

Effect of knowledge management on competitive advantage of public bus, taxi cooperatives in Thailand

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Abstract

Competitive advantage is the basic tool for the success of companies. This competitive advantage gives them leverage to companies on their competitors. Competitive advantage is the most favorable and profitable situation for companies. The objective of this study is to analyze the impact of knowledge management (tacit and explicit) on competitive advantage with the moderation of knowledge mapping. The scope of this study are employees working in public transport like buses and taxi cooperatives of Thailand. Cluster and simple random sampling techniques are used. Data is gathered through questionnaires by the e-mail survey method. Author drop questionnaire on respondents' mail address and collect when it filled. When results were generated from statistical tools, it revealed that knowledge management (tacit and explicit) has a positive significant impact on competitive advantage. Knowledge mapping moderates the relationship between knowledge management (tacit and explicit) and competitive advantage. This study suggested to policymakers that the public transport system of Thailand or other related companies gain their competitive advantage by giving focus on the management of knowledge like tacit and explicit knowledge.

Keywords: Knowledge management, tacit knowledge, explicit knowledge, competitive advantage

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. Introduction

Competitive advantage gives leverage to business over their competitors. It means a company, or a business produce more goods and products than their competitors and earn more profit. This position of competitive advantage is more gainful and more advantageous. All companies want to take advantage of their competitors but company or organization which used their resources like assets and human resource in the best way only those gain this competitive edge. One basic asset of companies is their knowledge. Knowledge management is considered a vital source for gaining a competitive edge. Knowledge has two basic parts like tacit knowledge and explicit knowledge. Tacit knowledge is implicit knowledge which is difficult to transfer to others or store for later use. Explicit or expressive knowledge is the type of knowledge that is easily

stores, transmitted, and assessed for later purposes (Fernandez & Shaw, 2020).

Public bus or taxi cooperatives are types of public transport. Public transport is transport which is used for the general public. Public transport cooperatives like buses and taxis are the most important sector of any government or economy. This public transport system, taxi, or bus cooperatives highly contribute to GDP as well as reduce the consumption of oil. Public taxis and buses help make the environment healthier in a way that improves air quality and is used in emergency and risk situations. In Thailand, the public transport system or public buses or taxis are the most used way of transportation. Like other countries or economies, Thailand's local or public transport system also very useful and supported by the government (Bailey & Schurz, 2020).

