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Influences of Information Technology, Human Capital, Network and Innovative Management on the Performance of Tourism Business Organizations in the Southern Provinces of Andaman Sea

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Abstract:
The novel Coronavirus outbreak (COVID-19) has resulted in the worldwide economic downturn. It has also caused stagnation and recession for Thai tourism business in the first quarter of 2020. In order to deal with this problem, tourism business organizations have utilized innovations in their management in order to allow them to be able to adjust themselves and prepare for the current situation and any situations that may occur in the future. The objectives of this research were to: 1) study the current states of the performance of the tourism business organizations in the southern provinces of Andaman sea; 2) examine the influences of information technology, human capital, network, and innovative management on the performance of the tourism business organizations in the southern provinces of Andaman sea; and 3) develop an operational model for enhancing the effectiveness of the tourism business organizations in southern provinces of Andaman sea. This research employed a mixed research methodology combining quantitative and qualitative methods. For the quantitative research part, the sample consisted of 360 entrepreneurs of the tourism business organizations, selected via stratified sampling. The sample size was determined based on the criterion of 20 times the observed variables. Data were collected with the use of a questionnaire and analyzed with a structural equation model. As for the qualitative research component, in-depth interviews were conducted with 18 key informants who were experiential experts in the tourism business. They were selected by purposive sampling. Data were analyzed with content analysis. The findings showed that: 1) the performance of tourism business organizations in the southern provinces of Andaman sea was rated at a high level; 2) information technology, human capital, network, and innovative management had the influence on the performance of the tourism business organizations in the southern provinces of Andaman sea, and 3) the operational model for enhancing the effectiveness of the tourism business organizations in the southern provinces of Andaman sea which was developed by the researcher could be used by entrepreneurs in determining approaches for developing a competitive advantage and sustainability for their organizations. The

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findings of this research suggest that majority of the entrepreneurs emphasize on the concept of innovative management which consist of process orientation, outcome orientation, relation orientation, improvement orientation, and more rapid creation of success. These factors can lead the organizations to grow, even with low cost, because they can benefit from network and business alliances.

Keywords: *Infromation technology, Human capital, Netwrok, Innovative management, Toursim industry, Business organizations, Andaman Sea*

INTRODUCTION

The importance of tourism industry has vital role in the current era of industrialization. Tourism is one of the most important service industries which has most crucial role in the economy. This service industry is moving towards the top among all other industries because of its growing importance. In most of the countries, this industry is the backbone of the service industry. Because it has several benefits and it has relationship with other industries. As tourism industry is linked with the hospitality industry (Uyar, Kilic, Koseoglu, Kuzey, & Karaman, 2020). The relationship between tourism industry and hospitality industry is most important because tourism industry support hospitality industry. Therefore, along with the direct contribution of tourism industry, it also has indirect contribution with the help of hospitality industry among different countries.

Tourism industry is important because this industry provides number of benefits to the local and national level. As national level, it has great contribution to the economy. Tourism industry has major role in the economic development in number of countries. Because it has vital role to increase the gross-domestic product in different countries. Particularly, in those countries, where the tourism has several opportunities, the importance of this industry cannot be neglected. To increase the tourism and to generate the better revenue, all the countries are now focusing to promote tourism activities. Therefore, tourism industry has vital role in economic development (Dinçer & Yüksel, 2020). As the economy of several countries is heavily based on the tourism services. Along with the national level, this industry has vital role at local level. At local level, tourism industry has important role to enhance the well-being of the people livening in tourism area. The tourist comes from various countries provide different income generating opportunities for the local people. Therefore, the provision of livelihood opportunities by the tourism industry has major contribution to economic development.

Along with the other countries, tourism is also most famous in Thailand. Thailand is rich of tourism opportunities and tourist comes from different parts of world to avail the tourism opportunities in Thailand. There are several types of tourism in Thailand such as supports tourism, health tourism, cultural tourism, religious tourism etc. All these types of tourism are famous in Thailand. Therefore, tourism in Thailand has great importance and providing several benefits to the nation (Fareed, Meo, Zulfiqar, Shahzad, & Wang, 2018; Moghavvemi et al., 2017). Various types of tourism in Thailand providing several benefits to the national and international level. Moreover, it also has several benefits at local level.

