to return the medication which take up about 11% and 12% respectively. The total over all mean of TAT for self-pay patients is 157 mins. In the Pareto’s chart for the self-pay patients the major area which needs attention is the bill clearance area, which even includes the pharmacy clearance as well.

For getting a better output in the results only the departments having more than 10 cases have been taken into consideration of comparisons amongst the departments. All the departments selected for comparison and analysis are highlighted in green and the least time taken in violet and the most time taken in red. The average time taken to mark for discharge was least for general surgery cases which were 16 mins and the highest is for internal medicine which was 45 mins. The reason which can be attributed for taking such a long time is due to deficiency of the nurses in the internal medicine section. Due to excess load of work and more number of cases, the nurses delay the process of marking discharge in the HIS. Another reason is the lack of systems in the nursing station which delay the process. The discharge summary preparation time taken is the least for the OBG department which accounts to 9 mins and the highest for integrated liver care. Firstly, the reason why OBG department takes the least time is due to the planned discharges whether the discharge summary is kept ready well in advance by the doctors. Secondly, the consultants in the OBG department themselves do the discharge summary instead of the duty doctors. For return of medications the least time is taken by the OBG department which is about only 3 mins, the reason again being only planned discharges wherein the medicines are returned well in advance. On the other hand, the Gastroenterology cases take the most amount of time i.e, 41 mins. The least time taken for pharmacy clearance is by the General Surgery department and the most by OBG and for bill clearance is least by Internal Medicine and the most by OBG. Both pharmacy clearance and Bill clearance are noted to be highest of OBG as most of the cases are insurance covered which is the major reason for delay. After finding out the major gaps from the process maps and the TAT of the hospital discharge process, cause and effect diagrams were made to bring out all the problem areas leading to delay. Analyzing all five parameters, benchmarking was undertaken to appropriate least time taken during the discharge process.

Now coming to the Patient Satisfaction Assessment, factor analysis was carried out where in the variables were grouped under empathy, reliability and responsiveness for
factors 1, 2, and 3 respectively. The highest significance for empathy is given for patient ambience (.718), for reliability is timely discharge summary (.843) and response to queries (.765) for responsiveness. The other two individual variables under factor 4 and 5 have very high significance values .849 and .918 respectively, which can be grouped under reliability and assurance respectively. By this it can be said that patient ambience, timely discharge summary, response to queries, clarity in post discharge instructions and intimation of discharge completion time plays a very important role in the patient satisfaction and is perceived very significant by the patients. Along with factor analysis the means of the results obtained was calculated as well.

### 4. DISCUSSION

After the entire analysis it is clear that there are major problems in the processes are pertaining to pharmacy clearance, discharge summary preparations and bill clearance. The turnaround time for the average time for self-pay patients was calculated to be 157 mins (2 hours 37 mins) which definitely needs improvement. On the other hand average time for the insurance patients was calculated as 293 mins (4 hours 53 mins). Since the billing for insurance is not in the hands of the hospital the main focus should be to improve the internal processes. The next most crucial area which needs improvement is the hospital discharge summary preparation time. The paper "Reducing and optimizing the cycle time of patients discharge process in a hospital using six sigma DMAIC approach"[7] also brought out that one of the major reasons for delay is the discharge summary preparation. The mean TAT recorded in the study for the hospital was the mean 234.35 minutes and they kept the target of 135 minutes. In another study "Improving Patients Discharge Process in Hospitals by using Six Sigma Approach" had a purpose to minimize the percentage of insured patients whose discharge time from hospital above 50 minutes [8].

While carrying out analysis department wise, the most TAT was observed in the OBG department and the least in the gastroenterology department. Though the OBG department has the least time taken for the discharge summary preparation and return of medications the overall TAT is very high because, firstly they were mostly insurance covered and secondly the new born baby celebrations are performed before discharging the patients. In the study "Improving the Hospital Discharge Process with Six Sigma Methods"[9], conducted in Ohio, Orthopedic surgery discharges took much longer on average than other discharges because of mandated physical therapy in the afternoon. This therapy was being used partly to assess whether the patients were ready for discharge. By comparing the departments the best practices of the departments can be adopted to improve the process in the lacking areas.

The hospital discharge patient satisfaction questionnaire which was attributed to reliability, responsiveness, assurance and empathy gave results where the hospital was very much lacking in responsiveness. Hence the hospital must focus on the improving the responsiveness. On the other hand patient friendliness of the nursing staff and the patient ambience which come under empathy, have a higher weightage on the agreeable side and showed positive patient satisfaction. Regarding reliability, timely discharge summary and clarity in post discharge instructions showed positive patient satisfaction, where as the transparency of hospital charges and bills was on the side of disagreeability. On the whole reliability of the hospital is under neutral.

### 5. RECOMMENDATIONS AND SUGGESTIONS

Below given are the recommendations for the hospital to streamline the hospital discharge process based on the analysis of the problem areas.

- **Formulation of SOPs**: One of the most crucial things that have to be started is the formulation of the standard operating protocol for the hospital discharge process, to give a clear idea for the staff to go about. A systematically detailed protocol will minimize the errors and the confusions in the process there by speeding up things.
- **IT issues**: By solving the IT issues, 50% of the delays can be minimized in the discharge process, since every single step is system based and the hospital is moving towards a paper free hospital. Hence the IT department needs to seek out all these issues as soon as possible.
- **Pharmacy department improvements**: There are a few mandatory things that need to be improved:

#### Preparation of a drug formulary for the hospital

Incorporation of a separate purchase department in the hospital

- Taking the list of most commonly prescribed medications from the consultants and adding them in the HIS well in advance instead of last minute delays due to it.
- Converting the entire medicine list into either generic name or brand names, to avoid confusions.
- Separating inpatient and outpatient pharmacy services.
- **Eliminating duplication of work**: The nurses are complicating their work by entering the work sheet in both systems as well as manually.
- **Work load management for nurses**: The nurses need to be taken classes on workload management and multi-tasking. Training of nurses in both professional level and personal level can prove to be of good importance.
**6. CONCLUSION**

The hospital discharge process is one of the major areas in the hospital which needs improvement and it is a multi-functional process involving many process interlinked with various departments. It is one of the most time-consuming process in a hospital and a major reason for patient dissatisfaction and also affects the hospital revenue when not done in time. The main areas which need improvement are the discharge summary preparations, pharmacy clearances and to minimize the errors by the nurses. Other important improvements which are needed for minimizing the cycle time are eliminating duplication of work by the nurses, increasing the manpower, proper training of HIS to the hospital personnel using it and increase in equipment. There will be a lot of improvement and reduction in the turnaround time and the smooth flow of the processes by eliminating these gaps.

**7. ACKNOWLEDGEMENT**

At the end of my dissertation I would like thank my guides, Ms. Aileen J and Dr. H S Srivatsa without whom this project would not have been completed. I would also take this opportunity to thank and extend my gratitude to Chief Administrator of M.S. Ramaiah Hospital, Dr. Narendranath V and HOD, Department of Hospital administration, Dr. Shalini D for their timely help and guidance.

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### APPENDIX

**Appendix 1**

<table>
<thead>
<tr>
<th>S no</th>
<th>Questions</th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Neutral (3)</th>
<th>Agree (4)</th>
<th>Strongly Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The nursing staff was patient friendly and understanding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Hospital's response to queries was quick</td>
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<tr>
<td>3</td>
<td>Billing and the charges were explained correctly</td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td>The discharge summary was given on time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The doctor/duty doctor explained the Post discharge instructions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>The ward nurses were responsive and available when needed</td>
<td></td>
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<tr>
<td>7</td>
<td>The patient was explained about the time taken for discharge completion</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>The discharge was completed in the said time</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9</td>
<td>The patient was taken till the exit by hospital attenders (in wheel chair, stretcher)</td>
<td></td>
<td></td>
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</tbody>
</table>
Effect of Leadership, Human Resource Management Innovative Organizational Toward Nursing Organizational Performance Community Hospitals


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Abstract:
The purpose of this research was (1) to study the important of Leadership, Human Resource Management, Innovative Organizational and Organizational Performance and (2) to study effect of Leadership, Human Resource Management, Innovative Organizational toward Nursing Organization Performance in Community Hospitals. The sample were collected from nurses (N=2,800) in 500 community hospitals. The data obtained from the questionnaire were analyzed with descriptive statistics of percentage, mean, standard deviation and inferential statistics by path analysis technique.

The results showed that most of registered nurses first priority on Nursing Organizational Performance followed by Human Resource Management, Innovative Organizational and Leadership, respectively. All factors were quite high level.

The results of path analysis showed that Human Resource Management had the most direct effect toward Innovative Organizational. Followed by Leadership had direct effect toward Human Resource Management, Innovative Organizational direct effect toward Nursing Organizational Performance, Human Resource Management had direct effect toward Nursing Organizational performance and Leadership had direct effect toward Nursing Organizational Performance. As for Leadership, it was not direct effect toward Innovative Organizational.

Keywords:
Leadership, Human Resource Management, Innovative Organizational and Nursing Organizational Performance

1. INTRODUCTION

Thailand has changed in terms of society, economy, politics, and geopolitics including environment rapidly under the current situation, and they inevitably affect the operation of the organization in the present, both positive and negative. Particularly, the management of the Thai health system is facing various challenges such as the beginning of the elderly society, change from rural society to urban society, link global trade and investment as well as technological advances resulting in more people expecting more on the quality of the service system. While the government budget is limited and insufficient to increase the cost of public health, it causes the Thai health system to be prepared to cope with these things [1]. Moreover, it affects many aspects of administrative systems in community hospitals, whether it is medical technology and communication advances, business and economic growth, social and natural environment changes, and politics. All of these aspects have a rapid effect on the reform of the organization's systems, especially in the government sector, with many changes, e.g. the government system reform, decentralization of administration from central government to local Internal process improvement for quality service, being a government organization with good governance, change of the perspective focusing on the importance of the population, reducing the size of government workforce and focus on achievement [2].

Impact on changes in these various things has resulted in the change of the government agencies' operations all the time. In addition, Thailand 4.0 policy is a vision for Thailand's economic development policy or the government's economic development model on the vision that is "Stability, Prosperity and Sustainability" with an important mission to drive the reform of country in various aspects. This policy is issued in order to adjust the working mechanism, modernize the system, adjust the working direction and create a way to develop the country to prosper, able to cope with new opportunities and threats that are rapidly changing and violent in the 21st century because such policy is the government's commitment with
the intention to change the economic structure into Value-Based Economy, with the main idea is to change from manufacturing "commodities" to "innovation" products, changing from country driven by industrial sector to technology, creativity, and innovation. Moreover, it changes from focusing on the manufacturing sector to focus more on the service sector [3]

Therefore, according to the mentioned policy, the nursing group of the community hospitals have been affected as the leadership development that will drive the nursing department to meet the government's policy because the nursing director has no requirements or criteria for entering the head nurse position and lack of virtue [4]. Moreover, the effect includes the shortage of nursing personnel, then nurses have to work hard [5] and the number of nurses is limited, not enough for the current workload. Such problems tend to intensify since many factors having effects such as retirement, the cease of nurses' need to work in the wards, the resignation of nurses because of hard work, and bad work environment, result in human resource management. Finally, it brings to lack work stability. The path or opportunity for career advancement is unclear, lack of manpower, unattractive compensation and welfare system to remain in the job. Therefore, from the trend of the replacement manpower that is less and less, the problem of exhaustion from the afternoon and late shifts affect the quality of service [6]. Finally, the effectiveness and performance of the nursing department decrease. Being an innovative organization of nursing groups found that the leadership of nursing administrators must play an important role in driving the organization of innovation to the goal, but there has a lack of support to create an conducive atmosphere of work to production, innovation and lack of encouragement to nurses, creativity and innovation, resulting in decreased performance [7].

As the above issues, the researcher has thereupon reviewed the relevant literature, leading to research on leadership, human resource management, and innovative organizations on the performance of the nursing department, community hospitals to reduce the gap of research studies that are still a problem and needs answers to the nursing department management.

2. RESEARCH OBJECTIVE

1. To study the importance of leadership, human resource management, Innovative organization and nursing organization performance in community hospitals
2. To examine leadership, human resource management and the innovative organization on nursing organization performance in community hospitals

3. LITERATURE REVIEW

According to a literature review, the researcher created 4 related variables: 1) Leadership, 2) Human Resource Management, 3) Innovative Organization, and 4) Nursing Organizational Performance as the information presented below;

1. Community Hospitals

The hospital is a medical service providing the service to sick people. Therefore, it must be accompanied by equipment and personnel that provide medical care for patients 24 hours. It is an agency that works in the area of medical services in the hospitals and in the communities. It is responsible for providing health services in all aspects to the public, the medical treatment, disease prevention, and health promotion, rehabilitation of patients covers the home of the patient himself and is also a training facility for health personnel and community health research [8] which includes:

1. First level 3 is a community hospital with a bed size of lower than 30 beds;
2. First Level 2 is a community hospital with a bed size of 30 - 90 beds;
3. First Level ) is a community hospital with a bed size of 90 - 120 beds;
4. Middle level hospital is a middle level 2 hospital with a community hospital of 120 beds or more.

Thailand has a total of 768 community hospitals, divided into 91 Middle level 2 community hospitals, 74 First Level 1 community hospitals, 518 First Level 2 community hospitals, and 85 First Level 3 community hospitals [9]. In consequence, a nursing department is a group in a community hospital that is very important and has the most number of personnel in the hospital. The nurse director is the highest executive in the nursing department and directs to the hospital director with the responsibilities for policy formulation strategies and strategies in nursing practice. It includes management of nursing service systems in terms of academic service management as well as effective work development and personnel. The services cover medical treatment, health promotion, prevention and rehabilitation of patients 24 hours a day, focusing on people to be able to take care of their own health [10].

2. Leadership

The context of change in society, technology, economy, environment, and political administration is rapidly occurring today. The bureaucracy has adapted both in management, strategic plan, new administration. Such changes require leadership in driving the organization towards a new paradigm [11] where leaders are very important for organizational development and management as well as policy formulation, direction for the organizational development in order to achieve the organization's goals. Importantly, it must be communicated...
or conveyed to the co-operation policy in order to achieve the goal [12].

The success of the organization is not only from the co-operation of the people in the organization but also effective leaders and uses the various patterns of leadership, whether they are transformational leaders between leaders and followers where the leader accepts the needs of the person, followed by giving the valuable rewards. The followers will be rewarded in exchange [13], [14]. The transformational leaders are leaders who know what the followers desire from the job and attempt to give the followers and promise to reward according to the level of success of the even as reward exchanges. The transformational leaders [15] have the elements as (1) Idealized influence or Charisma leadership, (2) Inspiration Motivation, (3) Intellectual stimulation, (4) Individualized Consideration. Leadership influences human resource management, innovative organization and nursing organizational performance as hypothesized at 1, 4 and 5

H1: Leadership influences human resource management.
H4: Leadership influences innovative organizations.
H5: Leadership influences nursing organizational performance

3. Human Resource Management

Human Resource Management is a scientific concept [16] in the era of human relations, which Elton Mayo (1880 – 1974) emphasized the importance of the person in the organization by considering the interpersonal relationship that is informal, pay attention to the basic needs of the person's feelings, motivation, and satisfaction leading to good performance.

As for human resource management: behavioral science emphasizes the behavior of personnel at every level of the organization. All of them are important for increasing productivity or working efficiency of the organization [17], [18] and human resource management as an artificial intelligence era is to apply the computer system came to replace and support in the operation instead of human labors, resulting in high-efficiency work with higher organizational performance [19].

Human resource management is the application of proactive strategies that are consistently related to the management of the most valuable resources in the organization in order to achieve goals in both public and private operations. Human resource management strategies will change according to time and situation, especially government agencies consisting of (1) human resource planning, (2) training and personal development, (3) compensation and reward, and (4) performance evaluation [20], [21] and human resource management have an effect on the innovative organization and performance of the organization as hypothesized 2 and 3.

H2: Human resource management influences innovative organizations.
H3: Human resource management influences innovative organizations.

4. Innovative Organization

Today's organizations have to adopt extremely in order to be in line with economic conditions and have to be transformed into an innovative organization with an emphasis on work challenges, giving opportunities for people to be creative and accepting opinions in all levels. The mistake is not considered as a punishment but will be seen as an important lesson that the organization has learned. The importance is executives must create personnel with the full of knowledge, skills, beliefs and operational processes to stimulate the innovation. The organization must be highly flexible, able to adapt according to the situation and the decision-making process can be done rapidly because the innovation is due to the combination of knowledge and courage in doing something. Knowledge is an intangible thing but can be fulfilled [22]. Innovative organization [23] [24] includes (1) leaders must have a vision, supporting strategies and promote innovation (2) the organizations must create an atmosphere in the organization to facilitate creativity in creating innovation, (3) organizational structure is flexible at the appropriate level and encourages creativity and innovation, (4) the organizations have teamwork, (5) the organizations have training and development of staff for innovation, (6) the organizations have the link with external factors, (7) there are the tools to help stimulate innovation, and (8) the communication is effective and innovative organization influences the nursing organizational performance as hypothesized 6.


5. Organizational Performance

The performance of the organization will be high or not depending on the organization that has to be a group of employees with the capabilities of working with those products. Those qualities must be continuously developed for achieving organizational goals. However, the organizational performance must be clear in what the organization wants to achieve the goal, whether it is the result set, paying attention to the achievement occurring through assigning employees the power to make decisions and motivating people in the organization to achieve success [25]. As for the performance of government agencies include emphasize effective results and achieving the mission, results of importance on service recipients and stakeholders as well as the effectiveness of the process [26].
4. METHODOLOGY

This research is a quantitative research with 4 related variables: 1) Leadership [15], [27]. 2) Human Resource Management [28], [29]. 3) Innovative Organization [30], [31] and 4) the Nursing Organizational Performance [32], [33] where each variable has a relationship with each other.

5. SAMPLE AND PROCEDURE

The population used in the research was the Unit of Analysis. They employed the community hospitals under the jurisdiction of the Provincial Health Office, Health Region 1-12, where the researcher gathered data from [34], the total number of community hospitals as 500 hospitals. The informational representatives were professional nurses working in community hospitals. The population used in the research was 37,820 professional nurses. The sample size was set at 2,800 people, which was at a very good level and was the number of suitable samples for data analysis with structural equations [35] including using Stratified Random Sampling.

Research Instruments

1. The research instrument was a questionnaire divided into 2 parts as follows.

   Part 1: General information of the respondents is the multiple choice questions and fill in the words, including gender, age, status, education level, position, the position of work, work experience, type of work, working department, hospital size, working period, and health zone.

   Part 2: Related variables divided into 4 parts as follows: Section 1 as Leadership with 10 questions, Section 2 as Human Resource Management with 10 questions, Section 3 as Innovative Organization with 10 questions and Section 4 as Nursing Organizational Performance with 10 questions. The online questionnaires were distributed to the sample group.

   Research duration was a year from October 2018 to March 2019.

Research Tool Construction

The research team created a questionnaire developed from 4 related literature, namely 1) Leadership, 2) Human Resource Management, 3) Innovative Organization, and 4) Nursing Organizational Performance. The research tool was 7-Likert scale questionnaire [36]. Level 7 refers to the highest opinion level and level 1 means the lowest level of opinion. This tool has been tested for content validity from 5 experts and considered content validity index. The results of validation and consistency with the overall objectives have an average of 0.92. After that, the researcher tried out the tool to perform reliability tests with similar samples as professional nurses in 100 community hospitals. The Cronbach’s Alpha coefficient of the questionnaire was analyzed and had the value of .984. Each aspect was classified as leadership with the Cronbach’s Alpha coefficient of 0.956, human resource management with the Cronbach’s Alpha coefficient of .928. The innovative organization had with the Cronbach’s Alpha coefficient of .967 and the nursing organizational performance with the Cronbach’s Alpha coefficient of .957.

Data Analysis

Data analysis used the descriptive statistics to find the percentage, mean and standard deviation. As for the Inference, statistics was used for analyzing the effect on related variables with path analysis technique.

6. RESULTS

The demographic data showed that a total of respondents is 2,800 and most of them are females in the range of 41 - 45 years, followed by the age of 51 - 55 years and 46 - 50 years, respectively and the least age is the age in the range of 20 - 25 years. Most of them have marital status as married status, followed by single status and the least is divorced or widowed. They mostly obtain a bachelor’s degree or equivalent, followed by a master’s degree and the least is the doctorate degree. Most of them hold professional nursing profession positions, followed by professional practice nurses and the least is professional nurses. The most active position is a registered nurse professional and the least is the nursing director.

The type of government service is the most civil servant position, followed by temporary employees and employees of the Ministry of Public Health, and the least is the government official. The most active departments are In-Patient Department, followed by the Emergency Room, and Out Patient Department, respectively. As for the work unit, the least is Intensive Care Units. For the operation in the community hospital, it was found that the operation at the first level hospital is the first level 2, followed by the middle-level hospital and the least is the first level 3) and the highest health jurisdiction is the health zone 1, followed by the 9th health zone and the 7th health zone, respectively, and the least is the 3rd health zone and the 12th health zone, respectively.

The analysis of descriptive statistics can be concluded that all factors have a high significant level (5.00). The first aspect is the nursing organizational performance with the average scores of opinions being at a rather high level ($\bar{x} = 5.09, SD = 0.69$), followed by human resource management, with the average scores for opinions level being at a very high level ($\bar{x} = 5.05, SD = 0.66$). As for innovative organization has the total average scores as in rather high ($\bar{x} = 5.01, SD = 0.67$), and leadership with the average scores in the rather high lot ($\bar{x} = 4.85, S.D = 0.89$), respectively.

The analysis of Inference statistics in analyzing the relationship path of the variables for the aspect of executives’ leadership, human resource management, and the innovative organization, the results showed that they
have direct and indirect effects, and total effect on nursing organizational performance as Fig.1: Path Analysis.

From Figure 1, it was found that the human resource management has the most direct effect on the innovative organization with the path coefficient equal to 0.94 with the value of R2 equal to 0.62, followed by leadership with indirect effect on nursing organizational performance through human resource management with a path coefficient equal to 0.79 and leadership has a direct effect on human resource management with a path coefficient of 0.79. The innovative organization has a direct effect on nursing organizational performance with a path coefficient of 0.41 with R2 equal to 0.74. Human resource management has a direct effect on nursing organizational performance with a path coefficient as 0.34 with a value of R2 as 0.62, and leadership has a direct effect on nursing organizational performance with a path coefficient as 0.10. Finally, leadership has no direct effect on the innovative organization with a path coefficient as 0.10 and a value of R2 as 0.74.

### Table1: Research Hypothesis Testing

<table>
<thead>
<tr>
<th>Research Hypotheses</th>
<th>Path Coefficient</th>
<th>t-stat</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Leadership influences Human Resource Management</td>
<td>0.79</td>
<td>29.671</td>
<td>***</td>
<td>support</td>
</tr>
<tr>
<td>H2: Human Resource Management influences Innovative Organization</td>
<td>0.94</td>
<td>21.307</td>
<td>***</td>
<td>support</td>
</tr>
<tr>
<td>H3: Human Resource Management influences Nursing Organizational Performance</td>
<td>0.34</td>
<td>6.268</td>
<td>***</td>
<td>support</td>
</tr>
<tr>
<td>H4: Leadership influences Innovative Organization</td>
<td>-0.10</td>
<td>-2.995</td>
<td>0.003</td>
<td>no support</td>
</tr>
<tr>
<td>H5: Leadership influences Nursing Organizational Performance</td>
<td>0.13</td>
<td>4.177</td>
<td>***</td>
<td>support</td>
</tr>
<tr>
<td>H6: Innovative Organizational influences Nursing Organizational Performance</td>
<td>0.41</td>
<td>10.264</td>
<td>***</td>
<td>support</td>
</tr>
</tbody>
</table>

Note: the t-stat value is between 1.96 -2.58, indicating that there is a statistically significant level at 0.05 ** and the t-stat value is 2.58 or higher showing a statistically significant level at 0.01.

According to Table1, the hypothesis test found that all defined variables support the hypotheses of 1 - 3 and hypotheses 5 – 6. However, hypothesis 4 has no support which means that leadership has no effect on innovative organization with a path coefficient as -0.103, not statistically significant (p = 0.003). Human resource management influences the most innovative organization with a path coefficient as 0.939, followed by leadership, influencing human resource management with a path coefficient as 0.787, innovative organizations has an effect on nursing organizational performance with a path coefficient as 0.405, human resource management has an effect on nursing organizational performance with a path coefficient of 0.341 and leadership has effect on nursing organizational performance with a path coefficient as 0.132, respectively.

### Table2: Results of direct effect and indirect effect and total effect analysis

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>R-Square (R²)</th>
<th>Effect</th>
<th>Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Nursing Organizational Performance</td>
<td>Innovative Organization</td>
</tr>
<tr>
<td>Leadership</td>
<td></td>
<td>DE 0.10</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IE 0.30</td>
<td>0.74</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TE 0.43</td>
<td>0.84</td>
</tr>
<tr>
<td>Human Resource Management</td>
<td>0.62</td>
<td>DE 0.34</td>
<td>0.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IE 0.30</td>
<td>0.74</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TE 0.74</td>
<td>NA</td>
</tr>
<tr>
<td>Innovative Organization</td>
<td>0.74</td>
<td>DE 0.04</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IE 0.00</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TE 0.04</td>
<td>NA</td>
</tr>
</tbody>
</table>

Note: TE= Total Effect, DE=Direct Effect, IE=Indirect Effect, NA=Not Application

Table2 showed the results of the path analysis, it revealed that leadership has a direct effect on nursing organizational performance with a path coefficient of 0.13 and indirect effect as 0.30 as well as the total effect as 0.43. Leadership has a direct effect as 0.10, an indirect effect as 0.74 and total effect as 0.84 on the innovative organization. Moreover, leadership has a direct effect on human resource management as 0.79. Human resource management has a direct effect on nursing organizational performance as 0.34, direct effect as 0.39, indirect effect as 0.73 and R2 value as 0.62. Lastly, the innovative organization has a direct effect on nursing organizational performance as 0.04 with in a direct effect as 0.00 including total effect as 0.04. The R2 value is as 0.74.

### 7. CONCLUSIONS

The findings revealed that most of the subjects are female than males with the age of 41-45 years. They mostly married. They mostly obtained a bachelor's degree or equivalent. Most of them hold professional nursing positions. The most operational position is a registered nurse professional as government officers. Most of them work in the In-Patient Department and work at First Level 2) hospitals and under the 1st health zone.
According to the first objective: To study the importance of leadership, human resource management, Innovative organization and nursing organizational performance in community hospitals, it can be summarized the variables from descending order as follows:

1. The nursing organizational performance has the average level of opinions being quite high. The nursing group can pass the HA / QA standard assessment, and they set the nursing indicators to achieve the first goal, followed by the quality of work is correct according to the specified indicators and the performance does not cause any errors or problems / following complaints. This is correlated with the concept of [37], [38] that can be concluded that the performance is a process based on the results provided by the service, which allows it to be evaluated and compared with the goals, standards, past results and other organizations including efficiency, effectiveness, quality, good service, response of the customers’ needs and service recipients. Moreover, it is in accordance with the research [39] [40] concluded that nursing organizational performance focuses on effective and efficient results.

2. In terms of human resource management, the average level of opinion is at a very high level by supporting and encouraging nurses to attend meetings, training or courses that are suitable for the job. There is a plan to develop and determine the core competencies of nurses in concrete form. There is a fair and transparent assessment of performance. There is a plan for human resource management using the principles of participation of all stakeholders. There is both monetary and non-monetary compensation (welfare / other benefits) in relation to the concept of [41] and [42] concluding that human resource management is a valuable human resource use for the organization to perform. The work has been accomplished according to the organization’s goals with related processes such as manpower planning, training, and development, compensation and benefits as well as performance evaluation. This is consistent with the research of [43] concluded that human resource management is a need for work and is the key to driving the work to the success of organizations.

3. The innovative organization has the average scores of the opinions is quite high, because of support and incentives for innovation/extension of the work to be used in continuous work (CQI). It has improvement in the work process with effectiveness and provides an opportunity for personnel to participate in every step of innovation development. It is in relation to the concept of [44], which can be summarized that the innovative organization is as an organization that leaders and colleagues have set policies, vision, strategies, joint strategic plans, innovation by applying scientific knowledge, technology, and other sciences and research to help support innovation. The organization supports the creation of an atmosphere and environment in the workplace, promotes teamwork to create a sustainable innovative organization. The finding is in accordance with [45], [46] research, it can be said that the management must promote and support the organization as an innovative organization that will help increase the quality of the organization.

4. Leadership has an average level of reviews being quite high. Organizations should support teamwork, assign tasks to colleagues based on knowledge, ability. Leadership must have vision, goals and management strategies, encourage people to express opinions reasonably and accept the opinions of others that are different from themselves, takes into account the differences between individuals. Leaders should play a proactive role in rewarding and praising to create morale in their performance. This is in relation to the concept of [47], [48] revealed that transformational leadership is a leader that is primarily used through the exchange. The leader will suggest or motivate the followers to work for achieving the goal by using the reward as an exchange when achieving the goal. As for transformational leadership, it is a leadership style that influences followers in a manner, creating a vision, working hard, inspiring and making people follow their own values in order to achieve the goal. This is consistent with the research of [49] and [50], concluded that leadership is a process by which leaders can convince or motivate incentives Exchange As well as ideological influences Intellectual stimulation as well as taking into account individuality.

The second objective is as to examine leadership, human resource management and the innovative organization on the nursing organizational performance in community hospitals. It has the hypotheses testing as follows:

**Hypothesis 1:** Leadership influences human resource management because the nursing director must have transactional leadership and transformational leadership by setting policies and leading to effective practices as well as development, improve the service system to be safe, emphasize the development of knowledge, manage training, fair compensation management, and good performance evaluation. It is consistent with the concept of [51] and his research [52] concluded that bringing the organization to success requires a visionary leader inspires until the role of both proactive and receptive in human resource management.

**Hypothesis 2:** Human resource management has an effect on innovative organization because human resource management has changed the vision, policy to create an atmosphere that promotes creativity in creating innovation for the organization including giving appropriate and fair rewards. It is in accordance with the concept of [43] and research [53] concluded that human resource management is very important, as well as being an innovative
organization, helping to strengthen the organization to create competitiveness.

**Hypothesis 3:** Human resource management has an effect on nursing organizational performance because fair performance evaluation will encourage and support the performance, efficiency, quality service. Service recipients are satisfied and received quality assurance from other agencies. It is consistent with the concept of [54] and research [55] summarized that human resource management plays an important role in the performance of the organization. Success and failure depend mainly on human resource management.

**Hypothesis 4:** Leadership has no effect on innovative organization because the nursing work group focuses on the goals and objectives as the location, so they are not interested in creating an atmosphere or motivation to work. This is in line with the concepts of [56] and [57]’s research, [58] that leaders are important for the creation of innovative organizations. However, most nursing organizations have traditional management methods and do not learn how to do in a new way. Therefore has no effect on the innovative organization.

**Hypothesis 5:** Leadership has an effect on nursing organizational performance since transactional leadership and transformational leaders influence employee and customer satisfaction. It is in accordance with the concept of [33] and research [59] indicated that leadership is important in driving the organization due to the complexity of the organization. Whether it is internal or external factors, leaders must adjust and develop themselves, arrange flexible structures, build more good relationships between personnel in the department.

**Hypothesis 6:** Innovative organizations have an effect on nursing organizational performance because being an innovative organization requires skills, knowledge, creativity, improve the environment to facilitate work in accordance with the concept of [60] and [61]’s research concluded that the creation of an innovative organization to succeed The organization must have a link between the team and various knowledge both inside and outside the organization as well as having clear goals, directions and methods of operation of the organizations.

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Causal Relationship of Branding, Integrated Marketing Communication, Corporate Image and Parents' loyalty to Regular Private Schools in the Upper Northern Region of Thailand


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Abstract:

The purposes of this research were (1) to study the importance of branding, integrated marketing communications, corporate image and parents’ loyalty, and (2) to consider causal relationship of branding, integrated marketing communications, corporate image and parents’ loyalty to private schools in the upper northern region of Thailand.

The samples were collected from the parents having two or more children of 301 private schools in the upper northern region of Thailand, studying in kindergarten, elementary or at the secondary level. The data obtained from the questionnaire were analyzed with descriptive statistics of percentage, mean, standard deviation and inferential statistics by structural equation model: SEM and use the Amos program.

The results of this research will be useful for private school administrators to determine marketing strategies or find ways to use integrated marketing communications tools which can be appropriate to the situation and truly reach the school parents. This is accepted, confident, and trust in school management. Finally, parents are loyal to the organization, able to communicate with organizational commitment or an attitude towards the organization that reflects the relevance system that parents or those who are involved have confidence, faith, love, and cherish to the organization.

Keywords:
Branding, Integrated Marketing Communications, Corporate Image and Parents' loyalty

1. INTRODUCTION

At present, Thailand emphasizes the education management. In particular, the government of General Prayut Chan-o-cha will be very interested and aware in order to solve the problems of Thai education, which results in the decline of students, school disparity in quality as well as the educational budget of the government and the private sector with no parity.

From the above situation, it was found that private schools were gradually closed, especially in the upper northern region of Thailand, consisting of 8 Provinces include Chiang Mai, Chiang Rai, Phrae, Nan, Phayao, Lampang, Lamphun, and Mae Hong Son. There are 301 private schools in general. The number of students decreases every year. Such problems have affected the dismissal of teachers in private schools. [1] In the last 20 years, private schools in the north have gradually closed down more than 50 places, most of which have dissolved their businesses because of the need to do other business with more income and profitable. [2] While many schools quit their businesses because their heirs do not want to inherit the business because of the difficulties and obstacles in managing the form of marketing communication and information to be diverse in order to reach parents. Moreover, the welfare of teachers is different from government schools. The progress of the work that private school teachers cannot do with academic standing like government school teachers, resulting in the strength of the private school brand image because internal management is not as systematic as it should, including the development of various academic knowledge. There are quite a few opportunities. [3] School administrators therefore need to seek new ways or strategies in marketing to reinforce work within the organization for the development of educational quality by finding ways to promote and improve quality of continuous standards to be able to compete with government schools and at the same time, must create a selling point or unique identity of a private school that is clear or different than the competitors to create the image and reputation for the school. [4] To look at the image of
the school that parents will choose for their children to continue their education is very important. Good schools have a vision that is far-reaching; improve the quality of various factors at all times with efficiency. This results in maximum effectiveness and responds to the needs of parents to choose a good, efficient, and effective school that is appropriate for their children. [5] Ordinary private schools are competing in quality and academia, which in this competitive quality and academic situation make students and parents have the desire to receive quality and the most beneficial education services. [6] Some private schools can still survive because of its long-standing reputation, its distinctive image, and identity. Therefore, school administrators should take into account stakeholders, such as students, teachers, parents, personnel, janitors and housewives. Because what parents and students are interested in is the modern education system and curriculum including the facilities in the school that create appeal to those who have contributed. [7] In the past, it was found that private schools still neglected to create brand identity (schools), direct marketing and sales promotion in order to truly match the customers.

