A Model of Multidestination Travel: Implications for Marketing Strategies

IIS P. TUSSYADIAH, TATSUHITO KONO, AND HISA MORISUGI

Because tourists derive utility from the enjoyment of destination characteristics, Lancaster's approach is putatively appropriate to address the particular structure of the tourism industry. Most research efforts regarding tourism destination, including those applying Lancaster's model, specifically address the choice of a single destination. This article is intended to explain multiple destination choice using Lancaster's characteristics model and a discussion of model implications of some marketing strategies for destinations as well as for tour operators. The model developed herein explains that packages of multiple destinations can create preferable combinations of characteristics for certain travelers. Furthermore, the model provides useful strategies for tour operators in combining destinations into a travel menu or package.

Keywords: *destination choice; multidestination; Lancaster's model; tourism marketing; package tour*

Traveling decisions for tourism purposes involve choices of destinations, timing, transportation, and activities. Among these, destination choice has remained a central issue in tourism management literature. Studies of destination choice have typically used the analytical framework provided by traditional demand theory. Despite its contribution to tourism research, traditional demand theory is considered to be insufficient to justify the spatial and temporal nature of tourism comprehensively. Rugg (1973) introduced Lancaster's characteristic approach to cope with the evolutionary structure of tourism. The model developed by Rugg (1973) includes two constructs: the inclusion of time constraint and the transportation time and cost between alternate destinations to modify the time and budget constraint.

Studies of applications of Lancaster's model in tourism were followed by examinations by Morley (1992) and Papatheodorou (2001). The former attempted to explain the model using microeconomic theory, whereas the latter presented comparative exercises proving that the approach fits the variety issue in tourism. The most recent work, which is that of Seddighi and Theocharous (2003), combined Lancaster's characteristic approach with Koppelman's consumer transportation model to elucidate destination choice using a multivariate logit model.

Those studies, along with other major studies of destination choice, specifically addressed travel to a single destination, considering one independent traveling decision. The models did not explicate the possibility of combining different destinations to achieve a higher utility in tourism consumption. The reason for this, aside from simplifying the models, was related by Papatheodorou (2001, p. 167): "[A]fter all, multiple destination tourism has only a very minor share in the real world." In addition, Rugg (1973) considered in his model that travel to multiple destinations would engender lower utility than that with only a single destination because the transportation cost and time among alternate destinations are positive.

Numerous studies have argued that the assumption that a traveler chooses only one destination for a trip is often fallacious and overly simplistic (Wall 1978; Lue, Crompton, and Fesenmaier 1993). Multidestination travel decisions better reflect the patterns of many tourism trips (Fesenmaier and Lieber 1985; Lue, Crompton, and Fesenmaier 1993; Oppermann 1995; Lue, Crompton, and Stewart 1996; Hwang and Fesenmaier 2003). Lue, Crompton, and Fesenmaier (1993) reported that 30% to 50% of all trips are multidestination journeys. Furthermore, using empirical data collected from Branson, Missouri, visitors, Stewart and Vogt (1997) confirmed the importance and prevalence of multidestination travel: 70% of visitors stopped by other attractions during their trip, and 28% made an overnight visit to other destinations.

Tideswell and Faulkner (1999) summarized the reasons for multidestination travel as five predisposing factors: "variety and multiple-benefit seeking," "heterogeneity of preferences," "risk and uncertainty reduction," "economic rationalism," and "visiting friends and relatives." Variety seeking provides various benefits through the travel experience. By visiting multiple destinations that offer multiple opportunity configurations (Kim and Fesenmaier 1990; Gunn 1994), a traveler can satisfy needs that are difficult to satisfy at one destination (Lue, Crompton, and Stewart 1996).

From the variety-seeking point of view, a traveler might choose to visit multiple destinations in one trip or to visit different destinations on many trips. The probability of visiting multiple destinations in one trip relies on travel mobility (geographical configuration, distance, transportation mode, etc.) in terms of the travel budget and time constraint. Consequently,

Iis P. Tussyadiah is a PhD candidate in the Regional and Urban Planning Laboratory, Graduate School of Information Sciences, Tohoku University, Sendai, Japan, and a lecturer in the Department of Regional and City Planning, Diponegoro University, Semarang, Indonesia. Tatsuhito Kono is an associate professor in the Regional and Urban Planning Laboratory, Graduate School of Engineering, Tohoku University, Japan. Hisa Morisugi is a professor in the Regional and Urban Planning Laboratory, Graduate School of Information Sciences, Tohoku University, Sendai, Japan.

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some destinations are unlikely to be combined. A traveler then might seek diversity by visiting different destinations during future travel (i.e., variety throughout time) to compensate unfulfilled needs of previous travel.

These considerations imply the necessity of developing a model that comprehensively explains utility maximization of performing multidestination travel on one occasion and on multiple occasions. The mathematical model is used not only to show that the behavior of combining destinations exists in traveling but also to provide a means to further estimate and predict future travel patterns. The model in this article is developed to cope with all possible itineraries implied with multidestination travel. Using the basic Lancaster's model and accounting for multidestination cases of traveling patterns, the model offers not only a theoretical basis to explain tourists' behavior but also practical guidelines for destination development and management.

The remainder of the article is organized as follows. The next section describes the importance of Lancaster's model for tourism, and outlines the model and its application to the tourism field. The subsequent section illustrates the extension of Lancaster's model to tourism, which incorporates multiple occasions and multiple destinations in traveling activities. Implications of the model for marketing are described in the section, showing strategies available for destinations and tour operators to capture and maintain their market. The first part of that section describes various strategies for tour operators, offering guidelines to choose efficient combinations of destinations. The subsequent explanation concerns strategies that are useful for destinations and tourism authorities to behave efficiently toward a policy of developing new destinations. A concluding remark ends the article.