In Thailand, there are many places which are famous in tourism. However, the current study is selected the Southern provinces of Andaman sea. Southern provinces of Andaman sea are very rich in tourism opportunities. Thousands of tourists come in each year to visit Southern provinces of Andaman sea. Andaman Sea is one of the areas having rain forested and mountainous island which is most famous. This area is also based on the some of the most popular beaches of Thailand which attract the tourist from whole world. This area is largely located along the clear water of the western shore. These areas have several natural sights which has major attraction for the tourists. The island is home

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to many high-end seaside resorts, spas and restaurants. In this area, Phuket city is located, the capital, has old shophouses as well as busy markets which is the point of attraction for tourist. Patong, the key resort town, has numerous nightclubs, bars as well as discos. Therefore, Andaman Sea is the major tourist place for the tourist in Thailand.

However, in the current situation, the COVID-19 effect negatively on the tourism activities in this area. From several months, the tourism activities are shutdown which has major loss for the tourism industry in Thailand. Thailand is also facing losses in this industry due to COVID-19. However, the performance of tourism industry can be enhanced with the help of different factors. For instance, the tourism industry can be resumed after COVID-19 and services can be better provided to enhance the revenue of this industry and to meet the previous loses. In this direction, the role of tourism companies is vital. As the tourism companies has vital importance for the tourism (Hassan, Mustafa, & Ismael, 2020; Yudina, Vandina, Bogoviz, & Lobova, 2017). To boost the tourism, these companies has major importance. Better performance of these companies can increase the performance of tourism. The performance of these companies can be increased with the help of information communication technology (ICT). Better ICT has the ability to enhance the tourism practices in Southern provinces of Andaman sea. Moreover, better human capital such as skills and capabilities may increase the performance of employee and further increase the performance of the companies. Additionally, the network among the employees also has major contribution to tourism companies. All these elements such as ICT, human capital and network shows positive effect on innovative management and further innovative management lead to the performance. Therefore, the combination of ICT, human capital, network and innovative management can enhance the performance. Hence, the current study has following objectives;

1. To study the current states of the performance of the tourism business organizations in the southern provinces of Andaman sea.
2. To examine the influences of information technology, human capital, network, and innovative management on the performance of the tourism business organizations in the Southern province of Andaman sea.
3. To develop an operational model for enhancing the effectiveness of the tourism business organizations in Southern provinces of Andaman sea.

Several studies has examined the role of tourism companies performance (Khattab & Elsayed, 2018; Shaker, 2019), however, previous studies did not examine the relationship between ICT, human capital, network and innovative management to enhance performance. Previous studies also did not consider the Southern provinces of Andaman sea. Therefore, by examining this relationship, the curent study has major contriution to the litrature as well as practcie in relation to the toursim industry.

II.LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Information Communication Technology (ICT), Innovative Management and Performance

Information technology is the utilization of computers to stock, retrieve, transmit, as well as employ information of data. Information technology is typically used within the context of various business operations as opposed to personal or entertaining technologies. Information technology is considered to be a subsection of information as well as communications technology. It has major importance among the companies as the better implementation of information technology has several benefits for the companies. In the current era of industrialization, the introduction of new information technology has major role in business activities (Egbuniwe, 2019; Gozali et al., 2020). Information technology has relationship with

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innovative activities of the companies. Innovative activities of the companies have vital role in performance.

Better implementation of information technology lead to the better performance through innovative management. As innovative management decreases the time of activities and increases the accuracy. It has the ability to increase accuracy among the operations. Therefore, innovation has vital role among the organizations. More importantly, the innovative activities in the tourism industry has vital role which requires information technology. The presence of information technology has vital role to facilitate the tourist by providing new technology for communication. Therefore, information technology has direct effect on innovative management and performance. As the information technology is key to the business operations (Alqahtani, 2019; Hameed, Basheer, Iqbal, Anwar, & Ahmad, 2018; Razzaq, Maqbool, & Hameed, 2019), therefore, it has vital importance for the tourism companies. Hence, this discussion lead to the following hypotheses;

Hypothesis 1. Information technology has positive influence on Innovative Management.

Hypothesis 2. Information technology has positive influence on performance.