With the aforementioned circumstances, the ordinary private schools in the northern region need to pay attention to the specific characteristics of the school in the form of marketing communication in various forms such as public relations, advertising, and organizing academic activities in order to reach the target group as much as possible. Creating a school image to stand out from the competition because the image is a holistic way of connecting ideas, satisfaction by parents who are satisfied and impressed it will help to attract new students by telling or suggesting as Word of Mount. [8] Another thing, creating corporate branding is another important aspect of the company and then results to the stakeholders of the organization in order to create a bond with the organization that owns those products and services which will support the organization in every aspect and create loyalty to the organization in the long run. In addition, [9] that brand value is an important indicator of a strong brand and was created with an effective brand management process, thus allowing each school to focus on the development of the school's own brand continuously and sustainably.

Although branding for schools is a concept that has been discussed and accepted for a long time. But considering in the context of the educational administration of each school in Thailand, it is found that there are still very few studies that do not give importance to this. Therefore, administrators should be aware of branding in order to gain awareness in marketing communication, such as integration in many forms, because it can create the potential of a private school brand sustainably. All schools have to adjust the management paradigm dramatically for long-term survival. [10] For this reason, the researchers consequently realize the need to study the causal relationship of branding elements, integrated marketing communication, organization image, and parents' loyalty to ordinary private schools in the northern region as a guideline for developing schools to have quality and to be standardized.

2. RESEARCH OBJECTIVES

1) To study the importance of branding, integrated marketing communication, corporate image, and loyalty of parents of ordinary private schools in the northern region.

2) To consider the causal relationship of branding, integrated marketing communication, corporate image, and parents' loyalty to ordinary private schools in the northern region.

3. LITERATURE REVIEW

Results from the literature review, the researcher created 4 relevant variables: (1) branding elements (2) integrated marketing communications (3) organization image and 4) loyalty as the following details:

1. Branding

Aaker (2002) [11] has given the idea that the brand is an asset or the value of the entire organization, consisting of (1) brand name awareness (2) brand loyalty (3) perceived quality and (4) brand associations. The branding creation is caused as a result of intense competition from the economic, social and government policies, private schools have to struggle to survive, whether using marketing strategies, quality control, and management. However, most importantly, schools need to have effective management, no need to be a large school that requires students and many faculty members, but focus on academic quality. There are outstanding courses, flexible management, advertising, public relations access. The organization has modern technology including branding in their own school which consists of quality awareness, brand awareness, integrity with the brand and brand relationships. The branding can help integrated marketing communication to be effective and achieve the goals set forth [12] as the following hypothesis 1

H1: Branding creation influences integrated marketing communication.

2. Integrated Marketing Communication

Schultz, (1993) [13] said that the tools of integrated marketing communication are communication that covers all forms of communication by taking into account the suitability for that consumer group or what the operator or organization can perform in 5 ways: 1) Advertising 2) Personal Selling 3) Sale Promotion 4) Public Relation and 5) Direct Marketing. But which tool will be chosen, it depends on the situation and the competitive status at that time because integrated marketing communication can help brand creation run efficiently and achieve the results as
required and must combine the use of various marketing communication tools to be perfectly consistent under the marketing goals [14], [15], [16] as the following hypothesis 2.

H2: Integrated marketing communication influences branding creation.

3. Corporate Image

Wirat Aphirattanakul (2003) [17] has classified the image into 4 categories as follows: 1) Corporate Image 2) Institutional Image 3) Product / Service Image and 4) Brand Image, but which tool will be chosen to create the image of the organization according to which type it depends on the mission and marketing strategy of the organization because the image and reputation of the organization is not something that can be created in a short time but must be built with a continuous process in the long run. The image can be changed according to the circumstances and the changing environment. In each era the process of creating an image will start with the organization's identity, such as defining symbols, logo, slogan, and the color of the organization. After that, marketing communication will be used as the key to developing the identity that is defined as the image of the organization. The marketing communication must be clear, focus on history or good story and must focus on both external and internal communication which external communication will make society aware of information about the organization. As for internal communication, the organization will create personnel to be aware of information, providing knowledge, understanding, and being representative in presenting the good image of the organization. [18]

Integrated marketing communication including branding can help make the image perceived and understood by the organization. In the end, the response will be made in terms of ideas; the feeling of the organization's meaning is Judgments and Feelings [19], [20], [21], [22], [23] as the following hypothesis 3, 4.

H3: Integrated marketing communication influences organizational image.

H4: Branding creation influences the image of the organization.

4. Brand Loyalty

Brand Loyalty means that consumers have a positive attitude towards a brand, regardless of whether they are confident, thinking about, or directly satisfying the consumer. In the end, repeated purchases were made. Consumers love and believe in one brand product that is difficult to change to use other brands because consumers will feel familiar with that brand, be honest with the brand. Consumers are satisfied with a particular brand of product and buy that product with familiarity. In addition, Siriwan Serirat and et al. (2013) [24] said that brand loyalty is honest. Brand loyalty will affect the purchase of that product the next time. If consumers are highly loyal to the brand it is called a good attitude towards the brand. The concept of Damrongsk Chaisanit (1994, page 106-107) [25] concludes that the behavior that has been consistently performed on the purchase of products in a particular brand of products is repeated on a regular basis. It will inevitably cause loyalty in the brand or logo that is important. If the product manufacturer wants to create loyalty to their products, it is a matter that requires money and time. But if it is done successfully, it will be as a guarantee of the stability in selling products in the future and also causes viral advertising as Word of Mouth or consumers will tell others too.

In conclusion, brand loyalty in behavioral aspects can be considered continuously from repeated buying behavior. The buying behavior is the result of consumers having a good attitude towards the brand. Therefore, the results of the concept and the theory conclude that the image has direct influence on brand loyalty as the following hypothesis 5.

H5: The image influences brand loyalty

Use either SI (MKS) or CGS as primary units. (SI units are strongly encouraged.) English units may be used as secondary units (in parentheses). This applies to papers in

4. CONCEPTUAL FRAMEWORK

Review of relevant literature and research both domestically and internationally. The researcher synthesizes a conceptual framework for research as shown in Figure 1 below.

Picture 1 Conceptual framework for research

5. METHODOLOGY

The researcher uses a mixed method, both quantitative research and qualitative research applied together in order to achieve objectives and answer research questions depending on the appropriate form of the research methodology, both methods [26] (Smite, 2012). The researcher proposed by seeking information and analyzed using quantitative research under latent variables. Research hypothesis obtained from literature review and qualitative research in order to confirm the data obtained from quantitative analysis.
6. SAMPLE AND PROCEDURE

Population used in this research, the researcher considered the unit of analysis, which is the parents of students who are studying in the general private schools in the upper northern region, 8 provinces, Chiang Rai, Phrae, Nan, Phayao, Lampang, Lamphun and Mae Hong Son province total 301 educational institutions, including large, medium, and small educational institutions [27] (Office of the Private Education Commission, 2017). Quantitative research tools were questionnaires divided into 3 parts as follows:

- Part 1 General Information of respondents includes gender, age, status, education level, number of children studying, and reasons for choosing a school. The characteristics of the question will be multiple choice questions, closed-ended questions, to choose only one question that is the true.
- Part 2 is a measurement tool that is the main variable in data collection. It consists of the following information: (1) Branding (2) Integrative marketing communication (3) Corporate image and (4) Brand loyalty.
- Part 3 is an open-ended questionnaire. So that parents can express their opinions about the performance or other related issues.

Quantitative research will have descriptive statistical processing and inference statistics based on the Structural Equation Model (SEM) and using the Amos program. After that, bring the results to summarize and discuss the results through integration with the concept, related theories and research as well as providing additional suggestions from information obtained from the questionnaire.

The qualitative research tool is an in-depth interview as semi-structure in-depth interview created according to the literature reviewed in order to cover this research. The researcher conducted a complete examination of the data with a triangular examination (triangulation) [28] The final sequence brings the results of content analysis to summarize and provide suggestions to support qualitative research. The research period is 1 year from October 2018 - March 2019.

7. RESULTS

The research on “Causal relationship of branding, integrated marketing communication, corporate image and parents' loyalty to regular private schools in the upper northern region of Thailand” is an important aspect of competition in today's era because of creating recognition for the stakeholders, acknowledge, and access important and accurate information. It is necessary to use marketing communication in many ways, such as Integrated Marketing Communication, Internal Branding, as if communicating the brand's commitment to customers or those involved because it will influence the creation of attitudes about Brand creation for employees or parents which consists of the commitment of school administrators and staff towards the goal of branding including the feeling that the brand is a part of the executives or employees in the organization in order for those involved to be loyal to the organization. Finally, the organization can create competitive advantage over the competitors in the end.

With the increasingly competitive business environment, the organization may have to be in the state of being chosen rather than being a chooser. Therefore, to survive and grow even more organizations need to focus on creating their own brands correctly and seriously. For the image of the organization to be outstanding and get results and can influence the decision to choose to use the services of customers by creating a strong brand through the production of products with high benefits and offering services with effective systems ultimately resulting in long-term survival of the organization.

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Forecasting Performance of GARCH Family Models in the Indian Commodity Markets

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Abstract:
The present paper examines the forecasting ability of the GARCH family models with reference to the Indian commodity markets. The study uses four futures indices of the Multi Commodity Exchange of India (MCX) which represent the commodities across sectors such as agriculture, energy and metals. MCX also maintains a composite index MCXCOMDEX that encompasses the other futures indices MCXAGRI, MCXENERGY and MCXMETAL. The symmetric GARCH model and three asymmetric EGARCH, TARCH and PARCH variants have been used to test the forecasting efficiency of these models. The mixed results indicate that any single model’s claim to forecasting efficiency across the four indices is not justified.

Keywords:
GARCH, Commodities, Futures, Forecast

1. INTRODUCTION

Commodities are regarded as the fourth asset class after equity, fixed income instruments and money market instruments. Constitution of the Chicago Board of Trade (CBOT) in 1848 marked the beginning of organized commodity trading on an exchange [1]. Organized commodities trading in India began in the year 1875 with the establishment of Bombay Cotton Trade Association. In 1900, futures trading in oilseeds was introduced with the setting up of the Gujarati Vyapari Mandal. Since then, India has had a rich history of trading in commodity futures till mid-1960s when it was discontinued due to war, natural calamities and ensuing shortage of commodities. Since 2003, trading in commodities has seen a phenomenal growth in India.

The Forward Contracts (Regulation) Act of 1952 laid the foundation stone for the governance of commodities futures contracts and all the commodity exchanges were regulated by the Forward Markets Commission (FMC) under the Ministry of Consumer Affairs, Food and Public Distribution, Government of India. Though the FMC was overseeing the operations in the Indian commodities markets for over 60 years, its powers were limited which is thought to be the cause for fluctuations and irregularities in the market. To streamline the regulations, curb speculations and promote growth, it was decided that the FMC would merge with SEBI (Securities and Exchange Board of India). This announcement was made by the Finance Minister in his budget speech in February 2015. This merger aims to “increase economies of scope and economies of scale for the government, exchanges, financial firms and stakeholders”.

Commodity markets perform four important functions: Price Discovery, Price Risk Management, Improve competitiveness in the Imports and Exports, and provide Benefit for farmers and agriculturists[2]. To meet food and raw material requirements and manage supply-demand scenarios, forward contracting in commodities was carried out in India for a long time. But forward contracts give rise to price risk and hence, the need for this price risk management. This can be done effectively through futures contracts. A Commodity futures contract is an agreement to buy (or sell) a specified quantity of a commodity at a future date, at an agreed price when entering into the contract. While futures contracts as an investment product exists for a variety of financial instruments, its uniqueness as a commodity derivative makes it an attractive investment product.

Commodity futures allow producers to insure themselves against unfavorable variations in commodity prices. The markets allow non-producer investors to receive a return for bearing a risk on commodity price fluctuations. Through organized exchanges, these risks are borne by a large number of investors/speculators for a premium. This leads to efficient price discovery since a large number of participants bring in variety of expectations and opinions on the behavior of the underlying assets. While some commodities are storable, some are not; the use of each product in production stage varies; quality differs. These features of the underlying commodities make it much more complicated for organized exchanges as it becomes difficult
to handle and commands a vast amount of resources and infrastructure.

India presently has 17 commodity exchanges of which six are national level commodity exchanges. Of these, the most important ones are Multi Commodity Exchange of India Limited (MCX) National Commodity and Derivative Exchange (NCDEX) National Multi Commodity Exchange of India Ltd (NMCE). According to the Forward Markets Commission’s 2013-2014 Annual Report, MCX contributed 85% of FMC’s revenues and is the largest commodities exchange in India followed by NCDEX, Mumbai (11.30%), NMCE, Ahmedabad (1.51%), ICEX, Mumbai (0.84%), ACE Mumbai (0.46%) and UCX, Navi Mumbai (0.72%). MCX offers trading in over 50 commodities. In addition, it maintains four Commodity Futures Indices (MCXCOMDEX, MCXMETAL, MCXAGRI and MCXENERGY), four Commodity Spot Indices (MCXSCOMDEX, MCXSMETAL, MCXSAGRI and MCXSENERGY) and three Rainfall Indices (RAINEXIDR, RAINEXMUM and RAINDEXJAI).

Commodities’ trading in India has seen phenomenal growth in the recent past as evidenced in Figure 1. It is also infamous for wild price fluctuations which is generally attributed to speculative participants[3]–[5].

Given the nature of the underlying and its relation to the Indian economy, it is of utmost importance that this market needs to be thoroughly analyzed. This paper is an attempt to capture and model the volatility in the Indian Commodity Markets using the GARCH family of models.

![Volume and Value of Commodity Trading in India](image)

**Figure 1: Growth of Indian Commodity Markets**

2. LITERATURE REVIEW

Prior studies in commodities markets have focused on price discovery[2], [6], [7], lead-lag relationship between futures and spot markets[8] and efficiency of commodity markets[9]–[11]. Introduction of derivatives trading in Indian commodity markets has been a topic of much debate for producers, consumers, researchers and policy makers. While some researchers believe that commodity derivatives have increased speculative activity and volatility, some others have shown that these products have reduced volatility thereby improving stability.

Indian agricultural commodities futures markets are not yet mature and efficient [12]. But Indian Commodity markets exhibit an efficient price discovery in place [2], [6]. When Granger Causality, Co-integration and Vector Error Correction Models are applied in the process of process of price discovery on pepper prices, it was found that there is unidirectional causality from futures to spot prices in the futures market [6]. Price discovery role of futures market might be affected by liquidity and market size [13].

For agricultural commodities such as maize, chickpea, black lentil, pepper, castor seed, soybean and sugar, it has been found that the futures and spot prices are cointegrated in the long term[14]. The study also revealed a short-term relationship between the two markets and that the futures market had the ability to predict spot prices for some of the commodities and the relationship was bi-directional for a few others.

An empirical analysis of the efficiency of spot and futures markets using Johansen cointegration technique has found that the futures market is unable to fully incorporate information which confirmed the inefficiency of the market. The study focused on the daily futures and comparable ready prices of five commodities across six Indian commodity exchanges. Hence the Indian agricultural commodities futures markets are not yet mature and efficient [12].

An examination of the lead-lag relationship between the spot price of commodities and the associated futures contract in the Indian market scenario concluded that information first appears in futures market and then is transmitted down to the spot market. Hence, futures market enjoys greater leverage which attracts speculators. Also, speculative activity provides liquidity to the market and helps in price discovery [8]. Data for that particular study consisted of daily cash closing prices, daily futures settlement prices, total futures trading volume, and total futures open interest for the agricultural commodities barley, maize, mustard seed and pepper traded on National Commodity Exchange (NCDEX) in India.

Commodity price volatility exhibits a leptokurtic behaviour [15]. It makes futures prices difficult to forecast because futures price becomes wider. Since the accuracy of forecasting is decreased, it makes it difficult for both producers and consumers to protect their welfare[16]. In addition, supply/demand, weather conditions, change in trading volumes, terms of trade shocks and exchange rates
also caused an increase in price volatility [15]. These studies also establish the need for hedging commodity prices [15]. The studies on Indian commodity markets have recommended the strengthening and autonomy of the Forwards Market Commission and also the need for well-developed warehousing and market linkages to make them more efficient [2]. Literature on Indian commodity markets has mainly focused on agricultural commodities [17]–[26] or is limited to few commodities traded on national exchanges.

This study contributes to the existing literature on the Indian commodities markets by studying the Indices being maintained by Multi Commodities Exchange of India Limited (MCX) viz. MCXCOMDEX, MCXMETAL, MCXAGRI and MCXENERGY. Commodity indices capture the broad market sentiments and studying these instruments gives a macro view of the markets as compared to the micro view by studying an individual commodity. As with other markets, volatility of futures prices is a concern and there is a need to develop a model to efficiently forecast the futures prices in order to better understand the behavior of these markets. The GARCH family models have been very popular in literature for studying and modelling volatility. The usefulness of these models in studying the Indian commodity markets will provide deeper insight into the concealed behavior that these markets exhibit.

### 3. DATA AND METHODOLOGY

This study employs futures data of four commodity indices actively traded on the Multi Commodity Exchange (MCX) – MCXCOMDEX, MCXMETAL, MCXENERGY and MCXAGRI. The MCXCOMDEX is a composite index comprising of MCXMETAL (40%), MCXENERGY (40%) and MCXAGRI (20%). The daily closing price of the four indices has been considered for this study. MCX considers only the near month active contract price for index computation.

As with equity indices, Indian commodity market indices encompass all the commodities available for derivative trading in the market and provide a good overall sense of the commodity markets. Indices also give a macro perspective which is helpful in understanding the volatility of the market. Table I lists the four indices being maintained by the Multi Commodity Exchange of India and their components.

### Table I: List of MCX indices and their components

<table>
<thead>
<tr>
<th>Index</th>
<th>Components</th>
<th>Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCXCOMDEX</td>
<td>MCXMETAL Index</td>
<td>40.00%</td>
</tr>
<tr>
<td></td>
<td>MCXENERGY Index</td>
<td>40.00%</td>
</tr>
<tr>
<td></td>
<td>MCXAGRI Index</td>
<td>20.00%</td>
</tr>
<tr>
<td></td>
<td>Gold</td>
<td>98.05%</td>
</tr>
<tr>
<td></td>
<td>Silver</td>
<td>24.15%</td>
</tr>
<tr>
<td></td>
<td>Copper</td>
<td>17.63%</td>
</tr>
<tr>
<td></td>
<td>Zinc</td>
<td>5.00%</td>
</tr>
<tr>
<td></td>
<td>Aluminum</td>
<td>5.00%</td>
</tr>
<tr>
<td></td>
<td>Nickel</td>
<td>5.00%</td>
</tr>
<tr>
<td></td>
<td>Lead</td>
<td>5.00%</td>
</tr>
<tr>
<td>MCXMETAL Index</td>
<td>Crude Oil</td>
<td>88.53%</td>
</tr>
<tr>
<td></td>
<td>Natural Gas</td>
<td>11.48%</td>
</tr>
<tr>
<td></td>
<td>Rel. Soy Oil</td>
<td>19.35%</td>
</tr>
<tr>
<td></td>
<td>Potato</td>
<td>23.80%</td>
</tr>
<tr>
<td></td>
<td>Ghana</td>
<td>20.70%</td>
</tr>
<tr>
<td></td>
<td>Crude Palm Oil</td>
<td>15.95%</td>
</tr>
<tr>
<td></td>
<td>Kupasfilli</td>
<td>10.00%</td>
</tr>
<tr>
<td></td>
<td>Mustard Oil</td>
<td>10.00%</td>
</tr>
</tbody>
</table>

### A. GARCH Family models

The GARCH model is effective in capturing the time-varying nature of volatility and models it as conditional variance. It expresses the conditional variance of the error term as a linear function of the lagged squared residuals and the lagged residual conditional variance. GARCH also captures volatility clustering found to be highly evident in financial data. The GARCH approach is a common and simple way to use historical data to study volatility as it is designed to track variations in volatility through time. The GARCH model is symmetric in nature i.e., it treats both good news and bad news with equal importance. Since Leverage Effect is very common in financial data, this symmetric nature of GARCH model may prove to be a limitation. To overcome this, variants of GARCH such as TGARCH, EGARCH etc. were developed which are asymmetric in nature and capture the Leverage Effect more effectively.

### B. The GARCH (1,1) model

In a GARCH (p,q) model given by [27], p represents the order of the moving average ARCH terms and q represents the order of autoregressive GARCH terms.

\[ Y_t = \omega + \alpha \varepsilon_{t-1}^2 + \beta \varepsilon_t \]  
\[ \varepsilon_t \sim N(0, \sigma_t^2) \]  
\[ \sigma_t^2 = \omega + \sum_{i=1}^{p} \alpha_i \varepsilon_{t-i}^2 + \sum_{j=1}^{q} \beta_j \sigma_{t-j}^2 \]  

Where,

- Equation (1) represents the conditional term
- Equation (2) is the conditional variance equation

In both the above equations, \( \omega \) is a constant.

In Equation (2),
\( \varepsilon_{t-1}^2 \) is the ARCH term which represents the volatility from the previous period and is measured as the lag of the squared residual form the mean equation
\[ \sigma^2_{t-1} \] is the GARCH term which represents the forecast variance of the previous period.

The GARCH (1,1) model refers to the presence of a first order moving average ARCH term and a first order autoregressive GARCH term. The mean and the variance equations for the GARCH (1,1) model are as follows:
\[ Y_t = \omega + \alpha_t X_{t-1} + \varepsilon_t \]  
\[ \sigma_t^2 = \omega + \alpha \varepsilon_{t-1}^2 + \beta \sigma_{t-j}^2 \]

C. The Threshold GARCH (TARCH) Model

The TARCH model was introduced by both [28] and [29] independently. It is an asymmetric GARCH model that factors in the ‘leverage effect’ and good news and bad news have differential effects on the model. An additional term is added to the GARCH equation to account for possible asymmetries. As with GARCH(1,1), \( \varepsilon_{t-1}^2 \) is the ARCH term which represents the volatility from the previous period and \( \sigma_{t-j}^2 \) is the GARCH term which represents the forecast variance of the previous period.
\[ \sigma_t^2 = \sum_{k=1}^{p} \alpha_k \varepsilon_{t-k}^2 + \sum_{j=1}^{q} \beta_j \sigma_{t-j}^2 + \sum_{k=1}^{r} \gamma_k \varepsilon_{t-k}^2 I_{t-k} \]

In Equation (5), \( I_t = 1 \) if \( \varepsilon_t < 0 \) and 0 otherwise. Good news is represented by \( \varepsilon_{t-1} > 0 \) and has an impact of \( \alpha_i \) to the ARCH term, while bad news is represented by \( \varepsilon_{t-1} < 0 \) and has in impact of \( \alpha_i + \gamma_i \).

\( \gamma_i \neq 0 \) implies that the impact of news (good or bad) is asymmetric. \( \gamma_i > 0 \) implies evidence of leverage effect and that bad news increases volatility.

D. The Exponential GARCH (EGARCH) Model

Nelson [30] proposed the EGARCH model which is specified by the conditional variance equation
\[ \log(\sigma_t^2) = \sum_{i=1}^{p} \alpha_i | \varepsilon_{t-1} | + \sum_{j=1}^{q} \beta_j \log(\sigma_{t-j}^2) + \sum_{k=1}^{r} \gamma_k \varepsilon_{t-k}^2 / \sigma_{t-k} \]

The EGARCH model implies that the conditional variance is exponential (hence log), rather than quadratic as implied by the other GARCH variants. As with GARCH(1,1), \( \varepsilon_{t-1}^2 \) is the ARCH term which represents the volatility from the previous period and \( \sigma_{t-j}^2 \) is the GARCH term which represents the forecast variance of the previous period.

While \( \alpha \) represents the symmetric effect of the model and \( \beta \) represents the persistence in conditional volatility, \( \gamma \) in Equation (6) is a measure of the asymmetry or leverage effect.

\( \gamma = 0 \) denotes that the model is symmetric. \( \gamma < 0 \) indicates that positive news generates less volatility than negative news. Conversely, \( \gamma > 0 \) indicates that negative shocks have a higher impact than positive news.

E. The Power GARCH (PARCH) Model

In the PARCH model proposed by Taylor[31], the standard deviation is modeled rather than the variance with the estimation of the power parameter \( \delta \). As with GARCH(1,1), \( \varepsilon_{t-1}^2 \) is the ARCH term which represents the volatility from the previous period and \( \sigma_{t-j}^2 \) is the GARCH term which represents the forecast variance of the previous period. The optional \( \gamma \) parameter is included to capture the asymmetry. The PARCH model estimates the variance as:
\[ \sigma_t^2 = \omega + \sum_{i=1}^{p} \alpha_i (| \varepsilon_{t-1} | - \gamma_i \varepsilon_{t-1}) + \sum_{j=1}^{q} \beta_j \sigma_{t-j}^2 \]
Where, \( \delta > 0 \), \( | \gamma_i | \leq 1 \) for \( i=1, \ldots, r \), \( \gamma_i = 0 \) for all \( i \geq r \) and \( r \leq p \)

4. EMPIRICAL ANALYSIS

The period of study is from May 2006 to March 2016. Daily closing data of MCXCOMDEX, MCXMETAL, MCXENERGY and MCXAGRI gives us 2921 observations. The entire sample is divided into two parts: observations for model building and hold-out-sample observations for validating the model. Data from May 2006 to December 2015, which comprises of 2858 observations is used to estimate the models. Data from January 2016 to March 2016 has been reserved as the hold-out sample for out-of-sample forecasting. Table II. displays key descriptive statistics of the four indices.

Preliminary investigation verify the stationary of data by employing Augmented Dickey-Fuller test [32] and Philips-Perron test reveals that the raw price data is not stationary. GARCH family models assume stationary of the data series. Hence, to achieve stationarity, the returns series is used. It is calculated as
\[ R_t = \left( \frac{P_t - P_{t-1}}{P_{t-1}} \right) \]

<table>
<thead>
<tr>
<th>Table II: Summary Statistics of Daily Closing Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MCXCOMDEX</strong></td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Median</td>
</tr>
<tr>
<td>Maximum</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>Std Dev</td>
</tr>
<tr>
<td>Skewness</td>
</tr>
<tr>
<td>Kurtosis</td>
</tr>
<tr>
<td>Jarque-Bera</td>
</tr>
</tbody>
</table>

The skewness and kurtosis statistics clearly indicate the presence of fat tails and extreme values. Kurtosis > 3 also indicates that the right tails are extreme.

To model the data for GARCH, EGARCH, PARCH and TARCH, 2855 daily observations are used. Models are estimated by the method of maximum likelihood and errors
are studies for three types of conditional distributions - Gaussian, Student’s t and Generalized Error Distribution (GED). Three statistics – Akaike Information Criterion (AIC), Schwarz Information Criterion (SIC) and Hannan-Quinn Criterion (HQC) are used to rank the models. Lower the value of the statistic, better is the model. The table below displays the ranks of the models for each of the indices – MCXCOMDEX, MCXAGRI, MCXENERGY and MCXMETAL.

Individual rank of each model for the three assumptions of error distribution is indicated below the respective statistic. The last row indicates the sum of the individual ranks and the definitive rank in parenthesis.

5. RESULTS AND DISCUSSION

The results of the various tests along with test statistics have been discussed below.

### Table III: Statistical verification and ranking of models for MCXAGRI

<table>
<thead>
<tr>
<th></th>
<th>AIC</th>
<th>SIC</th>
<th>HQC</th>
<th>AIC</th>
<th>SIC</th>
<th>HQC</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOGAR(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
<tr>
<td>LOGARCH(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
<tr>
<td>LOGTARCH(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
<tr>
<td>LOGGED(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
</tbody>
</table>

The AIC, SIC and HQC for the four models across the three error distributions for MCXAGRI index have been displayed in Table (III). All three statistics strongly favour PARCH(1,1) model and Student’s t distribution. The asymmetric models PARCH, TARCH are shown to be better suited for MCXAGRI than the symmetric GARCH model.

### Table IV: Statistical verification and ranking of models for MCXENERGY

<table>
<thead>
<tr>
<th></th>
<th>AIC</th>
<th>SIC</th>
<th>HQC</th>
<th>AIC</th>
<th>SIC</th>
<th>HQC</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOGAR(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
<tr>
<td>LOGARCH(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
<tr>
<td>LOGTARCH(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
<tr>
<td>LOGGED(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
</tbody>
</table>

Table (IV) discusses the efficiency of models for MCXENERGY. The symmetric GARCH(1,1) model with GED clearly ranking above the rest. The GED distribution is better suited for this index than the other error distributions.

### Table V: Statistical verification and ranking of models for MCXMETAL

<table>
<thead>
<tr>
<th></th>
<th>AIC</th>
<th>SIC</th>
<th>HQC</th>
<th>AIC</th>
<th>SIC</th>
<th>HQC</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOGAR(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
<tr>
<td>LOGARCH(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
<tr>
<td>LOGTARCH(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
<tr>
<td>LOGGED(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
</tbody>
</table>

Table (V) discusses the statistics for MCXMETAL index. All three comparison statistics indicate that the GED is a better assumption for error distribution. It also shows the preference for GARCH(1,1) model over the rest. It should also be noted that the difference in the actual statistics for any model under the GED distribution is minimal.

### Table VI: Statistical verification and ranking of models for MCXCOMDEX

<table>
<thead>
<tr>
<th></th>
<th>AIC</th>
<th>SIC</th>
<th>HQC</th>
<th>AIC</th>
<th>SIC</th>
<th>HQC</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOGAR(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
<tr>
<td>LOGARCH(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
<tr>
<td>LOGTARCH(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
<tr>
<td>LOGGED(1,1)</td>
<td>-4.028</td>
<td>-5.616</td>
<td>-3.773</td>
<td>-4.377</td>
<td>-3.893</td>
<td>-4.224</td>
</tr>
</tbody>
</table>

Table (VI) displays the model ranking for MCXCOMDEX index. The GED assumption is favoured along with extremely little difference in the statistics across the models. However, GARCH(1,1) is marginally better ranked than the other three.

Three (MCXENERGY, MCXMETAL and MCXCOMDEX) out of four indices show a strong affinity towards the symmetric GARCH(1,1) model. The GED error distribution assumption holds good for MCXENERGY, MCXMETAL and MCXCOMDEX. Although MCXAGRI has ranked PARCH(1,1) under the Student’s t distribution as the highest, the symmetric GARCH(1,1) is also shown to be not far behind. The model specifications thus tested across AIC, SIC and HQC have not shown the effectiveness of asymmetric models over the symmetric models. All four indices have rejected the assumption of a normal error distribution. Hence, it can be deduced that the usual assumption of normal distribution is not justified.

### Forecasting and performance evaluation

Forecasting performance is evaluated using the coefficients given by the forecasts output viz. Root Mean Squared Error (RMSE), Mean Absolute Error (MAE), Mean Absolute Percentage Error (MAPE) and Theil Inequality Coefficient (Theil U). The various models and assumptions of error distributions are measured for out-of-sample dynamic forecasting performance across the four error coefficients. The forecasting ability of the four models...
crossed with the three error distributions is tested against the reserved test sample of 63 observations.

Individual forecasting performance rank of each model for the three assumptions of error distribution is indicated below the respective statistic. The last row indicates the sum of the individual ranks and the definitive rank in parenthesis.

A common observation across the four indices is that any single model fails to establish its predictive supremacy over the rest. There is also a disagreement regarding the error distribution assumption across the indices.

**Table III: Forecast performance of models for MCXAGRI**

<table>
<thead>
<tr>
<th>Model</th>
<th>TSE</th>
<th>NMSE</th>
<th>GED</th>
<th>MAE</th>
<th>RMSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GARCH(1,1)</td>
<td>0.0224</td>
<td>0.0224</td>
<td>0.0224</td>
<td>0.0224</td>
<td>0.0224</td>
</tr>
<tr>
<td>MAE</td>
<td>0.0219</td>
<td>0.0219</td>
<td>0.0219</td>
<td>0.0219</td>
<td>0.0219</td>
</tr>
<tr>
<td>RMSE</td>
<td>0.0218</td>
<td>0.0218</td>
<td>0.0218</td>
<td>0.0218</td>
<td>0.0218</td>
</tr>
</tbody>
</table>

Table (VII) displays the performance of various models in forecasting the returns for the MCXAGRI index. The GARCH(1,1) model outranks the other three models in the forecasting accuracy with Student’s t distribution showing better performance irrespective of the model.

**Table IV: Forecast performance of models for MCXENERGY**

<table>
<thead>
<tr>
<th>Model</th>
<th>TSE</th>
<th>NMSE</th>
<th>GED</th>
<th>MAE</th>
<th>RMSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GARCH(1,1)</td>
<td>0.0224</td>
<td>0.0224</td>
<td>0.0224</td>
<td>0.0224</td>
<td>0.0224</td>
</tr>
<tr>
<td>MAE</td>
<td>0.0219</td>
<td>0.0219</td>
<td>0.0219</td>
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<tr>
<td>RMSE</td>
<td>0.0218</td>
<td>0.0218</td>
<td>0.0218</td>
<td>0.0218</td>
<td>0.0218</td>
</tr>
</tbody>
</table>

Table (VIII) discusses the MCXENERGY index. The assumption of Student’s t distribution shows a better performance than the normal distribution for any model. PARCH(1,1) , TARCH(1,1) and EGARCH(1,1) model show better forecast performance that GARCH(1,1) indicating that asymmetric models better suited for forecasting the MCXENERGY index.