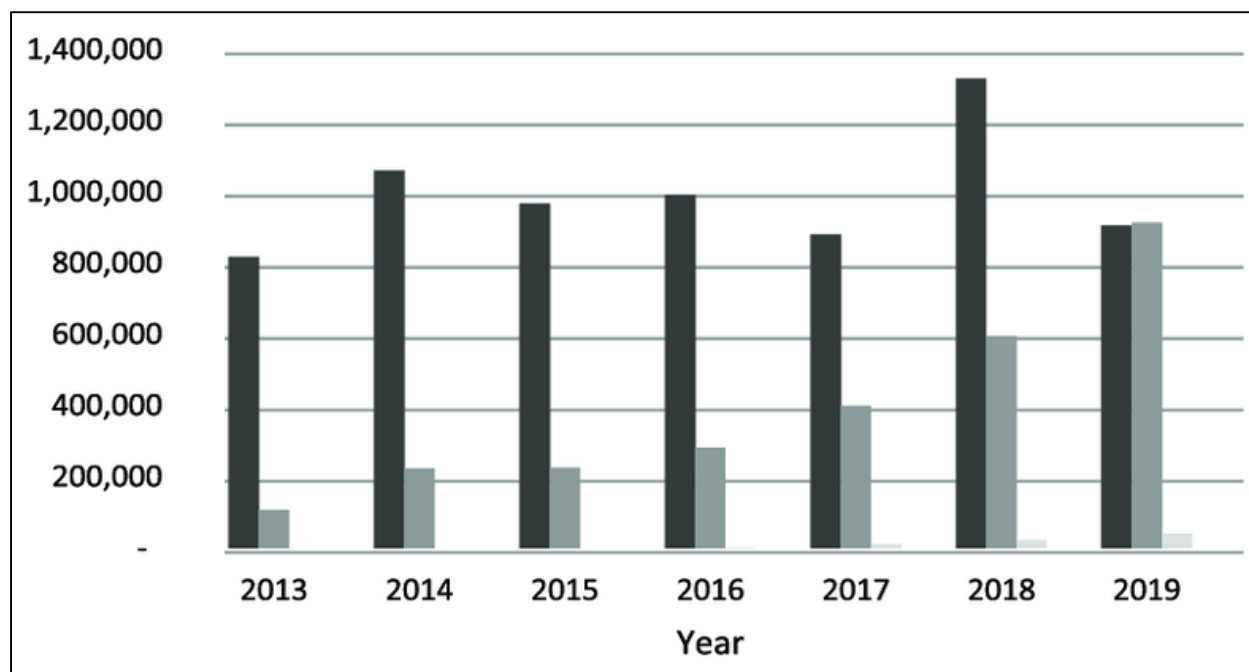


Figure 1. Public taxi cooperatives View (2020)

Source: Statista 2020

Thai public transport systems like public buses and public taxi cooperatives facing many challenges as well. The performance of this sector gradually down as showed in Figure 1. Many challenges like low performance, high competition between the public and private transport systems. Competition between companies made their employees less cooperatives, more selfish, and reduce the contribution in form of goods and services for the general public. Competition among different private and public transport system, buses or taxi cooperatives, cause the burden on public transport systems for creating the competitive edge or advantage on private systems. For creating a competitive edge, knowledge management is a necessary and important tool. The use of tacit and explicit knowledge creates a competitive advantage or helpful in taking the edge of competitors (Crawford, Butler-Henderson, Rudolph, & Glowatz, 2020).

Literature argued that knowledge management is a key and helpful tool in increasing the performance of companies. The use of tacit and explicit knowledge in a manageable way causes the employees' cooperation, reduce selfishness. Knowledge management is the tool considered as the key factor for employees' satisfaction, commitment, and engagement. These positive factors that caused by knowledge

management tools like tacit and explicit knowledge help in increasing the performance of companies (Hodges, Moore, Lockee, Trust, & Bond, 2020). For this purpose, this study wants to analyze the impact of knowledge management on competitive advantage in public buses or taxi cooperatives of Thailand. Figure 2 showed the link between variables like knowledge management (explicit and tacit) as an independent, competitive advantage as dependent and knowledge mapping as moderator.

This study is conducted to find out the impact of knowledge management (explicit and tacit) on competitive advantage by the moderation of knowledge mapping in public buses, or taxi cooperatives of Thailand. Limited studies are conducted on the impact of knowledge management (explicit and tacit) on competitive advantage (Iivari, Sharma, & Ventä-Olkkonen, 2020). Various studies that are conducted on the effect of knowledge management is not conducted on the employees working in public buses or taxi cooperatives. Various studies that are conducted on the employees working in public buses or taxi cooperatives have not examined the impact of knowledge management on competitive advantage (Pather et al., 2020). That's why this study fulfilled the gap which is present in the previous literature.

The objective of this study is to examine the impact of knowledge management on competitive advantage with the moderation of knowledge mapping among employees working in public transport of Thailand like buses or taxi cooperatives. The gap is present in previous literature that discussed earlier, this gap is full filled by conducting this study. This contribution in previous literature is the theoretical contribution of this study in previous literature. The practical contribution of this study has a suggestion for policymakers of public transport systems like buses and taxi cooperatives that they can take a competitive edge on their competitors and reduce selfishness from their employees and increase their cooperation. By taking a competitive edge or advantage on competitors give help to work properly for the benefit of the general public.

2. Literature review

Every organization has a system of information to communicate and deliver the right knowledge at the right place at the right time. It is very important to make a smooth flow of information to accomplish the tasks. Knowledge management is the process of managing this information. It starts from the creation of information than sharing, using, and managing the information and knowledge according to the requirement of the organization. It is equally important for all types of organizations. There have been many studies conducted on different sectors in different countries. Knowledge management has literature for many years (Donitsa-Schmidt & Ramot, 2020). The focus of the current study is to contribute to the literature with tacit and explicit both types of knowledge which may help to improve the competitive advantage of the corporations. Public sector bus services are the gap for the study. This sector is beneficial for the economy.