2.2. Human Capital, Innovative Management and Performance

Human capital has positive role in innovative management and performance. Human capital is one of the intangible assets or quality not registered on a firm's balance sheet showing the value of the firm. It can be categorized as the economic value of a worker's experience as well as capabilities. This comprises assets like education, training/skill development, intelligence, capabilities, health, as well as other things employers' value which include loyalty as well as punctuality. Human capital in this aspect has vital contribution to organization. Better human capital lead to the information technology. As the employee skills and development has the potential to explore new ideas based on the information technology. Human capital is the vital part of every organization (Costa et al.,2019; Mihardjo, Jermsittiparsert, Ahmed, Chankoson, & Hussain, 2020) which has influence on the innovative management and performance. As the better skills and capabilities of the employee lead to the better innovative management which further enhance the performance. Therefore, human capital also has positive effect on firm performance (Sunwoo, Law, Lee, & Oh, 2020) along with the positive effect of innovative management (Gerasimov et al., 2019). Hence, it is hypothesized that;

Hypothesis 3. Human capital has positive influence on Innovative Management.

Hypothesis 4. Human capital has positive influence on performance.

2.3. Network, Innovative Management and Performance

The another most important element which has influence on innovative management and performance is network. Network has positive role in innovative management and performance among tourism companies of Thailand. Strong network among the employee shows positive role to encourage innovative performance. Better role of innovative management lead to the performance of tourism companies. Actually, network among the employee strengthen the social capital among them. Previous studies also highlighted that social capital has major role in business organizations (Zhang, Gupta, Sun, & Zou, 2019).

Social capital is the effective operational activity of social groups with the help of interpersonal relationships, a shared sense of individuality, a shared understanding, shared norms, shared values, trust, cooperation, as well as reciprocity. Social capital among the people support the innovative ideas, as there is relationship between social capital and innovation among organizations (Faccin, Genari, & Macke, 2017). Moreover, social capital also has relationship with performance. Better level of social capital among the employee

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shows positive effect on performance which is evident from the previous studies (Ngo & Nguyen, 2020). Hence, this discussion lead to the following hypotheses;

Hypothesis 5. Network has positive influence on innovative management.

Hypothesis 6. Network has positive influence on performance.

2.4. Innovative Management and Performance

The above sections show that information technology has most important role in innovative management and performance. It is also discussed that human capital has positive influence on innovative management and performance. Along with this, it is evident that network has positive influence on innovative management and performance. Further, the current section shows that innovative management has positive role in performance. Better innovative management lead to the better performance. As innovation is the key to success for all companies which always shows positive effect on performance. Previous studies also shows that innovation is key to the performance among the organizations (Farouk, Abu Elanain, Obeidat, & Al-Nahyan, 2016; Jugend et al., 2018). New ideas in the process and technology always lead to the higher performance, therefore, in the tourism companies, higher performance by the companies is heavily based on the innovative management. Thus, it is hypothesized that;

Hypothesis 7. Innovative management has positive influence on performance.

III. METHODOLOGY

The current study preferred two major methodologies, 1) quantitative research approach, and 2) qualitative research approach. Therefore, this research employed a mixed research methodology combining quantitative and qualitative methods. Both quantitative and qualitative approaches was used because mixed method has the ability to produce quality results. It has the ability to confirm the results, however, in one method, it is not possible to confirm the results. In the current situation, the results of the one approach can be confirmed with the help of another approach. Previous studies also supported the use of mixed method approach (Petticrew et al., 2013; Rocco, Bliss, Gallagher, Pérez, & Prado, 2003).

The current study examined the relationship first with quantitative research approach. For the quantitative research part, the sample consisted of 360 entrepreneurs of the tourism business organizations, selected via stratified sampling. Therefore, a survey questionniares was used in this study for data collection. While collecting the data, cross-sectional rsearch design was selected in the current study. The sample size was determined based on the criterion of 20 times the observed variables. Data were collected with the use of a questionnaire and analyzed with a structural equation modeling. Use of structural equation modeling is most popular in the social sciences. Finally, the current study used stratified sampling to distribute the questionnaires among the tourism companies. Questionnaires were distributed among the employees of the tourism companies in Southern provinces of Andaman sea. From total 360 distributed questionnaires, only 215 were returned. Remainders were also sent to the employee of tourism companies. From 2015 returned questionnaire's 10 was not appropriate to use because these questionnaires were missing with the significant part of information in questionnaires. Hence, 10 questionnaires were excluded from the survey and 205 questionnaires were used for data analysis. Moreover, survey questionnaires in this study was based on number of sections. Majorly, the section number one was based on the general information of respondents. The second section of the survey questionnaire was based on the scale items related to the key variables, namely; information technology, human capital, network, innovative management and performance. Finally, the variables along with the measures are given in Table 1.