**Table V: Forecast performance of models for MCXMETAL**

<table>
<thead>
<tr>
<th>Model</th>
<th>TSE</th>
<th>NMSE</th>
<th>GED</th>
<th>MAE</th>
<th>RMSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GARCH(1,1)</td>
<td>0.0224</td>
<td>0.0224</td>
<td>0.0224</td>
<td>0.0224</td>
<td>0.0224</td>
</tr>
<tr>
<td>MAE</td>
<td>0.0219</td>
<td>0.0219</td>
<td>0.0219</td>
<td>0.0219</td>
<td>0.0219</td>
</tr>
<tr>
<td>RMSE</td>
<td>0.0218</td>
<td>0.0218</td>
<td>0.0218</td>
<td>0.0218</td>
<td>0.0218</td>
</tr>
</tbody>
</table>

The forecasting performance of the four models for MCXMETAL index is discussed in Table (IX). All the four models are ranked equally here, under the assumption of the GED. The forecast ability of the various models under the normal distribution is clearly not preferred.

**Table X: Forecast performance of models for MCXCOMDEX**

<table>
<thead>
<tr>
<th>Model</th>
<th>TSE</th>
<th>NMSE</th>
<th>GED</th>
<th>MAE</th>
<th>RMSE</th>
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<tbody>
<tr>
<td>GARCH(1,1)</td>
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<tr>
<td>MAE</td>
<td>0.0219</td>
<td>0.0219</td>
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<td>0.0219</td>
<td>0.0219</td>
</tr>
<tr>
<td>RMSE</td>
<td>0.0218</td>
<td>0.0218</td>
<td>0.0218</td>
<td>0.0218</td>
<td>0.0218</td>
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</tbody>
</table>

Table (X) discusses the ranking of various models for forecasting performance for the MCXCOMDEX index. The asymmetric EGARCH(1,1) has outperformed the other models followed by PARCH(1,1) and GARCH(1,1). The results are strongly in favour of asymmetric distributions under the GED assumption for MCXCOMDEX.

Out-of-sample forecasting of the 63 samples tested against the various models under the three assumptions of conditional error distributions show that all the four indices prefer non-normal error distributions which capture the fat-tails of the data series. While MCXENERGY and MCXCOMDEX show better forecasts with asymmetric models, MCXAGRI shows a better performance under GARCH(1,1). MCXMETAL ranks all the models equally but with the assumption of non-normal error distribution.

6. DISCUSSION

The GARCH family models are employed to capture, model and forecast volatility for the four commodity indices (MCXAGRI, MCXENERGY, MCXMETAL and MCXCOMDEX). The efficiency of the models has been tested with both in-sample forecasts and out-of-sample forecasts. Ideally, the best fit model should also be the best forecasting model. The statistics indicate that for the MCXAGRI index, while PARCH(1,1) is a better fit, GARCH(1,1) gives better forecasting performance as found in other studies also.[14], [16] and [4]

The symmetric GARCH model in its lowest order (1,1) is a better fit for MCXENERGY, MCXMETAL and MCXCOMDEX. The efficiency of the models has been tested with both in-sample forecasts and out-of-sample forecasts. Ideally, the best fit model should also be the best forecasting model. The statistics indicate that for the MCXAGRI index, while PARCH(1,1) is a better fit, GARCH(1,1) gives better forecasting performance as found in other studies also.[14], [16] and [4]

The symmetric GARCH model in its lowest order (1,1) is a better fit for MCXENERGY, MCXMETAL and MCXCOMDEX. The efficiency of the models has been tested with both in-sample forecasts and out-of-sample forecasts. Similarly, MCXMETAL shows TARCH(1,1) as a better forecasting model for in-sample data and GARCH(1,1) for out-of-sample data. No single model establishes its superiority over the others in the sample of commodity indices used for this study, as evidenced in some other studies.[33]
It should also be noted that for every index and every model, the assumption of a non-normal conditional error distribution is evident.[33]

7. CONCLUDING COMMENTS

This paper has attempted to examine the forecasting performance of the popular GARCH family models in the Indian Commodity Markets. It makes use of the four commodity indices maintained by Multi Commodities Exchange of India (MCX) – MCXCOMDEX, MCXAGRI, MCXENERGY and MCXMETAL.

As evident from the statistics obtained, the results are mixed regarding the best fit model and the two types of forecast for the four commodity indices. The ability of a model to cope with the asymmetry, which appears prominently in the data set, also has no bearing on the forecast performance of the model. This could also be due to the inherent parameter instability of the long data set being used for the study. In such a situation, it is difficult to arrive at a definitive conclusion regarding a single model which is ranked high for both model specification and forecasting performance. This however, does not undermine the usefulness of the GARCH models in studying time series data. Adding more specifications to the model’s variance equation may better capture the essence of volatility and thereby, improve forecast ability. Also, commodities in general and agricultural commodities in particular, have been traditionally known to be influenced by exogenous variables which distort the volatility levels and make it more difficult to model than equity instruments.

REFERENCE


The Conceptual Model: The Factors Influencing of Entrepreneurial Intentions for Vocational Entrepreneurship Incubator Members: A Case Study Mentoring


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Abstract:
The research aimed 1) to study entrepreneurship incubator member’s inspiration, entrepreneur’s characteristic, innovativeness mentoring and entrepreneurial intentions 2) to study the factors influencing of entrepreneurial intentions for vocational entrepreneurship incubator members and 3) to study the model of entrepreneurial intentions in vocational entrepreneurship incubators. By using mix methodology research, questionnaire and in-depth interview are distribute to five star excellent 51 incubators. The data has analyzed by descriptive and inferential statistical method which are percentage, mean standard deviation and structural equation model (SEM).

Keywords:
Inspiration, entrepreneur’s characteristic, innovativeness, mentoring, entrepreneurial intentions

1. INTRODUCTION

Bureau of Standardized Vocational Education and Profession is an office under the Office of the Vocational Education Commission. It conducted an independent career promotion program among vocational learners in 2012 with the development of an enterprise management system for empirical education in 3 pilot schools, namely Sriboonruang Vocational College, Kalasin Technical College, and Surin Vocational College [1]. This project is identified in the integration plan to promote small and medium enterprises with the aims to provide business knowledge to students and undergraduate students and promote entrepreneurship to learners through the process of teaching and learning including activities under the vocational entrepreneurship incubator. It required all educational institutions to set up a vocational entrepreneurship incubator for developing the potential of learners to have experience in business operations both in and out of educational college, applying knowledge and experience to the next level as an entrepreneur, which will be a path to create careers and generate income in the future.

Career training for learners is an important and essential activity in teaching vocational education so that students have the opportunity to be on the job training with direct experience in operations. In the atmosphere of competitive business operations must be maintaining standards and quality of work as well as working as team work, including developing the potential of vocational students in basic knowledge of personal finance, career, and entrepreneurship with the hope that the new vocational students will be fully equipped with professional skills and life skills. Moreover, they can apply knowledge, professional ability to maintain a profession as an entrepreneur [2].

The target group of the vocational entrepreneurship incubator is categorized into 2 groups, consisting of 1) target groups within vocational college, namely vocational students in vocational certificate programs (students) and vocational certificate programs (students) studying in government vocational education throughout Thailand, and 2) target groups outside educational institutions are general people interested in applying for membership and through the process of cultivating vocational entrepreneurs by the general government vocational education college in the country, there are 429 places, classified by types of educational college as 17 types, such as technical colleges, vocational colleges, industrial and community education college and colleges of agriculture and technology, etc. [3].

The vocation entrepreneurship incubators have to proceed to provide members through the incubation process
from the vocational entrepreneurship incubator or through courses in entrepreneurship or through business operations in the project to earn money during schools or through business operations in project subjects or obtain advice from teachers as business consultants of the vocational entrepreneurship incubator, which can bring knowledge to use in business operations by themselves. It has a quantitative goal to require the incubators of all educational colleges having at least 25 vocational students who participate in the incubation as well as the businesses should not less than 3 businesses. When the vocational students complete the process of cultivating a vocational entrepreneur, at least one of them should graduate, then can be a business owner and brings inventions, innovations, scientific projects, research projects, etc., to further commercialize products (product or service) not less than one business. The Board of Directors operates according to the management structure that serves as the core to drive and operate incubator activities and plans, including training department, incubation department, innovation department and administrative departments, especially the incubator, which consists of teachers as business consultants and teachers who specialize in accounting, production, marketing and management plays an important to consider selecting potential learners including those who are interested in or whoever are interested in train for entrepreneurship. The teachers themselves act as a "mentoring", providing care and advice in doing business, coordinate with related parties and work to organize activities to cultivate entrepreneurship. Moreover, it includes to summarize and to report the performance, as well as work at each assigned educational colleges [4].

Since the entire working group of the vocational entrepreneurship incubator is a teacher who performs the duties as a main task of teaching and perform other duties in accordance with the plans and activities of educational colleges such as working in administrative departments or sub-departments in educational colleges, being a classroom teacher or advisor for a group of students and being a supervising teacher including the allocation of schedules other than those tasks to be a working group for the incubator with another workload. In case of schedule allocation, if it cannot be arranged during office hours, they may have to be done extra hours or even public holidays in order for the operation to meet the expected goal. That is a restriction that the incubators' working group cannot avoid and members of the incubators, who are vocational students or the general public who are interested also encounter the same limitations. Especially, the group of vocational colleges’ students, they have to attend teaching and learning according to the schedule specified by the class schedule varied according to the curriculum of each group of students. As a result, the working group resolve such restriction by requiring this group of members to get full incubation at the time of experience training [5] which the school may provide in the internship course (Education in the system) at least 320 hours or integrated with professional training (Bilateral education), not less than 50 percent of the study period according to the curriculum. For example, vocational certificate must be admitted to study for 6 semesters or 3 academic years, divided into theoretical studies in schools affiliated with 3 semesters and practice in the workplace with a memorandum of cooperation with the Office of the Vocational Education Commission for 3 semesters. All 429 vocational entrepreneurship incubators must undergo an assessment of the potential of the center by a committee appointed by the Vocational Education Commission. The criteria of consideration [4] consist of 3 aspects as 1) the potential of the vocational entrepreneurship incubators, 2) the potential development of students in vocational colleges, and 3) the achievement of cultivating students into entrepreneurship. The assessment is set for 4 levels, including college level, vocational, provincial, regional and national levels in which all vocational education college must proceed to receive a vocational assessment at the province. Educational institutions with a 3-star rating (70-100 points) must be assessed at the regional level and the colleges with a 4-star rating (80-100 points) at the regional level must be assessed at the national level to request a 5-star rating (90-100 points), respectively. In the fiscal year 2018 (academic year 2017), there were 51 five-star rating of the vocational entrepreneurship incubators as the excellence at the national level, classified by region, consisting of 9 provinces in the Eastern region and Bangkok, and 9 in the Central region, 5 in the Northern region, 9 in the South and 15 in the Northeast [3].

Nevertheless, incubators that have excellent incubation of vocational entrepreneurship and are a learning source and create new entrepreneurs of that vocational college have attempted to develop potential and strengthen the center continuously, such as improving the operating structure to be in line with the current college. The incubators should clearly define the roles and responsibilities of the working group for alleviating the workloads of business consultant teachers that originally required a lot of workload. It results in less time for advising, therefore having an effect on the student's entrepreneurship not being able to see many results because most students lack inspiration in thinking of becoming a business entrepreneur and also cannot find their own needs in a career [6]. They cannot see the opportunities in business as well as lack of creativity in entrepreneurship since the low intention of being an entrepreneur of vocational students even though those students have already passed the screening requirements for education in the profession [7]. Consequently, the researcher has studied the factors that will lead to the intention of being an entrepreneur among vocational
students who are members of the vocational entrepreneurship incubator.

2. OBJECTIVES

1) to study entrepreneurship incubator member’s inspiration, entrepreneur’s characteristic, innovativeness mentoring and entrepreneurial intentions
2) to study the factors influencing of entrepreneurial intentions for vocational entrepreneurship incubator members and
3) to study the model of entrepreneurial intentions in vocational entrepreneurship incubators.

3. SCOPE OF THE RESEARCH

1. Content Scope
This research focuses on the importance of variables; inspiration, entrepreneur’s characteristic, innovativeness, mentoring and entrepreneurial intentions of the vocational entrepreneurship incubators.

2. Population Scope
A population sampling is a type of purposive sampling technique which are 51 excellently five star levels vocational entrepreneurship incubator of national vocational schools of Thailand in year 2018 (school year 2017). The units of analysis include 3 groups of each incubator; head of incubator, advisor and member as totally 153 persons.

3. Area Scope
There are 5 regions of Thailand as 1) Eastern region and Bangkok, 2) Central region, 3) northern region, 4) Southern region, and 5) Northeastern region.

4. Timing Scope
The period for development research proposal, presentation research proposal, research and summarize in 2016-2019.

4. THEORETICAL UNDERPINNING AND HYPOTHESES DEVELOPMENT

1. Inspiration
These conditions require talent or genius from the original nature as the most important factor. The cause of external inspiration is the cause of inspiration from the external environment affecting or being hurt the thought and mind. Finally, it causes some creative ideas, significantly; not just watching or liking as other people. There are 3 main causes include the natural environment, social environment and seeing examples from others. Inspiration can occur under various circumstances, however, there are 4 driving mechanisms[8] as follows:

1. Inspiration by goal: every human being has different goals in life. Some people set high goals for challenges and desire to reach that destination. Some people set a moderate goal to see the possibility of not being too high, not too low, to be able to provide for the disappointment that may occur while many people evaluate their potential are somewhat less than they should be. Therefore, setting goals in their own lives is not as much as they should be. However, no matter how high or low the goal is, these things will inspire those people to choose as their own goal. Inspiration by goal helps to motivate and not to cause discouragement causing the positioning to be suitable for himself, career decision- making, a social selection that matches the path for achievement.

2. Inspiration by role model: during human life, there will be love, faith, the impression from the role model and trust in the impressive style. All of these can happen when the inspiration accumulated until crystallized in the mind by starting from within the family, person, model, society and institution through interaction either directly or indirectly in the direction that corresponds to the model that wants to act amicably.

3. Inspiration by motivation: it is the unintended or unprepared inspiration in advance; therefore, it can be inspiring at that particular time. It may be applied to make decisions on a database to choose one that may be important to life-related organizations or institutions. It is an inspiration arisen from being stimulated and therefore requires careful, precise and effective consideration.

4. Inspiration by dynamic: it is a natural inspiration depending on the timing of the lifestyle. During that time will meet what will affect and influence at that time. The inspiration that comes from this drive may change frequently and has an impact on life in a short time, such as confidence in one's ability, being inspired by professional education, getting professional experience from learning and having a successful need for business with the motivation to influence entrepreneurial features[9].

Inspiration influences entrepreneur’s characteristic, in particular, the attitude, perspective, needs, and behaviors of entrepreneurs in the business since they recognize opportunities for entrepreneurship before other people[10] as hypothesis 1 and the inspiration of the person influences the mentoring on the basis of real action[11]. If any person has inspiration, then it will lead to the desire to do business by using an experienced network or mentoring as the second hypothesis, including new initiatives regarding new products, services and technologies[12] in creating the differences under the circumstances occurring as the hypotheses 3 below.

H1: Inspiration influences entrepreneur’s characteristic.
H2: Inspiration influences the mentoring.
H3: Inspiration influences innovativeness.

2. Entrepreneur’s Characteristic
Entrepreneurs are those who create new things happen in each situation[14], the combination of new products, marketing process, model of organization or source of product manufacturers[15], determination of market opportunities and the ability to use resources in accordance
with the opportunities and creation of commitments in both practice and resource efficiency for long-term profits [16]. In addition, the study of Weiner, Geldhof, Agans, Lerner, and Johnson[17] indicated that the entrepreneur’s characteristic is an important element of the organization’s strategic approach including other factors. The other factors employ the factors of being a planner, creator or prospect, through different creative ideas [18] and adaptability according to the volatile changing environment through action for the success of organizations. Moreover, the characteristics of entrepreneurs also include the personality of different entrepreneurs, skills in seeking cooperation with the board or network in the workplace [19] and the patience of all thing around. Additionally, the other characteristics are as the ability to manage[20], ability to motivate others[21], a person who accepts risk[22] generous and acceptable person for new ideas as in the changes bringing to the entrepreneurial intentions as the following hypothesis 7.

H7: Entrepreneur’s characteristic influences the entrepreneurial intentions.

3. Mentoring

Mentoring is a development of personnel with the focus of one-to-one relationship or a sub-group by an experienced person called “mentor” to develop new people or less experienced person called “mentee” (trainee from the mentor) or protégé (protectors) who have been developed both professional and personal matters. In the education industry, various forms of mentoring are applied, depending on the group of people who act as mentors and trainees. If dividing the form of the rough, there are 2 types of mentoring [23]: 1) natural mentoring includes teaching, guidance and counseling, and 2) planned mentoring looks like a structured program as an office of research). Both of these forms can be applied in the context of each incubator or organization.

Therefore, mentoring is to create a system for developing, teaching, and advising. There are elements of the system: inputs, processes, productivity and feedback [24]. It is the development of people to grow, learn, improve and develop themselves to be able to perform better. It is to achieve goals based on good relationships, sincerity and mutual trust [25]. The mentoring which is a development of personnel with the focus of one-to-one relationship or a sub-group by an experienced person called “mentor” to develop new people or less experienced person called “mentee” (trainee from the mentor) or protégé (protectors) who have been developed both professional and personal matters. In the education industry, various forms of mentoring are applied, depending on the group of people who act as mentors and trainees. If dividing the form of the rough, there are 2 types of mentoring [23]: 1) natural mentoring includes teaching, guidance and counseling, and 2) planned mentoring looks like a structured program as an office of research). Both of these forms can be applied in the context of each incubator or organization.

4. Innovativeness

Innovativeness is frequently found in education about the key elements of entrepreneurship [32] and the ideas of entrepreneurial people tend to be more innovative than those who are not entrepreneurs, too [33]. Nybakk, Hansen, and Lunnan [34] defined innovation as a trend in creating and applying innovation into new products, processes and services in business systems. As for Mueller and Thomas [35] study found that innovation is an important motivation to lead a person to start a business while Avlonitis, Kouremenos and Tzokas [36] thought that innovation consists of technology dimensions and behavioral dimensions. It means both technological ability and behavior, intention and determination to change the company or create new companies.

McClelland [37] conducted research on entrepreneurship by focusing on the dimensions of personality characteristics. McClelland insisted that personality characteristics such as innovation are a feature of successful business innovators as hypothesis 5. People with a high level of innovativeness are the characteristics of the person who is determined to be an entrepreneur [33] affecting the intentions of starting a business [32] as the following hypothesis 8.

H5: Mentoring influences innovativeness.

H8: Innovativeness influences entrepreneurial intentions.

5. Entrepreneurial Intentions

Entrepreneurship promotion can be done since not being an entrepreneur or studying in order to prepare to enter into future entrepreneurship. An important attribute of being an entrepreneur for a group that has not been an entrepreneur yet is Entrepreneurial Intentions, a person’s awareness and confidence that is likely to create a business[38] and plans to do that in the future including factors influencing the entrepreneurial intention. Therefore, the mentoring has significance due to intention is an important variable that
affects behavior leading to future entrepreneurial actions[22] as hypothesis 6.

H6: Mentoring influences entrepreneurship intentions.

Shapero[39] said that the decision to change the direction of life or propensity to act or the establishment of their own business will be accelerated by events or changes in daily life and relies on 2 factors: perception of desirability and perception of feasibility. There are three factors that affect the intention of being an entrepreneur: attitude towards entrepreneurship, perceptions of entrepreneurship and social norms[40].

The entrepreneurial intention is as a factor in this study covers running his own business immediately upon graduation, the support of family members in the business, the ability to learn to conduct business from family members[4], having confidence in themselves that can be successful in business and interested in learning about management and business operations.

5. THE CONCEPTUAL MODEL

Study of related concepts, theories and research found inspiration factor direct effect on mentoring, entrepreneur’s characteristic factor and innovativeness factor had directly effect on entrepreneurial intentions, the mentoring factor had directly effect on three related factors; entrepreneur’s characteristic factor, innovativeness factor and entrepreneurial intentions factor as can be seen in figure 1.

Figure 1. Hypotheses structure and conceptual model of the factors influencing of entrepreneurial intentions for vocational entrepreneurship incubator members: case study mentoring.

6. METHODOLOGY

6.1 Research Design

This study adds to the literature base by revealing what influence entrepreneurial intentions assign to mixed methods research; quantitative and qualitative. By applying them together to achieve the objectives and answer research questions, which are growing area of methodological choice for many academics and researchers from across a variety of discipline areas [42] depending on the appropriate of both research methodology. The research presents data acquisition and analysis methods with quantitative variables and the hypotheses derived from the literature review and proceed with qualitative research to confirm the data obtained from quantitative analysis to defining the process of conducting research into 2 parts as follows;

1) Quantitative Research

Quantitative research is carried out according to the steps such as development of the variable scale, data collect by questionnaire and descriptive statistical processing based on Structural Equation Model (SEM) and then summarize and discussion are provide from questionnaires that have closed questions.

2) Qualitative research

Qualitative research is semi-structure in-depth interview which create a comprehensive study of the factors influencing of entrepreneurial intentions for vocational entrepreneurship incubator members: case study mentoring has examined the integrity of the question by triangulation[43] which is very much associated with measurement practices in social and behavioral research[44]. The result are discussion and provide for further research.

6.2 Population/Sample-Data Source

Population

A population sampling is a type of purposive sampling technique which are 51 excellently five star levels vocational entrepreneurship incubator of national vocational schools of Thailand in year 2018 (school year 2017). The units of analysis include 3 groups of each incubator; head of incubator, advisor and member as totally 153 persons for 5 regions of Thailand; 1) eastern region and Bangkok, 27 cases, 2) central region, 39 cases, 3) northern region, 15 cases, 4) southern region, 27 cases and 5) northeastern region, 45 persons.

Research Instrument

We have develop scale to examine the content validity as inspiration factor scale of Cantillon[14] entrepreneur’s characteristic factor scale of Zimmerer and Scarborough[20] mentoring factor scale of Pompa[27] and entrepreneurial intentions factor scale of Thompson[45].

The questionnaire designed based on the basic of literature and examine the reliability by 5 experts to verify the accuracy and consistency of content. This research test try out level was 30 selected by way of purposive sampling from excellently five star levels vocational entrepreneurship incubator of national vocational schools of Thailand in year 2017 (school year 2016).

Data Collection

The researcher collected data from primary data sources as data sources obtained from data collection using closed-end questionnaires which used similar questions to help confirm and verify each other's information. As the open-ended questions, the researcher has requested for
cooperation and requesting the director of vocational education college who is also the incubator president to distribute questionnaires. Moreover, in-depth interviews were conducted based on the tools created and analyzed data using descriptive statistics to find the percentage, mean and standard deviation y inferential statistics analyzed by the project equation (SEM) with AMOS technique.

**REFERENCE**

<table>
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Digital Marketing


[1][2] S2 MBA, Nehru School of Management, Pampadi, Thrissur, Kerala, India

Abstract:

Digital marketing is referred to as the marketing of products or services using the aid of digital technologies. It relays mainly on the internet, but also including mobile phone, display advertising, and any other digital medium. Nowadays brands and businesses utilize technology and digital marketing for their marketing. People choose digital devices instead of going to physical shops.

Online marketing which is also called internet marketing, involves use of interactive, virtual spaces for the sake of promoting and selling goods and services. It includes email marketing, search engine marketing(SEM), social media marketing, many types of display advertising and mobile advertising. Online advertising involves both a publisher and an advertiser. Other potential participants include advertising agencies, an ad server and advertising affiliates. In this method virtual space is used to put marketing messages on websites to attract internet users.

E-mail marketing, using e-mail for sending promotional messages to internet users has been considered one of the more effective method of online marketing. Among its benefit points to “high response rate” and “low costs” of e-mail marketing and believe that this advantages “are rapidly turning e-mail marketing into an invaluable tool”. Affiliate marketing and social media marketing are other online marketing methods. Affiliate marketing refers to the process of gaining a commission by promoting products or services of another company. Social media marketing is a term used to describe the process of boosting website trapping or brand awareness through the use of social media networking sites.

The main advantages of digital marketing are empowering effect, avoid geographic barriers, efficient target reach, better results, immediate result, cost effective, wide audience. It also possess some disadvantages like copyright, taken unserious, not appropriate to, high competition, damage from negative, lack of trust. However it is the most advanced technology of market.

1. INTRODUCTION

Digital marketing is an umbrella term for the marketing of products or services using digital technologies, mainly on the internet, but also including mobile phones, display advertising, and any other digital medium. The way in which digital marketing has developed since the 1990s and 2000s has changed the way brands and businesses utilize technology and digital marketing for their marketing.

Digital marketing campaigns are becoming more prevalent, as digital platforms are increasingly incorporated into marketing plans, and as people use digital devices instead of going to physical shops. Digital marketing activities are search engine optimization (SEO), search engine marketing (SEM), content marketing, influencer marketing, content automation, campaign marketing, and e-commerce marketing, social media marketing, social media optimization, e-mail direct marketing, display advertising, e-books, optical disks and games, and any other form of digital media. It also extends to non-Internet channels that provide digital media, such as mobile phones, call-back and on-hold mobile ring tones.

The term digital marketing was first used in the 1990s, but digital marketing has roots in the mid-1980s when the Softad Group, now Channel Net, developed advertising campaigns for automobile companies, wherein people would send in reader reply cards found in magazines and receive in return floppy disks that contained multimedia content promoting various cars and offering free test drives.

Digital marketing became more sophisticated in the 2000s and the 2010s, and the proliferation of devices able to access digital media has led to great growth of digital advertising; statistics produced in 2012 and 2013 showed that digital marketing was still a growing field.

Digital marketing is often referred to as ‘online marketing’, ‘internet marketing’ or ‘web marketing’. The term digital marketing has grown in popularity over time, particularly in certain countries.

Ease of access

A key objective is engaging digital marketing customers and allowing them to interact with the brand through servicing and delivery of digital media. Information is easy to access at a fast rate through the use of digital communications. Users with access to the Internet can use many digital mediums, such as Face book, YouTube, Forums, and Email etc. Digital communications it creates a Multi-communication channel where information can be quickly exchanged around the world by anyone without any regard to whom they are. Social segregation plays no part through social mediums due to lack of face to face communication and information being wide spread instead of to a selective audience. This interactive nature allows consumers create conversation in which the targeted audience is able to ask questions about the brand and get
familiar with it which traditional forms of Marketing may not offer.

**Competitive advantage**

By using Internet platforms, businesses can create competitive advantage through various means. To reach the maximum potential of digital marketing, firms use social media as its main tool to create a channel of information. Through this a business can create a system in which they are able to pinpoint behavioral patterns of clients and feedback on their needs. This means of content has shown to have a larger impingement on those who have a long-standing relationship with the firm and with consumers who are relatively active social media users. Relative to this, creating a social media page will further increase relation quality between new consumers and existing consumers as well as consistent brand reinforcement therefore improving brand awareness resulting in a possible rise for consumers up the Brand Awareness Pyramid. Although there may be inconstancy with product images; maintaining a successful social media presence requires a business to be consistent in interactions through creating a two way feed of information; firms consider their content based on the feedback received through this channel, this is a result of the environment being dynamic due to the global nature of the internet. Effective use of digital marketing can result in relatively lowered costs in relation to traditional means of marketing; Lowered external service costs, advertising costs, promotion costs, processing costs, interface design costs and control costs.

**Effectiveness**

Brand awareness has been proven to work with more effectiveness in countries that are high in uncertainty avoidance, also these countries that have uncertainty avoidance; social media marketing works effectively. Yet brands must be careful not to be excessive on the use of this type of marketing, as well as solely relying on it as it may have implications that could negatively their image. Brands that represent themselves in an anthropomorphizing manner are more likely to succeed in situations where a brand is marketing to this demographic. “Since social media use can enhance the knowledge of the brand.

Establishment of customer exclusivity: A list of customers and customer’s details should be kept on a database for follow up and selected customers can be sent selected offers and promotions of deals related to the customer’s previous buyer behaviour. This is effective in digital marketing as it allows organisations to build up loyalty over email.

Low Technical Requirements: In order to get the full use out of digital marketing it is useful to make you advertising campaigns have low technical requirements. This prevents some consumers not being able to understand or view the advertising campaign.

**2. INEFFECTIVE FORMS OF DIGITAL MARKETING**

Digital marketing activity is still growing across the world according to the headline global marketing index. Digital media continues to rapidly grow; while the marketing budgets are expanding, traditional media is declining (World Economics, 2015). Digital media helps brands reach consumers to engage with their product or service in a personalised way. Five areas, which are outlined as current industry practices that are often ineffective are prioritizing clicks, balancing search and display, understanding mobiles, targeting, viewability, brand safety and invalid traffic, and cross-platform measurement (Whiteside, 2016). Why these practices are ineffective and some ways around making these aspects effective are discussed surrounding the following points.

**Digital marketing communications**

Changing at an impressive speed, digital marketing constantly evolving technologies, and the way people using them, is transforming not just how you access your information but how you interact and communicate with your friends on a global scale. People are embracing digital technology to communicate in ways that would have been unimaginable just a few short years ago. No longer the preserve of tech-savvy early adopters, today ordinary people are integrating digital technologies continuously into their everyday lives (Ryan, 2014). The global population of people who are online in the Internet was around 2.1 billion at the end of March 2011 (Internet World Stats). By mid-2012 the figure had already climbed to almost 2.5 billion people online. Direct marketing communication (DMC) is described as the use of new digital communication channels or technology tools to create an integrated and measurable communication process that helps companies acquire and retain customers while building a deeper relationship with them (Mulhern, 2009). Other terms closely related with DMC include “e-marketing”, “Internet marketing” and “new media” (Hennig-Thurau et al., 2010). DMC has its roots in interactive marketing and one-to-one marketing (Wynbs, 2011) and, as a concept, is preferable to either e-marketing or Internet marketing, which are more limited in focus. Customers now represent the personalization and participation as they become contributors to content and creators of marketing communication, rather than just passive objectives (Hennig-Thurau et al., 2010). The majority of digital marketing agencies now undertake the changes from advertising products to building brands. It is no more about establishing lifestyles, experiences and sensitivities around brands. Choosing from trying to influence consumer perceptions of the brand to telling a storied product is the trend of digital agencies now. Customers have become content creators and active participants in the communication process. Recent improvement in communications technology, such as the upswing of interactive media, has put emphasis on some of
the interactivity and proficiency. Recent studies have claimed that social media, as one part of DMC, should concentrate on lead generation by releasing attention-grabbing content with a clear call-to-action element (Bodnar and Cohen, 2012). Researchers agreed that creating awareness and strengthening the brand are the two most important objectives of marketing communications (Karjaluoto, Mustonen, & Ulkuniemi, 2015).

Using digital marketing in the newly introduced digital era enables brands and businesses to create a whole new relationship and communication channel with their customers and raises new opportunities for businesses to develop the value of their brand. The widespread use of technology is moving marketers closer to one-on-one as the web not only offers merchants the ability to communicate instantly with each other, but also allows the customer to talk back and that makes it possible for companies to customize offers and services, start conversation and gain valuable feedback. In allowing this, it builds on the relationship a brand has with its customers and allows customers the opportunity to have personal relationships with the brands, strongly influencing the brand loyalty of a customer.

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The Conceptual Framework: Multi-Group of Leader Resource Base Participation toward Value Added for Pracharat Tongchom Market in Thailand

[Somsri Chaiwat, Netpradit Napawan]

Abstract: The purpose of this literature were 1) to study the expectations and level of satisfaction of Leader, Resource Base, Participation, and Value Added of Pracharat Tongchom Market in Thailand, 2) to study Effect of Leader, Resource Base and Participation toward Value Added in Pracharat Tongchom Market in Thailand. The research was developed from data compilation based on the related literature review. The research tools were questionnaires. The sampling group was 500 entrepreneurs in Pracharat Tongchom Market from 17 provinces in the north region of Thailand. It was Multi Stage Random Sampling technique, data analysis with descriptive statistics to find percentage, average, standard deviation and inferential statistics with structural equation model.

Keywords: Leader, Resource Base, Participation, Value Added

1. INTRODUCTION

Connecting all parts of the world, a world without borders is called globalization which affects environment, population, economy, society, and culture enormously as well as spreads broadly. Thailand is also effected by globalization. Thailand is a country that has economic and social system which is connected and depend on foreign countries: causing Thai society exposed to external competition and threats. At the same time, the country is also being faced with various obstacles that arise from within [1]. In this era of globalization it is accepted that there are certain important factors that enable organizations to sustain and compete which are creativity and innovation that adds value by using existing resources of an organization [2]-[4]. An individual creativity is the starting point of creating an innovation [5]. And creativity is a key factor which enables the survival and growth of an organization [6]. Thailand has established a visionary 20-Year National Strategy Framework (2017-2036), allowing Thailand to have stability, prosperity, sustainability as a developed country. By following the development of the philosophy of self-sufficiency economy Thailand has established a strategy: to create fairness and reduce social disparity, to create opportunities for everyone in the society to be able to access resources, source of occupational funds, raise income levels and drive the economy, strengthening economic strategy and sustainability. It is to set the foundation of Thailand 4.0 model for caring all Thai people to move forward without leaving anyone behind [7].

“Pracharat Tongchom Market” is a concept aiming public sector, private sector and government sector to work together to drive the economy, unite together with specific goals, and understand the work process as well as develop integration at all levels. In order to be able to act correctly and accurately at the central, provincial and national levels. To generate income, create jobs for people in the community, and strengthen the sustainability of local economy. Hence, the government has a policy to promote domestic marketing by setting goal of having a community market in every corner in the region to help the farmers, agricultural product producers, community enterprises, and SMEs that produce handicraft products as well as OTOP products to be able have a direct place to sell their products to people. Department of Internal Trade, Ministry of Commerce has therefore implemented a project of community market for local businesses under the name of “Pracharat Tongchom Market” to develop or upgrade the existing market that sell agricultural products, handicrafts, arts, OTOPs and consumer products of the communities that were produced by farmers, community enterprise, SMES, and people in the community or nearby areas. To promote to be “Pracharat Tongchom Market” where there are a beautiful landscape, sell products in a fair and accountable way such as showing price tag, having a precision scales, and good quality products. Along with preservation of arts and culture, holds the identity as well as the way of life of...
the community. The “Pracharat Tongchom Market” will be an alternative way to create jobs and generate income for people in the community. Nevertheless, it will also be a place whether for either local people or visitors must stop by to see and spend some money, experience the uniqueness of local culture and lifestyle of the villagers. These help generate income along with preserving tradition, arts and culture of the community [8].