APPLYING LANCASTER'S MODEL TO TOURISM

Lancaster's model appears to offer the most promising insight into choice when qualitative aspects are important (Fernandez-Castro and Smith 2002), including tourism. Seddighi and Theocharous (2003) pointed out that an important objective of tourism demand analysis is to improve the understanding of public behavior toward a particular destination. In other words, knowledge of the way in which holidaymakers select their holiday destinations and the factors that determine their choices are important investigative goals.

The existing tourism demand literature is dominated by econometric models that follow a single equation time-series approach (Papatheodorou 2001; Seddighi and Theocharous 2003). These models exclude measures of travelers' attitudes, including perceptions of service attributes and personal feelings toward different destinations and services. Therefore, the models are not sensitive to the wide range of strategies that can be designed to motivate, influence, or change consumer travel behavior (Seddighi and Theocharous 2003).

Some drawbacks exist in applying traditional demand theory to tourism research. These drawbacks are the consquence of failures of the theory to cope with particularities in tourism products. The static nature of traditional demand theory is inapplicable to the evolutionary features of tourism products, namely, the dynamics and trends in destination attractions.

Lancaster's characteristics model (Lancaster 1966, 1968) is used to provide an answer to these problems. The concept of Lancaster's characteristics model is that goods are no longer the objects of utility by themselves: goods are assumed to generate certain characteristics or attributes from which the utility is ultimately derived. It conforms well to analysis of tourism because a traveler does not derive utility from possessing or consuming travel destinations; rather, travelers derive utility from being in a particular destination at some period of time, thereby consuming the destination's characteristics.

The basic model. Formally, the collection of *i*th characteristics z_i possessed by some collection x_1, x_2, Λ, x_J of goods j is given as the equation

$$z_i = \sum_{j=1}^{N} b_{ij} \cdot x_{\mathrm{j}}$$

where b_{ij} is the consumption technology coefficient. Goods produce characteristics in fixed proportions.

The consumer maximizes $U\ (z)$

$$\text{subject to } z = bx$$
$$E \geq p_x \cdot x + p_t \cdot m$$
$$z, x, p_{x,} p_t, m \geq 0;$$

in those equations, z is a vector of characteristics, x is a vector of days spent in each destination, E is the available expenditure, p_x is a vector of prices per day visit in each destination, p_t is a vector of transportation prices between region pairs, and m is a permutation column vector whose elements are either 1 or 0.

The goods space. Given destinations A, B, C, and D, and the characteristics Z_1 and Z_2, the goods that are purchased by the traveler are number of days spent in destinations A, B, C, and D, noted as x_A, x_B, x_C, x_D, which are generally regarded as the durations, or lengths of stay, in tourism analysis. Lancaster's model transforms this goods space into a characteristics space, which expresses the combination of characteristics a consumer could consume by purchasing x: $z_1 = b_{1A}x_A + b_{1B}x_B + b_{1C}x_C + b_{1D}x_D$ and $z_2 = b_{2A}x_A + b_{2B}x_B + b_{2C}x_C + b_{2D}x_D$.

The characteristics space. The characteristics space can be illustrated diagrammatically (see Figure 1) with characteristics on the vertical and horizontal axis, the ray of characteristics of each destination, that is, $0A = b_{1A}/b_{2A}$, $0B = b_{1B}/b_{2B}$, $0C = b_{1C}/b_{2C}$, $0D = b_{1D}/b_{2D}$, and budget constraints in each destination.

The budget constraints E_A, E_B, E_C, E_D indicate maximum amounts of characteristics (combinations of Z_1 and Z_2) that might be consumed by a traveler given the available expenditure for traveling purpose. The line E_A—E_B—E_C—E_D is the efficiency frontier: each point along the line is the optimum amount that the traveler can consume. In diagram (a) in Figure 1, the area inside the plane formed by 0—E_A—E_B—E_C—E_D—0 is the traveler's opportunity set: the traveler might choose one point inside the area that best suits a preference. Given the convex indifference curve, point E^* in diagram (b) in Figure 1 indicates the optimum point the traveler could choose; the traveler must spend time in B and C in one trip.

Inclusion of time constraint. Tourism is a time-consuming activity. Therefore, a time constraint must also be included in the model. With the inclusion of a time constraint, the consumer maximizes *U (z)*

FIGURE 1
CHARACTERISTICS SPACE

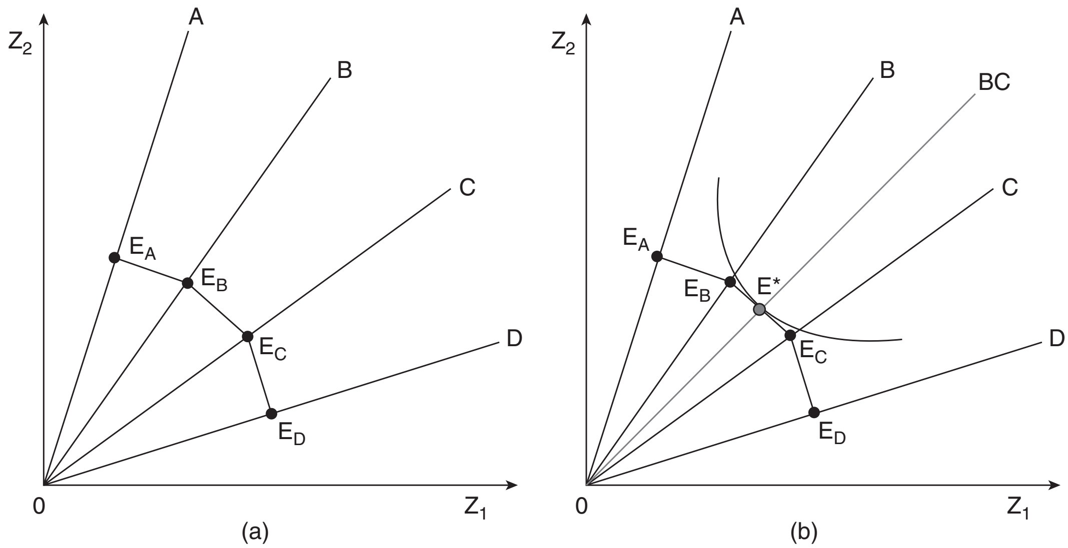
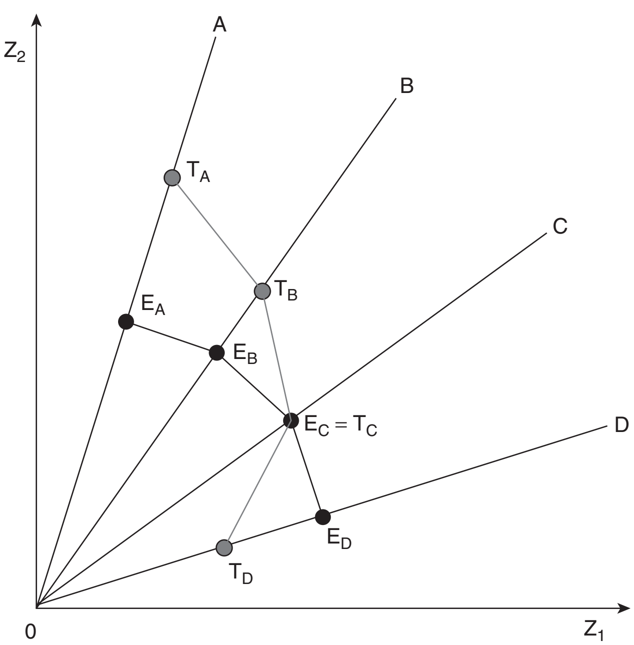