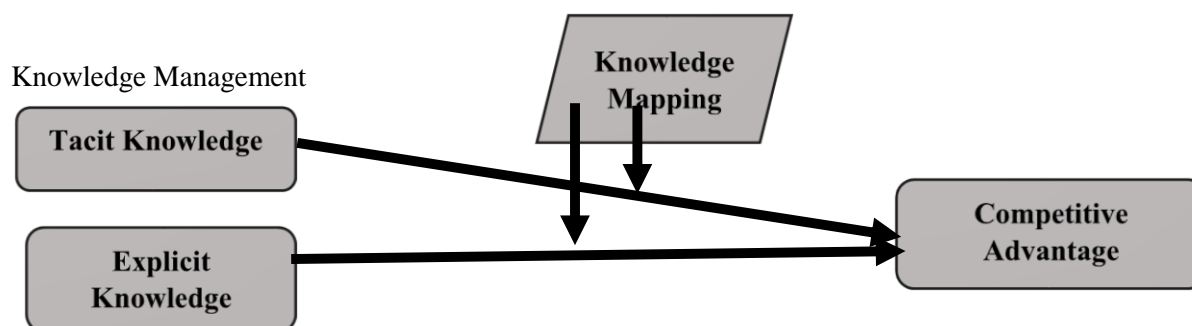


Figure 2. Theoretical framework of the study shows the relationship between Knowledge management, tacit knowledge, explicit knowledge, knowledge management, and competitive advantage

2.1 Tacit Knowledge and Competitive Advantage

There are many sources of knowledge generation. Knowledge gained from the experiences, observations, and environment as personal happenings or happens to others. This type of knowledge is learned or earned. It is not taken from the books and every time may differ from individual to individual about the same things. Competitive advantage is to have the skills or resources which the competitor doesn't have. Tacit knowledge can be improved by inducing the human resource of good

exposure to the environment. These types of employees are considered as assets of the organization. They perform well under the pressure and complex situation and know to handle the situation due to their tacit knowledge. This type of advantage can improve the efficiency of the firm. Conflicts can also be decreased. Organizations having more assets of tacit knowledge can perform better than the other firms of the market (Melnick et al., 2020). From the above discussion and scenario, it can be assumed as:

H1: Tacit knowledge has a positive significant impact on competitive advantage.

2.2 Explicit Knowledge and Competitive Advantage

Literature are documented that knowledge available in the form of books and save in written form is considered as explicit knowledge. It is beyond experience and available to every person in the same way. One may have a different understanding of the knowledge but available to everyone in the same way. This the transferable to others. Everyone uses the knowledge as per requirements. Now maximum of the knowledge is documented even the true observations and experiences are also documented after verification from different experts. Rules and regulation, SOPs of organization, policies of the management, and other legal documents are a form of the explicit knowledge which are base of any organization. One organization that is properly documented and having a policy manual can solve issues easily. This type of organization follows the rules to put the management on ease. Organization managing well the information is ranked high then the other with low knowledge management skills. The current study is focusing to check the impact of explicit knowledge on the competitiveness of the firms (Chick et al., 2020). There have been many studies conducted on the relevant fields but none of the research has taken the public bus as a sample of the study. It is being done to improve the transport of the public sector. From the discussion, we can assume that:

H2: Explicit knowledge has a positive significant impact on competitive advantage.

2.3 Knowledge Management, Knowledge Mapping, and Competitive Advantage

Knowledge mapping is a tool used for knowledge management. It is considered as the most powerful approach. A process in which stakeholders can pinpoint the creation of, flow, and implication of knowledge. There have been many studies conducted on knowledge management. Some studies are conducted on the field of the service sector other or the manufacturing. Developing countries have their focus on the latest knowledge mapping of organizations. KM sure has worked on the brief and mapping of the knowledge. There have been

introduced many comprehensive knowledge mapping techniques. In a study conducted in China, it is concluded that organizations focused on knowledge management at convenient to operate. Knowledge sharing is appropriate and easy. In another, on knowledge mapping and information availability, it is suggested that information flow smoothly when knowledge mapping is applicable. When there is a smooth procedure for informing employees and all other management feels easy to work. It gives mental satisfaction which helps to improve the performance of employees and organizations. It may give a competitive edge to the organization (Hollander & Carr, 2020). On the base of the above discussion, it could be assumed that:

H3: Knowledge mapping has a significant impact on competitive advantage.