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After analysis the relationships with the help of quantitative research approach, the qualitative approach was applied to confirm the results. Hence, confirmation of results was performed with the help of qualitative research approach. As for the qualitative research component, in-depth interviews were conducted with 18 key informants who were experiential experts in the tourism business. They were selected by purposive sampling. Data were analyzed with content analysis. Finally, the results of qualitative was compared with the results obtained from the quantitative research approach.

TABLE I.
Symbols for variables studied

Latent Variable	Manifest Variable
1.Information Technology (ICT)	1.1 Information technology resources (ICTRES) 1.2 Modern information technology capabilities (ICTMOR) 1.3 Effectiveness Assessment of information Technology (ICTEVA)
2. Human capital (HUMCUP)	2.1 Intellectual capital (HUMWIS) 2.2 Social capital (HUMSOC) 2.3 Emotional capital (HUMEMO)
3. network (NETWOR)	3.1 Principles of network operations (NETPRI) 3.2 Network building potential (NETPOT) 3.3 Network management (NETMAN) 3.4 Communication between networks (NETCOM) 3.5 Network and business competitive advantage (NETADV)
4. Innovation Management (INOMAN)	4.1 Product innovation (INOPAS) 4.2 Process Innovation (INOPRO) 4.3 Marketing innovation (INOMAR)
5.Performance (TOUPER)	5.1 Process focus (TOUPRO) 5.2 Focusing on results (TOUOUT) 5.3 Focus on connection (TOUCOR) 5.4 Focus on improvement (TORUPD)

IV. RESULTS

This study used preliminary data analysis before to test the relationship between variables (Adamski et al., 2005). Preliminary data analysis is the crucial part of every data analysis because it is important to remove the errors in the data before data analysis. Preliminary data analysis is given in Table 1 in which standard deviation, normality of the data and p-value is given.

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TABLE II
Statistical test of empirical variables (n=360)

ตัวแปร	$\overline{X}$	S.D.	%CV	Sk	Ku	χ^2	p
ICTRES	3.883	1.014	26.11	-2.757	-3.848	22.406	.000
ICTMOR	3.706	1.135	30.63	-1.790	-4.528	23.711	.000
ICTEVA	3.747	1.040	27.76	-1.671	-2.685	1.002	.007
HUMWIS	4.117	1.014	24.63	-4.409	-3.490	31.614	.000
HUMSOC	4.114	1.016	24.70	-4.176	-7.501	73.706	.000
HUMEMO	3.753	1.126	30.00	-2.493	-4.164	23.555	.000
NETPRI	4.094	1.049	25.62	-4.121	-4.071	33.559	.000
NETPOT	4.225	.936	22.15	-4.544	-5.485	5.727	.000
NETMAN	4.322	.875	20.25	-5.181	-3.818	41.416	.000
NETCOM	4.150	.973	23.45	-4.283	-6.256	57.484	.000
NETADV	4.378	.906	20.69	-6.329	-2.308	45.382	.000
INOPAS	4.244	.900	21.21	-4.550	-3.032	29.892	.000
INOPRO	4.206	1.067	25.37	-5.712	-2.390	38.342	.000
INOMAR	4.208	.866	20.58	-4.134	-4.593	38.187	.000
TOUPRO	4.383	.836	19.07	-5.996	-2.483	42.111	.000
TOUOUT	4.267	.985	23.08	-5.267	-5.509	58.087	.000
TOUCOR	4.283	.910	21.25	-5.186	-4.145	44.070	.000
TORUPD	4.269	.945	22.14	-5.140	-4.870	5.134	.000

This study used Structural Equation Modeling (SEM) to analyze the data which is most recommended data analysis technique (Henseler & Chin, 2010; Henseler et al., 2014; Henseler, Ringle, & Sinkovics, 2009; Ul-Hameed, Mohammad, & Shahar, 2018). In this process the factor loadings were examined by the current study. According to J.

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Hair, Hollingsworth, Randolph, and Chong (2017) factor loadings must be above 0.7 for all scale items. The factor loadings are given in Table 3. According to the results of factor loadings, it is evident from Table 3 that all the scale items have factor loadings above 0.7 which is the minimum threshold level in the current study. Additionally, standard deviation, t-value and r-square value is also given in Table 3 for all variables.