FIGURE 2
CHARACTERISTICS SPACE WITH BUDGET AND TIME CONSTRAINTS



$$\text{subject to } z = bx$$
$$E \geq p_x \cdot x + p_t \cdot m$$
$$\mathrm{T} \geq c \cdot x + t \cdot n$$
$$z, x, p_x, p_t, t, c, m, n \geq 0,$$

where z is a vector of characteristics, x is a vector of days spent in each destination, p_x is a vector of prices per day visit in each destination, p_t is a vector of transportation prices between region pairs, t is a vector of transportation time among all links in a transportation network, c is a permutation column vector whose elements are all 1, and m and n are permutation column vectors whose elements are either 1 or 0.

Figure 2 shows that the inclusion of time constraints T_A, T_B, T_C, T_D changes the efficiency frontier to E_A, E_B, E_C, E_D and the opportunity set to 0—E_A—E_B—E_C—T_D—0.

A MODEL OF MULTIDESTINATION TRAVEL

Tourism destinations are defined as d. The destinations produce characteristics Z_i. Traveling occasions are defined as n. The time constraints for respective occasions are defined as T_n. A yearly available expenditure for traveling purposes is defined as E. Transportation prices between all pairs of nodes in transportation network o to d at occasion n are defined as p_{todn}. The transportation time between all pairs of nodes in transportation network o to d at occasion n is defined as t_{odn}. The price to spend a day in d on occasion n is defined as p_{xdn}.

The consumer maximizes $U(z)$ subject to

$$\text{the characteristics } z_i = \sum_{n=1}^{N} \sum_{d=1}^{D} b_{idn} (\delta_{dn} \cdot x_{dn})$$

$$\text{the budget constraint } E \geq \sum_{n=1}^{N} \sum_{d=1}^{D} p_{xdn} (\delta_{dn} \cdot x_{dn}) + \sum_{o=1}^{O} \sum_{d=1}^{D} (\delta_{odn} \cdot p_{todn}); \text{ and}$$

$$\text{the time constraint } T_n \geq \sum_{d=1}^{D} \delta_{dn} \cdot x_{dn} + \sum_{o=1}^{O} \sum_{d=1}^{D} \delta_{odn} \cdot t_{odn};$$

$$n = 1, 2, 3, \ldots, N$$

where $\delta_{od} = 1$ if the traveler goes from o to d, and $\delta_{od} = 0$ if the traveler does not go from o to d.

$$\text{If } \sum_{0} \delta_{odn} \geq 1, \text{ then } \delta_{dn} = 1. \text{ If } \sum_{0} \delta_{odn} = 0, \text{ then } \delta_{dn} = 0,$$

$$\text{with the conservation law } \sum_{0} \delta_{od} \bigg|_{d=j} = \sum_{D} \delta_{od} \bigg|_{o=j}$$

$$\text{and } z, x, P_x, P_t, t \geq 0.$$

The model can be considered as an extension of the currently applied Lancaster's model in tourism. It implies some important points. The model introduces occasions of travel (n) into consideration. The definition of *occasion* in this model refers to how frequently the traveling activity could occur within a year. Given many holidays such as weekends and other seasonal or bonus-related vacations, consumers' decisions toward these holidays then result in *to travel* and *not to travel* (i.e., using the holidays to do other leisure activities). The decision to travel marks the traveling occasion.

Introduction of the traveling occasion presents the possibility of differences in time constraints and prices (transportation prices as well as staying prices) at each occasion. Examples of such phenomena are peak and off-peak flight fares between a particular origin and a destination that might vary throughout time, and low- and high-season accommodation rates at different destinations.

The model also allows for a changing consumption technology coefficient of a destination within a given time span. In the model, characteristics are assumed to be occasion dependent. In other words, destinations might produce different proportions of characteristics at different occasions. An illustration of this fact is the change of characteristics caused by seasonal and climatic variation throughout the year. One locale might be considered more beautiful in winter than in summer; another place's cuisine might have a unique taste at an occasion when special crops or spices are in season. Consumers' destination choices within the model framework would result in visits to single destinations or to multiple destinations within one occasion. Summing up all occasions, the decision then points to travel to the same destination or destinations at all occasions (destination repetition), or to travel to a different destination at each occasion. Mixes of more than one destination in overall traveling choices, which might exist in one occasion or many different occasions, are all regarded in this article as multidestination travel. Cases and diagram illustrations in the next section will aid in clarifying this matter.

