

TOURISM LOGISTICS STRATEGY WITH SUSTAINABLE DEVELOPMENT: IN CASE OF BANG SAEN BEACH, AS ECO-TOURISM DESTINATION IN THAILAND

Taweesak Theppitak

Faculty of Logistics, Burapha University, Thailand

E-mail : taweesak99@hotmail.com

Introduction

Nowadays, tourism has become a significant industry to Thailand's economy growth. It generates high revenues as compared with the revenues from exporting. The paper focuses on how to design and develop Bang Saen Beach, Choburi province, Thailand, to become eco-friendly tourism destination. Bang Saen Beach is an important and popular tourist destination, just out 80 kilometers from Bangkok, capital of Thailand.

This study applies principles of tourism logistics management to the tourism industry under the hypothesis that moving tourists from Bangkok to Bang Saen Beach more efficiently and effectively, including providing an effective transport networking system, would increase and support the tourism on Bang Saen Beach. A demand forecast was statistically calculated in order to provide recommendations for the improvement of infrastructure systems and facilities. The use of logistics in the tourism industry is currently recognized as a strategic tool for enhancing tourist satisfaction in relation to lower travel costs, one-stop services, other conveniences and safety.

However, the research study (Briguglio 1995; Bryden 1973) shows that traveling destinations, using tourism logistics concept is key success for developing destination sustainably. It is starting point for planning and developing infrastructure systems and facilities, including formulating strategies for transport networking and logistics systems to support the future sustainable growth of tourism industry.

Literature Review

This study reviews the literature related to the role of tourism to the economic growth of Thailand. It also considers the adoption of logistics management in the tourism industry, especially the beach tourism. Two relevant sources (Acharya 1995; Briguglio 1995; Bryden 1973) point out that logistics management contributes to the success of sustainable tourism development. These sources also review definitions of logistics and logistics management as they pertain to sustainable development of tourism, but no research identifies exactly what tourism logistics is and how it contributes to tourism success.

Logistics is mostly understood in term of business industries, with only a few research studies done exclusively in relation to tourism (Briguglio, Butler, Harrison and Filko 1996). People typically relate logistics (Bowersox & Closs 1996; Lambert, et al. 1998) to transportation or warehousing, particularly connecting it to aspects of material goods or information flow (Butler 1980; Theppitak 2006). As such, logistics is understood as a service-oriented process related to movement of physical and information flow. To apply logistics to tourism, people, or tourists, shall be considered as physical flow from one point to another, and examined in terms of lower costs, higher safety and more convenience through excellent coordination and collaboration (Bowersox & Closs 1996).

The authors (Butler 1980; Briguglio 1996) points out that before logistical planning for tourism infrastructure and facilities can be achieved, there needs to be an accurate demand forecast developed. Demand forecasting for tourism into the next decade is statistically calculated in order to provide improvement for infrastructure systems and facilities, which can in turn support growth and expansion. However, very few researches have been done in area of tourism logistics (Butler 1980; Conlin and Baum 1995). It also reveals patterns of tourist behavior and other factors influencing travel decisions, as well as identifies problematic issues with tourist destinations (Conlin and Baum 1995).

Conlin and Baum (1995) states that there is a relationship between adoption of logistics management in the tourism industry and the success of sustainable tourism development. For instance, logistics management can be used to consider moving people, or tourists, from one point to another point (Theppitak, 2006). It provides tools for facilitating how to prepare accommodations, how to build transport networks between and within locations to support sustainable tourism (see Figure 1). However, there is the gap for application logistics in tourism. This study applies a logistical approach to the tourism industry under the hypothesis that moving tourists from Bangkok to Bang Saen Beach

more efficiently and effectively, including providing an effective transport networking system, would increase tourist satisfaction on Bang Saen Beach.