TABLE III.
Factor Loadings. (n = 360)

ตัวแปร	λ	θ	t	R^2
1. ICT				
ICTRES	.72	.48	15.81	.52
ICTMOR	.80	.37	18.10	.63
ICTEVA	.97	.05	24.26	.95
ρ_c = .92 ρ_v = .69				
2. HUMCUP				
HUMWIS	.79	.38	17.93	.62
HUMSOC	.81	.35	18.36	.65
HUMEMO	.89	.21	21.49	.79
ρ_c = .86 ρ_v = .68				
3. NETWOR				
NETPRI	.92	.16	22.70	.84
NETPOT	.87	.25	20.73	.75
NETMAN	.81	.35	18.45	.65
NETCOM	.84	.29	19.73	.71
NETADV	.91	.18	22.20	.82
ρ_c= . 93 ρ_v = .75				
4. INOMAN				
INOPAS	.89	.21	21.38	.79

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INOPRO	.84	.29	19.78	.71
INOMAR	.83	.30	19.12	.70
ρ_c= . 89 ρ_v = .73				
5. TOUPER				
TOUPRO	.86	.27	20.68	.73
TOUOUT	.92	.16	22.70	.84
TOUCOR	.74	.45	16.99	.55
TORUPD	.88	.22	21.09	.78
ρ_c= . 91 ρ_v = .72				

Results of the study are given in Table 4. The relationship between variables is given in Table 4. These relationships between variables are examined with the help of Structural Model Assessment (F. Hair Jr, Sarstedt, Hopkins, & G. Kuppelwieser, 2014; J. F. Hair, Ringle, & Sarstedt, 2013; J. F. Hair, Sarstedt, Pieper, & Ringle, 2012; Hameed et al., 2018; Zahra, Hameed, Fiaz, & Basheer, 2019). Furthermore, the beta value of relationships is given in Figure 1. The effect of ICT was examined on innovation management and performance. Moreover, the effect of human capital was examined on innovation management and performance. Finally, the effect of network was examined on innovation management and performance. Results of the study shows that ICT has significant effect on innovation management and performance and the beta value is 0.64 and t-value is 2.42. Moreover, the effect of human capital was found significant on innovation management and performance with beta value 0.17 and t-value 2.23. Network also has significant effect on innovation management and performance with beta value 0.58 and t-value 5.04. Furthermore, in case of second dependent variable, namely; performance, the effect of ICT on performance found beta value 0.34, 0.6 and 0.94 with t-value 3.4, 3.7 and 3.55. The effect of human capital on innovation management and performance is also significant with beta value 0.57, 0.19 and 0.76, showing the t-value 3.36, 3.68 and 3.54. Finally, network has positive effect on innovation management and performance with beta value 0.26, 0.47 and 0.73 having t-value 3.14, 3.78 and 5.77. Furthermore, r-square value for innovation management is 0.97 which is strong. Moreover, r-square value for performance is 0.87 which is also strong as per the recommendations of Chin (1998). This study also examined the goodness of fit as shown in Table 4 which shows that all values have achieved the minimum criteria for acceptance.

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TABLE IV.
Measurement Model (n=360)

			Variable			
Variable	**R^2**		**INOMAN**	**ICT**	**HUMCUP)**	**NETWOR**
INOMAN	.97	DE	n/a	.64* (2.42)	.17* (2.23)	.58* (5.04)
		IE	n/a	n/a	n/a	n/a
		TE	n/a	.64* (2.42)	.17* (2.23)	.58* (5.04)
TOUPER	.87	DE	.93* (3.87)	.34* (3.40)	.57* (3.36)	.26* (3.14)
		IE	n/a	.60* (3.70)	.19* (3.68)	.47* (3.78)
		TE	.93* (3.87)	.94* (3.55)	.76* (3.54)	.73* (5.77)

χ^2= 183.25 df = 98 p-value = .00000, χ^2 / df = 1.86 , RMSEA = .049 ,P-Value for Test of Close Fit = .60, NFI = .96, IFI = .97, RMR = .042, SRMR = .044, CFI = .97, GFI = . 93,AGFI = .91, CN = 260.04