In most of the countries, bus transport dominates transportation means. Low-speed transport has been low-speed rail travel to urban and rural areas. For short trips, motorbikes are now becoming common. The transport network in Thailand is quite dense and can take you almost anywhere in the country at least by bus. The bus is the most popular mean of transport and the most used by Thai people. In such a country, transportation plays an important role in the economy of the country. The application of knowledge management is also valuable in this type of organization. Previous studies have been conducted on other organizational sectors and results have shown a positive impact on the process. Knowledge mapping applies to all types of organizations. When the creation of knowledge is pointed or flow is convenient it helps to make the management strong (Desai et al., 2020). From the above discussion, a hypothesis could be developed as:

H4: Knowledge mapping moderates the relationship between tacit knowledge and competitive advantage.

To get sustainable competitive advantage, the significant role of knowledge management has been explored. Applying knowledge management has improve the competency of firms. The importance of intangible assets is based on the soft skills and management of the company. KM helps a lot with the development of such skills. It has been observed that the progress of firms relies on the knowledge of human capital. Explicit knowledge is documented in the form of literature and available to everyone. It is

transferable for the sake of implication. This knowledge is visualized by knowledge mapping techniques. One dimension of the KM is explicit knowledge. Some scholars have mentioned the different factors for the suitability of explicit knowledge. Few types of research have also indicated that knowledge that is explicit or implicit has a significant role in the organization's importance. The firm makes its strategies strong on the base of this knowledge. Many scholars have worked on knowledge management, but the focus of the current study is checked impact on the competitive advantage for the public bus sector. Knowledge mapping here is being taken as the role of the mediator between explicit knowledge and competitive advantage of firms (Christensen, Dube, Haushofer, Siddiqi, & Voors, 2020). A hypothesis can be designed as given to test the assumed relation of variables.

H5: Knowledge mapping moderates the relationship between explicit knowledge and competitive advantage.

3. Research Methodology

In research methodology tools and techniques are discussed which are adopted during the research. Design of the research use to describe in this part how the research was conducted. Population and sample of research, collection of data is also mentioned here.

4. Data Analysis

Table 1. Data Statistics

	No.	Missing	Mean	Median	Min	Max	SD	Kurtosis	Skewness
TK1	1	0	2.407	1	1	5	0.651	2.891	2.257
TK2	2	0	2.714	2	1	4	0.573	1.681	0.503
TK3	3	0	2.726	2	1	4	0.611	1.534	1.455
TK4	4	0	1.701	2	1	4	0.633	-0.169	0.443
TK5	5	0	2.025	2	1	4	0.663	-0.464	0.059
EKN1	6	0	2.929	2	1	4	0.675	-0.244	0.249
EKN2	7	0	2.938	2	1	4	0.618	0.008	1.146
EKN3	8	0	2.402	2	1	5	0.998	-2.717	0.158
EKN4	9	0	2.241	2	1	5	0.893	-0.584	0.211
KNM1	10	0	2.162	2	1	4	0.875	-0.751	0.238
KNM2	11	0	2.108	2	1	5	0.848	-0.231	1.409
KNM3	12	0	2.311	2	1	5	1.03	-0.874	0.287
KNM4	13	0	2.033	2	1	5	0.761	1.306	0.738

The current study is quantitative which means responses of the respondents were collected on a designed Likert scale. A questionnaire was designed to measure the impact of the effect of Knowledge management on the competitive advantage of a public bus. This study is based on the transport sector of Thailand, the population of the study is Taxi corporations.

Cluster and simple random sampling are a simple technique used to choose the sample out of the population. It is very simple and convenient. Respondents also participate easily because this technique has a large scope. It is used most of the time when there is a wide range of population is included for research. The questionnaire was adapted for the data collection. It consists of a 7-point Likert scale. Items of the questionnaire were collected from the previous related researches. The questionnaire was distributed to the respondents via email. The statement of purpose and affidavit was also attached to the paper to provide a sense of security to the respondents. It was informed to every participant that data will be kept secure and confidential. Participants were given time to fulfill the data. After their response data was gathered to analyze. 256 responses were received. Out of the total responses of 250 were used for analysis. For a quantitative study, these are an excellent number of responses to analyze the collected data. Additional and incomplete responses were dropped.