Illustrations and cases. Assume that three destinations, A, B, and C, exist with characteristics Z_1 and Z_2, which are produced in the same proportion throughout the year. The traveler has two occasions of traveling (1 and 2) with time constraints T_1 and T_2, and budget constraints E_1 and E_2; the ray of characteristics and constraints are illustrated in Figure 3.

Diagram (a) of Figure 3 illustrates the time and budget constraint of occasion 1, whereas diagram (b) of the same figure illustrates the time and budget constraint on occasion 2. Diagram (c) of Figure 3 illustrates the condition when the traveler chooses to travel to the same destination in both occasions: destination repetition. Choosing destination C, the traveler faces point T_{C1C2} in ray $0C$ as the time constraint, and a point between E_{C1} and E_{C2} as the budget constraint.

Figure 4 illustrates the choice of multiple destinations on one occasion. As discussed in Rugg (1973), a trip to more than one destination involves a positive transportation cost and transportation time among alternate destinations that might decrease attainable vacation days in the destinations, which in turn decreases the level of utility. The present study is intended to illustrate the dynamics of destination combinations that are likely to occur in the present day. Mobility among alternate destinations is considered to be the core factor that determines the possibility of destination combination in multidestination choice.

Diagram (a) in Figure 4 shows a case in which distance between destinations is relatively small. The movement from one destination to another will not affect the attainable vacation days at both destinations: the time and cost for moving are sufficiently small to be considered negligible. When combining A and B at the same occasion, the time constraint is the line between T_A and T_B, and the budget constraint is the line between E_A and E_B.

In addition, diagram (a) also shows that when one destination (A) is en route to other destination (B), a visit to A on the way to B might be considered as a sunk cost in transportation but implies staying time and the difference in staying price. Given the characteristics of each destination, the budget and time constraints of the combination do not shift (the time constraint is the line between T_A and T_B, and the budget constraint is the line between E_A and E_B).

Diagram (b) in Figure 4 is a case in which distances between alternate destinations are sufficiently large that the traveler will face some decrease in his or her attainable days of vacation. Within this situation, the traveler might choose between using inexpensive slow transportation and expensive fast transportation, assuming that the infrastructure for both choices is available. There would be a relatively small effect on the budget constraint but a huge effect on the time constraint if a traveler chooses to use low-cost, slow transportation. This choice causes the shift in time constraint line, as in the combination of A and B, in which the time constraint line T_AT_B shifts downward, causing the time constraint to change to point T_A, the solid line under line T_AT_B, and point T_B. If, however, a traveler chooses to use high-cost, slow transportation, a relatively small effect on the time constraint would occur along with a huge effect on the budget constraint. This choice causes the shift in the budget constraint line, as in the combination of B and C, in which the budget constraint line E_BE_C shifts downward, causing the budget constraint to change to point E_B, the solid line under line $E_B E_C$, and point E_C. The time and budget constraints are discrete at points (T_A, T_B, E_B, E_C), continuous in the solid line, and discontinuous at points when the solid lines are perpendicular with the rays of characteristics.

Travelers could also consume destination mixes by traveling to different destinations on different occasions, each with a single destination and multiple destinations. Figure 5 illustrates examples of combinations that are consumable by travelers: ray A_1A_2 represents characteristics of visiting A on occasions 1 and 2; ray B_1C_2 indicates the characteristics of visiting B on occasion 1 and visiting C on occasion 2 (both as single destinations); and area $B_1B_2C_2$ are the characteristics of visiting B at occasion 1 as a single destination and B and C (multiple destinations) on occasion 2. The lengths of ray 0-A_1A_2, ray 0-B_1C_2, and area $B_1B_2C_2$ are determined by the efficiency frontier (whichever of budget or time constraint is closest to 0). Within these examples, both combinations B_1C_2