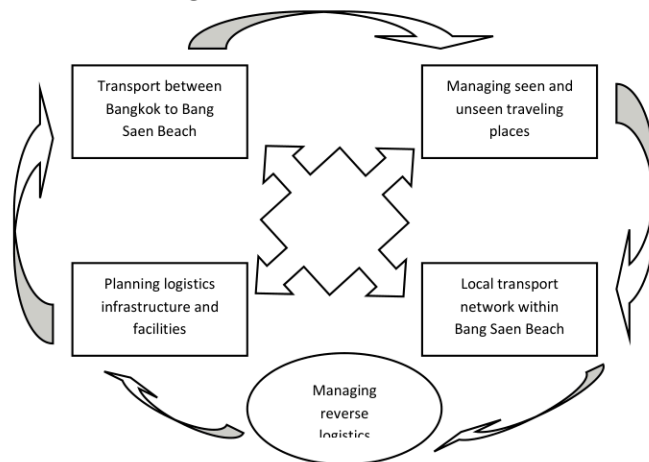


Figure 1 Relationships between activities in tourism logistics

When considering the factors affecting adoption of logistics management and planning in tourism, in particular, tourism on a beach, the literature points out the major factors are economic and political realities (Thor 1994). The research (Conlin and Baum, 1995) highlights the relationship between such factors and the adoption of logistics management, like fluctuating tourist counts and tourist satisfaction.

It concludes there is a literature gap related to the examination of issues related to adoption of logistics management (and its effectiveness) within the tourism industry, and specifically for a beach. It would be examined the factors contributing to the logistics adoption phase and the factors influencing sustainable tourism development. This study therefore proposes a theoretical framework (Figure 2) derived from a previous study (Theppitak 2006).

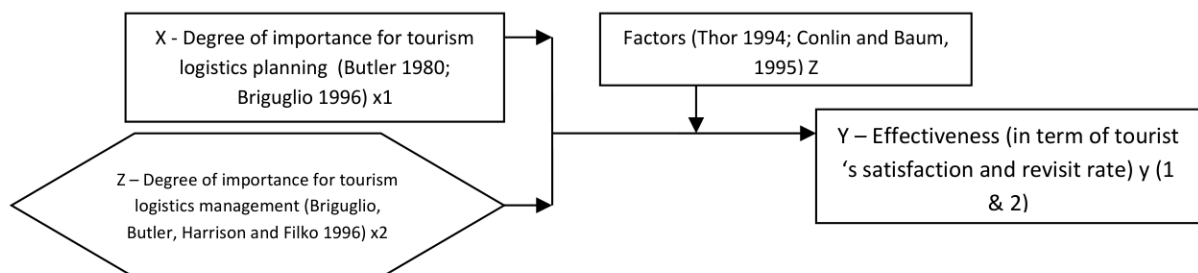


Figure 2 Theoretical Framework of the study

Figure 2 shows the theoretical framework of variables in this study. The literature review revealed that designing and building a sustainable tourism industry, especially tourism on a beach, required widely applied logistics concept and strategies. Success of sustainable tourism development requires a high priority of importance on logistics planning. The research points out that more importance placed on the logistics planning, the more effectiveness is gained for developing tourism (on a beach) in term of tourist satisfaction. A main objective is to find ways to improve tourist satisfaction.

This study examines relationship between variables (X, Y, Z), defining degree of importance to the adoption of logistics planning and logistics management as *an independent variable (Variable X1 and X2)* and defining the effectiveness of logistics management to tourism on Bang Saen Beach, in terms of tourist satisfaction (i.e. convenience, safety for transport network, infrastructure and facilities on Bang Saen Beach), and return rate of tourist as a *dependent variable (Variable Y1 and Y2)*.

Furthermore, it discovered that factors, (i.e. economic and political) were significant to tourism logistics management and planning. These factors are defined in the framework as *an intervening variable, (Variable Z)*, which influences both the independent variable (Variable X) and the dependent variable (Variable Y). It was therefore assumed that the level of such influencing factors would have a correlation to the degree of adoption of logistics management, as well as to the effectiveness of any logistics used on destination.

Research Methodology

This study initially focused on issues related to design and develop of tourism in logistics perspective, including the examination of problems and opportunities occurring while development to tourism destinations. The objective was to investigate a relationship between variables related to the adoption of tourism logistics to Bang Saen Beach, as well as the effectiveness of logistics management for building sustainable eco-friendly tourism. The study collected data in *two* following dimensions: first, a *literature review* was conducted in various fields related to tourism logistics management. Secondly, *questionnaire survey and in-depth interview method* was used. Two pre-testing were conducted with Cronbach's alpha (α) at 0.91 and 0.92 respectively. To obtain the data, the study used a sample of 270 randomly selected tourists, which included both Thai and foreign tourists traveling on Bang Saen Beach. This number of face-to-face questionnaires was based on a randomly stratified sampling. The rate of response was very good, with 245 respondents, or 90.74 percent.