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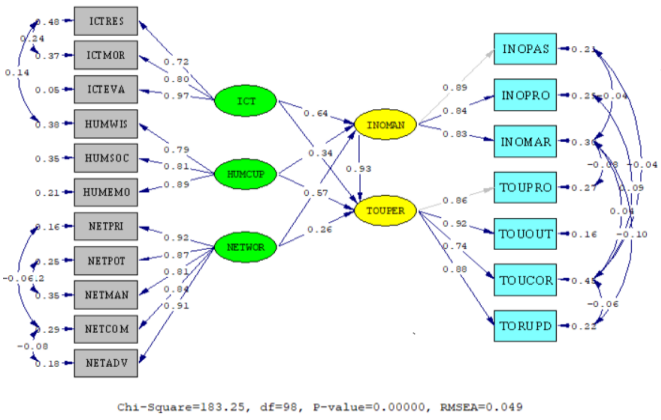

FIGURE I.
Conceptual model of the current study showing the relationship between information communication technology, human capital, network, innovative management and performance

V. CONFIRMATORY PROCESS

The confirm the results of the current study, a confirmatory process was carried out by using qualitative research approach. Therefore, in order to make the confirmatory process, 18 interviews were conducted in this study. Hence, for the qualitative research component, in-depth interviews were conducted with 18 key informants who were experiential experts in the tourism business. These respondents were selected with the help of purposive sampling (Auerswald et al., 2004). To confirm the results obtained from the quantitative study, data were analyzed with content analysis. Finally, the results of qualitative was compared with the results obtained from the quantitative research approach.

Total eighteen interviews were conducted, and each interview was 15 to 20 minutes long. Interviews as stopped as the researchers found the redundancy in the information provided by the respondents. In these interviews, respondents were answered related to the key variables tested in the current study. According to the views of respondents, various constructs such as information technology, human capital, network and innovative management are crucial for performance. According to the respondents, information technology, human capital, network, innovative management and performance has major role in tourism industry. Tourism companies majorly based on these elements. According to the respondents, without the information technology, it is not possible to provide valuable services for tourists which has influence on performance. Moreover, human capital like skills of the tourism company employees has major role in innovative management and performance. Along with this the information provided by the respondents while interview shows that network among the employees also shows positive role in innovative management and performance. In addition, the respondents explained and suggested that employee creativity is a most influential factors which has considerable effect on tourism business organizations performance.

VI. CONCLUSION

The objectives of this research were to examine the current states of the performance of the tourism business organizations in the Southern provinces of Andaman sea, to examine the influences of information technology, human capital, network, and innovative management on the performance of the tourism business organizations in the Southern provinces of Andaman sea and to develop an operational model for enhancing the efficiency of the tourism business organizations in Southern provinces of Andaman sea. To achieve these objectives, data were collected from the tourism companies located in Andaman sea by using a survey questionnaire. After analyzing the data through statistical tool, this study highlighted the valuable insights. Results of the study shows the key outcomes in relation to the information technology, human capital, network, innovative management, performance and tourism companies. It is found that the performance of tourism companies in the Southern provinces of Andaman sea are rated at a high level. These tourism companies in the Southern

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provinces of Andaman has key importance for the tourism industry. Services of these tourism companies in the concerned area has vital importance for the visitors. Moreover, information technology has positive effect on innovative management and performance. Better implementation of information technology has positive role to enhance innovative management and performance. The role of human capital also has crucial role in innovative management and performance. Increase in the human capital increases the innovative management as well as performance. Human capital such as skills as well as capability has major role in performance and innovative management. Furthermore, network among the people also has crucial importance in innovative management and performance. Network has positive effect on innovative management and performance. Therefore, information technology, human capital and network has positive effect on innovative management which finally influence on the performance of the tourism business organizations in the Southern provinces of Andaman sea which is proved by the results of the current study. The current study suggested that majority of the entrepreneurs emphasize on the idea of innovative management which involve of process orientation, outcome orientation, relation orientation and improvement orientation along with the quick creation of success among the companies.

6.1. Implications of the Study

The current study has several implications for the theory and practice. The relationship discussed in the current study filed the significant literature gap. The relationship between information technology, human capital, network, innovative management and performance has major role to contribute to the body of literature related to the tourism. Particularly, this relationship between information technology, human capital, network, innovative management and performance is first time discussed in relation to the Southern provinces of Andaman sea. The current study also has vital practical implications. Especially, the current study has several implications for the tourism companies in Southern provinces of Andaman sea. As results of the current study suggested the management of tourism companies to enhance performance by promoting information technology, human capital, network and innovative management. Additionally, the operational model for increasing the effectiveness of the tourism companies which was developed by the researcher could be used by entrepreneurs in determining approaches for developing a competitive advantage as well as sustainability for their organizations.

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