FIGURE 3
MULTIOCCASION SINGLE DESTINATION CHOICE

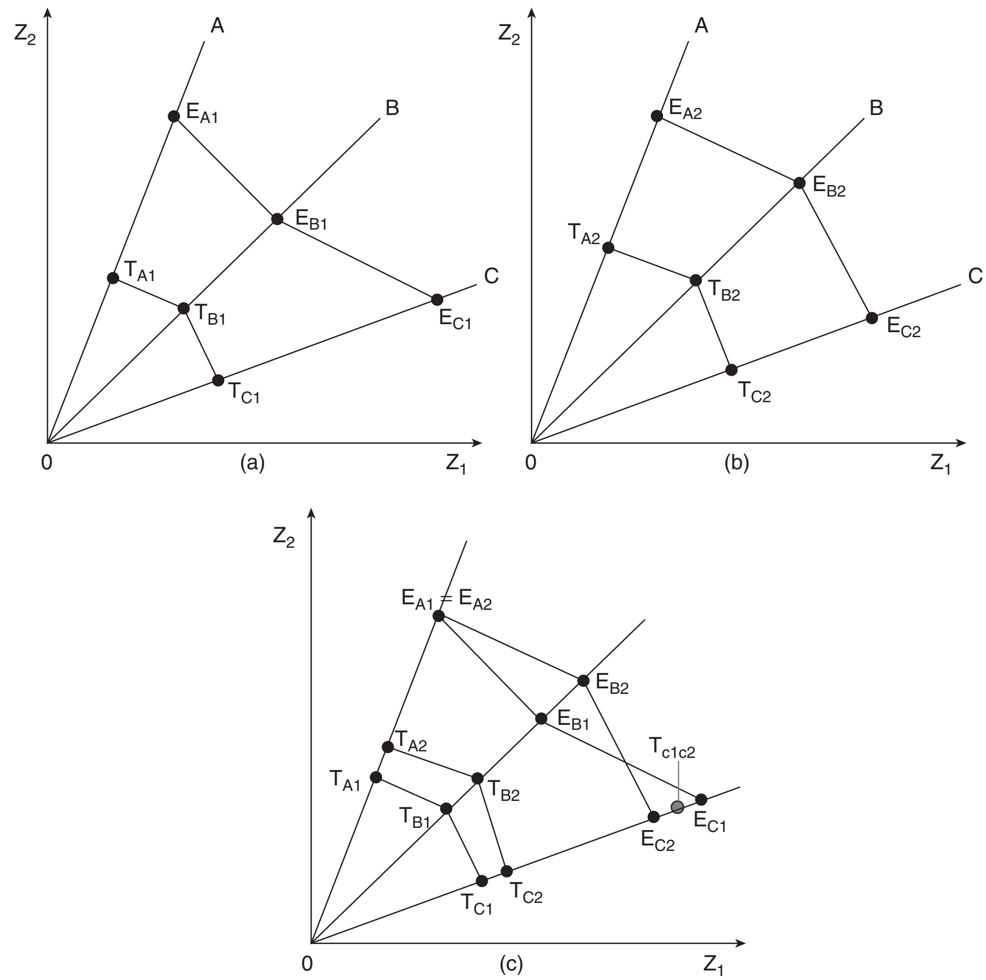


FIGURE 4
CHARACTERISTICS OF MULTIDESTINATION TRAVEL

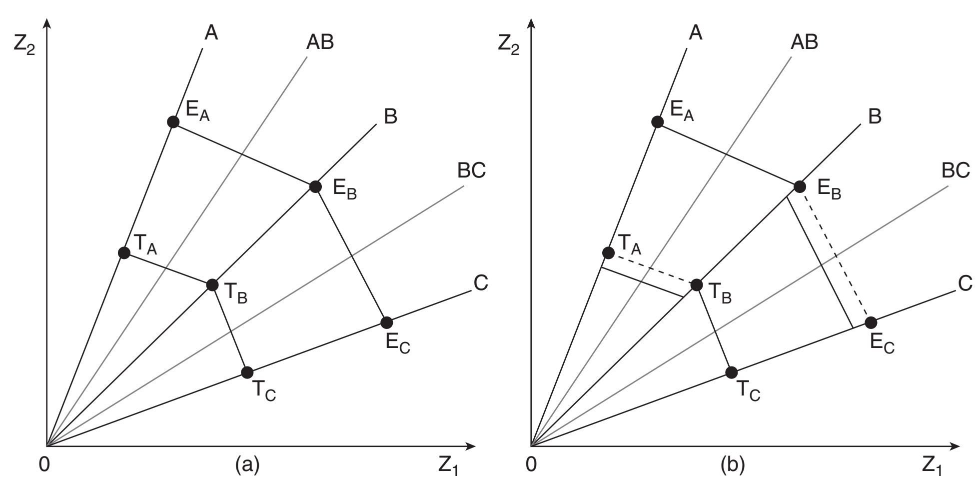
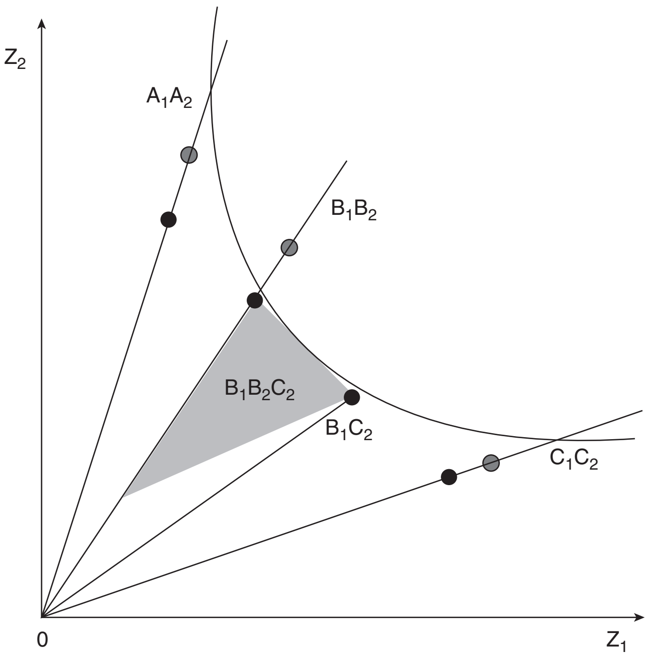


FIGURE 5
COMBINING SINGLE DESTINATION AND MULTIDESTINATION TRAVEL WITHIN A TIME SPAN



and $B_1B_2C_2$ are considered as multiple destination visits in this article. Given the convex indifference curve in the figure, mixes of destinations $B_1B_2C_2$ generate the highest utility to the traveler; they hold the concept of variety-seeking behavior. Dynamics of traveler choices within this case can also be compared with the case in which destinations produce different characteristics throughout the year.

These illustrations clearly demonstrate that combining more than one destination can generate higher utilities for certain travelers than single destination travel. Under certain conditions, grouping destinations in a package can increase their likelihood of purchase. Some irregularity results, however, from destination attractiveness or traveler behavior. Some particular destinations might offer unique attractions, which may drive travelers to visit them repeatedly. Conversely, some particular travelers might also attempt to avoid the risk of visiting other destinations and continually visit the same destination.

Trip itinerary. Within one traveling occasion, the key concept to multidestination travel is the trip itinerary, which consists of a route with one or more stops that a traveler takes (Lew and McKercher 2002). Numerous studies have modeled various trip itinerary configurations (Gunn 1994; Lue, Crompton, and Fesenmaier 1993; Oppermann 1995; Lew and McKercher 2002; Hwang and Fesenmaier 2003) that are arranged based on the route and the stops en route.

Lue, Crompton, and Fesenmaier (1993) proposed a classification system of trip configuration (referred herein after as the *LCF system*) that consists of five alternative patterns: (1) single destination travel, (2) en route travel, (3) base camp travel, (4) trip chaining, and (5) regional tour (see Figure 6). With the definition of δ_{od} and δ_d as well as the conservation law, which prohibits travel from the tourism network system, the model in this article allows for all LCF trip configurations.