The Department of Internal Trade, Ministry of Commerce, assigned the Office of Commercial Affairs to survey and set up the Pracharat Tongchom Markets. According to the standard set: there are considerably number of Pracharat Tongchom Markets that were unable to successfully pass the standards due to lack of differentiation from other markets. Office of Commercial Affairs tried to focus on the targeted number of new markets as was specified in the project outcome, instead of continuously develop board and entrepreneurs. Moreover, lacking of monitoring the project’s performance [9]. One of the major difficulties in establishing the Pracharat Tongchom Markets was building the links in the economic system. For instance, “Upstream” was a production and cultivation; “Midstream” was a privatization, an innovation, and creating a value-added; “Downstream” was marketing that create an alternative choice for consumers, middlemen, and large enterprises as well as being as the “alternative markets” for manufacturers. There are numbers of the projects with the name of “Pracharat” appeared the results shown that the purpose could not be achieved. The operation was also deviated from the original intention that requires large enterprises help small enterprises and the citizen. On the other hand, a low-income citizen was used as a means of transferring benefits to large enterprises such as a case of Thai government’s Welfare Smart Card Project [10]. The accountability of budget management in Pracharat Market Project was one of the problem describing that money itself does not be used in the highest potential for full development [11] there was a problem in board members on managing the market [12].

In reference with a review of research papers on community businesses, found that the majority of scholars focused on the factors related to the performance and the competitive advantage, including [13]-[15] as well as the studies of leadership and participation factors [16], [17]. Without studying other various factors that are linked to creating a value-addition to products and services which are resulted to a lack of clarity. In term of Resources-Based View: RBV Theory, mostly shown either domestic or international research papers applied this theory to support the studies only in the overall view. In addition, there is no research papers with in-depth study on how factors of the Pracharat Tongchom Market as a community businesses operation related to creating value-added for the products and services to the community businesses. Especially in managing the community businesses of the Pracharat Tongchom Market showed in a small number, therefore, it was the background of this research titled multi-group of leader resource base participation toward value added for Pracharat Tongchom Market. The research findings can be applied as a guideline to increase the value-added of products and services for Pracharat Tongchom Market toward local economic development in order to create stability, prosperity, sustainability economic system for the country.

2. RESEARCH OBJECTIVE

1. To study the expectations and level of satisfaction of Leader, Resource Base, Participation, and Value Added of Pracharat Tongchom Market in Thailand.

2. To study Effect of Leader, Resource Base and Participation toward Value Added in Pracharat Tongchom Market in Thailand.

3. SCOPE OF RESEARCH

This research consists of the entrepreneurs from Pracharat Tongchom Markets in Thailand used as an analysis unit, with 4 scopes of the study as follows:

A. Content
Focus on the important effect scale of the multi-group of leader resource base participation toward value added for Pracharat Tongchom Markets.

B. Population and Sample
Population was the entrepreneurs from Pracharat Tongchom Markets in Thailand. Sample was a number of 500 entrepreneurs from Pracharat Tongchom Markets in Northern region of Thailand by Multi Stage Random Sampling.

C. Area
The entrepreneurs from 51 Pracharat Tongchom Markets in the north region of Thailand

D. Timing
This research has taken a year from October 2018 to August 2019.

4. LITERATURE REVIEW

The context of Pracharat Tongchom Market
“Pracharat Tongchom Markets” is an alternative way to create jobs and generate income for people in the community. Nevertheless, it will also be a place for either local people as well as for visitors to stop by to see and spend some money, experience the uniqueness of local culture and lifestyle of the villagers. These will help generate income along with preserving tradition, arts and culture of the community. Under the operation of all sectors related to Pracharat framework to strengthen the local economy sustainability, the Department of Internal Trade
has proposed and acknowledge the local market development for community businesses project in the cabinet meeting on 30 September 2015, meeting titled “Tongchom Market” where it targeted 231 markets nationwide within 3 years timeframe (2016-2018). The local markets were a mechanism to expand the marketing channels for farmers, community enterprises, cooperative, and SMEs entrepreneurs. In addition, to solve agricultural products, generate income for the community, and link to tourism which will lead to the economic stimulation driven by domestic consumption and local economy. In the fiscal year of 2018, Department of Internal Trade has set up 214 local markets across the country which are local markets for local businesses. Supporting the government’s policy on stimulating the economy as well as solving the economy problems. Solving the problem of poverty and helping SMEs, cooperatives, community enterprises, agricultural institution, and low income families through these local markets by using its mechanisms as a marketing channel for farmers and target group together with improving OTOP products and connecting tourism in each province to strengthen the local economy that will lay to the foundation for the future of the country [8].

Researchers have extracted related variables as a result from related conceptual review, theories, and literatures which can be identified into 4 main variables were 1. Leader 2. Resource base 3. Participation and 4. Value-added.

A. Leader

Leader is a person who was assigned by the group members on duty to control or coordinate any activities involve with the mission of the group [19]. Leader is a person who has been elected or appointed to lead the group and effect toward the activities processes in the group to accomplish the group’s goals as well as to serve as the leader of the group [20]. Additionally, leader is also a person who makes the organization move forward and succeed. By acting in a role of making a relationship between people who are supervisors or a person who creates the stability and helps people to achieve the group’s goals [21]. Leader is also a person who was assigned or be selected or appointed and being accepted by the group members to have an effect and a role over other group members. Be able to motivate, induce, as well as guide the group members to work together to be able to successfully achieve all the group’s mission [22]. The concepts of many scholars and researchers have mentioned about the qualities of a good leader should consist of motivation, intelligence, self-confidence, knowledge, emotional intelligence, background and experiences, physical features, moral and human relations in order to cover the characteristics that the leader should have in all dimensions. Besides the leader’s qualities mention above, the skills and abilities that leader in every organization should have to build credibility and confidence in managing the organization under good governance and achieving the organization’s goals [16], [23].

B. Resource Base

Resource base of the organization is an important factor to enhance organizational competency which can be derived by having resource base from an accumulation of personnel skills and knowledge which an organization must be able to access and develop in all aspects [24], [25]. It is the ability to combine between human resource capability and work operation. Whereby an organization has to apply the available resources to meet the needs of all parties quickly, in a timely manner as well as with good quality [26]. It is, therefore, not the unchanged capability, but must be the capability that can adjust and respond appropriately with the changing environment [27]. Paying attention to the available resource base in the organization is consistent to the concept of Resource-Based View Theory. The theory discussed an importance of the resources and capabilities in the organization. It is a contemporary theory that combines in-depth information about the acquisition of competitive advantage and the existence of an organization under the good administration of the leader [24], [25], [27], [28]. Resource base is the factor that an organization has already have it. The organization is the owner and able to command or control those factors included asset, knowledge, the ability, and the operational process in the organization. The organization can use those factors to develop organizational strategies and effectively and efficiently implement it into practice. Nevertheless, resources that have the characteristics of value, rareness, and inimitable or assets in same meaning are an asset that an organization has been possessing either tangible or intangible. And the ability of the organization that can benefit the business operation such as physical resources, human resource, financial resource, and knowledge resource [29]-[31].

C. Participation

Participation causes a good result toward driving an organization or networking because it has high impact in psychology. In other words, the participants are proud to be a part of administration, their opinions are being heard and implemented for networking development. Most importantly, the participants will have an ownership feeling in that work and that feeling is the best network driven power. The famous and well-known scholars, Cohen, John and Uphoff [17] mentioned that the participation in organizational development means that the cooperation in the organization under any conditions or circumstances which needs to achieve the goal of recent development and classified the participation into 4 stages: participation in decision making, participation in implementation, participation in benefits, and participation in evaluation. In accordance with, Fonaroff, [32] has given the meaning of participation that it is the community participation process.
which consists the steps as follows: planning, implementing, using services of the project, and participation in benefits. Whitaker [33] has given the meaning of the participation as, the participation of organizational members consist of 4 dimensions: participation in decision making, participation in scarifying for development, participation in competition, and participation in performance evaluation. Dale [34] has given the meaning of participation as the collaboration of people with intention and voluntary without being forced which includes participation in decision making, participation in implementation, participation in project monitoring and evaluation, as well as the participation in receiving development benefits.

D. Value Added

Value added is adding more value to the products. Value added creation is a marketing tool that will result in product, distribution, advertising, and marketing promotion development. This creates an impact on higher prices, moreover, product value added will make consumers feel more benefited by value added creation which means put an effort in developing various products to be more valuable in customers’ eyes [35].

Nilson, Solomon, Björcck, & Akerström [36] have given the meaning of value added as developing the product to meet the highest customer satisfaction and exceed customer expectation. Moreover, the value added may occurred from adding other things than what the consumer expects to receive. De Chematony, Riley and Harris [37] have given the meaning of value added as the development of product to meet the highest satisfaction of consumers and exceed their expectation by adding new things in the products. The academician, Smith & Colgate [38] have presented a framework for delivering value added to the consumer that the basic needs that consumer want will be met by value added creation through value of product and service in 4 main aspects: functional value that responds to different types of work appropriately. There are an efficiency, effectiveness and quality in the capacity. Internal demand value which relates as a sign for example, group value, social status, beliefs. Impressive experience value gain from consumption, use of service, be aware of story that is an emotional response to thoughts. And worthless value which toward the selection of usage, warranty, environmental impact, as well as related risks. Furthermore, the scholars and researchers mentioned the conceptual framework of delivering value added to consumers whereby it relates to the concept of Smith & Colgate, Freeman [39] said that creating good value will occur when there is the same opinion of stakeholders on the important issues. And creating different experiences of products from the competitors can create psychological value for buyers. This will increase a good experience of using the products and services.

5. THE METHODOLOGY AND MODEL

The methodology of this research is mixed-methods research divided into 2 categories are:

A. Quantitative research steps are scale development, questionnaire distribution, descriptive statistical processing, and inference statistics according to structural equation model (SEM) and use AMOS program to summarize and discuss the results. As well as providing additional recommendation from research data where it was obtained from questionnaires which has closed- question style. Then, applied qualitative research to compare with the results of quantitative research to find the familiarity or differences in which aspects.

B. Qualitative Research has applied the semi-structure in-depth interview where it was formed from the reviewed literatures to cover the research in term of perceiving value, service quality satisfaction, trustworthiness, loyalty. The researchers has been completed the data integrity check with Triangulation approach of Denzin [18]. Finally, the results obtained from structural equation analysis were discussed, summarized and provided additional recommendations from the research. From the literature review, it can be summarized as the conceptual framework and research hypothesis as follows:

Figure 1: The Conceptual Frame Work

Hypothesis
H1: Leader effects value added.
H2: Leader effects participation.
H3: Resource base effects participation.
H4: Resource base effects value added.
H5: Participation effects value added.

6. SUMMARY AND CONCLUSIONS

Thailand is a country enrich with resources that has a high value for tourism. There are an abundance of natural resources, arts, culture, and long history. Self-identity in different regions of Thailand have been attracting tourists to Thailand. Therefore, this tourism industry helps to generate income tremendously for the country. It strengthen economics and social prosperity in the country [40]. Many tourist attractions in Thailand have a long source history and there are lots of interesting cultural heritage. It is also a key factor of the development and promotion of tourism in...
the country. These have been inheriting and accumulating as pride and attracting many tourists. Under the government’s policy on creating the creative economy for strengthening the competitive advantage of enterprises as well as create the social enterprises that can produce and sell. By creating value added to the products and services together with applying knowledge, innovation, the diversity of natural resources, culture and lifestyle to develop Thailand and increase value in economy, then forward it to social value until finally establishing as a creative economy [41]. Be focus on leaders who play an important roles in encouraging to have the participation among group members, using resource base of the organization to develop and increase value added creation for products and services of the organization. Together with supporting the community integration to build a community market for selling local products. The government sector should give priority to these business groups as well as promote and develop the groups to increase the competitiveness. Since these business groups are a large foundation of the country, therefore increasing the potential of the communities by promoting the strengths within the community in terms of culture, lifestyle, and local wisdom to the manufacturing and service sectors. Building their own identity and expanding more market opportunities are one of the way to increase the potential of the communities under the implementation of Pracharat Tongchom Market approach to develop local economy to the stability, prosperity, and sustainability economic system of the country.

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Causal Model of Customer Intention to Using Anti-Aging Business in Thailand


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Abstract:
This conceptual paper explores the causal relationships among the components of the customer relationship management and proposes a causal model using the theory of planned behavior. The context of investigation is the anti-aging business which is expected to be growing in response to the increasing trend of aging society in Thailand. The data collection is design for the online platform, disseminating the questionnaire through social media. The total sample is 500. The causal relationship will be investigated using structural equation model.

Keywords:
Anti-aging business, customer intention, customer relationship management, theory of planned behavior

1. INTRODUCTION
The ‘Million Birth Cohort’ during 1963-1983 representing the Thai population tsunami has brought to Thailand a great number of elderly population during the 21 century [1]. Thailand is embarking on the “complete aged society”. In 2037 with the population aged 53-73 will be around one third, Thailand will then become the “Super Aged Society” [2]. Preparations for health care and early disease prevention are therefore a challenging task. When this group of people eventually becomes older persons, they will have an enormous demand for various health services and other related welfare from the government [3].

In this regard, the Ministry of Public Health has formulated a strategic plan for the health service business to serve the aging society as a part of the Thailand 4.0 scheme. Anti-aging business is deemed to play a major role in the healthcare service.

Anti-aging is a dimension of the body care using the knowledge of the aging science which is a science about a holistic approach to obtain the optimal health with a healthy dietary, proper exercise, relaxation, and maintaining a clear mind. It is actually considered as the health care from the inside.

Anti-aging business is a business that serves the different needs of customers for appropriate products and services in relation to anti-aging activities. Maintaining the long-term relationships with customers is crucial to the success of the business as customers will need continuing services. Therefore, anti-aging business managers must give high priority to customer knowledge management and customer information management process in order to maintain the customer base as well as to acquire new customers. This includes good customer interactions by listening to the comments and applying information to improve customer services. Additionally, the anti-aging business has to be able to present suitable products and services to each customer group to improve products and services customization using customer relationship management [4]. Towards such aim, insight into the factors influencing customers’ purchasing decisions is indispensable. Even in the same purchase, different customer has different purchasing decision.

Knowledge about customers’ purchasing behavior customers can be explained by the theory of planned behavior [5]. The theory defines behavior as the intention of action which is the need of the person to perform that behavior under control. The intention can therefore predict the behaviors. That is, the more people are determined to act, the more likely they will act. Therefore, if we are able to understand and find important factors underlying the needs and intentions of customers, we have a better chance to predict their behaviors.

As a consequence, anti-aging business entrepreneurs have to understand customer behavior in order to develop and offer services that can properly meet customer needs and satisfaction in the highly competitive environment. Since current customers are looking for better opportunities and the availability of service information including contact channels through various platforms, such as Website,
Facebook, Instagram, these allow customers to change or choose services from other sources at any time. This forces entrepreneurs to keep adapting themselves to the changing needs of customers and search for new strategies to comprehend the factors determining consumer behaviors. The trend of aging society offers both opportunities and challenges to the anti-aging business entrepreneurs. The newness of the business provides limited knowledge about the purchasing decisions of potential customers. This article resorted to the theory of planned behavior aims to explicate this purchasing complication.

2. RESEARCH OBJECTIVES

A. To explore the level of customers’ opinions on customer relationship management, attitudes, subjective norm, perceived behavioral control and intention regarding anti-aging business in Thailand.
B. To examine the causal relationship among the customer relationship management, attitudes, subjective norm, perceived behavioral control and intention in the anti-aging business in Thailand.

3. LITERATURE REVIEW

Customer Relationship Management: CRM

The concept of customer relationship management (CRM) originated in the early 1980s, formerly known as "Contact Management" which is a collection and documentation of information about business organizations and customers paying attention to maintaining valuable customers with business organizations [6]. Many scholars have defined the concept of customer relationship management. Generally the customer relationship management is an activity to enhance the strategic process together with a viewpoint to manage knowledge of technology, both academic and practical applications of technology in order to have two-way communication channels, able to understand customers as well as respond to the needs of each customer for building customer loyalty and increasing profits in the long run [4], [7]-[9]. However, the difference are the guidelines for supporting operations such as partnering with customers [10], satisfying customers with the highest satisfaction or customer experience management [9], [11], building relationships with customers and those having the potential to become customers [10], [12].

From the synthesis of variables regarding customer relationship management (CRM) appearing in various research projects, it was found that despite the use of different words, the meaning is similar. For example, customer awareness in [13] is referred as the knowledge that the customer has about the company, vendor and product or service, is similar to customer knowledge in [6], [14]-[15]. While customer knowledge includes knowledge about customers, knowledge for customers and knowledge from customers. However, [16] uses “customer intelligence” which means gaining knowledge about the customers using technology to collect information from customers. Customer Intelligence is therefore not different from “customer knowledge management capability” in [14], [17]-[18] mentioning the knowledge infrastructure capability with the application of organizational technology in data collection analysis and communication of information to suit customers. Regarding the ability to manage customer knowledge discussed in [6] and [14], the function of knowledge process capability that facilitate the knowledge management can be found both inside as well as outside the business organization. Another term with similar meanings is “customer interaction” in [14], and customer retention in [6]. However, customer interaction has a broader meaning that also includes customer retention. Customization is a term that is similarly defined in many literatures [14], [16], [17].

In this study, the components of the customer relationship to be investigated include customer knowledge, customer knowledge management capability (CKM capability), customer interaction and customization.

Theory of Planned Behavior: TPB

The Theory of planned behavior was developed from the flaw of the theory of reasoned action which limits to the belief that most social behaviors are under complete validation control. Behavioral intention is assumed to be a motivating factor influencing behavior, therefore, the behavioral intention can predict whether the behavior will eventually occur. It can be explained that if the person has sufficient intention, he will have more effort to lead himself as he intends. In fact, there are many behaviors that are not under incomplete validation control because the complete actions must rely on factors other than motivation factors, including resources and opportunities (ie time, money, skills, ability, cooperation from others, etc.). As in 1991, Reference [5] developed the theory of planned behavior based on the belief that the person will decide to behave due to the use of existing information contain with behavioral belief, attitudinal belief, normative belief, and control belief. All of these beliefs affect behavior through attitude, subjective norm, perceived behavioral control (PBC) and behavioral intention. This theory presents the PBC as the determination of intention to behave as well as determines behavior. Consequently, the success of the action depends on the behavioral intention and the perceived behavioral control (PBC) thus making this theory different from the original theory and is appropriate for explaining and predicting behaviors that cannot be fulfilled more completely [5].

Theory of Planned Behavior is recognized as a testing tool for measuring most of the consumer behavior [19]. It is employed to predict or explain behavior and intention related to many health conditions, such as vaccination against disease, organic food consumption, consumption of dietary supplements, Halal food consumption, and exercise
The results of most studies support the benefits of the theory of planned behavior, i.e., behavioral intention, an effective behavior prediction [24] - [25].

In this paper, the theory of planned behavior is used as a framework to investigate the causal relationship among the components of the customer relationship management in the anti-aging business context.

4. CONCEPTUAL FRAMEWORK

5. RESEARCH HYPOTHESIS

Hypothesis 1: Customer relationship management positively influences the subjective norm.

Hypothesis 2: Customer relationship management is related to perceived behavioral control.

Hypothesis 3: Customer relationship management is related to attitude.

Hypothesis 4: Customer relationship management is related to the intention to using anti-aging business.

Hypothesis 5: Subjective norm are related to attitude.

Hypothesis 6: The perceived behavioral control is related to attitude.

Hypothesis 7: Attitude is related to the intention to use the business of anti-aging.

Hypothesis 8: Subjective norm is related to the intention to use the business of anti-aging.

Hypothesis 9: The perceived behavioral control is related to the intention to use the business of anti-aging.

6. RESEARCH METHODOLOGY

Population and sample group

The population of this study is Thai people aged 35-55 years old. The survey is restricted to those whom can be accessed through internet. As the exact number of the population is unknown, this study used the unknown population sampling method of [26] which the sample size that is considered to be sufficient at 500 people. Inclusion criteria of the sample are: 1) a Thai citizen age from 35-55 years living in Thailand during 2019, 2) use internet, 3) have experience of using anti-service business, 4) agree to participate in the research, and 5) are able to answer the selection questions correctly. Sampling method employed the Stratified Random Sampling: 1) Sample size covers Bangkok and the 4 regions according to the criteria of the population and housing census [27]. Quota Sampling is randomly selected for each region, which will obtain 100 samples in each region and 100 in Bangkok. The total sample is 500. 2) 25 provinces are randomly selected from each region, including Northern region 6 provinces, Northeastern region 6 provinces, Central Region 8 provinces and Southern region 5 provinces. 3) Then, the researcher calculated the sample by using the quota sampling method in each province 4) Based on the framework and the literature, an online questionnaire was developed. The questionnaire URL was placed on social media networks requesting cooperation from the sample group to respond to the questionnaire.

Research Instruments

The research instrument is an online questionnaire consisting of 2 parts: (1) demographic data of respondents and (2) four component of variables derived from the literature review, namely customer relationship management, attitude, subjective norm the perceived behavioral control, and intention to using of anti-aging business. The instrument obtained the ethical approval PPH No.005/2662 from the Phrae Provincial Health Office.

Data Collection

Data are collected through online questionnaires. At this stage, the researcher designed the data collection process using online media to ensure that the information from online surveys is truly information representing the population based on the criteria of Gaiseric and Schreiner [28] as follows: 1) Sampling: since there are no methods used to randomize sampling among the internet users population. Therefore, sending an online questionnaire by using random sampling methods that use nonprobability sampling is, therefore, the most suitable method for data collection [29]. According to many literature reviews, it was found that the technique of random sampling using nonprobability sampling can obtain more reliable data. The non-response bias will be tested [29]. 2) Data will be tested for content validation, reliability, and the confirmatory factor analysis will be performed. 3) In order to obtain accurate information, the researcher set the criteria for selecting samples clearly. There are 2 screening questions to which the answers must be consistent before accepting as a qualified response ready to be analyzed.

Data analysis

Data analysis will be performed using descriptive statistics, i.e., mean, standard deviation, and inferential statistics using structural equations to explore the causal relationships among the investigated components.
7. CONTRIBUTION OF THE FINDINGS

Contributions of the finding can be of two folds:

A. Contributions to theory

1. The findings will add to and expand the knowledge on customer relationship management, attitude, subjective norm, and the perceived behavioral control in the anti-aging business setting.

B. Contribution to business

Anti-aging business entrepreneurs can apply the knowledge gained from the research finding to properly develop the customer relationship management system that effectively focuses on responding to customer needs in anti-aging business. Moreover, the findings can be used in planning as well as applying in the management to create an efficient service system and promoting the exchange of goods and services according to the demand and supply in the health market as well as being able to apply to continue business succession.

REFERENCE


Understanding the Impact of Land Acquisition, Rehabilitation and Resettlement (Amendment) Bill (LARR) and Its Consequences on Land Acquisition in India


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**Abstract:**

Land acquisition is the process by which land owned by private persons is compulsorily acquired. It is different from the purchase of land, which is a contract between a willing seller and a willing buyer on mutually acceptable terms. Acquisition is where the land owner has no choice over parting with the land, and is forced to relinquish his property. Therefore, the process of acquisition overrides the property rights of the private land owner. This can be justified only if a case can be made for greater public benefit in taking away someone’s land ownership rights. Land acquisition in India refers to the process by which the union or a state government in India acquires private land for the purpose of industrialization, development of infrastructural facilities or urbanization of the private land, and provides compensation to the affected land owners and their rehabilitation and resettlement.

1. INTRODUCTION

Land acquisition in India is governed by the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (LARR) and which came into force from 1 January 2014. Till 2013, land acquisition in India was governed by Land Acquisition Act of 1894. On 31 December 2014, the President of India promulgated an ordinance with an official mandate to "meet the twin objectives of farmer welfare; along with expeditiously meeting the strategic and developmental needs of the country". An amendment bill was then introduced in Parliament to endorse the Ordinance. Lok Sabha passed the bill but the same is still lying for passage by the Rajya Sabha. On 30 May 2015, President of India promulgated the amendment ordinance for third time. Union Government of India has also made and notified the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Social Impact Assessment and Consent) Rules, 2014 under the Act to regulate the procedure. The land acquisition in Jammu and Kashmir is governed by the Jammu and Kashmir Land Acquisition Act, 1934.

This paper focuses on the issues and conflicts happening due to land acquisition in India and the related consequences on the society at large. The paper also deals with Proposed Amendments by the government in the existing Land Acquisition, Rehabilitation and Resettlement Act, 2013 and alternative proposals to land acquisition.

2. PURPOSE OF LARR

As per the Act, the union or state governments can acquire lands for its own use, hold and control, including for public sector undertakings and for "public purpose", and shall include the following purposes:

- for strategic purposes relating to naval, military, air force, and armed forces of the Union, including central paramilitary forces or any work vital to national security or defense of India or State police, safety of the people;
- for infrastructure projects as defined under the Act;
- project for project affected families;
- project for housing for such income groups, as may be specified from time to time by the appropriate Government;
- project for planned development or the improvement of village sites or any site in the urban areas or provision of land for residential purposes for the weaker sections in rural and urban areas;
- Project for residential purposes to the poor or landless or to persons residing in areas affected by natural calamities, or to persons displaced or affected by reason of the implementation of any scheme undertaken by the Government, any local authority or a corporation owned or controlled by the State.
The land can be acquired for private bodies for certain purposes:

- for public private partnership projects, where the ownership of the land continues to vest with the Government, for public purpose as defined in the Act;
- For private companies for public purpose

Six facts bout Land Acquisition, Rehabilitation and Resettlement (Amendment) Bill, 2015

The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Amendment) Bill, 2015, popularly known as Land bill, was adopted by the Lok Sabha on Tuesday. Here are the six important facts you need to know. Source: prsindia.org


The Bill creates five special categories of land use: 1. defense, 2. rural infrastructure, 3. affordable housing, 4. industrial corridors, and 5. infrastructure projects including Public Private Partnership (PPP) projects where the central government owns the land.


The Bill exempts the five categories from provisions of the LARR Act, 2013 which requires the consent of 80 per cent of land ownersto be obtained for private projects and that of 70 per cent of land owners for PPP projects.

The Bill allows exemption for projects in these five categories from requiring Social Impact Assessment be done to identify those affected and from the restrictions on the acquisition of irrigated multi-cropped land imposed by LARR Act 2013.

The Bill brings provisions for compensation, rehabilitation, and resettlement under other related Acts such as the National Highways Act and the Railways Act in consonance with the LARR Act.

The Bill changes acquisition of land for private companies mentioned in LARR Act, 2013 to acquisition for ‘private entities’. A private entity could include companies, corporations and nonprofit organizations.

3. DEVELOPMENTS IN REAL ESTATE SECTOR

The union cabinet has approved 20 major amendments to the real estate regulatory bill that seeks to protect home buyers as well as help investments in the real estate industry grow. These changes were based on the recommendations of the select committee of Rajya Sabha that had examined the bill pending in the upper house of the parliament.

- The updated bill now mandates projects on 500 sq metres of area or with eight flats to also be registered with the regulatory authority instead of 1,000 sq metres proposed earlier, bringing in a larger number of projects under the regulator's ambit.
- Builders will now have to deposit at least 70% of the sale proceeds, including land cost, in a separate escrow account to meet construction cost. Earlier proposal was 50% or less of sale proceeds.

4. ISSUES RELATED TO LAND ACQUISITION

Some of the important issues surrounding the Land Acquisition are discussed below. The major land acquisition and conflicts happen in the densely populated areas of the countryside.

1. Eminent Domain

The power to take property from the individual is rooted in the idea of eminent domain. The doctrine of eminent domain states, the sovereign can do anything, if the act of sovereign involves public interest. The doctrine empowers the sovereign to acquire private land for a public use, provided the public nature of the usage can be demonstrated beyond doubt. The doctrine is based on the following two Latin maxims, (1) Saluspopuli suprema lex (Welfare of the People Is the Paramount Law) and (2) Necessitaspublica major est quam (Public Necessity Is Greater Than Private Necessity). In the history of modern India, this doctrine was challenged twice (broadly speaking) once when land reform was initiated and another time when Banks were nationalized.

The Constitution of India originally provided the right to property (which includes land) under Articles 19 and 31. Article 19 guaranteed that all citizens have the right to acquire, hold and dispose of property. Article 31 stated that "no person shall be deprived of his property save by authority of law." It also indicated that compensation would be paid to a person whose property has been taken for public purposes (often subject to wide range of meaning). The Forty-Fourth Amendment of 1978 deleted the right to property from the list of fundamental rights with an introduction of a new provision, Article 300-A, which provided that "no person shall be deprived of his property save by authority of law" (Constitution 44th Amendment, w.e.f. 10.6.1979). The amendment ensured that the right to property" is no more a fundamental right but rather a constitutional/legal right/as a statutory right and in the event of breach, the remedy available to an aggrieved person is through the High Court under Article 226 of the Indian Constitution and not the Supreme Court under Article 32 of the Constitution.

State must pay compensation at the market value for such land, building or structure acquired (Inserted by Constitution, Seventeenth Amendment) Act, 1964, the same can be found in the earlier rulings when property right was a fundamental right (such as 1954 AIR 170, 1954 SCR 558, which propounded that the word "Compensation" deployed
in Article 31(2) implied full compensation, that is the market value of the property at the time of the acquisition. The Legislature must "ensure that what is determined as payable must be compensation, that is, a just equivalent of what the owner has been deprived of"). Elsewhere, Justice, Reddy, O Chinnappa ruled (State Of Maharashtra v. Chandrabhan Tale on 7 July 1983) that the fundamental right to property has been abolished because of its incompatibility with the goals of "justice" social, economic and political and "equality of status and of opportunity" and with the establishment of "a socialist democratic republic, as contemplated by the Constitution. There is no reason why a new concept of property should be introduced in the place of the old so as to bring in its wake the vestiges of the doctrine of Laissez Faire and create, in the name of efficiency, a new oligarchy.

2. Legislative changes

The 2013 Act focuses on providing not only compensation to the land owners, but also extend rehabilitation and resettlement benefits to livelihood looser from the land, which shall be in addition to the minimum compensation. The minimum compensation to be paid to the land owners is based on a multiple of market value and other factors laid down in the Act. The Act forbids or regulates land acquisition when such acquisition would include multi-crop irrigated area. The Act changed the norms for acquisition of land for use by private companies or in case of public-private partnerships, including compulsory approval of 80% of the landowners. The Act also introduced changes in the land acquisition process, including a compulsory social-impact study, which needs to be conducted before an acquisition is made.

The new law, also has some serious shortcomings as regards its provisions for socioeconomic impact assessment and it has also bypassed the constitutional local self governments by not recognizing them as "appropriate governments" in matters of land acquisition.

3. Monetary compensation

Major Indian infrastructure projects such as the Yamuna Expressway have paid about INR 2800 crores (US$500 million) for land, or over US$25,000 per acre between 2007 and 2009. For context purposes, this may be compared with land prices elsewhere in the world:

- According to The Financial Times, in 2008, the farmland prices in France were Euro 6,000 per hectare (US$2,430 per acre; IN Rs. 1,09,350 per acre).
- According to the United States Department of Agriculture, as of January 2010, the average farmland value in the United States was $2,140 per acre (IN Rs. 96,300 per acre). The farmland prices in the United States varied between different parts of the country, ranging between $480 per acre to $4,690 per acre.

A 2010 report by the Government of India, on labor whose livelihood depends on agricultural land, claims that, per 2009 data collected across all states in India, the all-India annual average daily wage rates in agricultural occupations ranged between IN Rs.53 to 117 per day for men working in farms (US$354 to 780 per year), and between IN Rs. 41 to 72 per day for women working in farms (US$274 to 480 per year). This wage rate in rural India study included the following agricultural operations: ploughing, sowing, weeding, transplanting, harvesting, winnowing, threshing, picking, herdsmen, tractor driver, unskilled help, masonry, etc. The compensation for the acquired land is based on the value of the agricultural land, however price increases have been ignored. The land value would increase many times, which the current buyer would not benefit from. Secondly, if the prices are left for the market to determine, the small peasant farmers could never influence the big corporate tycoons. Also, it is mostly judiciary who has awarded higher compensation than bureaucracy.

4. Delayed projects

Delayed projects due to mass unrest have caused a damaging effect to the growth and development of companies and the economy as a whole. Earlier states like Maharashtra, Tamil Nadu, Karnataka, and Andhra Pradesh had been an attractive place for investors, but the present day revolts have shown that land acquisition in some states pose problems.

5. CONSEQUENCES OF LAND ACQUISITION IN INDIA

The consequences of land acquisition in India are manifold. The empirical and theoretical studies on displacement through the acquisition of land by the government for development projects have so far focused on the direct and immediate adverse consequences of land acquisition. Most of the analytical as well as the descriptive accounts of the immediate consequences of land acquisition for development projects draws heavily from Michael Cernea’s ‘impoverishment risk model’, which broadly enumerated eight ‘risks’ or ‘dimensions’ of development-induced displacement.

These eight risks are very much direct and basic in nature which is (i) landlessness, (ii) joblessness, (iii) marginalization, (iv) loss of access to common property resources, (v) increased morbidity and mortality, (vi) food insecurity, (vii) homelessness and (viii) social disarticulation. Recently L.K. Mahapatra has added ‘loss of education’ as another impoverishment risk in situations of displacement (Mahapatra 1999).