KNM5	14	0	2.046	2	1	5	0.683	1.098	0.492
CA1	15	0	2.373	2	1	5	0.831	-2.366	1.037
CA2	16	0	2.224	2	1	5	0.874	-0.012	0.336
CA3	17	0	2.116	2	1	5	0.714	0.116	0.17
CA4	18	0	2.158	2	1	5	0.784	1.6	0.755
CA5	19	0	2.224	2	1	5	0.762	1.388	0.729
CA6	20	0	2.149	2	1	5	0.836	-0.365	0.268
CA7	21	0	2.195	2	1	5	0.859	-0.316	0.205

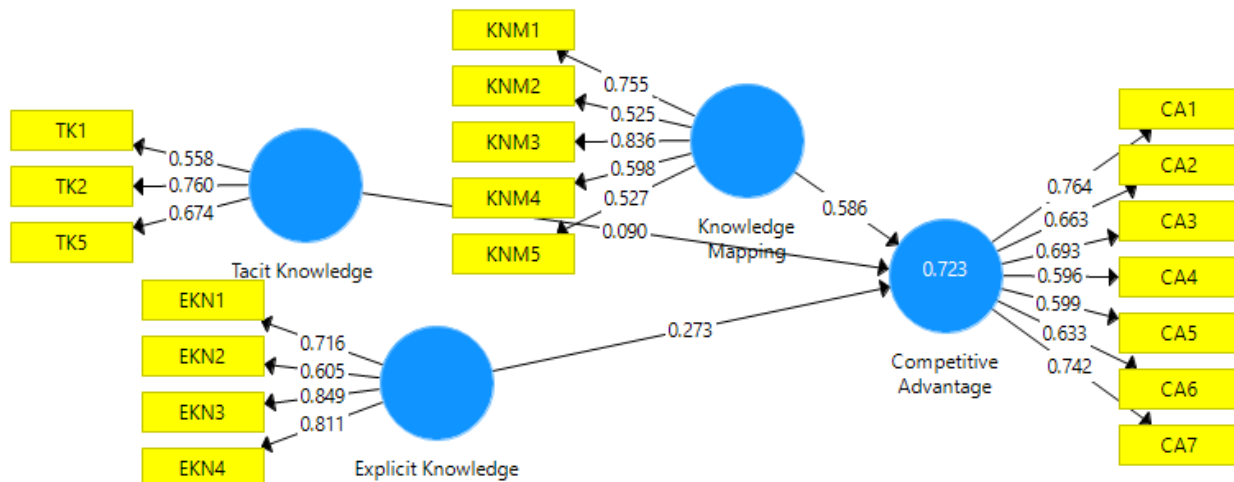


Figure 3. Measurement Model

Figure 3 (measurement model assessment) and Tables 2,3 and 4 showed the values of the factor loading, value of alpha, composite readability, average variance extracted (AVE) (Naveed, Hameed, Albassami, & Moshfegyan, 2019), and value of AVE square root. These all values are shown the reliability

and validity of data for variables like (knowledge management (tacit and explicit knowledge) and Knowledge mapping). Values showed that the data is reliable and valid. Reliability and validity checked for testing the normality. Normality of data is necessary for further analysis.

Table 2. Factor Loadings

	Competitive Advantage	Explicit Knowledge	Knowledge Mapping	Tacit Knowledge
CA1	0.764			
CA2	0.663			
CA3	0.693			
CA4	0.596			
CA5	0.599			
CA6	0.633			
CA7	0.742			
EKN1		0.716		
EKN2		0.605		
EKN3		0.849		
EKN4		0.811		

KNM1	0.755
KNM2	0.525
KNM3	0.836
KNM4	0.598
KNM5	0.527
TK1	0.558
TK2	0.76
TK5	0.674

Table 3. Reliability and Convergent Validity

	Alpha	rho_A	CR	(AVE)
Competitive Advantage	0.798	0.806	0.852	0.553
Explicit Knowledge	0.743	0.781	0.836	0.564
Knowledge Mapping	0.764	0.704	0.788	0.536
Tacit Knowledge	0.79	0.796	0.705	0.548