The probability of taking multidestination travel within one occasion, then, relies on travel mobility among alternate destinations. Travel mobility constrains the flexibility of itineraries and is therefore related to time as well as budget. In general, it can be considered that the greater the mobility among destinations, the stronger the tendency toward multidestination travel (Cooper 1981; Debbage 1991). This mobility depends on the spatial configuration of destinations as well as the origin (i.e., distance and transportation network) and transportation mode. Within the time and budget constraint, the model encapsulates the distance factor, that is, the distance between origin and destination, as well as the distance between alternate destinations.

Travelers' preferences and destination loyalty. Within the model, travelers' preferences are indicated by the utility function and indifference curves, which illustrate the relative importance of each destination characteristic to the travelers. A traveler who exhibits a greater interest in a particular characteristic has a relatively flat indifference curve toward the other characteristics (see Figure 7). If traveler 1 has a greater interest in scenic beauty than in a cultural attraction, the scenic beauty becomes a more important determination in choosing destinations.

Tourists who travel in groups tend to include more than one destination in the travel itinerary to accommodate the heterogeneity of preferences of different group members. For instance, in cases of spousal and family vacations in which each individual has different preferences toward destination characteristics, more than one destination with different characteristics is likely to be included in the travel itinerary or be combined throughout time from one occasion to the next.

Travelers' preferences are strongly related to the concept of destination loyalty. Destination loyalty is associated with the idea that previous experiences influence subsequent traveling decisions, specifically destination choice. As Oppermann (2000) argued, destination loyalty exists in a longitudinal perspective, analyzing individuals' lifelong destination choices rather than looking merely at repeat visitation of previous destinations.

To explain the destination loyalty within the model, the utility $U(z)$ can be replaced by $U(\sum_{i=1}^{I} z_{in}, \sum_{n=0}^{n-1} \sum_{i=1}^{I} z_{in})$; the travelers maximize the utility of destination characteristics $(\sum_{i=1}^{I} z_{in})$ in consideration of the cumulative experiences of characteristics consumed in previous travels $(\sum_{n=0}^{n-1} \sum_{i=1}^{I} z_{in})$. After some number of visits, the combination of characteristics at particular destinations still best suits what the travelers seek (giving the highest utility to the travelers), thereby creating destination loyalty.

Applicability to empirical analysis. This study is intended to construct a theoretical model of multidestination choice. This subsection discusses the empirical applicability of the constructed model to the real world for future research.

Estimation of the utility function is possible by collecting data of consumers' preferences toward particular destination characteristics. Seddighi and Theocarous (2003) personally administered questionnaires with a 3-point Likert-type scale to tourists visiting Cyprus in March 2001. Thereby, they measured the importance of that destination's characteristics. Similar questionnaires can be used to estimate the importance

FIGURE 6
LCF SYSTEM OF TRAVEL CONFIGURATIONS

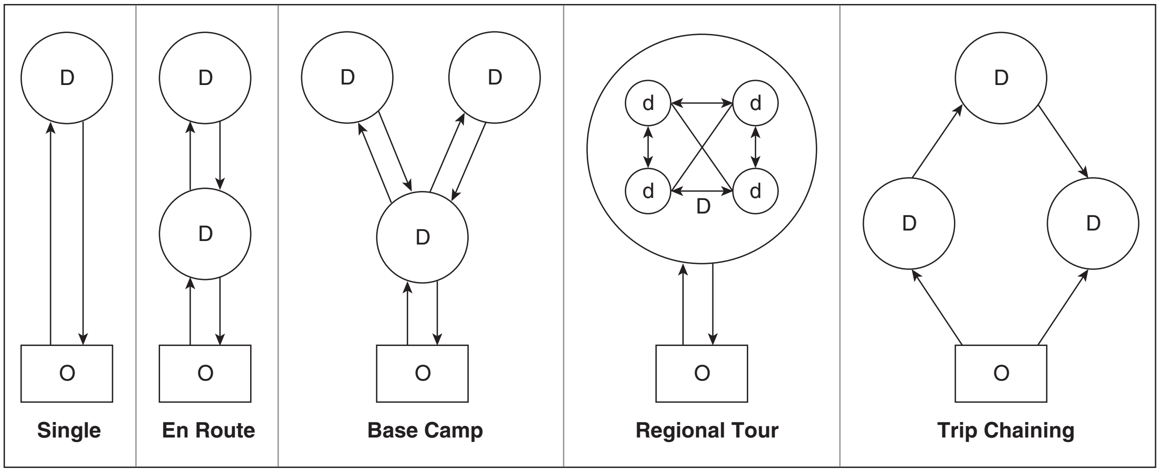
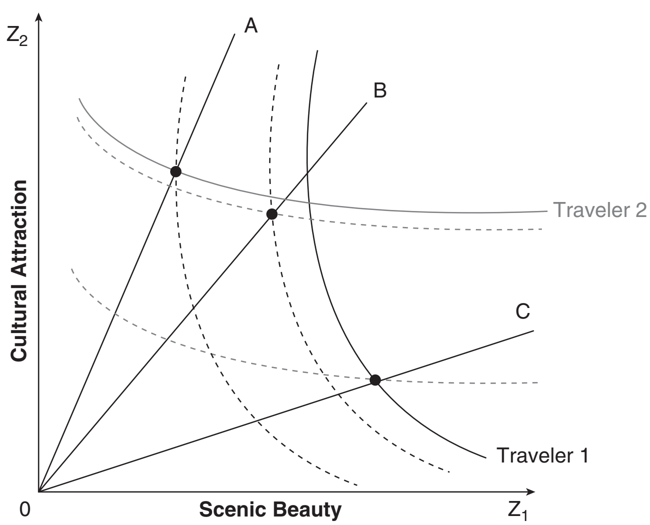


FIGURE 7
TRAVELERS' PREFERENCES



and attractiveness of many destination characteristics at different types of tourist segments.