But apart from these direct and immediate effects of land acquisition there are more subtle and indirect effects of this coercive and centralized legal procedure, which have a
bearing on various decentralized and participatory democratic processes, and institutions of the state power. Land reforms and the Panchayati raj institutions are the two most important areas, which are being vitiated by land acquisition. Of all the states of India, the consequences and controversies around land acquisition in West Bengal has recently gained a lot of national and international attention. The peasant resistances against governmental land expropriation in Singur (a place in the Hoogly district) and Nandigram (a place in the East Medinipur district) has finally led to the fall of the communist party (Marxist) led government in West Bengal, which ruled the state through democratic election for 34 years. The communist led left front government of West Bengal under the economic liberalization policy adopted by the Central/Union government of the country shifted from its pro-farmer policy and took to the capitalist path of industrial development, which at the micro-levels endangered the food security of the small and marginal farmers as well as sharecroppers who formed the vote bank of the left front government of West Bengal. The new anti-communist Trinamul Congress led government of West Bengal which came to power in the state in 2011 through a massive electoral victory is yet to develop any comprehensive resettlement and rehabilitation policy for the thousands of families affected by various development projects. The new government has enacted a law on 14 June 2011, in the West Bengal Assembly named ‘Singur Land Rehabilitation and Development Act, 2011’. With this law, the West Bengal government has reacquired about 1000 acres of farmland from the Tatas which was given to the company for building a small-car manufacturing factory in 2006 by the then Left Front government. The Trinamul government’s intention was to return 400 acres of farmland to the ‘unwilling’ farmers around whom the agitation against the Left Front government was organised by the Trinamul Congress party. However, the whole issue seems to have fallen into a long legal battle between the present state government and the Tatas, as the latter has challenged the ‘Singur Land Rehabilitation and Development Act’ in the court. As a result, the Trinamul government has not yet been able to return the land to those ‘unwilling farmers’ nor have they received any compensation (The Statesman, 12 January 2012).In another case of governmental land acquisition for housing at North 24 Parganas district of West Bengal, the farmers began to cultivate their farmland which were acquired but remained unutilized. According to media reports, the farmers were assured by the Trinamul Congress party leaders before the election that their land, which is about 1687 acres would be returned to them if the party came to power. However, now these farmers are turning their backs to the Trinamul Congress, since the party has not kept its pre-election promise (The Statesman, 11 February 2012). Under the above disturbing episodes, it may be worthwhile to narrate the glaring incident of the opposition leveled by Mamata Banerjee, the present chief minister of West Bengal to the draft Land Acquisition (Amendment) Bill 2007 in the Lok Sabha. At that time Miss Mamata Banerjee was the railway minister of the Central Government. She opposed to a clause of the bill which empowered private companies to acquire up to 70 per cent land directly from farmers and landowners. The remaining 30 per cent could be acquired by the state government. Miss Banerjee wanted private companies to buy 100 per cent of the land, according to a report (The Statesman, 26 July 2009). It seemed that Miss Banerjee would have allowed the amended Bill to be passed if the Lok Sabha agreed to modify the 70/30 proportion to 100 per cent purchase by the companies under the principle of willing-buyer-willing-seller.

Eminent domain doctrine has been widely used in India since the era of Independence, with over 21.6 million people in the period of 1951-90. They have been displaced with large-scale projects like dams, canals, thermal plants, sanctuaries, industrial facilities, and mining. These occurrences are generally categorized as “development-induced displacement”.

The process of land acquisition in India has proven unpopular with the citizenry. The amount reimbursed is fairly low with regard to the current index of prices prevailing in the economy. Furthermore, due to the low level of human capital of the displaced people, they often fail to find adequate employment.

The draft of the government’s National Policy for Rehabilitation states that a figure around 75% of the displaced people since 1951 is still awaiting rehabilitation. However, it should be noted that displacement is only being considered with regard to “Direct Displacement”. These rehabilitation policies do not cover fishermen, landless laborers, and artisans. Roughly one in ten Indian tribal’s is a displaced person. Dam projects have displaced close to a million Adivasis, with similar woe for displaced Dalits. Some estimate suggests 40 percent of displaced people are of tribal origins.

There have been a rising number of political and social protests against the acquisition of land by various industrialists. They have ranged from Bengal, Karnataka, and Uttar Pradesh in the recent past. The acquisition of 997 acres of land by Tata motors in Bengal in order to set up a factory for the cheapest car in India was protested (Singur Tata Nano controversy). At least a decade before the Singur episode similar events occurred in West Bengal, although the opposition parties and other civil society organizations remained silent at that time. Similarly, the SardarSarovar Dam project on the river Narmada was planned on acquired land, though the project was later canceled by the World Bank.
The Land Acquisition Act of 1894 allowed the government to acquire private lands. It is the only legislation pertaining to land acquisition which, though amended several times, has failed to serve its purpose. Under the 1894 Act, displaced people were only liable for monetary compensation linked with market value of the land in question, which was still quite minimal considering circle rates are often misleading. Land acquisition related conflicts during the post-reform period in India has shown three distinctive tendencies: (1) Technocracy and Bundle of Rights, (2) Power-land Regulation Nexus, and (3) Disappearing Commons.

<table>
<thead>
<tr>
<th>Displaced Tribals</th>
<th>State</th>
<th>Displaced Population</th>
<th>Tribal Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karjan</td>
<td>Gujarat</td>
<td>11,600</td>
<td>100</td>
</tr>
<tr>
<td>Sardar Sarovar</td>
<td>Gujarat</td>
<td>2,00,000</td>
<td>57.6</td>
</tr>
<tr>
<td>Maheshwar</td>
<td>Madhya Pradesh</td>
<td>20,000</td>
<td>60</td>
</tr>
<tr>
<td>Bodhghat</td>
<td>Madhya Pradesh</td>
<td>12,700</td>
<td>73.91</td>
</tr>
<tr>
<td>Icha</td>
<td>Bihar</td>
<td>30,800</td>
<td>80</td>
</tr>
<tr>
<td>Chandil</td>
<td>Bihar</td>
<td>37,600</td>
<td>87.92</td>
</tr>
<tr>
<td>Koel Karo</td>
<td>Bihar</td>
<td>66,000</td>
<td>88</td>
</tr>
<tr>
<td>Mahi Bajaj Sajar</td>
<td>Rajasthan</td>
<td>38,400</td>
<td>76.28</td>
</tr>
<tr>
<td>Polavaram</td>
<td>Andhra Pradesh</td>
<td>1,50,000</td>
<td>52.90</td>
</tr>
<tr>
<td>Maithon Panchayat</td>
<td>Bihar</td>
<td>93,874</td>
<td>56.46</td>
</tr>
<tr>
<td>Upper Indravati</td>
<td>Odisha</td>
<td>18,500</td>
<td>89.20</td>
</tr>
<tr>
<td>Pong</td>
<td>Himachal Pradesh</td>
<td>80,000</td>
<td>56.25</td>
</tr>
<tr>
<td>Ichampalli</td>
<td>Andhra Pradesh</td>
<td>38,100</td>
<td>76.28</td>
</tr>
<tr>
<td>Tulunti</td>
<td>Maharashtra</td>
<td>13,600</td>
<td>51.61</td>
</tr>
<tr>
<td>Daman Ganga</td>
<td>Gujarat</td>
<td>8,700</td>
<td>48.70</td>
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<td>Masan Reservoir</td>
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<tr>
<td>Ukai Reservoir</td>
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</tr>
<tr>
<td>Tamnar</td>
<td>chhattisgarh</td>
<td>59999</td>
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</tr>
</tbody>
</table>


6. PROPOSED AMENDMENTS

The current Narendra Modi lead National Democratic Alliance (India) government driven Land Acquisition Amendment Bill in the Lok Sabha on 10 March 2015 has seen a tough resistance from key position parties in India who have called the proposed amendments “anti farmer” and “anti poor”. The proposed amendments remove requirements for approval from farmers to proceed with land acquisition under five broad categories of projects. While the bill was passed in Lok Sabha, it still needs approval from the Rajya Sabha, where the current government does not have a majority, for the proposed amendments to become effective.

The following are the main "disputation points":

- The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 defines 'consent' clause as "land can only be acquired with approval of the 70% of the land owners for PPP projects and 80% for the private entities. But the proposed amendments by the Narendra Modi government does away with consent clause for Industrial corridors, Public Private Partnership projects, Rural Infrastructure, Affordable housing and defense projects.

- While the The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 allows private companies to acquire land but the proposed amendment allows any private entity to acquire land.

- According to the new amendment if any government official conducts any wrongdoing he or she cannot be prosecuted without prior sanction from the government.

- The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 mandated the social assessment before land acquisition but the NDA government’s proposed bill does away with this requirement.

The National Democratic Alliance (India) government came under heavy attacks from opposition parties and farmer organization for the proposed Land Acquisition bill amendments. The opponents of the Land acquisition bill claim the bill to be "anti-farmer" and "pro corporate". They claim that the amendments are aimed at "benefiting the large corporate houses". The opposition Indian National Congress has opposed the bill in and out of Parliament. Sonia Gandhi, the chairperson of UPA and Indian National Congress, called the bill "anti-poor" and "anti-farmer". She alleged that the bill will "break the backbone of India". Samajwadi party leader Mulayam Singh Yadav said the Modi government is "taking anti-farmer stand" and is "favoring industrialists".

Not only the opposition parties but also other organization that traditionally supported Bharatiya Janata Party such as Mazdoor Sangh, Bharatiya Kisan Sangh and Akhil Bharatiya Vanvasi Kalyan Ashram have come heavily against the amendments proposed by the Narendra Modi
lead NDA government. As per the Bharatiya Kisan Sangh, the Modi government’s land ordinance tweaks the fundamentals of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 passed by the UPA government and supported by the BJP two years ago.

7. ALTERNATIVES

One of the alternative proposals to land acquisition is leasing the land from landowners for a certain lease period. Proponents cite how land acquisition policies by Governments unwittingly encourage rampant land speculation making the projects expensive since huge portion of investment would be need to be allocated for land acquisition costs. According to them, policies of land acquisition gave way to political cronism where land is acquired cheaply by securing favors from local governments and sold to industries at steep markup prices. Leasing land, may also support sustainable project development since the lands need to be returned to the landowners at the end of the lease period in a condition similar to its original form without considerable environmental degradation. When the land is leased then anybody who has to otherwise give up land or livelihood will be compensated for its growing valuation over time. In this model, the landowner lends her land to the government for a steadily-increasing rent, or through an annuity-based system as currently practiced in Haryana and Uttar Pradesh.

Some industries already follow the model of leasing lands instead of acquiring it. Energy development projects such as oil & gas extraction usually lease lands. Renewable energy projects such as Wind Power farms projects often lease the land from land owners instead of trying to acquire the land which could make the projects prohibitively expensive.

8. CONCLUSIONS

The five types of projects being exempt from the provisions of social impact assessment, restrictions in case of multi-cropped land and consent are broad and may cover many public purpose projects.

The Act requires consent of 70% of landholders for PPP projects, and 80% for private projects. Acquisition, being different from purchase, implies that land owners were unwilling to part with the land. Requiring consent from them may be impractical. Also, it is not clear why the consent requirement depends on who owns the project.

The amendments in the Bill propose to expedite the process of acquisition. However, the changes in the Bill will reduce the time for acquisition from 50 months to 42 months.

The removal of the provision that deemed the head of department guilty, and addition of a new requirement of prior sanction to prosecute government employees may raise the bar to hold them accountable.

The change in the retrospective provision may be ineffective in cases instituted until 2014 in light of a recent Supreme Court judgment.

The revised bill now includes an enabling provision for arranging insurance of land title, which is currently not available in the market. This will benefit buyers and sellers both in situations where the title of the land is held invalid.

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A Study to Assess the Surgical Safety Compliance in an Operation Theater of Tertiary Care Hospital

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Abstract:
Traumatic injuries, unnecessary surgical deaths, and medical error continues to raise. The main aim of this paper is to assess the surgical safety compliance in an operation theatre of Tertiary care hospital.

This paper is focused on study of all the surgical safety compliance in an operation theatre complex. The data was collected by observing Anesthetists, Surgeons and operation theatre nurses who are all involved in the surgical procedures in the various operation theatres in the tertiary care teaching hospital.

Collected data was analyzed by using frequency, percentage and is presented in the form of table and diagrams. The difference in the percentages among the various categories of the items such as Sign in (100% compliance with confirmation of patient identity and 98% with confirmation of the site of operation, patient confirmation of procedure in 95% of cases and 100% check by Anesthetists for patient safety), Time out (confirmation of the procedure in 94.4% of cases, 100% consistency in the verification of instrument sterility by nurses, the equipment issues were addressed well (99%), the antibiotic prophylaxis given within 60 minutes (100%) and Sign out (Equipment was addressed well (99%),100% labelling of specimen was done accurately) has been calculated. This paper shows the surgical safety compliance in an operation theatre and provides suggestions for improving the compliance.

Key Words:
Surgical Safety Compliance, Surgical Safety Checklist, Operation Theatre, Operating room, Sentinel events.

1. INTRODUCTION
The World Health Organization (WHO) in 2008 launched the Surgical Safety Checklist as an instrument to enhance safety in operations for operating personnel and reduces unnecessary surgical deaths and problems. The checklist was designed following international consultation with anesthetists, nurses, surgeons, patient safety specialists and patients, to support the safety practices and better communication and to encourage team work between clinical authorities [1].

Surgical care has been a necessary part of the health care over the world for a century. As the occurrence of cardiovascular disease, major injuries, and cancers continue to increase, the effect of surgical involvement on general health systems has been increasing. Each year in the world, 234 million surgical procedures are performed. On assessing all surgical operations, the problems usually occur in 3% to 16% of cases [2].

To ‘err’ is human, but a small medical error can prove fatal. Clinical experts say this is high time that suitable steps are taken to minimize the scope of mistakes in medical treatment, especially in the Operation Theatres over the world. This amounts to around 1 operation per 25 people and indicates that patient safety is more important in public health. The plan for the hospital to design their infrastructure and surgical procedures mainly around patient safety and comfort needs to be tightly managed [3].

The Operation Theatre can be a hazardous place for healthcare staffs and patients alike. For example, plastic surgeons need a better knowledge of different pre-operative aspects like confirmed identity, site, procedure and consent to reduce these risks. As the significance of team work becomes more evident, direct communication skills, intra-operatively, preoperatively and postoperatively become an equally important factor. [4]

2. LITERATURE REVIEW
The current studies have revealed that operative complication can be reduced, if safety checklist is used. The hospital under study has adopted the WHO safety checklist. This is administered in 3 phases on arrival of the patient into the Operation Theatre namely, before skin incision phase, time-out and after skin incision phase. The means (ranges) of the compliance to the checklist items was 57% (28-100%) before skin incision, 68% (34-100%) for Time Out, and 45% after skin incision. Limitation of this study: High-turnover theatres were given preference and this means that specialties such as neurosurgery which have a
predominance of longer cases were not represented in the audit.[5] Another study was conducted in tertiary care hospital study on communication failure in operation theatres. Study demonstrated that ineffective group communication is usually the cause of clinical mistakes. The objective of the study was to describe the reasons for failure of communication in an operation theatre and to divide the outcomes.[6] A study was conducted involving two hospitals, each of which had a current root-cause analysis and wrong-site surgery incident reporting system. The study revealed that the surgical safety checklists contribute to developing surgical patient safety. When asked about the 8 particular elements of the time-out checklist, the percentage of respondents who believe the element was “very significant” varied widely, from to highs of over 80 percent for correct procedure, correct side, and patient identity to a low of 14 percent for the introduce the team members [7]. A global study conducted to compare the patient outcome pre and post implementation of the WHO Safety Checklists, show a overall reduction in the after surgery problems and mortality. These findings were reproduced in another study conducted in more than one medical centre contributing to the conclusion that concerns are growing related to surgical safety in an operating room [8].

3. METHODOLOGY

**Study design:** A descriptive study design

**Participants:** All the surgeons, anesthetists and Operation Theater nurses who are currently working in the tertiary care hospital were taken as the participants for the data collection.

**Sampling:** Data collection was for one month in the Operation Theater of the tertiary care hospital. A sample size of 450 surgeries, each in General Surgery, Orthopedics, Ophthalmology, Obstetrics, Gynecology and Urology departments were selected using purposive sampling technique for observational study. The very first and last surgery of the day, as per the schedule in the Operation Theatre, was observed by the investigator till the sample size was covered.

**Tools and Techniques:** Collected data was analyzed by using frequency, percentage and presented in the form of table and diagrams. The difference in the percentages among the various categories of the item- Sign in, Time out and Sign out is calculated.

4. RESULTS AND ANALYSIS

**Section—a Sign-in:**

**Table 4.1 Compliance to “Confirmation of the patient site, procedure, identity and consent”**

<table>
<thead>
<tr>
<th>Patient has confirmed</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N/a</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

**Figure 4.1 Compliance to “Confirmation of the patient site, procedure, identity and consent”**

**Results**

Table 4.1 and Figure 4.1 illustrate Compliance to “Confirmation of Patient identity, Site, Procedure and Consent”. It shows out of 450 surgical cases 100% of them have confirmed identity, 98% (441) patients have confirmed operation sites and 95% (428) of the patient have confirmed the procedure. The confirmation of the consent by patient during sign in procedure was 92.2%(415).

**Table 4.2 Percentage compliance for site marking**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>409</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
</tr>
<tr>
<td>N/a</td>
<td>31</td>
</tr>
<tr>
<td>Total</td>
<td>450</td>
</tr>
</tbody>
</table>

**Figure 4.2 the data for site marking**
Table 4.2 and figure 4.2 show the data recorded for site marking of 450 different patients. It was only in 91% (409) of patients that site marking was done. Site marking was not applicable for 7% (31) of patient.

Table 4.3 Percentage of cases with completed Anaesthesia safety check

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>450</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N/a</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.3 Percentage of cases with completed Anaesthesia safety check

Table 4.3 and figure 4.3 show the anesthesia safety check was 100% and it is thoroughly met in all the departments.

Table 4.4 Pulse oxymeter on patient and functioning

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>450</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N/a</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.4 Pulse Oxymeter on Patient and functioning

Table 4.4 and figure 4.4 reveal the pulse oxymeter was used for every patient who underwent surgery and all the pulse oxymeter were functional during operative phases 100%.

Table 4.5: Risk management assessed

<table>
<thead>
<tr>
<th>Patient have</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>450</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N/A</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.5 Risk management assessed

Table 4.5 and figure 4.5 show the risk management assessed. It is seen that risks associated with known allergy, different airway aspiration, blood loss and adequacy of iv fluid were assessed in all 450 (100%) cases.

Section --B Time out:

Table 4.6 Introduction of team members by name and role

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>450</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N/A</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.6 Introduction of team members by name and role

Table 4.6 and figure 4.6 it is evident that introduction of the surgical team members including surgeons, anaesthetist and nurses before taking up the surgery is 100%.
Table 4.7 Verbal confirmations by surgeons, Anaesthesia professionals and nurse about patient, site and procedure:

<table>
<thead>
<tr>
<th>Verbal confirmation of</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Patients</td>
<td>393</td>
<td>57</td>
</tr>
<tr>
<td>Site</td>
<td>385</td>
<td>65</td>
</tr>
<tr>
<td>Procedure</td>
<td>425</td>
<td>25</td>
</tr>
</tbody>
</table>

Table 4.7 and figure 4.7 describe that the surgeons, anaesthesia professionals and nurse verbally confirm patients in 393 (87.3%) of cases and do not confirm 57 (12.7%), confirm the site in 385 (85.6%) and not confirm the site in 65 (14.4%) and confirm the procedure in 425 (94.4%) and do not confirm the procedure in 25 (5.6%).

Table 4.8 Anticipated critical events-surgeon review

<table>
<thead>
<tr>
<th>Surgeon reviews</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Critical events</td>
<td>18</td>
<td>432</td>
</tr>
<tr>
<td>Operative duration</td>
<td>63</td>
<td>387</td>
</tr>
<tr>
<td>Anticipated blood loss</td>
<td>72</td>
<td>428</td>
</tr>
</tbody>
</table>

Table 4.8 and figure 4.8 show the anticipated events as per surgeons’ review was in about 18 cases (4%), operative duration assessed by surgeon’s review was done in 63 (14%) cases and anticipated blood loss was shown in 22 (4.9%) cases.

Table 4.9 Anaesthesia team reviews: are there any patient specific concern

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No</td>
<td>450</td>
<td>100</td>
</tr>
<tr>
<td>N/A</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.9 and Figure 4.9 show there was no specific concern found among 450 patients as per Anaesthesia team reviews.

Table 4.10 Nursing team reviews

<table>
<thead>
<tr>
<th>Nursing Reviews on</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has sterility</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Sterility indicator results</td>
<td>450</td>
<td>0</td>
</tr>
<tr>
<td>These equipment issues or any other concerns</td>
<td>11</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4.10 and figure 4.10 make the nursing team reviews on confirmation of sterility indicator results has been confirmed to 100% the confirmation of the equipment issue was found to be in 5 (1.1%) cases.
**Table 4.11** Details Antibiotic prophylaxis given during the last 60 minutes

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>450</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N/a</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

**Figure 4.11** Details of Antibiotic Treatment given during the last 60 minutes

Table 4.11 and Figure 4.11, in all the 450 cases, before the start of surgical procedure. Antibiotic prophylaxis had been given in the last 60 minutes.

**Table 4.12** Details about essential imaging been displayed

<table>
<thead>
<tr>
<th>Details about essential imaging displayed</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>284</td>
<td>63.1</td>
</tr>
<tr>
<td>No</td>
<td>13</td>
<td>2.9</td>
</tr>
<tr>
<td>N/a</td>
<td>153</td>
<td>34</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

**Figure 4.12** Details about essential imaging been displayed

Figure 4.12 and Table 4.12 reveals that among 450 patients, the essential images were displayed for 284(63.1%) cases. In case of 13(2.9%), radiological images were not displayed and remaining 153(34%) radiological images were not applicable.

**Section -- C sign – out**

**Table 4.13** Nurse verbally confirmed with the team of Surgeons and anesthetist

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>450</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N/a</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

**Figure 4.13** Nurse verbally confirmed with the team of Surgeons and anesthetist

Table 4.13 and figure 4.13 Shows the Nurse verbally confirmed with the team of Doctors and Anesthetist 100%.

**Table 4.14** Name of procedure is stated as recorded

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>437</td>
<td>97.1</td>
</tr>
<tr>
<td>No</td>
<td>13</td>
<td>2.9</td>
</tr>
<tr>
<td>N/A</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

**Figure 4.14** Name of procedure is stated as recorded

As per Figure 4.14 and Table 4.14 describe that out of 450 cases, the name of the procedure are recorded in 437(97.1%) cases and do not record only in 13(2.9%) cases.

**Table 4.15** The instrument sponge and needle count are correctly recorded

<table>
<thead>
<tr>
<th>The instrument sponge and needle count or correct</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>413</td>
<td>91.8</td>
</tr>
<tr>
<td>No</td>
<td>37</td>
<td>8.2</td>
</tr>
<tr>
<td>N/A</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

**Figure 4.15** the instrument sponge and needle count are correctly recorded
Table 4.15 and figure 4.15 we can observe that, during 413 (91.8%) cases, the needle, sponge and instrument counts were correct, and during 37(8.2%) cases there were incorrect count.

Table 4.16 Confirmation that the specimen (if any) is correctly labeled

<table>
<thead>
<tr>
<th>How the specimen was labeled</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>450</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N/A</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.16 Confirmation that the specimen (if any) is correctly labeled

Table 4.16 and figure 4.16 Highlights that the specimen taken for the histopathological diagnosis during the surgical procedure was labeled correctly 100%. The labels put on the specimen indicated the name, age, and inpatient department number.

Table 4.17 whether there is any instrument risk to be addressed

<table>
<thead>
<tr>
<th>Whether there any equipment problem to be addressed</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>5</td>
<td>1.1</td>
</tr>
<tr>
<td>No</td>
<td>445</td>
<td>98.9</td>
</tr>
<tr>
<td>N/A</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.17 whether there is any instrument risk to be addressed

Table 4.17 and Figure 4.17 show the out of 450 patients, only 5(0.1%) of them were seen with those concerns and rest of 445(98.9%) were without any issue.

Table 4.18 Anaesthesia professional, Nurse and Surgeon review the key concerns for retrieval and management of the patient

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>439</td>
<td>97.6</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>2.4</td>
</tr>
<tr>
<td>N/A</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.18 Surgeon’s, Anesthetist’s and Nurses enumerates or deny any key concerns for the recovery and care of the patient

5. FINDINGS

As per the lists of table 4.18 in all the 450 cases anaesthetist, nurse and Surgeon review the key concerns for healing and care of the patient in 439 (97.6%) cases.

- ‘There was a high rate of administration of the Sign In, Time Out and sign out 3 phases’ also
- The best compliance was within items relating to patient procedure, consent, identity and, where valid, side or site of operation,
- Anaesthetists safety check for the patient Completed,
- Checking for the Pulse oxymeter on patient and functioning good.
- Introduction of team members and their role done.
- Verbal confirmation by surgeons,
- Anaesthetists and nurses about patient’s anticipated critical events done.
- Antibiotic prophylaxis given 60 minutes before the procedure in all cases.

6. RECOMMENDATIONS AND SUGGESTIONS

Study has Highlighted Suggestions That could improve the use of Checklist in Operating Theaters.

- Audits should be performed on a weekly basis to improve the functioning of the operation theater.
- Surgeons should be taken a stronger role in time out and sign out phases.
Newly joined staffs had been “introduced” to the surgical safety checklist by personal heads “before joining” the surgical team.

- Multidisciplinary training should be conducted for operation theater staffs and to improve communication may increase the rates of compliance with the checklist.
- Prepare the checklist in a poster, whiteboard or other more participatory format so all theatre personnel can follow the checks and engage in the process.

7. CONCLUSION

In Healthcare system, the concept of using a surgical safety checklist in surgical practice was encouraged by publication by WHO Surgical Safety Checklist. It was believed that by routinely checking common safety issues and by better team communication morbidity and mortality could be addressed consistently.

The present study indicates that surgical safety checklist can contribute to improve patient safety. Adherence to the checklist helps in detecting the instances of human error, equipment malfunction and helps in identifying areas that need strengthening and streamlining. To develop safety of surgical operating procedures, key safety checks by all personnel at the following stages is necessary:
- Before taking the patient into operating room
- Prior to skin incision and
- Before the operating personnel leave the operation theater after surgery.

ACKNOWLEDGEMENT

Hence there are many instinctive clear benefits to the use of surgical safety checklist including the prevention of wrong patient/wrong site surgery. Use of surgical safety checklist is important, and the focus should be on supporting local implementation efforts.

Marvellous success can be achieved only through the guidance of well-experienced and qualified persons. Firstly, I would like to thank Dr Sarala K.S. Assistant Hospital Administrator Dissertation Supervisor, for her excellent guidance and kind cooperation during the entire Dissertation period.

It is my responsibility to extend my thanks to Professor Nagesha H N, Dissertation Supervisor, for extending his support and cooperation in completing my project work.

REFERENCE

Effect of Celebrity Endorsement, Advertising Effectiveness, Attitude and Customer Experience toward Purchase Intention of Cosmetic Surgery In the Upper Northern Region of Thailand


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Abstract:
The purpose of this research was to examine the level of opinion of celebrity endorsement, advertising effectiveness, attitude, customer experience and purchase intention of cosmetic surgery and to study the effect of celebrity endorsement, advertising effectiveness, Attitude and customer experience toward purchase intention of cosmetic surgery in the northern region of Thailand.

The sample size was 120 peoples who used service cosmetic surgery in 8 provinces in the northern region of Thailand, including Chiang Mai, Chiang Rai, Mae Hong Son, Lamphun, Lampang, Phrae, Nan, and Phayao. Research tools were the questionnaires. Quantitative data were analyzed by descriptive statistics as percentage, average and standard deviation. Inferential statistics was also performed by multiple regression analysis by enter selection technique.

The results showed that most consumers had priority to attitude first, and followed by advertising effectiveness, experience, purchase intention and celebrity endorsement, respectively, with all factors being at a very high level. The results of multiple regression analysis showed that the influence purchase intention experience first. The second was advertising effectiveness to influence purchase intention. And, finally the attitude had influence statistically significantly 0.01 except celebrity endorsement did not influence on the purchase intention.

Key Words:
Advertising Effectiveness, Celebrity Endorsement, Customer Experience, Purchase Intention

1. INTRODUCTION

Every human being wishes to be beautiful and desire to have a good look all the time that influence the humanity toward external appearance [1]. The charm of an appearance is very important to both men and women [2]. The majority of people cannot deny that living and demeanor in the society of each individual will be judged by first impression of an appearance. Therefore, there are a number of people who are willing to spend lots of amount of money for facial and skin care [3] through cosmetic surgery which is a reconstruction of body shape, facial structure, or birth defects of an individual. Especially face plays a vital role in cosmetic surgery field by supporting enhancement of personality and reconstructing the body physique to be better. These are including external body’s parts like ears, eyes, month, nose, or other. The desirable face and body of the individuals can be reconstructed or altered that lead to the cosmetic surgery as one of the choices for those who are not satisfied with their physical appearance and those who wish to have better outside appearance as well as good personality. The consumers especially new generation are still prioritizing the personality and being attractive to people in the society as well as gain self-confidence. Furthermore, they desire to do cosmetic surgery for improving self-personality as well as increase chances to be successful in life [4].

Karla Renton (2006) [5] presented that the celebrity endorsement who have guaranteed the products or services has high effect on purchase intention, including the research paper of Jasmine Ilicic & Cynthia M. Webster (2011) [6] found that the celebrity endorsement who are actors or actresses have a direct effect toward consumer purchase intention [7].Mazzini Mudaet. al. (2014) presented that an endorsement of business owners who are the celebrities included an actor and an actress also gain trust and increase purchase intention of the consumers [8], [9]. In addition, Noor, Sreenivasan, and Ismail, (2003); Shim, Lee, and Kim, (2015) [10] showed that the attitude towards product advertisement has high effect to purchase intention. The study of [11], [12] Ranjbarian, Shekarchizade, and Momeni. (2010) found that the celebrity endorsements who have...
guaranteed the products or services have high effect on purchase intention with an attitude towards brand name being a middle variable.

In Thailand, in the modern era, cosmetic surgery business has been increasing and very competitive. Many new entrepreneurs have started this business are doctors, famous superstars, celebrities who wish or interested to start this cosmetic surgery business have increasingly invested in this type of business. As a result, the overall market is growing at an average of 30 percent per year with an expected total value of cosmetic surgery industry around 1,000 million baht [13]. While the strategies which were most adopted for gaining competitive advantages are promotion and price set vary that resulted in the need of high budget for communicating to the market effectively. Most of cosmetic surgery enterprises now focus on doing an advertisement to target group of customers via various communication tools including traditional media such as television, radio, newspaper, and via the internet by online social media applications including Facebook, Instagram, Twitter as well as various websites [14].

From the problems encountered, there are many new entrepreneurs started the cosmetic surgery business being managed by either doctors or the superstars, and use the celebrities to review the products or services which are considered the main strategy that build trustworthiness in the products and services. Resulting to that the consumers will believe and wanted to try the products and services [15]. The celebrity endorsement, actors or net idols have huge number of followers who are ready to purchase the products or services that were reviewed or recommended by them. Moreover, there are a number of celebrities endorsements admitted that they have actually reviewed the products for the companies and understood that this is normal, not illegal because there is a food and drug administration label that certifies the product quality that they have reviewed for [16]. Nevertheless, there is the prosecution case of the celebrity, Kim Jae Kyung, claiming damages from one of the cosmetic surgery clinic that released her photo for its advertisement in the year of 2010. The clinic was claiming that this was the result of cosmetic surgery which had change a common girl face become a pretty idol girl. And the clinic intended to use this idol’s photos illegitimately, as well as created a negative image for this celebrity, and caused immediate damage to her as an actress because the advertiser did not have an official permission from the celebrity before able to use the requested photos for advertise the products and services of the clinic [17]. Thus, the effect of media advertisement in creating a good image for product brand and a company, it may also cause the problem to the celebrity endorsement and to the consumers who follows the product or service reviews but does not know the actual results. From the problems encountered, the researchers study the effect of customer experience as a factor linked with the celebrity endorsement.

2. RESEARCH OBJECTIVES

1. To examine the level of opinion of celebrity endorsement, advertising effectiveness, attitude, customer experience and purchase intention of cosmetic surgery in the Upper Northern Region of Thailand.

2. To study the effect of celebrity endorsement, advertising effectiveness, attitude and customer experience toward purchase intention of cosmetic surgery in the northern region of Thailand.

3. SCOPE OF RESEARCH

This research is to study on effect of celebrity endorsement, advertising effectiveness, attitude and customer experience toward purchase intention of cosmetic surgery in the northern region of Thailand. This quantitative research consists of 4 scopes as follows:

1. Content
   Focus on celebrity endorsement, advertising effectiveness, attitude, and customer experience toward purchase intention.

2. Population and Sample
   The consumers who are using the products or services of cosmetic surgery that has been authorized by the Provincial Health Office, Ministry of Public Health. The researchers gathered data through questionnaires and the sampling group was 120 consumers who are using the products and services of cosmetic surgery.

3. Area
   Cosmetic surgery clinics which have been authorized by the Provincial Health Office, Ministry of Public Health and registered with Provincial Commercial Office in 8 provinces in the upper northern region of Thailand.

4. Timing
   This research has taken a year from November 2018 to October 2019.

4. LITERATURE REVIEW

The researchers have reviewed the literatures, conceptual frame work, theories, and related researches as follows:

1. The context of cosmetic surgery
   Cosmetic surgery has been developing from medical practice and gaining popularity throughout the world since people pay more attention to the beauty of their faces and body shapes [18], [19]. The growth of health and beauty business has continuously gained popularity. If measured from the global market, it worth more than 900,000 million baht, the ASEAN market has a value of 500,000 million...
baht, and in Thailand market has a value worth 250,000 million baht with a continuous growth rate of 15 – 20 percent annually. While the numbers of over 250,000 million baht: beauty market is worth more than 30,000 million baht; and cosmetic surgery market is worth another 30,000 million baht. These two markets growth rate is not less than 10 percent annually [20]. Medical and aesthetic businesses ranked number 2 from the Rising Star Business Survey [21]. Nowadays, people around the world are increasingly interested in cosmetic surgery. The consumers decided to choose a surgeon who is knowledgeable, experienced, and has been trained directly in plastic surgery because they believe that a surgeon is knowledgeable and experienced [22]. This is resulting in a high competitive among cosmetic surgery clinics to attract the customers to use products and services offered in their clinics. Therefore, the marketing strategies of cosmetic surgery are effective advertisement, celebrity endorsement, presenting a positive attitude towards the cosmetic surgery results, and purchase intention.

The researchers summarize the variables related to the research and findings from the literature review as follows.