To answer the above issues, the study sought to define following questions; first, how are behaviors of tourists used to design infrastructure and facilities on Bang Saen Beach? Secondly, what are factors influencing the design and implementation of tourism logistics strategy on Bang Saen Beach? Finally, what are efficiencies and effectiveness of tourism logistics management? Under the questions,

hypotheses are established in order to examine a relationship between tourism logistics planning and management and the effectiveness of improving tourism on Bang Saen Beach.

H₁ = There is a relationship between tourism logistic planning and a degree of tourist satisfaction.

H₂ = There is a relationship between tourism logistic management and increasing return rate of tourists to Bang Saen Beach.

Finding Results

After conducting surveys with tourists in Bang Saen Beach over several months, it was found that most of these tourists well supported the rationale of this survey. The survey covers demographical data related to attitudes and behaviors of tourists when visiting Bang Saen Beach, including examining hypotheses. Implications related to transport modes; logistics infrastructure and facilities were discussed.

The result shows that gender of respondents. Male tourists made up the greatest number of respondents in the sample at 56.8 percent, followed by female tourists at 43.2 percent. The study represented real information for tourism on Bang Saen Beach and showed that the male tourists became a major target. When considering to the age of targeted tourists visiting to Bang Saen Beach. The result showed that 63.9 percent were between the ages of 13 to 28 years. Most of them, or 38.9 percent, had an age between 21 and 28 years. Secondly, 25.2 percent had an age between 13 and 20 years. The figure shows that the major targeted groups of tourists on Bang Saen Beach are now adolescent and young adults. It also shows the nationality of tourists. The survey revealed that most tourists came from Asian countries, 86.2 percent. Of this number, 68.2 percent were Thai tourists, with the remainder coming from other Asian countries (e.g. China, Taiwan, and South Korea) at 18 percent collectively. The result also showed a smaller percentage of tourists coming from western countries, especially European tourists. This result reflected that Thai tourists currently make up the major tourist group.

It shows to marriage status of tourists and reveals that the major tourist group, at 68.5 percent, was of single status. Only 27.9 percent of surveyed tourists were married. The result indicates that infrastructure and facilities on Bang Saen Beach should be considered accordingly, to support relevant activities, behaviors and lifestyles. It also points out to educational level of tourists that most of tourists or 87.4 percent have educational level lower than a bachelor's degree, and 12.6 of them were at postgraduate level. The results point to relevant expectation levels regarding lifestyles, traveling activities, facilities and infrastructure on Bang Saen Beach.

When considering to a career of respondents, the result reveals that major tourist groups were private employees (47.7 percent) and students (30.6 percent), for a combined total of 78.3 percent. This information points to a corresponding approach to infrastructure and facilities, which should be prepared and developed on Bang Saen Beach to facilitate these targeted groups. The study represents the average incomes of tourists and reveals that average income of most tourist groups, or 63.9 percent, was lower than 20,000 baht. The greatest number, or 23.4 percent, had income between 5,000-10,000 baht. This income data should facilitate researchers to design and develop proper infrastructure and facilities on Bang Saen Beach, consistent with targeted tourists' income. It also reveals the frequency of travel to Bang Saen Beach per tourist (excluding their current trip at the time

of the questionnaire). The result showed that most tourists, or 44.8 percent, had traveled to Bang Saen Beach several times. Only 22.4 percent of them had traveled there only one time. This frequency of tourism to Bang Saen Beach reflects an overall perception of satisfaction for tourists in Bang Saen Beach. For traveling period to Bang Saen Beach, the result revealed that most tourists, or 67.8 percent, visited between October-December. This period defines a peak seasonal period of tourism.