The next issue is to estimate how many characteristics destinations can generate in some period, that is, coefficient technology (b). Rugg (1973) considered only quantifiable characteristics in his research: average temperatures, average rainfalls, average hours of daily sunshine, and so on. The most important destination characteristics are unquantifiable: beauty, comfort, delicacy, and so on. A hedonic approach can quantify the latter characteristics and estimate destinations' coefficient technology.

The remaining variables, such as staying prices, transportation prices, and transportation time, are easily measurable. Having all those variables, this model can be used to estimate travel demand to particular destinations.

IMPLICATIONS FOR TOURISM MARKETING STRATEGIES

The model described above is useful as a basic tool to implement various marketing strategies and destination management. Given their characteristics, other characteristics, and consumer preferences, destinations could appeal differently according to many challenges and opportunities generated by travelers' behavior of combining destinations. Tour operators could offer the best combination of destinations as a package tour to draw more travelers.

Strategies for tour operators. For tour operators, the model can be used to decide on and evaluate combinations of destinations that yield a maximum utility for certain travelers. When designing various package tours that combine myriad destinations, important considerations must be given to destination choice and the visitors' lengths of stay at each destination.

The practice of packaging destinations is not new, but no theoretical basis accompanies the package design—that is, destination choice and duration—with regard to travelers' utility. Some destination packaging as well as service packaging, which are created without considering consumers' utility, pose the risk that they will eventually hurt the consumption process, namely, generate dissatisfaction among travelers. Gourville and Soman (2002) showed that bundling services can reduce actual consumption and also decrease repeat sales. Examples shown in their article reflect the grouping of resorts or restaurants created by managers as an attempt to increase demand without consideration of consumers' utility.

Illustrations in the following figures present some explanations of the utility of destination combinations as well as choosing the most efficient among possible combinations. Two characteristics are plotted in the diagram. Therefore, the possible combination is limited to two destinations. This is a simplification of the model because the model allows the number of destinations (*d*) and the number of characteristics (*i*) to be analyzed.

FIGURE 8
UTILITY MAXIMIZATION WITH MULTIDESTINATION TRAVEL

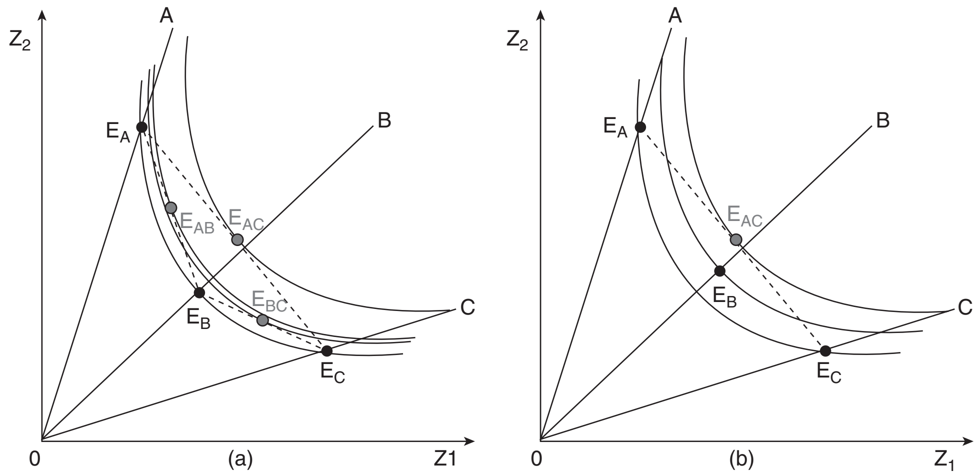


FIGURE 9
GUIDELINE 1: ANGLES BETWEEN ALTERNATE DESTINATIONS

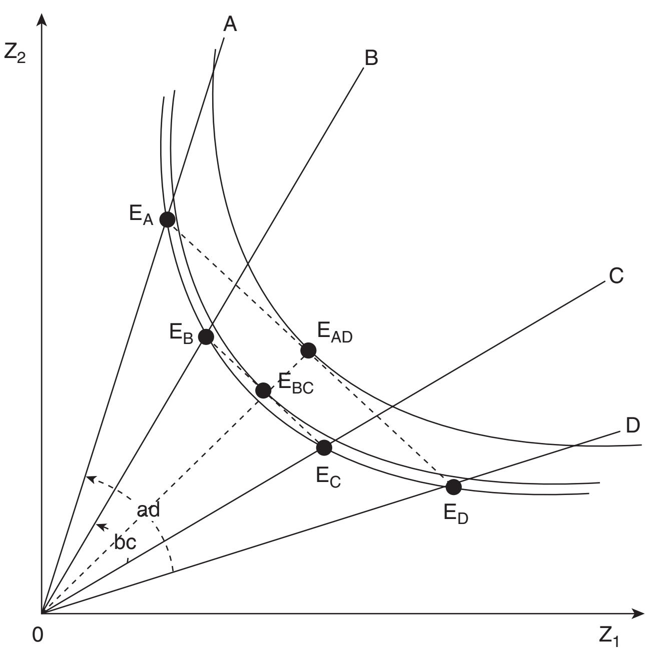


Diagram (a) in Figure 8 shows that destinations *A*, *B*, and *C* offer the same utility level when they are consumed as single destinations. Combining *A* and *B*, *A* and *C*, or *B* and *C* (i.e., point E_{AB}, E_{AC}, and E_{BC} respectively) creates higher utilities than those of single destinations (i.e., point E_A, E_B, and E_C). Given, however, the indifference curve, the combination that generates the highest utility is *A* and *C* at point E_{AC}, assuming that the mobility between *A* and *C* is sufficient that the traveler can move without decreasing the number of staying days. Diagram (b) in Figure 8 shows that the combination of *A* and *C* (i.e., point E_{AC}), which respectively have lower utility levels than *B*, yields a higher utility than that of *B*.

The efficiency of combining destinations is well illustrated. Therefore, we should next seek the combination that attracts travelers most efficiently. The following are several guidelines for tour operators to choose the most efficient combination of destinations as a package.