Celebrity Endorsement

Celebrity Endorsement is the way of using very famous and well-known people of the target market to provide the products and services certification. An endorsement is the strategy used in an advertisement by using the status and photos of the celebrity to promote the recognition, recall, and differentiation [23]. Many consumers praise the superstar and celebrities, and try to imitate their lifestyles by the clothes they wear and the products they use [24]. Therefore, the celebrity endorsement has a great effect on sales when advertise products and brands. Because the celebrity can provide information that focuses on the benefits and outstanding features of each product in neutral and standards presentation, which have a tremendous impact on increasing revenues in the businesses[25] as well as effect towards purchase intention to the products[26]. Nevertheless, the physical attraction of the celebrity will create an impact toward the consumers and effect the purchase intention of the consumers toward each brand [27]. The celebrity endorsement is involved with purchase intention as hypothesis 1:

H1: celebrity endorsement effects toward purchase intention

2. Attitude

Consumer attitudes are an important knowledge to be able to develop successful marketing processes [28]. The study of consumers showed that attitude and purchase intention are connected in parallel [29], [30] and a positive attitude to a specific product is a key predictor towards purchase intention [31]. Attitude is a response process that occurs from human while responding to certain conditions which are in the scope of creating feeling, understanding of emotions and behaviors [32]. In addition, the attitude is combinations of 2 elements are knowledge and understanding, as well as behavior that were developed into a two-dimension [33]. The first demission is the stimulus that is considered to be an independent variable in a situation that occurred in that environment and effects toward the consumer attitude. The second dimension is an intervention variable of attitude such as emotion, knowledge, understanding and behavior of the consumer. The attitude is also connecting to likes and dislikes toward influencers in online social media [34]. Reliable information can have a positive impact on consumer attitudes [35].

In business operation, understanding the consumer’s needs are essential to develop the best product presentation which will lead to high responses of attitude and change the behavior of consumers. However, creating limited choices for consumer to decide to purchase products or services based on the branding reputation and trust [36]. With the driven force in today’s businesses, building a strong brand image through marketing activities and tools to create a certain attitude towards the brands via consumer’s perspective which was determined by quality and satisfaction [37], [38]. Hence, the consumer’s attitude effects purchase intention, in other words, a positive attitude towards products that have been guaranteed by the influencers in social media will create a higher purchase intention opportunities as hypothesis number 2.

H2: Attitude effects toward purchase intention

3. Advertising Effectiveness

The advertising effectiveness is determined by the extent to which advertisement is created that leads to the process of drawing an interest and memorizing through consumers’ attitudes and behaviours. In general, the measurement of advertising effectiveness is based on the attitude towards advertising and purchasing behaviour. The connection among the attitude, intention, and behaviour of the consumers has been described as a theory reasonably [39]. The hypothesis mentioned that the belief effects attitude and social norms are an indicative of behavioral intention. The theory is widely used to predict and explain the extent and human behaviour that the feeling of each individual express either positive or negative is the expression of behaviour; while the attitude towards advertising means that the mental status each individual expresses for responding to the way of perceiving in accordance to the environment and control method in response [40]. Attitude is an evaluation of whether it is good or bad based on emotions, feelings, and reactions to certain objectives or thoughts [41]. Celebrity endorsement effects feeling of consumers in general, and may affect the consumer’s attitude towards advertising and branding. This may results in an increase of purchase intention and sales[42]. On the other hand, the purchase intention means
the possibility of an individual in purchasing products or incentives to buy certain products or brands [43]. The two-dimensions are (1) the dimension of trustworthiness and attractiveness: trust in product endorsers has little effect towards purchase intention and; (2) the dimension of expertise has a great effect towards purchase intention. The celebrity endorsement has a positive effect towards attitude on advertising than the endorsers who are not celebrities. Moreover, knowing that an endorser is more reliable, the more effective the advertising will be [44]. Therefore, the advertising effectiveness effects toward purchase intention as hypothesis number 3.

H 3: advertising effectiveness effects toward purchase intention

4. Customer Experiences

Products with low participation and certified by the experiences of experts effect consumers’ purchase intentions [45]. Those who have experience often show that they are effected by celebrity endorsements and enhance more credibility [46]. The customer experience is a concept that provides emotional value, understanding of behavior, and becoming relationship value which replaces the work value [47]. Customer experience comes from the relationship between a customer or a product and service of the company that activate a response. This experience is a personal and points out the differentiation of customers’ participation in term of reason, emotion, physical, and spiritual characteristics of each individual [48]. The experience arises when customers has a feeling or receive knowledge from interacting with various elements in the context of services [49]. The three-dimensional experience of the customer consists of sensory experience, emotional experience, and social experience [50]. Customer experience can be created immediately and effect towards purchase intention [51] as the hypothesis 4.

H4: customer experience effects toward purchase intention

5. Purchase Intention

Purchase intention is being set by a customer who makes a decision whether to purchase the products willingly [52]. There are many elements that affect the purchase intention, for example, customer willingness in purchasing a product by considering the quality or standards, and are willing to purchase in the future as well as repurchasing [53]. Nevertheless, there are many processes involved in purchasing decision process and repurchasing. There are 5 essential stages of the consumer purchasing decision process: need recognition, information search, evaluation of alternatives, purchase decision, post purchase behavior [54], [55]. Consumers must go through the whole process before deciding to purchase or repurchase the products as the following conceptual framework below.

5. THE METHODOLOGY AND MODEL

The quantitative research was conducted through questionnaires from customers who are using the products and services of cosmetic surgery. Data was collected by survey. The research tools were the questionnaires and 5 rating scale according to Likert conceptual [56] whereby 5 means the most and 1 means the least. By measuring the content validity of methodology and finding the Index of Item-objective Congruence (IOC) value with an average score of 0.74 and calculated the reliability value to find the internal consistency with an average score of 0.856. The descriptive statistics and statistical inference were used to analyse the effect of related variables by multiple regression Enter method technique.

6. SUMMARY AND CONCLUSIONS

Data analysis has been divided into 3 parts as follows:

Part 1 Personal Profile of cosmetic surgery customers

The research found that the majority of respondents were found to be females than males, aged between 20-25 years, followed by 36-40 years, and 26-30 to 31-35 years in the same proportion, and a few were above 50 years old. The majority were found to be holding single status and bachelor’s degree or equivalent. Monthly income was ranged not higher than 20,000 - 30,000 baht, followed by 30,001-40,000 baht, and finally more than 50,000 baht respectively. The majority of respondents were government officers or state employees or permanent employees, followed by private company employees and entrepreneurs, and students had a similar proportion. Most of respondents were in Lampang province, followed by Chiang Mai and Chiang Rai in the same proportion.

Part 2 Consumer Behaviour towards Purchase Intention of Cosmetic Surgery

The information received about the cosmetic surgery via social media such as Line, Facebook, Instagram, Twitter, Blogger, You tubewere the majority, followed by close people, close friends, and information from the cosmetic surgery in the same proportion. The majority of respondents used the service for the first time, followed by 2-3 times. Paying by cash accounted the majority of respondents, followed by credit cards and e-banking.
Part 3 the level of opinion of celebrity endorsement, advertising effectiveness, attitude, customer experience, and purchase intention

Table 1 showed that all factors towards opinions as overall were on high level.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Total Average</th>
<th>Standard Deviation</th>
<th>Level of Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Celebrity Endorsement</td>
<td>3.90</td>
<td>0.683</td>
<td>High</td>
</tr>
<tr>
<td>Attitude</td>
<td>4.16</td>
<td>0.644</td>
<td>High</td>
</tr>
<tr>
<td>Advertising Effectiveness</td>
<td>4.08</td>
<td>0.723</td>
<td>High</td>
</tr>
<tr>
<td>Experience</td>
<td>3.96</td>
<td>0.699</td>
<td>High</td>
</tr>
<tr>
<td>Purchase Intention</td>
<td>3.96</td>
<td>0.804</td>
<td>High</td>
</tr>
</tbody>
</table>

Attitude accounted an average value of 4.16 with standard deviation value of 0.644, followed by advertising effectiveness accounted an average value of 4.08 with standard deviation value of 0.723. Customer Experience and purchase intention accounted the same average value 3.96 with standard deviation value of 0.699, 0.804. Finally, celebrity endorsement accounted an average value of 3.90 with standard deviation value of 0.683.

Part 4 Results of the study of the effect of celebrity endorsement, advertising effectiveness, attitude and customer experience toward purchase intention of cosmetic surgery in the northern region of Thailand using Multiple Regression Enter Method technique.

Table 2 Multiple Regression Enter Method

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>p-value</th>
<th>Collinearity Statistics</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.594</td>
<td>0.279</td>
<td>2.191</td>
<td>0.037</td>
<td>0.594</td>
<td>0.594</td>
<td>1.612</td>
</tr>
<tr>
<td>Celebrity endorsement</td>
<td>0.008</td>
<td>0.096</td>
<td>0.096</td>
<td>0.933</td>
<td>0.539</td>
<td>0.539</td>
<td>1.863</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.297</td>
<td>0.111</td>
<td>2.691</td>
<td>0.006*</td>
<td>0.317</td>
<td>0.317</td>
<td>3.125</td>
</tr>
<tr>
<td>Advertising Effectiveness</td>
<td>0.345</td>
<td>0.104</td>
<td>3.328</td>
<td>0.001*</td>
<td>0.296</td>
<td>0.296</td>
<td>3.491</td>
</tr>
<tr>
<td>Experience</td>
<td>0.388</td>
<td>0.104</td>
<td>4.971</td>
<td>0.000*</td>
<td>0.342</td>
<td>0.342</td>
<td>1.844</td>
</tr>
</tbody>
</table>

Note: p-value = 0.01

Table 2 the conclusion of hypothesis 1 – 4 found that customer experience effects the most toward purchase intention accounted a regression coefficient value for 0.388 with standard error value of 0.104, followed by advertising effectiveness effects the purchase intention accounted a regression coefficient value for 0.345 with standard error value of 0.104. Lastly, attitude effects toward purchase intention accounted a regression coefficient value for 0.297 with standard error value of .111 at the statistically significant level 0.01. Except for celebrity endorsement was not effected toward purchase intention of customers of cosmetic surgery.

Part 5 Summary, Discussion and Suggestions

The purpose of this study was to examine the effect of celebrity endorsement, advertising effectiveness, attitude, and customer experience toward purchase intention of cosmetic surgery in the upper northern region of Thailand. The research found that customer experience has the highest effect towards purchase intention because if the overall customer experience is satisfied with the service or may receive positive information and news about cosmetic surgery it will lead to higher purchase intention in that business. According to the conceptual framework[57] presented that customer needs a recognition and search information from television, radio, newspaper, and online social media via Internet such as Facebook, Instagram, Twitter, as well as various websites. After that evaluate the alternatives and finally make a purchase decision or purchase intention.

Followed by that advertising effectiveness effects toward purchase intention because advertising is like an announcement to the public or target group of customers to know the products and services. Sometimes, those kinds of products are needed by the users. And if they do not know from the advertisement, they may not be able to purchase and meet their needs. According to the conceptual framework [58] presented that the advertisement which has the celebrity endorsement effects positively towards consumers’ attitudes than the endorsers who are not celebrities. And knowing that an endorser is more reliable, the more effective the advertising will be that ultimately effect purchase intention of customers because there is trust in the information received from an advertisement.

Lastly, attitude effect towards purchase intention because a positive attitude is the reflection of satisfaction, willingness, preference of customers which finally effects purchase intention of customers or purchase willingly. Therefore, in today’s businesses, building a strong brand image through marketing activities and tools to create a certain attitude towards the brands via consumer’s perspective which is determined by quality and satisfaction[58], [59]. Hence, the consumer’s attitude effects purchase intention, in other words, a positive attitude towards products that have been guaranteed by the influencers in social media will create a higher purchase intention opportunities.

Except for celebrity endorsement which was found not effect towards purchase intention of customers of cosmetic surgery because some business owners were found to have
lack of understanding on whether which celebrity endorsement is suitable to promote and support their products or services. If those celebrity endorsers have no link or consistent with the products and services, there is no effect toward purchase intention of that products and services. According to the conceptual framework of [60] Belch and Belch (2004) mentioned that the beliefs toward the endorsers slightly effected purchase intention.

In summary, the customer will have purchase intention of cosmetic surgery depends on various factors such as their own experiences, the influences of those around them, advertising effectiveness, customer’s attitude, and celebrity endorsement which are very important. If the cosmetic surgery businesses wish to succeed, there is the need of ongoing situation analysis in considering which factor should be use to strengthen marketing in order to gain more market share.

7. RECOMMENDATIONS

1. Cosmetic surgery entrepreneurs should carefully consider the celebrity endorsement to promote the business. Since the findings show that it has no effect towards consumer purchasing intention. Therefore, the business should seek for experienced experts who are trustworthy or net idols who are consistent with the products and services because customer behaviour is intended to be confident in those groups of people.

2. Cosmetic surgery entrepreneurs need to develop the advertising channels to be modern and reliable, truly respond to the needs of customers. Due to an increasing social media development and under the changing circumstances, the media used for business must be appropriate and able to reach the target market.

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Remote Environmental Monitoring System

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Abstract:
This paper gives custom designed implementation details of unmanned environment sensing and monitoring embedded system. This embedded system will be helpful to monitor the air pollution levels in the remote areas where it is difficult for the human beings to travel. In this design, we intend to monitor pollution levels and gauge the suitability of environment for living conditions as per the standards set by the environmentalists. The uniqueness of this Envi-Quadcopter is that, the electronic system designed is mounted on the DJI Phantom 3 drone which has visual positioning system that allows quad copter to maintain its position at lower altitudes and even when GPS is weak or unavailable. A box is custom designed and light weight 3D printed to be integrated with DJI Phantom 3 drone using CAD software to hold the circuitry. This system consists of four pollution gas sensors NO2, CO, CO2, O3 and two meteorological condition sensing components for sensing pressure, temperature and humidity. The meteorological parameters help to determine accurate concentration of pollutants and seeing the trend of change in concentration of gases with changes in temperature and pressure. The sensed parameters are logged into SD card and also transmitted to the server for real time monitoring. The transmission is done by ATSIM900 module. These values can be then analyzed and helpful in formulating laws for environmental protection.

Key Words:
Air pollution, Payload limit, Real time monitoring, Sensors, Quad copter, Wireless data transmission

1. INTRODUCTION

Air pollution is the increase in levels of various harmful gases and other substances in the atmosphere. It leads to various health problems like asthma, skin cancer etc. It also harms the environment in many ways like global warming, ozone depletion etc. There has been a rapid increase of air pollution in the 21st century, major contributors being industrial and vehicular emission. Recent study shows that road traffic emission contributes to 97% of total CO and 75% of total NO emission [1]. Six common air pollutants present in the atmosphere are particulate matter, ground level ozone, carbon monoxide, sculpture oxides, nitrogen oxides and lead. These are called the criteria pollutants. Measuring the concentration of these pollutants is necessary for determining the air quality. Therefore, air quality monitoring is necessary for checking air pollution and taking appropriate preventive measures against its increasing levels. Air pollution monitoring also provides the information required by the scientists, planners, policy makers to make decision on improving and managing the environment [2]. An ambient real time air quality monitoring system equipped with gaseous, meteorological sensors as well as data logging and wireless communication capabilities has been designed by[3]. It explains work going on where multiple monitoring stations communicate with backend server using machine to machine communication.

The present paper is divided into mainly two sections. First one is mechanical section which gives the details about the custom designed mechanical structure built considering the payload limit of the DJI Phantom-3 and on the other hand providing enclosure and protection to the electronic subsystem. Second one is the electronic section which details the different components used to monitor the ambient pollution in real time.

2. MECHANICAL DESIGN

The 3D printed models used in the system including circuitry box that provides enclosure for sensors over PCB, battery and GSM module, a clamping joint between the horizontal bars of the old landing gears and the circuitry box and a pair of new landing bars at the bottom of the circuitry box. There were four main facts taken into consideration while designing the system:

1. Light weight of the system for durability of the drone. The system should weigh less than the payload capacity of DJI Phantom-3. The material used is poly lactic acid (PLA) due to its good strength with low density. The density of the system is further optimised by 3D printing specifications by varying the infill.
2. The design does not interrupt the motion of the Camera and Vision Positioning Sensor of the quadcopter.
3. The design is to be mechanically balanced so that the total payload is uniformly distributed. Also, the extended landing bars at the bottom of the attachment gives the quadcopter a proper landing and hovering.
4. The system should have appropriate strength to withstand the total weight of DJI phantom-3 and payload.
The net weight of the circuitry box assembly should act at very near to the censorial axis of the Quad copter to get rid off from the mechanical imbalance i.e. reducing the x-distance and z-distance between the old and new centroids. In Figure 1, the two centroids have been shown in which one of them is the centroid (top one) of the DJI phantom-3 and the other one (bottom one) is of circuitry box assembly. In front view (XZ plane) dX= 0.07 mm and side view (YZ plane) dZ=2.11mm. Figure 2 gives the bottom view of the enclosure with opening and seat for fitting sensors which are exposed to the environment for measuring parameters. The mechanical design including the circuitry box, u-clamps and landing bars is safe to withstand the load of 800gms or 7.8 Newtons without any significant deformation and fracture.

3. ELECTRONIC DESIGN

Due to large amount of circuitry and compact space, a custom built, Printed Circuit Board (PCB) has been designed for the system. The PCB designed comprises the sensor circuitry, microcontroller and SD Card in a compact space of 120mm*44mm. It also helped in reducing the wirings of system due to the internal circuit connections. The reduction in space used is due to the small package components soldered on the PCB. These components require very less space compared to the components of the same specification used on Bread Boards or Dot boards.

Figure 3 gives the top view of the double sided custom designed PCB of the embedded system of Quad copter. The major components on front side are potentiometers, SD Card and voltage regulator circuitry along with necessary circuit for microcontroller. The microcontroller used is Arduino Nano which is at the bottom side as shown in Figure 4. Due to its small size and light weight (5gm), Arduino Nano is most suitable microcontroller for the project.

3.1 Sensing System

The main aim of the sensing system is to monitor air pollution by sensing the amount of various harmful gases present in the atmosphere. For the system, four Solid state sensors MICS-2710, MICS-2610, MICS-5521 and TGS-4161 for sensing the gases – NO₂ (Nitrogen Dioxide), O₃ (Ozone), CO (Carbon Monoxide) and CO₂ (Carbon Dioxide) are being used.
In Figure 5, VH is the heater voltage required to maintain the MICS sensing element at a specific temperature which is optimum for its working. The sensor, TGS4161 which is an electrolytic sensor has very high input impedance and hence requires an operational amplifier to amplify and feed the sensor output voltages to the Arduino board as seen in Figure 6. The op-amp used is TLC274.

In addition to these sensors, a temperature and humidity sensor SHT-21 and a pressure sensor BMP-180 is also used for analysing the trends of change in concentration of gases with changes in temperature and pressure. ADS1115, a 16 bit Analog to Digital Converter (ADC) can greatly improve the Arduino resolution and measurement accuracy. The output of the ADS1115 is a signed integer. That means, one of the bits in the 16 bit words is going to be used to tell if it’s a positive or negative value being reported. The value of 32767 would represent a value of 6.144 volts. Dividing 6.144 volts by 32767 yields a scale factor of 0.1875 mV per bit. This is a significant improvement over the Arduino ADC which has resolution of approximately 5 mV per bit. ADS1115, BMP180 and SHT21 communicate with microcontroller using I2C communication. The advantage of I2C communication is that it uses only 2 wires (SDA and SCL) for bi-directional communication.

3.2 Wireless Communication System

For real-time monitoring of various gas concentrations and other parameters, a GSM SIM 900 module is used. The SIM Module receives various sensor output values transmitted by the Arduino and sends this 2G data wirelessly to a server continuously, where it is monitored in real time. GSM module interfaces with Arduino via three pins: TX pin of Arduino connected to RX pin of GSM Module and vice versa. The ground pins of both the components are connected as shown in Figure 7. The GSM Module connects to a server after execution of specific AT commands. The AT commands are incorporated in the Arduino code along with the IP address and port number of the server.

3.3 Data Logging System

Observing and studying the change in sensor values over a period of time is important for deriving conclusion and taking preventive measures to control the amount of harmful gases in the air. For this purpose, the sensor values are stored in a Micro SD card in the form of an excel sheet which can be analysed once the drone has finished its survey. The SD card communicates with the Arduino by SPI communication. SPI is a protocol on 4 signal lines. The communication lines are: A data line from the master to the slaves, named MOSI (Master Out-Slave), a data line from the slaves to the master, named MISO (Master In-Slave Out).

4. CIRCUIT PARAMETER ANALYSIS FOR BATTERY SELECTION

The analysis of consumption of voltages and currents of the circuit is done to decide the battery rating for the embedded system being designed here. Batteries are the powering source of the system. Based on the voltage and current requirement of each component as shown in Table 1 and Table 2, lithium polymer battery, which is light weight and is suitable for the system requirement is used.

<table>
<thead>
<tr>
<th>Components</th>
<th>Heater Voltages (VH)</th>
<th>Input Voltages (VDD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICS2710</td>
<td>1.7V</td>
<td>2.5V</td>
</tr>
<tr>
<td>MICS2610</td>
<td>2.35V</td>
<td>5V</td>
</tr>
<tr>
<td>MICS5521</td>
<td>2.4V</td>
<td>5V</td>
</tr>
<tr>
<td>TGS4161</td>
<td>2.4V</td>
<td>-</td>
</tr>
<tr>
<td>SHT21</td>
<td>-</td>
<td>3.3V</td>
</tr>
<tr>
<td>BMP180</td>
<td>-</td>
<td>3.3V</td>
</tr>
<tr>
<td>GSM Module</td>
<td>-</td>
<td>7-12V</td>
</tr>
<tr>
<td>Arduino Nano</td>
<td>-</td>
<td>7-12V</td>
</tr>
</tbody>
</table>

Table 1: Voltage requirement of components
Table 2: Current requirements of components

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CURRENT (mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICS2710</td>
<td>26</td>
</tr>
<tr>
<td>MICS5521</td>
<td>32</td>
</tr>
<tr>
<td>MICS2610</td>
<td>34</td>
</tr>
<tr>
<td>TG54161</td>
<td>50</td>
</tr>
<tr>
<td>BMP180</td>
<td>0.65</td>
</tr>
<tr>
<td>SHT21</td>
<td>0.3</td>
</tr>
<tr>
<td>GSM and SD CARD</td>
<td>2A (active mode) 30 mA (standby mode)</td>
</tr>
</tbody>
</table>

As total current requirement of the circuit is above 2A and GSM and Arduino Nano requires 7-12 V input voltage, two batteries of specification 3.7V and 3000mAH are connected in series to give output 7.4V. For meeting the voltage requirement of the components used, a voltage regulator LM1117 is used. It converts input voltage given to it as per the requirement of the components and provide stabilized input voltage to sensors.

5. RESULTANT INTEGRATED EMBEDDED QUADCOPTER SYSTEM

Figure 8 gives the block diagram representation of the final integrated Quad copter for air pollution monitoring. All the six sensors sense various gas concentrations, temperature, pressure and humidity and send these values to the Arduino in the form of voltage signals.

The four gas sensors send their respective outputs to the ADC, where they are enhanced and sent to the Arduino. The Arduino executes the code which is programmed in it to change this voltage signal back to ppm values and then send these values to the GSM module and the SD card. The GSM module then send these values continuously to the server through wireless transmission. The SD card stores various values from different sensors in an excel sheet, from where they can be retrieved afterwards. All the functions performed are governed by the execution of the code programmed in the Arduino Nano microcontroller.

Figure 9: Integration of the designed embedded circuit enclosure box with the Quad copter

Figure 9 is the final view of the integrated Quadcopter system which houses the designed PCB circuitry into mechanically designed box.

6. CONCLUSION AND FUTURE WORK

The method of remote air pollution monitoring is comparatively cost effective, easy to install and provides real time data of air pollutant. This method is more advantageous compared to traditional methods where air pollution level was measured at fixed location or laboratory. The system attached with the drone doesn’t affect its flight. The system can be improved by including some more sensors like SPM sensors which are used to measure the pollutant level and size of suspended particulate matter.

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The conceptual model: Entrepreneurship Orientation, Knowledge Integration Capability and Business Growth: The Mediation Role of Innovativeness


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Abstract:
The aims of this literature were 1) to study the focus of entrepreneurship, innovation ability, the ability to integrate knowledge and the growth of OTOP business in the category of fabrics and apparel in the northern region and 2) to study the structural influence of entrepreneurial focus, innovation ability, the ability to integrate knowledge and the growth of OTOP business in the category of fabrics and apparel in the north. This research used the concept of resource base theory and knowledge management concepts as a conceptual framework for research. This research was an integrated research which had a unit of analysis, namely business operators OTOP fabric and apparel type in the north totally 2,048 places. The research tools were questionnaires and interview forms. Data analysis used descriptive statistics and Structural Equation Model (SEM) statistics for academic and commercial benefits.

Key Words:
Entrepreneurship Orientation, Knowledge Integration Capability, Business Growth, Innovativeness

1. INTRODUCTION
Developing under a society called Knowledge based Economy and Society. Such society is a society in which knowledge is a valuable asset of the organization. In the economic system, it is important to change knowledge to be innovative by using high technology [1]. Knowledge is something that can be used as an innovation or knowledge change is an innovation, used as a tool to develop the organization to be a learning organization that can develop society into a knowledge-based economy making every dimension of society need to focus on knowledge management, especially in Thai society that is rapidly changing according to the changing world of the digital age fully. Coupled with Thailand 4.0 policy [2], which propels the country with technology, creativity, and innovation to "Prosperity, Stability, and Sustainability. Therefore, it is necessary to create their own innovation from the knowledge gained from the learning management process in order to become a skill and be able to be a base for producing products or innovations in the future [2]. The organization that has been in existence for a long time and has always been famous, if the development of globalization stops then the organization will stop which is the eventual collapse of the organization [3]. In addition, managing the progress of the organization requires the creation of a learning organization in order to advance the new creativity. That will result in the organization being successful, i.e. "the Leader of the Organization" will determine the direction, order, control the system, and coordinate for all people to work together to focus on the goals that have been put together. The role and function of good leadership make the mechanism of management successful or failed. Besides, it will have an impact on the deterioration and prosperity of that organization. For this reason, in various organizations both the government and private sector, therefore, must have leaders or entrepreneurs as important people to make mechanisms in the organization's administration system [4]. For in business organizations, considering that entrepreneurs are sparking economic growth in various fields, these entrepreneurs are more valuable resources than innovation, capital or other factors. Moreover, entrepreneurs must develop new knowledge by integrating relevant elements to connect with previous knowledge from the experience accumulation as well as learning from local partners [5] must take into account the influence of the environment in which the business exists. Geographical conditions, community culture, economic factors and the creation of activities within the community are important [6]. It is therefore
accepted that entrepreneurs play an important role in economic development and entrepreneurs are driving the new economy [7]. However, at present, each country has used different competitive strategies to be used as an important mechanism to drive the economy within their own country. There are strategies and guidelines for solving problems and developing industries to create economic value from changes seeking ways to make that industry survive. In Thailand, the government has laid down important policies for economic foundation development in promoting community and local products with support to be a quality product that is accepted by consumers according to different market potentials under the project One Tambon One product (OTOP), which is the concept of solving the economic crisis in Thailand. This affects the economy and society extensively. The project is therefore a channel for each community to bring their local wisdom used in product development with the government sector helping to provide modern knowledge and management to link products from communities to markets both at home and abroad in order to promote and support local development processes, strengthen the community, self-reliant, and allow people to participate in generating income by bringing resources, local wisdom to develop into quality products and services with strength and value that is desired by the market. However, one of the important strategies in the northern region of Thailand is to drive and upgrade the products of the creative craft industries to the world. That is, woven fabrics and products that continue to develop from the fabric are excellent craftsmanship products of the north with the beauty and delicacy of the weavers, both the local woven fabrics woven by the local weavers and the hill tribe woven fabrics with unique tribal identity. There is a history of succession of local art and can also help generate income for the community sustainably as well as cultural diversity, variety of ethnic / ethnic. There is a transfer of cultural traditions from the ancestors to the next generation of ancestors. It has been transferred to products produced from local wisdom in the form of local weaving that varies in each local context. It extends into a unique product at the same time may add value from the story of the history of the product and then cause impressive impressions and creating value for the product until creating creativity and creating new ideas that create new innovations and generate more income [8]. For that reason, therefore is the source of research to encourage OTOP business operators in the category of clothing and apparel in the north that focuses on developing entrepreneurship, creates products and services with international standards accepted by consumers in general and reduces the burden of assistance from government agencies until the end of the OTOP business in the category of fabrics and apparel in the north can continue to grow sustainably.

2. RESEARCH OBJECTIVES

1. To study the focus of entrepreneurship, innovation ability, the ability to integrate knowledge and the growth of OTOP business in the category of fabrics and apparel in the north.
2. To study the structural influence of entrepreneurial focus, innovation ability, the ability to integrate knowledge and the growth of OTOP business in the category of fabrics and apparel in the north.

3. SCOPE OF THE RESEARCH

This research is a quantitative and qualitative research with 4 areas of study as follows:
1. The population is OTOP business entrepreneurs in the category of fabrics and apparel in the north registered 2,048 OTOP entrepreneurs.
2. The area is the OTOP business entrepreneurs group in the north.
3. Time: This research takes 1 year from January 2019 to December 2019.
4. Content is focused on entrepreneurship, innovation ability, the ability to integrate knowledge, and the growth of the OTOP business types of fabrics and apparel in the north

4. LITERATURE REVIEW

This research, the researcher has reviewed the literature, concepts, theories and related research as follows:

The context of OTOP business in the type of fabric and apparel

Past government policies have encouraged community entrepreneurs to push for the sale of OTOP products by developing and adding value to be exported to the international market. There are product development, demonstration show, and selling handicrafts products OTOP fabric and apparel type which is an excellent product of the northern region and is widely known for the beauty and delicacy of weavers in the form of weaving that is unique. At the same time, this can also add value from the story of the history of that product which gives the impression of credibility and value creation for the product, creates creativity and creates new ideas resulting in being more innovative and generating more revenue and also promoting the textile products and products continued from fabric. In addition, there are good and clear images to consumers inside and outside the country, with the government giving priority to strengthen community entrepreneurs, produce quality products that are unique and proud of products which will add value to the development of entrepreneurs. Encouraging entrepreneurs to participate in business networks / organizations as well as seeking business partners is an important way to develop the potential of OTOP business operators by bringing community products or potential in the area to create sustainable and stable
Results from the literature review; the researcher summarizes the variables related to research as follows.

1. Entrepreneurship Orientation

Processes related to strategic decisions of entrepreneurs [9] are the entrepreneurs who are willing to invent new things, risk search, self-directed, control, and more proactive actions and more severe than competitors for new marketing opportunities [10]. These cause the condition of acting according to leadership, the condition of strategic decisions, and the situation of managing opportunities for entrepreneurs. The entrepreneurs are those who bear the risk during the pursuit of opportunities through proactive action to achieve the ability to integrate knowledge developed as a new creative idea and innovation[9]. In addition, entrepreneurs are also responsible for managing their own activities, including the routine management of the OTOP business. In this research the researchers measured latent variables, focusing on entrepreneurship from 3 components, namely proactive operations., aggressive competition, and risky courage as hypotheses 1, 2, and 6.

H1: Focusing on entrepreneurship influences innovation ability.
H2: Focusing on entrepreneurship influences the ability to integrate knowledge.
H6: Focusing on entrepreneurship influences OTOP business growth.

2. Innovativeness

The ability to change the management system throughout the organization to develop new things both in the form of products, services, work processes including the new business model [11]. Innovation capability is the process of creating new production, services or updating to be new to increase the competitiveness of the organization through experimentation and development as a step by inventing, developing, and implementing which is a precursor for innovation and development of new products and services of business organizations [12]-[13] by innovative capabilities are seen as a strategy that focuses on changes in both products, process service, and marketing for the organization's competition [14] and to make a better change to the OTOP business. In this research the researchers measured latent variables of innovation capability from 3 aspects: innovation in product, marketing, and process as hypothesis 3.

H3: Innovation ability influences the growth of OTOP business.

3. Knowledge Integration Capability

The process of applying knowledge within the organization by integrating from the knowledge management process is a process that requires the collaboration of all members of that organization. Every member of the organization helps to share ideas about work, information, and recommendations between each other, resulting in the flow of information accumulation in the synthesis of knowledge that leads to new service ideas including being able to change that knowledge to new innovative capabilities [15]. In addition, the ability to integrate knowledge also affects entrepreneurship that the leader of the organization is considered as an important person to make the mechanism in the organization's administration system. It is also the designer that directs the control of the system and coordinates the people to work together to aim for the goals that have been put together[4], enabling the ability to integrate knowledge into variables that are important to quality entrepreneurs. This is to affect the entrepreneurship and the growth of OTOP business. In this research, the researcher measured the latent variables of knowledge integration capabilities into 3 components: IT capabilities, knowledge management and learning culture as hypothesized 4 and 5.

H4: The ability to integrate knowledge influences the growth of OTOP business entrepreneurs.
H5: The ability to integrate knowledge influences innovation ability.

4. Business Growth

It is an evaluation of the organization's performance which is an indication of the growth of that business. The results of the assessment are important to the organization's adaptation all in terms of finance, investment, resources or the need to create an advantage over competitors [16]. Such assessments can be measured in many dimensions together depending on the organization/business model [17]. In this research, the researcher measured the latent variables of growth in OTOP business in 2 areas: sales and the ability in making profitability.

5. THE METHODOLOGY AND MODEL

This research is a mixed-methods research using quantitative and qualitative research methods by collecting questionnaires from OTOP business entrepreneurs in the fabric and apparel category in the northern region and using qualitative research methods to support the findings from quantitative research. Besides, the researcher used in-depth interview method by choosing involved persons who have an important role in the operation of the OTOP business, which is based on the collection of information from literature reviews, concepts, theories, and research related to Chapter 2, including the development of theoretical frameworks that have divided the study into two types.

1. Quantitative research has a sequence of steps to develop that is the measurement of relevant variables by choosing to study and collect data from OTOP entrepreneurs in fabric and apparel type in the northern region. The research instrument is questionnaires. The statistics used in this research are descriptive statistical processing and Structural Equation Model (SEM). The
results were discussed, summary results, as well as additional suggestions from questionnaires. Consequently, the researcher used qualitative research to compare with quantitative research again.