Table 4. AVE Square Root

	Competitive Advantage	Explicit Knowledge	Knowledge Mapping	Tacit Knowledge
Competitive Advantage	0.873			
Explicit Knowledge	0.716	0.751		
Knowledge Mapping	0.818	0.677	0.66	
Tacit Knowledge	0.543	0.521	0.532	0.669

Figure 4 (structural model assessment) and Table 5 represent the direct impact of knowledge management (tacit and explicit), knowledge mapping, and competitive advantage. T value of knowledge management (tacit and explicit knowledge) is (4.908, 1.993) respectively which means the significant

impact is present in between knowledge management and competitive advantage. Knowledge mapping also has a significant impact on competitive advantage with t value 10.358. Beta values showed intensity. All relations re positive because beta values are positive.

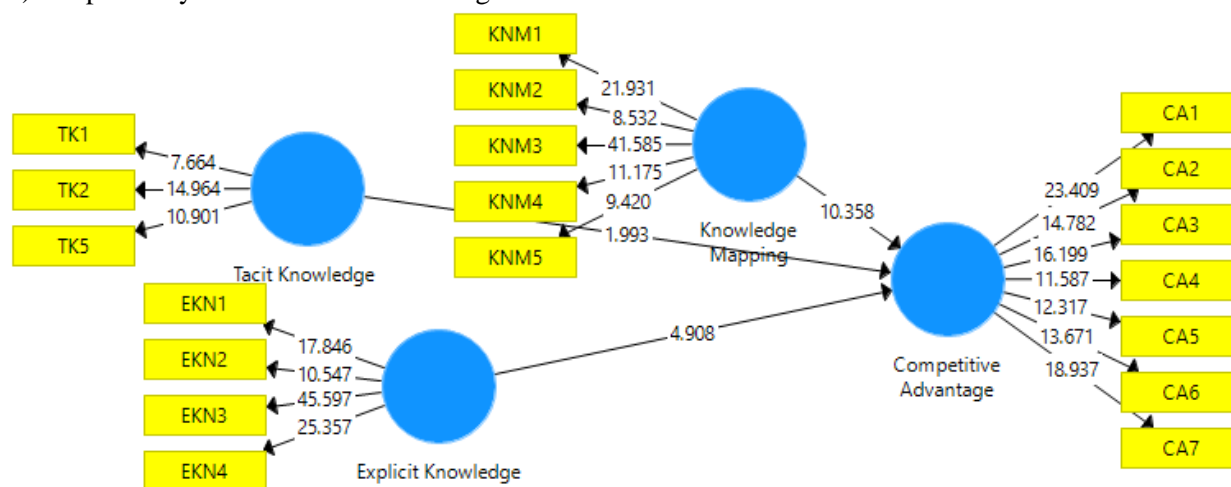


Figure 4. Structural Model

Table 5. Direct Effect Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Explicit Knowledge -> Competitive Advantage	0.273	0.271	0.056	4.908	0
Knowledge Mapping -> Competitive Advantage	0.586	0.586	0.057	10.358	0
Tacit Knowledge -> Competitive Advantage	0.09	0.096	0.045	1.993	0.047

Figure 5 is the structural model assessment and Table 6 which depicts the value of indirect effect (moderation) of knowledge mapping. This relation is analyzed by the t-value. T value (2.802, 3.99) is for knowledge mapping and knowledge management and

competitive advantage. Values depict the moderation of knowledge mapping between knowledge management (tacit and explicit) and competitive advantage.

Table 6. Moderation Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Moderating Effect 1 -> Competitive Advantage	0.045	0.047	0.016	2.802	0.004
Moderating Effect 2 -> Competitive Advantage	0.08	0.073	0.02	3.99	0