When considering to traveling behavior of tourists, it indicates that the greatest percentage of tourists, or 71.2 percent, came with their friends. Only 19.8 percent came with family. This information will help facilitate relevant designs and patterns of transport, as well as for infrastructure and facilities to support sustainable tourism on the beach. For the number of people per tourist group, it shows that the greatest number of tourists or 58.6 percent identified that their group had one to five tourists. Next, 22.5 percent of them identified six to ten tourists per group. This information points to how building infrastructure and facilities should be built consistent with targeted tourist groups. The pattern of vehicle to Bang Saen Beach is revealed that most of the tourists, or 33.3 percent, traveled by personal car, 30.6 percent of them visited by bus, and 17.1 percent by tourist bus, respectively.

The result shows the pattern of stay overnight in Bang Saen Beach and it points out that most of the tourists, or 87.0 percent, did not stay overnight. The tourists pointed out that proper infrastructure and facilities for overnight stays in Bang Saen Beach were unavailable and/or inconvenient. Only 13 percent of surveyed tourists indicated that they stayed overnight in Bang Saen Beach, typically for a long weekend or special holiday. For types of accommodation on Bang Saen Beach, it shows that the greatest number of tourists, or 58.1 percent, chose to stay at resorts. Next, 25.8 percent of them chose a hotel, and 16.1 percent stayed at private residents. This information reveals tourists' expectations regarding the pattern of accommodations on Bang Saen Beach.

Table 1 Summary of testing hypothesis and relationship between variables

Variable		Correlation	p-value
Independent	Dependent		
X1	Y1	+0.724	0.000
X1	Y2	+0.645	0.000
X2	Y1	+0.714	0.000
X2	Y2	+0.580	0.001
Z	Y1 & Y2	+0.340	0.001

Table 1 shows summary of hypothesis testing. The result reveals that adopting tourism logistics planning (X_1) would have positive relationship with tourist satisfaction (Y_1) and promote increasing tourists' return rate to Bang Saen Beach (Y_2). It also shows that effective tourism logistics management (X_2) have positive relationship with tourist satisfaction (Y_1) and promote increasing tourists' return rate to Bang Saen Beach (Y_2). Further, effective tourism logistics management (X_2) would increasingly encourage tourism activities and promote increasing tourists' return rate to Bang Saen Beach (Y_2). In term of tourism Logistics planning covers properly matching demand of tourists and services supply on the beach, including organizing logistics networks (e.g. linking between seen and unseen traveling places, transport, accommodation) within destination. Tourism logistics management covers how well logistics management is used to create and promote tourism industry on Bang Saen Beach, including providing reasonable costs, satisfying tourist need.

The result shows that factors, such as economic and political, were significant to tourism logistics management and its effectiveness. These factors, as an *intervening variable* (Z), influence both the independent variable (X) and the dependent variable (Y). They (Z) have moderately relationship with logistics management and effectiveness.

Discussion and Implications

Logistics in the context of tourism would be defined as "the management of the flow of physical (including tourists or vehicles) and information (information related tourism)." In this definition, tourists are being considered as "goods," being moved from point to point. Transport system(s), between mainland and the beach, as well as within the beach, would need to be designed to support

the move of tourists in terms of lower costs, safety, comfort and convenience. Therefore, scope of tourism logistics also covers functions i.e. transport, infrastructure and facilities. (in Figure 1)

To support and foster more and better tourism on the beach, infrastructure (e.g. electricity, water and internet) must be readily available. Also, future tourist facilities (for all travel activities and including currently undeveloped areas) must be well planned and organized. These facilities should include hotels and other accommodations. If tourists are the goods, then hotels and resorts can be considered as warehouses or distribution centers. Proper demand forecasts of tourist behaviors and lifestyles are critical. In-depth and accurate logistics is the only proper way to prepare for future tourist accommodations, facilities and traveling activities.

Tourism logistics also includes reverse logistics activities. Reverse logistics can be defined as the management of the flow of materials or information back to a desired point. This methodology covers the management of garbage, or unusable materials, by tourists. Normally, there are many methods to manage garbage, with different costs occurring, including non-monetary costs like pollution. This study can also be used logistically to incentive and support sustainable, more eco-friendly tourism on Bang Saen Beach.

To improve transport systems between Bangkok and Bang Saen Beach, it would improve in two ways. First, reengineering existing transport systems by focusing on hardware (i.e. vehicle, facility, infrastructure and road network), software (i.e. information to tourists, programme) and peopleware (i.e. training serviced people with service-minded). Second, new efficient and friendly environmental transport system (i.e. cable car and underwater car) would be considered.