2. Qualitative research used semi-structured in-depth interviews created from a literature review to cover research related to the subject of focusing on entrepreneurship, innovation ability, the ability to integrate knowledge and the growth of OTOP business in the category of fabrics and apparel in the north. And then the results from the structural equation analysis were discussed, summarized and gave additional suggestions from the research.

6. THE CONCEPTUAL FRAMEWORK

From a literature review, the researcher can summarize to be the research framework as follows.

![Picture 1 Research Framework](image)

7. SUMMARY AND CONCLUSIONS

This research is a mixed-methods research to support both quantitative and qualitative data under the concept theory of the resource base theory of [18]-[19] Barney (1991, 2001) that emphasizes to resources for competitive advantage in which each business is unequal, depending on 4 factors that: 1) resources must be valuable to affect the efficiency and effectiveness of the organization. 2) Those resources must be difficult to find. 3) Those resources must not be imitated, unique, difficult to imitate. If they are imitated, there will be a high operating cost. 4) Those resources cannot be replaced; especially knowledge or experience embedded in the individual. And for the knowledge management concept, [20]-[21] Nonaka and Takeuchi (1991, 1995) presented a model known as SECI. This conceptual framework discusses knowledge conversion between Tacit Knowledge and Explicit Knowledge, resulting in new knowledge which will spin endlessly because learning takes place all the time and is divided into 4 processes, namely Socialization, Externalization, Combination, and Internalization. Socialization and Externalization are related to creative ability while Combination and Internalization are related to efficiency. Therefore, knowledge management is a variable that connects entrepreneurship and innovation ability leading to grow the business. Consequently, the ability of the knowledge management process or the ability of the organization is to create, share, transfer, and apply the knowledge they have and clear knowledge which has a significant relationship to the effectiveness of the organization [22] under the changing environment both inside and outside the organization that happens quickly. OTOP business entrepreneurs should plan and develop the availability of resources in the organization to achieve a sustainable competitive advantage.

REFERENCE


Helical Insight: A Self Service Business Intelligence Tool


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Abstract:

A new trend of service is catching on, in the world of business intelligence. Self-service business intelligence (SSBI) is an approach to data analytics that enables business and non-technical users to access and work with data even though they do not have a background in statistical analysis, business intelligence (BI) or data mining. BI software vendors and industry experts recognize self-service reporting as a key feature of BI because it eliminates obstacles to timely insight and decision making and lowers the costs of reporting, analysis, and metrics-driven management by putting data directly in the hands of those who need it.[1]

There are not many SSBI tools in the market that completely satisfy the needs of business and non-technical users. According to a 2012 study by Wayne Eckerson, approximately 64 percent of self-service initiatives are rated as having achieved only an “average” or lower level of success by BI professionals. A BI program—self-service or not—can fail quickly if the users don’t trust the information it provides. [2] Helical Insight is an open source SSBI tool that is API driven with a simplified user interface that aims to completely satisfy the needs of all the business and non-technical users and make the transition to a BI tool a smooth experience.

1. INTRODUCTION

Business intelligence (BI) is a technology-driven process for analyzing huge amounts of data and presenting actionable information to business managers, corporates, data scientists and others so that they can take well informed business decisions.

As BI catches on in the world, business and non-technical users are looking for BI software and tools that are simple, easy to learn and use but at the same time provides them with basic features like accessing the data, manipulation and visualization of data as well as advanced functionalities and capabilities to tackle complex problems. Demand for Self-service analytics is increasing while demand for traditional dashboard BI is diminishing.

Self-service business intelligence (SSBI) tools with great data visualization features have become the need of the hour. Self-service BI appears to be the next big wave in business intelligence.[3] Helical Insight is one such SSBI tool that has been developed with the main aim of providing a simplified user experience with top notch functionaries and features that cater to the increasing pool of business users, corporates, data scientists and others.

Flexible retrieval of existing data, creation of new views on data, is difficult for business users due to the complexity and variety of data structures.[4] Hence business users, require the continuous support of BI specialists or developers.

SSBI should, on one hand, empower casual users to perform custom analytics and to derive actionable information from large amounts of multifaceted data without having to involve BI specialists. Power users, on the other hand, can accomplish their tasks with SSBI more easily and quickly than before.[4]

Gartner Inc. pointed to growing demand among businesses for a "data discovery tool architecture" that provides end users with data and reports and enables them to navigate and visualize data in a "surf and save" mode. Data governance, security, centralized monitoring and control of user interactions are critical for any BI system, but particularly for self-service setups that give less-technical end users direct access to the corporate data infrastructure.[3]

The problem with earlier generations of BI tools is that they forced users to conform to the way the tools work, rather than conform to the way users work and prefer to interact with information. The more BI platforms conform to the way users want to work, the more they disappear into the background, blending into core applications and central processes. Rather than shift to a separate application to view reports, users should be able to view information within the same application in which they perform their everyday
tasks.[5] This type of functionalities are provided by SSBI tools which provide immense value to business users and organizations.

BI managers are finding it increasingly difficult to convince and educate business users to create their own analytical reports and queries as most of the available BI tools are not easy, for even the power users who write reports every day. Training is must but at the same time continuous support is required till users get accustomed to these complex tools. SSBI solves most of these issues by enabling and empowering end users to become independent as well as allowing them to customize reports according to their needs.

3. REQUIREMENTS AND NEEDS OF BUSINESSES/BUSINESS OR NON-TECHNICAL USERS FROM BI TOOLS

Most of these needs and requirements of business users can be handled by SSBI tools. Some of them are listed below

Simple and easy to use interface that is extremely user-friendly
- Should support a variety of data formats as well support for new formats
- A simplified drag and drop user interface with not many technicalities
- Geographical maps and geographic hierarchy capabilities[6]
- Ability to combine data formats and create dashboards and other visualization without IT assistance[6]
- Visual appeal and extensive graphic format options[6]
- Ability to consolidate data from multiple data sources into a single place.
- Vendors with open architecture that enables integration with other program so that BI tools are not limited.
- Compound reporting options like what if analysis
- Prompt and intelligent alerts via email that is crucial for businesses

This means a BI environment in which business users can get rich, accurate and real information at their fingertips as easily as we get information from a Google search. For this to happen, business and IT need to work together to create a self-service BI environment that enables business users to access information with minimum support from IT for their day-to-day operations, so as to increase overall ROI for BI. [7]

Most of these needs and requirements of business and non-technical users, specially the need for a Google like search functionality that provides instant answers, are fulfilled by a newly developed self-service business intelligence tool called as Helical Insight

4. HELICAL INSIGHT: A NEW SELF-SERVICE BUSINESS INTELLIGENCE TOOL

Helical Insight (HI) is world’s first open source self-service business intelligence tool. It empowers business users to gain immediate access to insights that increase help organizations immensely and provide quick access to necessary data and insights that enables business leaders and non-technical users to take critical decisions in an instant.

A. HI caters to the needs of business users

HI is different from other BI tools and as a self-service business intelligence tool it has several features and functionalities to cater to the needs of business and non-technical users as given below.

- One of HI's biggest features and UPS is the new feature that enables users to interact with data in their own natural English language and data answer their questions. Powered by machine learning and NLP, HI empowers business users and users with zero technical knowledge to be data scientists. HI's AI algorithm understands the data, tables and columns, filter to be applied, functions to be done and shows users the relevant result instantly. Long development cycles will now be a thing of the past.
- HI allows Data Connectionsto different database sources like relational, columnar, big data databases, CSV, text and users can use this feature in-house as well.
- HI has a browser based interface (Safari, Chrome and Firefox) which enables users to access and connect to any database across different locations as well as devices and analyze and interpret the data.
- Different companies have different business processes that the existing BI tools do not encompass. HI permits business users to design their own workflows and specify what functional module of BI gets triggered and when. Users can use APIs to build their own external functional modules that can be used within HI's workflow engine.
- Unlike other BI vendors with closed-garden approach, HI is a SSBI tool driven by API's. HI empower clients to build functionalities according to their business needs using their own IT resources.
- Helical Insight as a self-service tool allows you to simply drag and drop columns, add filters, apply aggregate functions if required, and create reports and dashboards instantly, as well as HI has the functionality to add JavaScript, HTML5 and AJAX which allows creation of reports, new dashboards, new charts and functions.
• Exporting your work has never been easier. HI provides users with all the power to export reports and dashboards in different formats like PDF, CSV and adds the capability to add more exporting types using the API-based software.

• HI allows users to mail a copy of a report or anything else in any format to the user specified email as well HI provided a scheduling function that provided an extensive range of options to users

• HI is client and user friendly, and thus provides users with the option of adding new functions like a different type of chart or any other functions by using the client’s or user’s own technical team

• HI provides organizations with User and Role management features that can be easily integrated into the company’s system and thus ensures that data security is maintained

• HI is a platform independent SSBI tool that can run on different Operating systems (OS) and on different devices including smartphones, smart TV, tabs etc.

• Unlike other BI tools, HI provides a vast array of options for changing the look and feel of login or logout page, navigation method etc.

• HI provides users with a unique option of embedding helical insight with the client’s applications or software.

5. BUSINESS INTELLIGENCE USE CASES

Given below are some use cases where SSBI tools like helical insight can be implemented.

In Finance, leaders often lack visibility into various performance aspects that don't fall in their department and spend many hours in data collection. Creating plans and forecasts are also difficult if very less time is devoted to analyzing the data. SSBI tools can be extremely useful for such non-technical business users that help them in performing complex analyzing tasks in an instant. It also helps users by helping them with what if analysis for future predictions.

In sales, SSBI tools can be extremely useful as they can help sales managers keep track of the number of goods sold or pending sales, profits and losses that help them to achieve sales targets at the click of button without continuous support and help from technical teams or IT department.

Additionally SSBI tools can be used in sectors such as manufacturing, marketing, health, education, and literally every possible sector because with the huge amount of data in every sector business intelligence tools are a must.

Listed below are some demo dashboards of use cases in which helical insight has been used. These demo use cases are just for simple demonstrations purpose only.

A. K-12 Education domain dashboard

Commonly used in the United States, parents can now evaluate and analyze schools and thus select the right school they wish to enroll their child in. Similarly school administrations can now see the statistics of relevant data for students and teachers at a glance. Given below is a demo dashboard using the drag and drop interface of the SSBI tool Helical Insight. The dashboard has 3 sections to view data visualization district wise, teachers and student.

The demo dashboard in Figure 1 gives parents that want to enroll their child in a particular district consolidated information and analysis related to the count of the students, the ethnic diversity, the number of English speaking and non-English speaking students, the average students per class.

Screenshots in figure 2 and 3 depict the teacher section of the demo dashboard that shows visualizations for the grade wise distribution, the ethnicity and percentage of blacks, whites and Asians as well as the attendance percentage.

Screenshots in Figure 3 shows the student section of the demo dashboard that depicts data visualization for each particular student that depicts student information, overall scorecard percentage and the class average percentage as well the attendance breakup of students for different classes. A sunburst chart shows the name of the subject along with the total marks in that subject.

B. Ticketing dashboards

A Ticket dashboard can be used to track sales for various categories in different states

Screenshots in Figure 5 and 6 show the sales dashboard can keep track of sales through data visualization using charts which display a breakup of the genre of sales in which a tree chart has been used. It also displays the top 5 sales for the category of movies as well as displaying the different mediums through which sales have been completed.

Figure 1: District view of the dashboard
6. ACKNOWLEDGEMENTS

We extend our gratitude towards the CEO and Founder of Helical IT Solutions for giving us the opportunity to work on the project. We Thank You Sir.

REFERENCE

The Conceptual Framework: The Influence of Innovation as Extension of the Relationship between Marketing Oriented toward Performance of Agriculture Occupation Groups in Upper Northern Region of Thailand


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Abstract:
The research aimed 1) to study the important level of good governance, participation, marketing oriented, innovation and performance of agriculture occupation groups, and 2) to study the influence of innovation as extension of the relationship between marketing oriented toward performance of agriculture occupation groups in upper northern region of Thailand. This research based on the participation of all sectors to support the operation, creating value or creating income for the community by setting up agriculture occupation groups and stimulate the grassroots economy. The research framework was drawn from theories about resources based view and participation.

This research employed mixed methods. 500 committee of agriculture occupation groups in 8 provinces in the upper northern region of Thailand acted as research participants. The research tools were questionnaires and in-depth interviews. The data were analyzed using descriptive statistics, inferential statistics and structural equation model (SEM), and the results were disseminated for academic and commercial purposes.

Keywords:
Good Governance, Innovation, Marketing Oriented, Agriculture Occupation Performance

1. INTRODUCTION

The twelfth National Economic and Social Development Plan (2017-2021) was formulated to respond the rapid changes of external circumstances whether economic fluctuations, social condition, innovation, changes of competition both national and international, including changes of political stability and reform of the nation which has been linked to three approaches as adopting the principles of the “Sufficiency Economy Philosophy”, the sustainable development and emphasizing people as the center of Thailand’s sustainable development master plan based on the government's commitment to the era of Prime Minister Gen. Prayut Chan-o-cha who wants to change the economic structure to a value-based economy or an economy steering by innovation. On the basis of critical thinking, it is important to change the commodity production towards the innovative products, the steering the country from the industrial sector towards the innovative technology and creativity, and the manufacturing sector towards the service sector through the concept of economic growth that reduces inequality, and the steering of growth from increasing production towards productivity growth on the basis of using wisdom and innovation [1]. Although Thailand is facing with an economic headwind, and a number of grassroots people suffer from poverty. In the past, the government had a policy to lift the community products of occupation groups, or professional groups in each community, so that they could use their wisdoms and develop their unique products of each region around Thailand [2].

Under changes of the free trade system and the manufacturing sector in various categories in Thailand affect many agricultural products and the cost of production factors, so the relevant departments have set guidelines to determine proactive work strategies for acquiring new knowledge available on technology database in Thailand, in order to form a production model based on agricultural resources. Thailand has plenty of agricultural products resulted from feasibility studies such as the production process, the economic return, the production geography.
suitability, and farmers’ culture using local resources and social capital in community to replace external capital to enhance stability and sustainability, and the important main target is the farmers’ income. Mechanisms and management strategies rely on the strengthening agricultural group system in each area and the cooperation between the private sector in terms of technology support to encourage farmers being an initial market to support their products, and the local government sector in coordinating, transforming data and submitting to the regional or country policy [3].

The upper north of Thailand is an agricultural area where most people doing cultivation, sometimes there are over-supply products, then lead to agricultural product processing sources to increase value added prices supported by the academic institutions, the community development departments, the agriculture and cooperatives offices, together with the departments of local administration. The policy objectives are (1) to improve quality of life in the area by giving them chances having incomes, career management services, strengthening groups sustainably, having professional knowledge based system in community, family, and personal levels, and (2) to develop professional standards by supporting the local people in creating their self-reliant careers in personal, family, and community levels, in order to develop professional management, standards of unique local products, and to promote professional standards through local wisdoms. Enhancing the professional strength is able to create a network of other occupations involved to support one another in levels of villages, communities, sub-districts, districts, and provinces based on their aptitude and needs through the local gathering group [4].

Nowadays, the occupation groups are gathered by people who live in each community, especially in the northern region. Their unique goal is to produce commodities as the main career by housewife groups or unemployed butler groups who need to get their extra income, or some who need their main earnings. The occupation group management includes both the registered group at the sub-district administrative organization and non-registered group arranged by the community board and members management. The group may produce the same or different products depending on resources available in each community. There is also fund-raising from members of each community – holding the 10-baht share value or more that depends on each group agreement and the occupation groups will borrow money from the sub-district administrative organization or the municipality to manage and enhance the group, for examples: the garlic growing group, the organic fertilizer group, the fish farming group, the bean growing group, the corn growing group, and other involved groups. There is also competition in sales whilst some groups can sell their qualitative products at reasonable or higher prices, but some can get lower prices depend on their product quality.

The findings [5] indicated that the occupation groups had faced problems and obstacles because of the informal group formation that led to their lack of rules and regulations in group operation, however each member had good relation to one another, freedom to produce and sell their products. In addition, the same or similar products of occupation groups, lack of unique and attractive packaging, non-certified products, the limited distribution channels, and marketing promotion [6], inspired us to do this research.

2. RESEARCH OBJECTIVES

A. To study the important level of good governance, participation, marketing oriented, innovation and performance of agriculture occupation groups in upper northern region of Thailand.

B. To study the influence of innovation as extension of the relationship between marketing oriented toward performance of agriculture occupation groups in upper northern region of Thailand.

3. SCOPE OF RESEARCH

This research was participatory action research with 4 dimensions scopes, which were as follows: (1) Subject Content: to study good governance, participation, market orientation, and performance of agriculture occupation groups in the upper north of Thailand (2) Duration: 6 months between March and August 2019 (3) Geographic Area: 13,495 agriculture occupation groups in the upper north of Thailand who registered with the local government organization (4) Population: the agriculture occupation groups committee in the upper north of Thailand both registered and non-registered groups, but there is loan for an economic recovery from municipal authorities or sub-district administrative organizations.

4. LITERATURE REVIEWS

After reviewing literature, it can be concluded that there are 5 related variables as follows:

A. Good Governance

Good governance is the principle or an idea widely used by organizations or work groups because it helps organizations create and enhance the effective and efficient performance [7]. It is divided into 6 major characteristics [8] as follows; (1) The rule of law: It is the principle whereby all members of a society, including those in government, are considered equally subject to publicly disclosed legal codes and processes (2) Morality: Adherence and confidence are principles accepted by an individual or a social group including honesty and sacrifice (3) Accountability: It is the quality of being done in an open
way without secrets, and can be examined or monitored and evaluated effectively (4) Participation: It focuses on all people or sectors both inside and outside organizations to take part the involved activities and eliminate monopolies in both public and private sectors which is able to help public and private sectors create unity and cooperation (5) Responsibility: It is a liability of every committee to solve any problems together (6) Cost-effectiveness or Economy: Administrators must realize that there are relatively limited resources, limited resources, so it is necessary to follow principles of economic values and cost-effectiveness by focusing the consumers or all public [8] Good governance, therefore, affects the participation as hypothesis 1.

H1: Good governance affects the participation.

B. Participation

The concept of [9] shows the community development participation which means that the process of which the government encourages, supports and creates opportunities or chances for people in the community, no matter who are they; individuals, groups, clubs, members, foundations, and organizations, in order to achieve their goals and defined development policies. The aspects of participation should (1) to search for causes of problems and to study the needs of the community (2) to analyse and create patterns, including methods to solve and reduce community problems, or create new things that are beneficial for the needs of the community (3) to assign policies and plans, projects, activities, that can help the community eliminate or solve problems and also meet the community needs (4) to decide how to use the limited resources which are beneficial to the public (5) to get the highest benefits according to the group member operation, and also to allow those involved with development, making decision, and share idea and expertise to solve any problems, including support and follow-up the organization and officers [10] as hypothesis 2.

H2: Participation influences market orientation

C. Market Orientation

Market orientation focuses on customer orientation, competitor orientation, and inter-functional coordination because it is an approach to help expand business performance for increasing value-added to customers, increasing profitability, and making business successfully [11], [12], moreover, the other studies mention indicate that market orientation is a positive relationship to the innovation ability that creates initiative, and exchange ideas leading to higher performance development [13].

For the concept of [14], states that market orientation is systematically gathering information from customers and competitors, and analysing data to develop market concepts for innovation guidelines, design, selection and modification in order to respond to customers and competitors as hypothesis 3.

H3: Market orientation influences innovation

D. Innovation

Nowadays, there is more variance caused by competition and environment pressure, that affect the innovation is more interesting as the main factor of organization success [15], [16], [17], because innovation causes the product launching and new technologies which help the organization be different, adaptable, and present new organizational style [18] the innovation is the relationship of knowledge used to create new idea and knowledge [19] so it important to economic growth process and entrepreneurs drive company activities by using technology for increasing profits. And innovation as well as creativity is knowledge that generates higher organizational performance, success, and survival. So innovation is related to performance [20], [21] as hypothesis 4.

H4: Innovation influences performance

E. Performance

[22] Robbins (1990) states that organization performance is the sum total of activities that aims the better asset management, develops valued products and services for customers, and creates knowledge development for organization, whilst [23] suggests that performance is the way of intended achievement by using capabilities and available resources. The research of [24] shows that the relationship between innovation and performance depending on performance indicators, especially focusing on finance, marketing, production, efficiency and competitiveness. The study of [24] mentions that the measurement of innovation performance can be measured with the overall performance measurement in many aspects as new patents, product launch, projects, processes, technology, and organization management.

5. CONCEPTUAL FRAMEWORK

The literature reviews and related researches both domestic and international that the researchers synthesized the conceptual framework shows in the following 2 images.

![Conceptual Framework](image)

Figure 1: Conceptual Framework

6. METHODOLOGY

This research is a mixed-methods research integrated between the qualitative research by in-depth interviewing and the quantitative research by surveying. The research tool is the questionnaire that developed by data collection and based on the literature reviews of good governance, participation, market orientation, and performance which can be divided into 2 types are as follows:
A. The quantitative research: A sequence is to develop the gauge, create a questionnaire, the descriptive statistical processing according to the structural equation model (SEM) by using the Lisrel program to summarize and discuss, as well as to give suggestions of the data obtained from the open-ended questionnaire.

B. The qualitative research: A semi-structure in-depth interview created following the literature reviews is covered the innovation influences as factors that expand relationships between market orientation and performance of agriculture occupation groups in northern region of Thailand that the researchers have completed data check by triangulation [25] and the researchers discuss, summarize, and add suggestions by using the results of the structural equation analysis.

7. SUMMARY AND CONCLUSION

The title of this research is The Influence of Innovation as Extension of the Relationship between Marketing Oriented toward Performance of Agriculture Occupation Groups in Northern Region of Thailand. Innovation is important to develop local organizations and country or nation because it is an important tool of changes in creative economy which focus on value creation. The use of knowledge and technology to be an important capital leads to the intellectual property and various technologies, and is used for management as well as creative image production. This can run new added value business which makes progress in economics and societies in the country dramatically. In the past, the industrial sector focused on the innovation development to increase production efficiency and reduce production costs in order to raise the competitive of the organization. However it was not successful in the world market because there was the capital problem in production that was unable to struggle other countries which were prompt in raw materials, labors, and technology. Therefore, in the latter year the innovation development focuses on "differentiation" from the original product, including emphasizes on "branding" of the product by applying various methods and designs to combine with science and technology knowledge.

The most important innovation to create new unique and value-added products of agriculture occupation groups is not limited to the technology usage, but on the other hand it is related to thoughts, and system solutions. It can be mentioned that innovations are instruments and methods that help the agriculture occupation groups adapt to the changing situations and link to the marketing needs systematically. Finally, it is a helpful and useful management to reach their goals and lead the sustainable organizations.

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The Model of Employee Engagement for the Electronics Factories Group in Northern Region Industrial Estate (Thailand)

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Abstract:
Employee engagement is an important tool for all organizations because employees are valuable assets and important factors influencing organizational achievement. The objectives of this research were 1) to study the level of opinions on leadership, human resource management, and employee engagement, and 2) to investigate the pattern of employee engagement in the electronics industry in Northern Region Industrial Estate (Thailand). The sample group included 500 employees having lower positions than managers from the factories of the Northern Region Industrial Estate (Thailand). The questionnaire was a research tool for data collection and data were analyzed by percentage, mean, standard deviation and analysis of structural equation models using statistical software program.

Keywords: Transformational Leadership, Transactional Leadership, Human Resource Management, Employee Engagement

1. INTRODUCTION

Nowadays, the operations of each organization are affected by changes in both internal and external environments, including business competition, an increase of customer demand, politics, economy, society, culture, policies, concepts, management guidelines and working practice. They inevitably affect labor, both directly and indirectly, and lead to the consequences. Finally, the employees have to leave the organizations and each resignation of the individual employee will affect human resource expenses due to the loss of talented people, good people with full capabilities. It is not only difficult to hire good, talented people with high potential to substitute for work immediately, but the organizations also have a high cost for the recruitment and selection process, training provision according to the basis and requirements of each organization. In addition, the organizations have to lose in various aspects as follows: productivity and effectiveness, as well as a decrease in employee's morale. Based on the results of the employee turnover survey in 2017, Willis Towers Watson found that the overall staff turnover rate in Thailand is at 12 percent or it can be said that the employee engagement in the organizations is at the level of 88 percent. The top 3 reasons for the resignation of employees are higher salary requirements, career progress opportunities, and relationships with supervisors or managers [1].

Employee engagement in every organization is as a key important factor influencing the employees in deciding to continue working in the organization. On the other hand, if there is no engagement with the organizations, the employees would have to resign from that organization. Problems of employees who do not have an engagement both work and organization are derived from many factors:

whether it is the result of human resource management in various areas, including compensation and benefits management, performance evaluation for salary, bonus, or promotion, training and development in knowledge, attitude towards work, and higher or challenging positions as well as creating good relationships between supervisors and subordinates to reduce conflicts that will occur through various activities to create mutual support.

The significance of leadership in human resource management as mentioned above will have an effect and relationship to employee engagement since the human resource management process will integrate strategies and link the concept of employment, personnel development and welfare of employees in the organization [2]. As for effective and efficient leadership in organizations, the leaders must be visionaries, powerful or motivated, have virtue and use appropriate reward or punishment procedures to meet the needs of employees depending on each situation [3] and employee engagement is a representative of those employees having both work and organization engagement.
by expressing behavior while performing tasks that include enthusiasm for work with dedication to work and is determined to focus on work [4].

Referring to the relationship in the context mentioned above, the researcher, therefore, is interested in studying the pattern of employee engagement in the electronics industry, Northern Region Industrial Estate (Thailand) so that these industries can perform their tasks efficiently and effectively. These industries play an important role in the country's economic and social systems, which is an important source of income for both exports and job creation as well as improving the skills of skillful employees to be accepted in the region of the country and can also help reduce the amount of labors that will flow from the region in the central part. It will help reduce many social problems leading to various sequences.

2. RESEARCH OBJECTIVES

A. To study the level of opinions on leadership, human resource management, and employee engagement.

B. To investigate the pattern of employee engagement in the electronics industry, the Northern Region Industrial Estate (Thailand).

3. SCOPE OF RESEARCH

The researcher studied the theory related to concepts in order to explain the relationship of variables in leadership, human resource management, and employee engagement. This all variables brought to the creation of a conceptual framework for this research, comprising 1) Theory of Transformational Leadership and Transactional Leadership, 2) Human Resource Management, and 3) Employee Engagement.

From a review of relevant literature about Transformational Leadership and Transactional Leadership for this research will apply the theory developed by Bass and Avolio [5], Transformational Leadership is a process by which leaders influence colleagues and followers by changing the efforts of colleagues and followers to be higher than they expect, developing the ability of colleagues and followers to reach to higher levels and more potential. Moreover, it enhances the awareness in the mission and vision of groups and organizations, motivates the colleagues and the followers to look beyond their interests to benefit the group of organizations and societies. The process with leaders influencing colleagues or followers will be worked through 4 specific behavioral factors: 1) having idealized influence or charisma leadership with the classification of elements and this ideological influence is divided into two elements: elements of idealized influence for behavior and influence with attribute, 2) inspiration motivation, 3) intellectual stimulation, and 4) individualized consideration. As for the Transactional Leadership, it is as a process that rewards leaders or punishes followers depending on the performance of the followers. Leaders have used the reinforcement process according to the situation, motivate followers to perform according to the expected level, help the followers achieve the goal, give the followers the confidence to perform the roles and see the value of the expected result which the leaders must know how the follower must do to reach the desired result. The leaders motivate the followers by linking the needs and rewards for achieving goals and most prizes are external awards Transactional Leadership consists of 1) contingent reward and 2) managed-by exception which can be divided into 2 types: active management-by-exception and passive management-by-exception.

Human Resource Management is the process of personnel management in organizations for achieving the objectives of the organizations. It includes activities such as manpower planning, recruitment and selection, training and development, compensation and benefits management, performance evaluation, good relationship maintenance between employees themselves and with the organizations as well as the health and safety of employees [6].

Employee engagement is an expression of both physical, mental and intellect towards the work, colleagues including the organizations they belong to. As a result, the organizations benefit from the productivities of employees and the employees themselves will work with pride and happiness. This research applied the concept of Schaufeli, Salanova, Gonzalez Roma and Bakker includes: 1) Vigor is as the power of work and high mental flexibility while working, 2) Dedication is as behavior showing the feeling of fullness, pride, inspiration and having a challenge in the work, and 3) Absorption in the work is a feeling of commitment focused on work[7].

According to the review of the concepts, theories, and related research, the researcher could extract variables for applying in this study. There are a total of 4 variables with interconnectedness and can present the conceptual framework as follows:
Research hypothesis

H1: Transformational Leadership has a relationship with human resource management.
H2: Transactional Leadership has a relationship with human resource management.
H3: Transformational Leadership has a relationship with employee engagement.
H4: Transactional Leadership has a relationship with employee engagement.
H5: Human resource management has a relationship with employee engagement.

4. LITERATURE REVIEWS

A. Sample, Population and Sampling Methods

The population selected in this research is employees working in each factory of the electronic industry group in the Northern Region Industrial Estate (Thailand), a total of 24,297 people. The samples were 500 employees with the position lower than the manager level from each factory of the electronic industry group in the Northern Region Industrial Estate (Thailand) [8]. This amount of samples was obtained by calculating the proportion of the population and samples of each factory according to the stratified proportion [9].

B. Research Instrument

The researcher studied and reviewed the literature and related research results in order to create a conceptual framework and guidelines for developing questionnaires to collect data from the sample by a survey research method. The research instrument was created from the study of concepts, theories, documents and research both locally and internationally. The questionnaire was divided into 3 sections with the following details: Part 1) Questionnaire about demographic data of respondents, including gender, age, work duration, status, education level, and the characteristics of work. The nature of the question will be a multiple choice questions, by choosing only one answer that is most realistic, Part 2) Measures of variables used in data collection to study the level of opinions and structural equation model (SEM) consisting of transformational leadership, transactional leadership, human resource management, and employee engagement. In addition, the researcher has adapted various measures to be adapted to suit the context of the electronics industry group in the Northern Region Industrial Estate for easier understanding. The 5-point Likert scale questionnaire [10] has 5-part questions, and Part 3) the open-ended questionnaires was for the respondents to express their opinions about the pattern, other practices affecting employee engagement.

C. Validation of the Research Instrument

The research instrument was a questionnaire with the test of validity and reliability as follows: 1) the questionnaire was tested by applying the draft questionnaire to check for content validity by presenting to 5 experts who are experts. It included checking the appropriateness of wording in research by item-objective congruence: IOC and found reliability to measure internal consistency model. Consideration of expert opinions was based on finding the consistency index. (IOC) in every question: once analyzed If there was a value between 0 and 1. The question with the IOC value from 0.50-1.00 would be selected and for the questions that had an IOC value lower than 0.50, would consider improving or may be eliminated. The discriminates validity measured whether the question should go into that group by analyzing the correct correct item-total correlation and having the correct corrected item-total correlation not less than 0.50 [11], and 2) the questionnaire was tested by checking for reliability. The researcher used the questionnaire that was created and modified and then proceeded to try out with employees in the factory that was not a sample of this research with the qualifications and work in a similar manner to the 100 samples. This method helped to validate the questions whether they can convey meaning to the needs as well as being appropriate or without any difficulty. Then, they questionnaires were tested for the reliability using the statistical package to find reliability with the criteria of Cronbach’s alpha coefficient for the acceptance criteria at alpha (α) greater than or equal to 0.70 [12]-[14].

The validation of research instrument for quality. The researcher has set the guidelines for the operation to make the results of the study to be accurate, reliable and can be found in the 3 issues as follows: 1) Data validation and accuracy with triangulation [15], 2) Verification of accuracy in summarizing and interpreting data, the researcher will proceed with processing the data obtained from the analysis of the document content and recording the results of the interview to write about the situations as in the descriptive form, and 3) validation of accuracy according to the theoretical framework, the researcher attempts to collect information in both the analysis and opinion information obtained from the questionnaire. The opinions are used to compare results and lead to improvement of conclusions with precise explanations about research results.

Research Ethics and Protection of the Rights of Informants. The researcher defended the rights of the sample group by writing a letter requesting for ethical certification and human research, proposing to the Human Ethics Research Committee, Hospital, Lamphun Province, before the research conduction.

D. Data collection

Data collection in this research the researcher has taken the following steps. Step 1) the researcher has adopted a questionnaire that has already been approved by qualified experts and then collects data with 500 samples by asking the cooperation from the Human Resource Management officers, Step 2) the researcher gathers the questionnaires back, Step 3) the researcher checks the information received and collected additional information in the
incomplete section for the complete information in the amount specified, and Step 4) the researcher analyzes the data and confirms the results with information obtained from interviews with the sample group of the electronics industry group in the Northern Region Industrial Estate, then synthesize and summarize the results.

For qualitative research, it is conducted by applying an in-depth interview model with semi-structured questions. The sample group is interviewed in order to find the structural relationship of leadership, human resource management, and employee engagement. As the data collection, the researcher contact for making appointments and interviewed with key informants, including employees of the electronics industry group in the Northern Region Industrial Estate. The samples are interviewed with in-depth interviews using the outlined interview form. The researcher will note down the information and record sounds like evidence for confirmation in order to use for detailed analysis of leadership, human resource management, and employee engagement. Each interview takes about 30-60 minutes.

E. Data analysis

Quantitative research conducts as the following steps:

Step 1) Preliminary data analysis is an analysis to show the characteristics of the data distribution of variables by using descriptive statistics such as frequency, percentage, mean and standard deviation in explanation of general characteristics of the sample group and step 2) Data analysis with structural inference statistics is to answer research objectives.

Data analysis for qualitative research will analyze from interviews and data from the audio recorder for content analysis. Then, the data will be regulated into categories in order to summarize and interpret the findings to link with the quantitative research results.