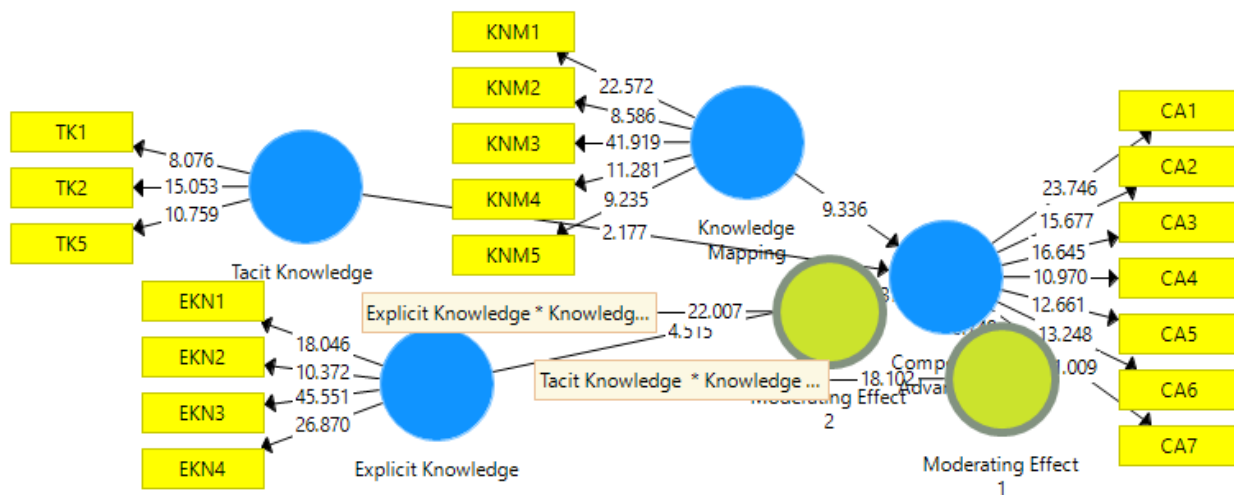


Figure 5. Moderation effect

The cumulative impact of knowledge management (tacit and explicit) and knowledge mapping is 72.3%. This effect is called the value of the adjusted r square and showed in Figure 3.

5.

Discussion

The objective of this study is to analyze the impact of knowledge management (tacit and explicit) on competitive advantage with the moderation of knowledge mapping among employees working in public transport like buses and taxi cooperatives of Thailand. For this purpose, different hypotheses are made in the literature part of this study.

Results revealed that knowledge management like tacit and explicit knowledge has a positive and significant impact on the competitive advantage. Aim of knowledge management is to simply deliver the right information to the right people at the right time to increase the efficiency, effectiveness, cooperation, satisfaction, and loyalty of employees. These all positive factor cumulatively increase the performance and brings competitive advantage in companies (Su, Gilbert, & Youngquist, 2020).

Like knowledge management, knowledge mapping also has a positive significant impact on competitive advantage and also moderates the relationship between knowledge mapping and competitive advantage (Lin et al., 2020).

6. Conclusion

The objective of this study is to analyze the impact of knowledge management (tacit and explicit) on competitive advantage with the moderation of knowledge mapping among employees working in public transport like buses and taxi cooperatives of Thailand. Competitive advantage is the elementary instrument for the success of companies. This competitive advantage provides control to companies on their competitors. This competitive advantage is the utmost positive and cost-effective position for companies. Cluster and simple random sampling techniques are used. Firstly, made the cluster of the whole population and after it simple random sampling used. Data is assembled over the questionnaire by the online survey method. Author drop questionnaire on respondents' mail and respondents resent after two to three days or when it filled. The statistical tool generated the results by analyzing the data. Results revealed that knowledge management (tacit and

explicit) and knowledge mapping have a positive significant impact on competitive advantage. Knowledge mapping moderates the relationship between knowledge management (tacit and explicit) and competitive advantage. This study advised to policymakers that public transport system of Thailand gain their competitive advantage and improve the cooperation of employees by giving focus on the management of knowledge like tacit and explicit knowledge and knowledge mapping.

7. Implications

This study ha theoretical and practical implications. From a theoretical point of view, this study full filled the gap that presents in previous literature. Limited studies are conducted on the impact of knowledge management (explicit and tacit) on competitive advantage. So, this study has a vital contribution to prior literature. Practically, this study has a suggestion for policymakers of public transport systems like buses and taxi cooperatives that they can take the competitive edge on their competitors and reduce selfishness from their employees and increase their cooperation, satisfaction, engagement, and commitment towards their jobs. By attractive competitive edge or advantage on competitors give help to work properly for the benefits of the general public.

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