The result shows that importance level and satisfaction level which tourists have when travelling within Bang Saen Beach. Surveyed tourists revealed they had high expectation for the destination in respect to beauty and atmosphere, cleanliness, security and safety. As they are satisfied with these aspects of the beach. However, they indicated some dissatisfaction with cleanliness and sanitary system, as well as some concern for the safety of security systems used at some places of destination.

Managing tourism logistics in term of existing destinations is not considered only lower costs and higher services level, but it also means to manage the destination in routes and vehicles. Unseen travel places would be effectively established and promoted. Obvious and clear signs between destinations become a source of satisfier.

When considering the levels of importance and satisfaction tourists place on transport (and related logistics) while visiting on Bang Saen Beach. This study asked the tourists to rate the transport systems from Bangkok to Bang Saen Beach, as well as the transport systems within Bang Saen Beach, in various relevant areas. Most of the tourists indicated high expectations related to safety and the expense of transportation. The study also found that they were mostly satisfied with the availability and comfort of transport systems to Bang Saen Beach. However, they were somewhat dissatisfied with the safety of transport systems to Bang Saen Beach.

When considering the transport system within Bang Saen Beach, tourists had high expectations for price standardization, as well as for comfort and availability of transport. But, they were dissatisfied to actually find a lack of price standardization of transport within Bang Saen Beach. Logistical implication would consider in a whole system, and then set standard prices in each destination. The difficulty is how to communicate and motivate to local people for following to same standard without their resistance and conflict.

Infrastructure required for supporting tourism on the beach, it included electricity, road, water, and telephone systems. Survey results revealed that most of the tourists (more than 75 percent) did not stay overnight in Bang Saen Beach, but rather returned to stay overnight in Pattaya. The question is that why tourists did not stay overnight on Bang Saen Beach. The results showed that most of tourists identified to unavailability and inconvenience in term of shortage, including high prices compared with earned services. They had high expectations for the costs and availability of tourism infrastructure in Bang Saen Beach. But, they were dissatisfied with the actual fees charged for services and the availability of infrastructure.

These results reflect that there is a need to rethink and analyse a whole system. It would commence with forecasting future demand to provide properly infrastructure and facilities. The study examine an appropriate methods and found that seasonal time series would be the demand forecasting model which fits to tourism on Bang Saen Beach. One of potential problems is garbage and pollutions occurring from tourism (appropriate 6-12 tons a day). Now the issue is increasingly becoming serious problems to friendly environmental tourism. It needs to apply concept of effective reverse logistics for creating and enhancing sustainable, eco-friendly tourism on Bang Saen Beach.

In summary, the main research finding reveals that:

- tourism logistics planning (X_1) would have positive relationship with tourist satisfaction (Y_1) and promote increasing tourists' return rate to Bang Saen Beach (Y_2).
- effective tourism logistics management (X_2) has positive relationship with tourist satisfaction (Y_1) and promote increasing tourists' return rate to Bang Saen Beach (Y_2).
- These factors, as an *intervening variable* (Z), influence both the independent variable (X) and the dependent variable (Y). They (Z) have moderately relationship with logistics management and effectiveness.
- Factors (Z) (i.e. economic, and political) have a moderate and positive relationship to tourist satisfaction (Y_1 and Y_2) and they influence to decision making for traveling at Bang Saen Beach.
- Lacking of effective demand forecast method creates problems in mismatching between supply and demand, preparing infrastructure and facilities.
- Transport (between Bangkok and Bang Saen Beach, and within Bang Saen Beach) contributes to tourism's satisfaction and tourism promotion success.
- Bang Saen Beach effectively lacks tourism logistics planning and management in term of sustainable development.
- Garbage from tourists is increasingly becoming serious problem, it needs to design effective and efficient reverse logistics systems.
- Finally, it concludes that effective tourism logistics management is a key success to tourism on Bang Saen Beach.

Conclusion

The results show that using a logistics concept for tourism, especially on the beach, would increase effective, sustainable, eco-friendly tourism. A demand forecast of tourism for the next ten years must be considered to effectively design and develop smooth flow patterns for future tourists, along with providing sufficient and appropriate infrastructure and facilities. It points out that a seasonal time series would be an appropriate model of demand forecasting. It reveals that in the next decade, tourism in Bang Saen Beach would increase to twice its current level. This result must be taken into consideration for designing transport (and related logistics systems) from Bangkok to Bang Saen Beach.