REFERENCE

The Conceptual Framework: Effect of Information Perceived, Attitude toward Using and Usage Behaviour toward firm performance of Thai entrepreneurs


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Abstract:
The objectives of this research were (1) to study the level of opinions of information perceived, attitude toward using, usage behavior, and firm performance. (2) To explore the effect of information perceived, attitude toward using, and usage behavior toward firm performance of Thai entrepreneurs. This research employed mixed methods between quantitative research and qualitative research. The sampling group was 500 entrepreneurs in Thailand. The research tools were questionnaires and in-depth interviews that developed from theory of The Technology Acceptance Model-TAM by Davis, Bagozzi and Warshaw (1989) with an analysis unit Operators in Thailand that use QR Code Payment service according to the National e-Payment policy of the Thai government. The data were analyzed by using descriptive statistics and inferential statistics with structural equation model (SEM) by Path Analysis Technique, and the results were disseminated for stakeholders' purposes to driving the National e-Payment policy of the Thai government. That cares about security Efficiency and proper care for consumers together which everyone can be a part in driving digital payment to be widely used in daily life and work. This will help reduce costs, increase efficiency and increase competitiveness in Thailand sustainably.

Keywords:
Thai e-Payment Law, QR Code Payment, Entrepreneur’s attitude toward using, TAM Theory, Firm Performance

1. INTRODUCTION
Under the dynamics of transcendence into the 21st century, the world of structural change is different from the original. As well as the age of integrated transition that causes opportunities, threats, forms, conditions, and limitations. Therefore, it is necessary in which Thailand must define the vision and strategy for national development to support the reform and development of the nation's ability to meet changes. For the economic development dimension, Thailand has crossed the Thailand 1.0 era that focuses on traditional agriculture into the Thailand 2.0 era that focuses on light industry. Before developing into the Thailand 3.0 era that focuses on complex industries. Until the end, it appears that such guidelines cannot make Thailand be able to create wealth because there are many traps such as medium income of countries trap, inequality trap or traps of imbalances, etc. These important factors led to the transformation of a new economic model in the era of Thailand 4.0 that would lead the country to escape from the traditional traps. Firstly, to encourage wealth to find a way out of the middle income country trap change through Thailand to high income countries by economic drive mechanism with innovation, wisdom, technology, and creativity by changing from "Doing a lot gets less" is "Doing little gets more". Secondly, to maintain stability and free from the disparity trap through income distribution mechanisms to local, opportunities, and wealth equally by focusing on the transformation from wealth that is concentrated to becoming wealth distributed at the local level. And lastly, creating sustainability and free from imbalance traps by creating sustainability through an environmentally friendly development mechanism changed from unbalanced development to "Balanced development" in accordance with the 20-year national strategy of Thailand that has been laid out by building strength from within the community, society and nation coupled with the connection with the world community according to the concept of "Sufficiency Economy Philosophy" [1] (Thailand 4.0 blueprint, model propelling Thailand to prosperity, stability, and sustainability).

The world of technology innovation in the digital age that plays an important role, communication devices, smart phones, the Internet are closer and more closely linked to
human daily life habits. These changes make the world today be driven by technology. Every sector therefore has to adjust quickly and around including entrepreneurs who need to develop and adapt to meet changing consumer behaviors. In 2015, the Thai government, by the Ministry of Finance, initiated and pushed the concept of National e-Payment or payment system “National Electronic Money” in order to have a standard electronic payment support system consistent with the use of technology in particular Internet and mobile phones that are expanding and the use of technology for the overall economic benefits. Moreover, on December 22, 2015, the Cabinet approved the principle of the National Electronic Payment Systems Infrastructure Development Plan and assigning relevant agencies to expedite the implementation of this strategic plan which requires the implementation of important parallel projects in the same time as (1) to support the payment of any ID (2) to focus on the expansion of the use of electronic cards (3) to implement the tax system and electronic transaction documents and (4) e-Payment projects by government agencies which have an important goal in order to increase the overall convenience, speed, efficiency, payment infrastructure, increase tax collection efficiency, low income registration, and welfare integration. Promote access to financial services and promote e-Payment in all sectors. National e-Payment, which results in the implementation of such projects, allows Thai people to know and is familiar with the word "Prompt pay" and has the opportunity to try the money transfer service through Prompt pay. This facilitates people, businesses, and government agencies to reduce cash use, reduce risks, reduce current system constraints and increase business opportunities for the private sector, entrepreneurs, and stakeholders and also publicizing knowledge to promote the use of e-Payment as well as the government sector has issued incentives to encourage the use of e-Payment instead of cash and checks.

[2] (National e-Payment Program, 2019), Financial Technology or FinTech, with an important role in supporting and promoting to develop a variety of financial innovations to help respond to the needs of users better, add convenience and speed, cheaper cost with security and risk management at an appropriate level until the Bank of Thailand has started allowing banks to open QR Code Payment services as general on 13 November 2017 [3] (Bank of Thailand News Issue No. 59/2017), which allows the QR Code Payment service to be made public. There are payment options that are convenient, fast, secure, and can be paid across the bank. The store can easily accept electronic payments, fast and low cost, especially with QR Code, can receive money from various channels directly into the account and help manage cash. Until now, transactions through the e-Payment system have been very popular with users including both small shop operators, medium, and large have turned to use QR Code Payment services more to support payment of goods and services through e-Payment channels as well. Which can be seen from the amount of electronic payment (e-payment) increased by 30-40 percent continuously since 2010-2017 [4] (Bank of Thailand, 2019).

At present, business operators play an important role in economic development in every country and with the special powers that exist in the entrepreneur's identity, enabling entrepreneurs to develop the world for continuous development included with spirit and spirit. The commitment of entrepreneurs who require situation with economic development at the grassroots level because the entrepreneurs are creator and allocate value, opportunities, and benefits for individuals, groups, organizations, and society [5],[6] (Lall, 1977, p.67)., (Wingwon, B & Pattanapho, N. 2018, p.2). For small or medium businesses, whether they are production, selling products or providing any services, the most important factors affecting the success or failure of a business are the qualifications of the entrepreneurs and individual character traits because it has a significant impact on business success [7] (Bygrave and Zacharakis, 2008, p.56). Besides, for small and medium businesses success in operations requires innovation, marketing capabilities, and competitiveness [8] (Jia-Sheng Lee, 2010, p.416-419; Shahid Qureshi, 2010, p.28-32) with this context, entrepreneurial success is a key driver of the global economy.

With the current change and competition in today's world, entrepreneurs therefore have to adjust to keep up with the changing circumstances, consumer behavior, and the digital age market, technology and innovation in order to survive and create competitive advantage (Jia-Sheng Lee, 2010, p.416) including adaptation to comply with regulations, laws, that have changed, such as the tax law, E-payment or the Revenue Code Amendment Act (Issue 48), BE 2562, have been announced in the Royal Gazette on 20 March 2019, which came into force on 21 March 2019. That is intended in practical results in accordance with the strategic plan for developing the national electronic payment system infrastructure in order to use electronic transactions to facilitate the people which include paying taxes. Therefore, the researcher wishes to study the results from the enforcement of such laws, recognition of ease of use, awareness of the benefits of use, and quality of service, system quality including the quality of information that may affect the attitudes and behaviors of new entrepreneurs who are deciding to use the service or currently using the QR Code Payment service which will link to how much of the success of the business.

2. RESEARCH OBJECTIVES

1. To study the level of opinions of information perceived, attitude toward using, usage behavior and firm performance of Thai entrepreneurs.
2. To explore the effect of information perceived, attitude toward using and usage behavior toward firm performance of Thai entrepreneurs.

3. SCOPE OF RESEARCH

The research on “Perception of information, Attitude and behavior of service users QR Code Payment that influences the performance of Thai entrepreneurs” the researcher has defined the scope into 4 areas as follows.
1. The location is the study of operators that use QR Code Payment services in Thailand.
2. The content emphasizes the study of theories, concepts, reviews of various literature related to the recognition of information, attitudes and behavior of users of QR Code Payment services that influence the performance of entrepreneurs by using The Technology Acceptance Model (TAM) by [9],[10] Davis, F. D.; Bagozzi, R. P.; Warshaw, P. R. (1989), Davis, (1989) to link the variables related to this research.
3. The population is entrepreneurs who use QR Code Payment services in Thailand.
4. The time, the researcher collected data, analyzed, and summarized the information in the amount of 10 months starting from March 2019 to December 2019.

4. LITERATURE REVIEWS

Results from the literature review can be concluded that there are 6 theories of acceptance of technology and related variables as the following details:

Technology acceptance theory is a theory developed from theoretical actions based on rationality [11] Fishbein and Ajzen (1975) who believe that any person’s actions can be predicted from Belief, Attitudes and Intention, which ultimately results in the intention that will result in that behavior and to explain or predict the behavior of users in accepting or wanting to use that information system. Later Davis (1989) have introduced technology acceptance models that describes the acceptance of individual information technology, the goal of the Technology Acceptance Model (TAM) to explain the important parameters for technology adoption that is awareness factor, Perceived Usefulness, Perceptive Ease Of Use, and Attitude towards Using.

1. Information Perceived

Recognition of information is important because current communication is an important factor of human beings in addition to the four factors that are necessary for human well-being. Although communication is not directly related to humans, like the four factors, but to acquire the four factors must rely on communication as a tool and human beings are social animals that must rely on communication as a means of living and in doing any of their activities to contact the business and to live with others in society. Communication is the basis of contact of social processes.

People who are exposed to much news would have wide ears, eyes, having knowledge and understanding in the environment and being a modern person Up-to-date information more than people who are less exposed to information usefulness [12] (Atkin, 1973). Information recognition can be classified into 4 components: e-Payment Law, Perceived usefulness. Perceived usefulness is the main factor of technology adoption theory which can be defined as level measurement of people who believe that if using a newly developed information system, the technology Information system will result in efficiency. In the work of the organization that is working is more efficient including perceived ease of use and quality of service, system quality, including the service quality of an information system. These affect the service attitude as hypotheses 1,2,3,4 as the following.

H1: E-Payment Law affects the attitude of using the service.
H2: Perceived usefulness affects the attitude of using the service.
H3: Perceived ease of use affects the attitude of using the service.
H4: Quality of service, system, and information affect the attitude of using the service.

2. Attitude toward using

Attitude towards service use is the attitude of consumers which means the point of view of one thing in the good and bad that arises from learning and awareness. Most of them are emotional feelings that result in different behaviors. Today’s marketers should avoid causing bad faith and attitudes towards products and services because it will result in customers changing to buy or use services from competitors. Providing different services is a way for customers to have an attitude or a feeling of trust in the business and tend to want to use the service continuously. For this reason, it is very important that business operators must create or improve the process of selection. For example, the characteristics of the workers must be characterized by having a service mind, understand, and recognize customer needs quickly, endure the pressure from customers and be creative in offering different products or services, as well as training, develop service and communication skills. [13] (Gáquez-Abad, J. C ., Hélène De Canniére, M. , & Martínez - López, F. J., 2011) Therefore, entrepreneurs must focus on service quality, facilitating the service users to encourage customers to have a positive attitude towards the business because it affects the service usage behavior continuously as the following hypothesis 5.

H5: The attitude of using service affects service usage behavior.

3. Usage behavior

Service behavior has changed according to social trends because customers now have a lot of demand for products / services at the same time. Therefore, business operators
who want to increase sales should design the type or content of news that is suitable for that customer group, focus on convenience fast and quality service in terms of confidence, trust, readiness to respond to customers, confidence in service, understanding and caring for users and the service provider's concrete image [14] (Parasuraman, et al., 1988: 29-30) to provide users with an awareness that exceeds expectations in order to make the user satisfied. [15] (Oliver, 1980: 460). This will bring the success of the business that will result in the behavioral intention of the service users in that business [16] (Cao and Chen, 2011: 73). However, such service and perception behavior if the user doesn't like it, it will be blamed. If the blame has not received attention or is not resolved, users will stop using that service and will not return to use that service again. But if the blame has received the attention or corrected in a timely manner that the user wants, it will result from the blame on the user became a behavioral intention by willing to use the service, suggest other people to use the service, and re-use of the service in that business [17] (Zeithaml, et al., 1996: 34-36). Finally, the result of that business has good performance or meets the stated goals as the following hypothesis 6.

H6: Service behavior affects the operation of the business

4. Firm Performance

Firm performance according to the concept of Robbins, (1990) [18] concluded that it is the sum of practicing activity in all business activities with the goal of better asset management, increase the ability to develop the value of products and services to customers as well as the development of knowledge of business organizations and while [19] Rampsey, 2008. views that performance is a way of achieving the set of requirements that arise from the use of all abilities or resources to achieve good results. In addition, the research of Damanpor, F. (1990) [20] concludes that the relationships occurring between service behavior of innovation and performance will depend on performance indicators. By focusing on the measurement of performance in finance, marketing, production, efficiency or competitiveness which the research of Hagedoorn, J., & Cloodt, M. (2003) [21] says that the measurement of innovation performance can be measured in many dimensions, such as a new patent, presentation of new products, new process, new technology, and organization of new forms depending on the adjustment of the business as well.

5. RESEARCH CONCEPT FRAMEWORK

The conceptual framework from the literature review on “Perception of information, Attitude and Behavior of Service Users QR Code Payment that Influences the Performance of Thai Entrepreneurs” concluded to be the conceptual framework of research as shown in Figure 1.

Figure 1 Conceptual framework of research

6. METHODOLOGY

This research is a mixed-methods research by integrating qualitative research using in-depth interviews and quantitative research by using a survey research methodology. The research tool is a questionnaire developed from data collection based on a literature review concerning perception information, attitude and behavior of users of QR Code Payment services that influence the performance of Thai entrepreneurs under the integration of the Technology Acceptance Model (TAM) (Davis, Bagozzi and Warshaw, 1989). The main informant is Thai entrepreneurs who use the bank's QR Code to be convenient for customers. The research can be classified as follows.

1. Quantitative research: There is a sequence of steps to develop the measure instrument, to create questionnaires, data collection, descriptive statistical processing according to the model that has been defined to find the relationship of the relevant variables and bring the results to summarize and discuss the results in an integrated way with the concept related theories and research as well as providing additional suggestions from open-ended questionnaires to categorize data. After that, qualitative research was used to compare with quantitative research once more.

2. Qualitative research using semi-structure in-depth interview created according to the literature reviewed in order to cover this research. The researcher conducted a complete examination of the data with a triangular examination [22] (Denzin, 1970) because it is a comprehensive examination method that is (1) examining the source of information is to prove that the source, all in terms of time, distance, location, and person, can prove that the information obtained is accurate or not (2) the researcher examines how each researcher will get different information by changing the observer instead of using a single researcher to constantly observe (3) the theory uses many perspectives to interpret if the researcher uses the theory that is different from the original, how much the interpretation of the data will differ.

Finally, bring the results from the Structural Equation Model to discuss the conclusion and provide additional suggestions.
7. SUMMARY AND CONCLUSIONS

The performance of the business will be successful or will use the ability to create a competitive advantage. Entrepreneurs need to choose support factors or strategies that are suitable for internal and external environments, organizations or situations that the organization is facing. As it can be seen from the efforts to determine the leadership strategy in innovation, where the operators have developed technology to be used in operations to facilitate or focus on creating an impression in the eyes of customers in order to be able to communicate that it is something that customers see that such product / service is valuable until others cannot find it, and if switching to another service, it will not be comparable to any other. So the external environment, such as law, e-payment that is constantly changing, the perception of users who access the ease of use of innovation and perceived benefits in the use of technology would bring about attitudes and behavior of using QR Code Payment services that influence the performance of Thai entrepreneurs. In order to connect to competitive advantage whether it is marketing can compete on price, lower prices than competitors and businesses can meet emergency needs in order to create satisfaction and impression to the users. Finally, it will affect the sustainability of the business.

REFERENCE

The Conceptual Framework: Effect of Leadership, Participation and Good Governance toward Smart Saving for Production Groups Efficiency in Northern Region of Thailand


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Abstract:

The purpose of this research was (1) to examine the leadership, participation, good governance and smart saving for production group's efficiency and (2) To study effect of leadership, participation and good governance toward smart saving for production group's efficiency in northern region of Thailand. The research framework was drawn from theories about resources based view and participation. This research employed mixed methods. 400 committees of saving for production groups on 17 provinces in the northern region of Thailand acted as research participants. The research tools were questionnaires and interviews. The data were analyzed using descriptive statistics, inferential statistics and path analysis, and the results were disseminated for academic and commercial purposes

Keywords:

Leadership, Participation, Good Governance, Smart Saving for Production Groups Efficiency

1. INTRODUCTION

The operation of the savings for production groups according to the guidelines of the Department of Community Development adheres to the five moral principles among group members, namely honesty, sacrifice, responsibility, sympathy, and trusts each other [1] (Department of Community Development, 2019). It is an operation using a combination of the concept of agricultural credit union and agricultural credit by using money as a tool for human development. Making people have virtue, helping, supporting, generosity, sharing with each other, creating a learning process, working together in a democratic way, accepting to hear the opinions of the majority, respecting the rules that come from mutual agreements, learning and knowing how to manage their own funds in order to allocate benefits and provide welfare for members. The community itself is the result of reducing dependence on external funding sources.

Department of Community Development Ministry of the Interior has promoted and supported the establishment of savings groups for production since 1974 by Prof. Dr. Yuwat Wuthimete, former Director-General of the Department of Community Development has started the first two experiments, namely, Khua Mung Sub-district, Saraphi District, Chiang Mai Province and at La-ngu Sub-district, La-Ngu District, Satun Province. For the production savings group in the northern region of Thailand, there are a total of 5,884 groups. There are a total of 825,848 members, classified as savings groups for production level 3 of a total of 1,770 groups. Of which the level 3 group is a group with good performance can be a model for other savings groups and implementation of guidelines can be used as a model. Therefore, the researchers are interested in studying the influence of leadership, participation process, and the use of good governance on the operational efficiency of the savings group to use the results of the study to be useful as a model to improve the integration of the management of savings groups for production in Thailand to achieve maximum efficiency. [2] (Bureau of Capital and Community Financial Organizations Development, 2019)

2. RESEARCH OBJECTIVES

1. To study the influence of leadership, participation process, team work and the use of good governance on the efficiency of the savings group for production in the northern region of Thailand.
3. RESEARCH METHODOLOGY

3.1 Scope of the Study

The research on “The influence of leadership, participation process, and the use of good governance on the efficiency of the savings group for production in the northern region of Thailand”, the researchers have defined the scope of the research into 3 areas as follows.

3.1.1 Location

The study of savings for production in the northern region of Thailand, consisting of 17 provinces including Chiang Mai, Lamphun, Lampang, Chiang Rai, Phayao, Phrae, Nan, Mae Hong Son, Uthai Thani, Phitsanulok, Tak, Phetchabun, Kamphaeng Phet, Nakhon Sawan, Phichit, Uttaradit and Sukhothai.

3.1.2 Content

For this research, the researchers studied theories, concepts, reviews of various literatures related to leadership issues, participation process, and the use of good governance in linking variables related to operational efficiency.

3.1.3 Time

The researcher has set a period of 2 years for collecting data, analyzing, and summarizing informational data. Starting from August 2019 to September 2021, Which will be separated into 2 periods as follows:
1. August 2019 to September 2020 is the period of quantitative research by collecting data from 400 savings groups for production of 17 provinces.
2. October 2020 to December 2021 is a qualitative research period of data collection by in-depth interview method with 17 representative of the Provincial Savings Group Production Committee.

3.2 Demographics and sample groups

3.2.1 Population

The researcher has determined the population group that is the savings group committee for production in the northern region, consisting of 17 provinces, namely Chiang Mai, Lamphun, Lampang, Chiang Rai, Phayao, Phrae, Nan, Mae Hong Son, Uthai Thani, Phitsanulok, Tak, Phetchabun, Kamphaeng Phet, Nakhon Sawan, Phichit, Uttaradit and Sukhothai totally 400 groups.

3.2.2 Data collection methods

This research collects data from representatives of the level 3 savings group committee for production in the northern region of 17 provinces by using questionnaires as a tool. The researchers collect data by using coordination with the Department of Community Development and the district community development office in the district. The qualitative data collection is used the group discussion of one group each province.

4. LITERATURE REVIEWS

Leadership

The study of leadership has received a lot of attention over the years, with new research. Leadership is a much-studied topic, and yet, the topic still attracts researchers. As an essential factor in every organization [3] (Putra, ED., Cho, S., 2019) Many studies about leadership will affect the ability to perform duties of followers from research [4] (Salas-Vallina A., Simone C., Fernández-Guerrero R., 2018). The results showed that good leaders who were able to inspire work for the followers, which would bring happiness to work. When people are happy with work the results of the work that is done will come out in a good way. leading by example leads to a significant increase in the overall contribution and the group’s welfare, as compared to the situation without leadership. [5] (Bahbouhi, JE., Moussa, N., 2019) transformational leadership style can facilitate to build trust and individual identification [6] (Xie, Y., Xue, W., Li, L., Wang, A., Li, X., 2018) leaders will engender more positive effects on follower performance when they enact visionary and empowering leadership behaviors simultaneously and adopt a “both-and” approach, rather than focus on one of these behaviors without the other. [7] (Kearney, E., Shemla, M., Knippenberg, DV., Scholz, FA., 2019) In addition, leadership is the relationship between the desire to lead and the person who chooses to be a follower. The success in leadership is an important mechanism that makes people work well with good leadership recognized as an important element in driving the success of the organization. Besides, effective leadership is the key to success or failure of an organization when leaders can influence the group in the implementation of the role which is important and influences the results of the organization. Therefore, it affects the operational efficiency of the organization by measuring results from the actions of leaders [8] (Madanchain, M., Taherdoost, H., 2019).

Participation

Concept of citizen participation is one of important criteria for the collaborative management and social science theorists have emphasized on citizen participation as the main representative of the democratic systems legitimacy. [9] (Momeni, M., Shamskooshki, H., Javadian, M., 2011) The use of the participation process in work has been widely recognized as having a positive impact on the organization's decision-making process. This results in a good way for that organization according to the research of [10] (Ernst, A., 2019), social capital and citizen participation therefore can improve public sector accountability and performance. [11] (Suebvises, P., 2018)
participatory processes are important and can enhance the decision-making process, resulting in success. Moreover, participation and involvement in public hearings is an important element of democratic decision making. In addition, in the development of democracy, public participation makes decisions more effective [12] (Mukhtarow, H., Dieperink, C., Driessen P., 2018). Citizen participation can make decisions more knowledgeable and legitimate. Besides possible substantive benefits, [13] (Baum, HS., 2015)

**Teamwork**

According to Torabi's concept, there is a concept that teamwork the group is the foundation of improvement in many areas of the operational efficiency of the organization. One way to solve the problem of the organization is to take advantage of teamwork and cooperation among people in the organization in making decisions which will lead to increased efficiency of the agency. Therefore, the organization must pay attention to team building and group work to take advantage of the ability of employees more efficiently [14] (Torabi, MHR., 2016). In addition, according to Hanaysha's concept, there is a concept that building engagement with the organization among employees is one of the key factors in the performance of the organization because the employees are bound able to drive the organization to the results that are beneficial to the organization's operations. This teamwork has a positive effect on organizational affiliations and statistical significance [15] (Hanaysha, J., 2016).

**Good governance principles of good governance**

One of the main tasks of the Office of the Public Sector Development Commission is to encourage the Thai government system to adopt good governance principles used in government administration for the benefit of the nation and the people according to the intention of Section 31 of the State Administration Act, B.E 2545 and the Royal Decree on Good Governance and Regulations for Good Governance, B.E 2546. Good Governance Principles of Good Governance consist of 10 main principles, including Responsiveness, Effectiveness, Efficiency / Value for money, Equity, Consensus Oriented, Accountability, Transparency, Decentralization, Participation, and Rule of Law. [16] (Ilaw, 2017)

**5. RESEARCH CONCEPT FRAMEWORK**

The research concept framework on “The Influence of Leadership, Participation Process, Teamwork and the Use of Good Governance on the Efficiency of the Operation of the Savings Group for Production in the Northern Region of Thailand” as shown in Illustration 1.

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**Illustration 1: Model of Influence of Leadership Participation Process Teamwork and the Use of Good Governance on the Efficiency of the Savings Group for Production in the Northern Region of Thailand**

**6. RESEARCH INSTRUMENT**

The implementation of this research is a mixed-methods research by integrating between qualitative research using in-depth interviews arranging a small group discussion forum, as for quantitative research using questionnaires. Therefore, the research is classified into 2 types.

1. **Quantitative research**: There is a sequence of steps to develop the measurement, distributed questionnaires, descriptive statistical processing according to the Structural Equation Model (SEM) and brought the results to summarize and discuss as well as providing additional suggestions from data research obtained from the questionnaire which has a closed end style. After that, qualitative research was used to compare with quantitative research once more.

2. **Qualitative research** used semi-structure in-depth interview created according to the literature reviewed to cover research on the influence of leadership, participation process, and the use of good governance on the efficiency of the savings group for production in the northern region of Thailand. The researcher conducted a complete examination of the data with a triangulation [17] (Denzin, 1970) and using group discussion. Finally, the results from the structural equation analysis were discussed, summarized and gave additional suggestions from research as illustrated in Illustration 1.

**7. SUMMARY AND CONCLUSIONS**

Efficient implementation of savings groups will happen; it must rely on good governance which is a mechanism to supervise operations through the participation of all parties involved and good teamwork. In particular, the Executive Committee has established guidelines for operations, formulating strategies, indicators, and controlling operations. This is to reinforce the group members to participate in the comments in the planning of operations to control the operation and the sharing of benefits is fair.
Therefore, these savings groups will integrate resources in the area to create added value in order to create jobs, generate income, and strengthen the foundation economy for further sustainability.

**REFERENCE**


The Conceptual Frame Work: The Roles of Information Sharing in the Expand Relationship Between Social Capital and The Operational Performance of Innovation and the OTOP Inno-life Tourism Base Community in Upper North, Thailand

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Abstract:
The objectives of the study are (1) to study the factors of the Relationship Between Social Capital and The Operational Performance of Innovation and the OTOP Nawatwittith Tourism Entrepreneurs Community in Upper North, Thailand and (2) to study the roles of the Relationship Between Social Capital and The Operational Performance of Innovation and the OTOP Nawatwittith Tourism Entrepreneurs Community in Upper North, Thailand. The study has been used the mixed method research which are quantitative research and qualitative research. An in-depth interview and a small focus group discussion have been conducted for quantitative findings. Also, A survey questionnaire has been confirmed the qualitative information which was based on the theory of Social Capital. The target population were 284 the OTOP Inno-life Tourism Base Community Entrepreneurs in Chian Mai, Lampang, Lamphun and Mae Hong Son. In addition, the study has been analyzed by descriptive statistics and Structural Equation Modeling (SEM) approach. The data was also analyzed by AMOS Program to reveal the findings, discussions and recommendations. Finally, the research will be useful for the further studies on the development of economic systems in local areas.

Keywords:
Information Sharing, Innovation, Social Capital, The operational Performance, An OTOP Inno-life Tourism Base Community

1. INTRODUCTION
Since Thailand’s Economic, consumer behaviors and Technological awareness have been changing continuously at the present days, connecting with the Strategy III of The 12th National Economic and Social Development Plan (2017-2021) says that Economic Strengthening and Sustainable Competition, There is a guideline to strengthen the business competitiveness of the service sector. Moreover, the Strategy IV of the Ministry of Interior’s mission also emphasizes that the participation is not only ways to strengthen the community and foundation economy but the King Rama IX’s philosophy of sufficiency economy is also very crucial for promoting the learning process and public participation to developing community economic foundation to be stable and it helps to enhance the capacity and strength of the community [1] (Office of the National Economic and Social Development Board, 2016)

In 2016, The Council of Ministers of Thailand had approved and granted the 3 guidelines to manage the additional annual budget of 15 million Baht for strengthening the economic and being sustainable competition. The first guideline was to promote the Foundation of Economic Development, to raise welfare levels and to develop potential and to build career opportunities and employment. Second, the guideline was to develop and support through community participation such as promoting people to access community funding, career development, income generation, and local tourism. The last, it was about to reform agricultural systems with creating value agricultural products and promote modern
marketing. Therefore, these three guidelines were not only the ways to create career and income opportunities for the local communities through the participation of all the sectors and the support of community enterprises but they also promoted tourism in the local communities as well. [2] (the OTOP Nawat Withee Tourism Project, 2018)

Nowadays, the current Thailand government had a successful policy to reduce social inequalities around the country by focusing on income generation, prosperity, and economic growth through supporting the participation of all the sectors and collaboration of people in communities. The One Tambon One Product or OTOP had been a worldwide project since 2004 and had also known as an example of success by working with the collaboration of various sectors to enhance the OTOP products and develop marketing channels that could reach the right target both Thai and international customers. However, OTOP Products still had several problems and obstacles in some cases. First, Most of OTOP entrepreneurs were not able to compete about the higher prices with other entrepreneurs in the marketing because of the quality and standards of their products; Some OTOP products have a low standard, they cause consumers to lack of confidence in their products and some product is lack of appropriate innovation for productions and they cannot own their brands.

In addition, the works of the OTOP group are uncoordinated, no meeting to share the idea, no meeting to exchange ideas and experiences and lacking marketing knowledge, planning, and no integration product development. Moreover, the distinctive of the community, cultural, characteristics of dress, lifestyle are not integrated with work and product identity. Therefore, these problems can cause unsuccessful product manufacturing.

Finally, according to the previous several problems, the researcher has the several ideas and will study how to strengthen the economic and be sustainable competition in communities which were based on the conception OTOP Inno-life Tourism Base Community in 1) Identity local products 2) Tourist attraction Community and 3) High Standard Thai Homestay.

II. RESEARCH OBJECTIVES

1. To study the factors of the Relationship Between Social Capital and The Operational Performance of Innovation and the OTOP Inno-life Tourism Base Community in Upper North, Thailand.

2. To study the roles of the Relationship Between Social Capital and The Operational Performance of Innovation and the OTOP Inno-life Tourism Base Community in Upper North, Thailand.

III. SCOPE OF RESEARCH

The researcher has defined the research scope and limitations into 4 areas; The researcher studied and did research in 8 provinces the OTOP Inno-life Tourism Base Community in Upper North, Thailand they are Lampang, Lamphun, Chiang Mai, Chiang Rai, Phayao, Phrae, Nan and Mae Hong Son. The researcher studied the theories, concepts, reviews of various literature related to the role of information sharing, which expanded the relationship between social capital and performance and innovation and performance of Innovation and the OTOP Inno-life Tourism Base Community in Upper North, Thailand. The researcher has assigned a population group which was the entrepreneurs in Chiang Mai, Lamphun, Lampang, and Mae Hong Son. The researcher has set, collected data, analyzed, summarized and informative data in one year which has started on January to December 2019.

IV. LITERATURE REVIEWS

Research The role of information sharing that extends the relationship between social capital and performance and innovation and performance of community tourism operators Thailand, the researcher has reviewed the concept Related theories and research as follows.

1. Social capital concepts

Social capital concepts is a popular concept both at the organization and society level Social capital involves networks, norms, trust and mutual understanding. Which relates to the number of human networks, communities By Putnam[3] (Putnam 1995: 67) has defined social capital as a characteristic of social organizations, including networks, norms and social trust that contribute to coordination and cooperation for benefits that each other In addition, according to the concept of Adler and Kwon [4] (Adler & Kwon, 2002: 1) describe social capital as a kind of hospitality. Caused by the social relationship structure And is often used to make various operations easier

2. Innovation

Innovation based on the concept of Fagerberg [5] (Fagerberg, 2004) has tried to classify the differences between innovations. (Innovation) with invention by specifying that the invention of new things is an initiative in creating new products and processes, but innovation has the characteristics of a continuous process in creating new products and processes. Any In addition, the Dobni concept [6] (Dobni, 2006: 171) states that taking into account the organizational environment (Context) is one factor that contributes to the innovation of the organization, namely Innovation can be achieved if the organization recognizes the importance of innovation as well as the strategies and operational plans of the organization must be coordinated and support the innovation of the organization.
3. Performance
Performance According to the concept of Armstrong. [7] (Armstrong, 2006). Performance is the result of continuous operations. Relating to everyone in the organization And is considered the final result of the operation and the concept of Raymond et al., [8] (Raymond et al., 2010) evaluated the performance of the operation which demonstrates the relevance of innovation in accordance with the study of Farhad et al., [9] (Farhad et al., 2011) Found that innovation and knowledge transfer were related to organizational performance

4. Information sharing
Information sharing In accordance with Marquardt's concept [10] (Marquard, 1996), it is said that the application of technology is a tool to help promote knowledge dissemination in order to promote learning in the organization and to help facilitate and easy to manage knowledge and promote Learning in the organization to be thoroughly comprehensive and fast, as Watkins and Marsick [11] (Watkins and Marsick, 1993) has a consistent concept. Seeking and applying the best technology leads to the best learning. Organizations that lack information technology or lack the ability to use technology Will be disadvantaged in the pursuit of storage and knowledge transfer

IV. RESEARCH CONCEPT FRAMEWORK
The conceptual framework from the literature review on “The Roles of Information Sharing in the Expand Relationship Between Social Capital and The Operational Performance of Innovation and the OTOP Inno-life Tourism Base Community in Upper North, Thailand.” concluded to be the conceptual framework of research as shown in Figure 1.

VI. METHODOLOGY
The population of this research was 1400 Entrepreneurs OTOP Inno-life Tourism Base Community in the northern part of Thailand by using a purposive sampling, consisting of 4 provinces. They 420 Chiang Mai people, 300 Lampang people, 330 Lamphun people and 350 Mae Hong Son people. [2] (The OTOP Inno-life Tourism Base Community Project, 2018). According to the criteria used by the researcher to determine the sample size with the power of testing by the G-Star Power program. [12]

VII. SUMMARY AND CONCLUSIONS
Research on the role of information sharing that extends the relationship between social capital And performance with innovation and performance of community operators, the OTOP Inno-life Tourism Base Community in Upper North, Thailand. Is very important Because it is the age of information Information that must be used in planning Decide on work To create competitiveness in all major industries (Small / medium and large) that is consistent with the capabilities of Thailand and the needs of the world market, with the mechanism the OTOP Inno-life Tourism Base Community as the power to drive the economy with innovation or information Under change management in the creative economy world, with the goal to create value creation from applying knowledge and technology to be an important cost leading to the creation of intellectual property Intelligence and technology to create image production Also resulting in progress in both the economic and social sectors of the country To enhance the competitiveness of community organizations Through the availability of participation in all sectors Whether social capital, raw materials, labor and technology to make a difference, branding by introducing a story of wisdom, way of life, and a variety of ways to work with science knowledge Technology and innovation to create new products that are unique, unique and have higher value For the tourism community to OTOP the way to the north of Thailand to survive sustainably

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