Today, more than 300 street food shops in Bang Saen Beach are increasingly complex and sophisticated to tourism management. Effective design for future infrastructure systems and facilities must support sustainable tourism in Bang Saen Beach. Likewise, development plans and redesign for new destinations must be included an appropriate action plan to managing environmental pollution. Finally, garbage management could be effectively planned using a reverse logistics system, as rapidly increasing garbage has become a problematic issue related to the logistics of maintaining a green, eco-friendly environment.

It provides valuable information for stakeholders, especially tourism related government agencies and Tourism Authority of Thailand, to plan and develop infrastructures and facilities for beaches, and specifically Bang Saen Beach. Logistically planned transport management can facilitate growing tourist travel to and from Bang Saen Beach, providing hotel, resort and residential-accommodation owners with consistently increasing demand, while also preventing the unrestrained destruction of natural resources and environments on the beach. This study leads to the conclusion that strategic and integrated logistics management is required, with active participation from all relevant stakeholders.

Reference

- Acharya, A. 1995 Small The beaches: Awash in a Sea of Troubles. *World Watch* 8(4):24-34.
- Bacon, P. 1995 Wetland Resource Rehabilitation for Sustainable Development in the Eastern
- Bloomberg., D.J., LeMay, S. & Hanna, J.B. 2002, "Logistics", Prentice Hall, Upper Saddle River, New Jersey, 07458.
- Bowersox DJ & Closs DJ (1996) "Logistics Management – The Integrated Supply Chain Process", McGraw-Hill, New York.
- Beller, W., P. d'Ayala and Hein, P. eds. 1990 Sustainable Development and Environmental Management of Small The beaches. Paris: Parthenon-UNESCO.
- Briguglio, L. 1995 Small The beach Developing States and their Economic Vulnerabilities. *In International Symposium on Small The beaches and Sustainable Development*, G. Paoletto and R.Kuhr, eds., pp. 7-51. Tokyo: United Nations University.
- Briguglio, L., B. Archer, J.Jafari and Wall, G. eds. 1996 Sustainable Tourism in The beaches

- and Small States: Issues and Policies. London: Pinter.
- Briguglio, L., R. Butler, D. Harrison and W. L. Filko eds. 1996 Sustainable Tourism in Small The beach States: Case Studies. London: Pinter.
- Bryden, J. 1973 Tourism and Development: A Case Study of the Commonwealth Caribbean.
- Butler, R. W. 1980 The Concept of a Tourist Area Cycle of Evolution: Implications for Management of Resources. *Canadian Geographer* 24:5-12.
- Conlin, M. and T. Baum, eds. 1995 The beach Tourism: Management Principles and Policies. Chichester: Wiley.
- D.M. Lambert, J.R. Stock, Lisa M. Ellram. (1998). *Supply Chain and Logistics Management: McGraw-Hill*.
- EPAT/MUCIA. 1995b Planning for the Effective Management and Sustainable Development of Coastal Resources in Caribbean Small The beach States. *Caribbean Dialogue* 2(1):11-16.
- Gongmei Yu, Zvi Schwartz. (2006, November). Forecasting Short Time-Series Tourism Demand with Artificial Intelligence Models. *Journal of Travel Research*, 45, 194-203.
- Kakazu, H. 1994 Sustainable Development of Small The beach Economies. Boulder: Westview Press.
- Knox, J. M. 1982 Resident-Visitor Interaction: A Review of the Literature and General Policy Alternatives. *In The Impact of Tourism in the Pacific*, F. Rajotte, ed., pp. 76-101. Peterborough: Trent University.
- Lanfant, M. F., J. B. Allcock and Bruner, E. M. eds. 1995 International Tourism: Identity and Change. London: Sage.
- New, S.J., 1994, "The Scope of Supply Chain Management Research", *Supply Chain Management*, 2, 1, 15-22.
- Theppitak T (2006) "Logistics Management", Expertnet Publishing, Bangkok, Thailand, ISBN 974-92887-6-9.