> Guideline 1: combine destinations with the largest difference in characteristics when the resulting combinations yield a similar ray of characteristics.

Assume four destinations, *A*, *B*, *C*, and *D*, which all have the same utility level as in Figure 9. Combining *A* and *D* (at point E_{AD}), for which each ray of characteristics differs by angle *ad*, generate higher utility than combining *B* and *C* (at point E_{BC}), for which each ray of characteristics differs by angle *bc* (where $ad > bc$). Both points (E_{AD} and E_{BC}) are in the same ray of characteristics from the 0 point, as shown by the dashed line from 0 to both points. The ray shows that both combinations yield similar characteristics for the traveler, but the combination of *A* and *D* is more efficient. The illustration shows that, given a convex indifference curve, the larger the angle between two rays of characteristics, the more efficient the combinations of destinations.

> Guideline 2: combine destinations to produce a ray of characteristics that is perpendicular to the indifference curve when the resulting combinations yield a different ray of characteristics.

The most efficient destination combination can be analyzed using the angle between the rays of characteristics and indifference curve. Supposing homothetic preferences for cases in which the slopes of combinations are different and the angles between rays of alternate combinations are the

FIGURE 10
GUIDELINE 2: ANGLES BETWEEN THE RAY OF CHARACTERISTICS AND THE INDIFFERENCE CURVE

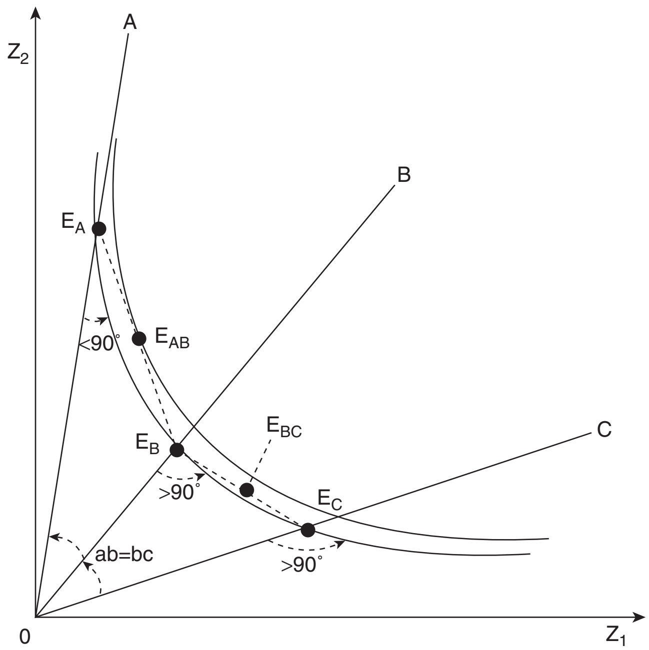
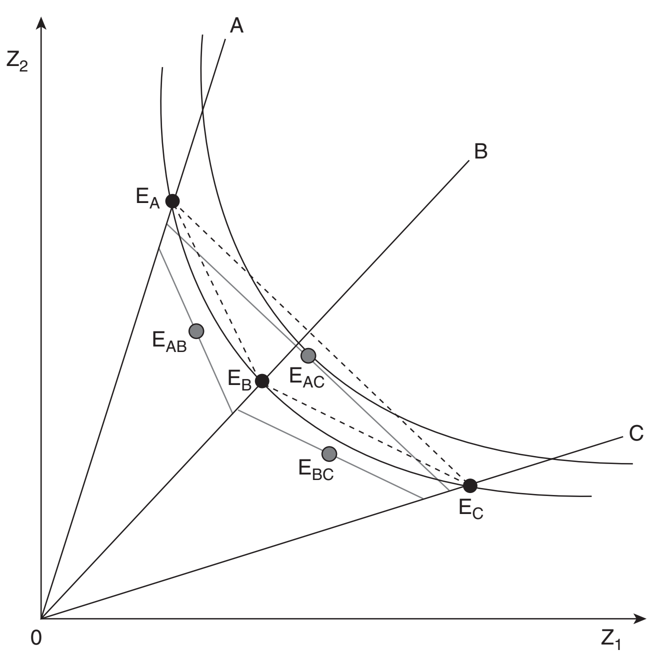
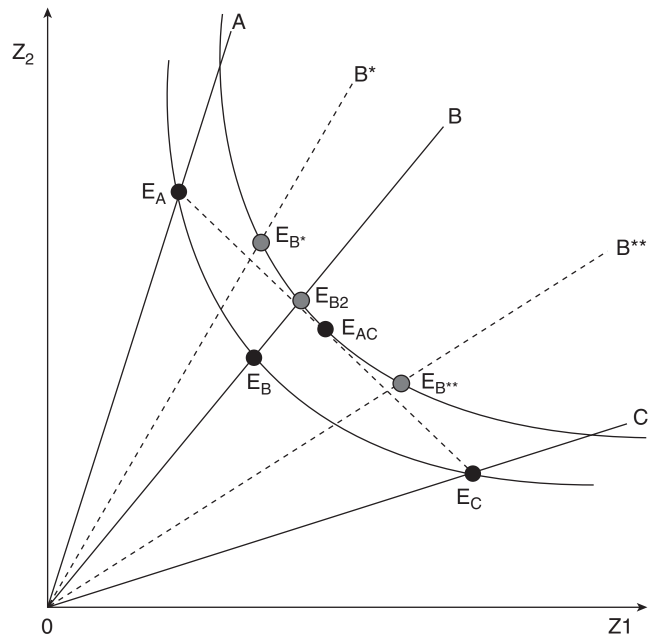


FIGURE 11
EFFECTS OF MOBILITY AMONG DESTINATIONS



same (as in Figure 10: *ab* = *bc*), the combination of destinations having different angles of intersection between the ray and indifference curve (as in *A* and *B*, where the angle between

FIGURE 12
STRATEGIES FOR EXISTING DESTINATIONS



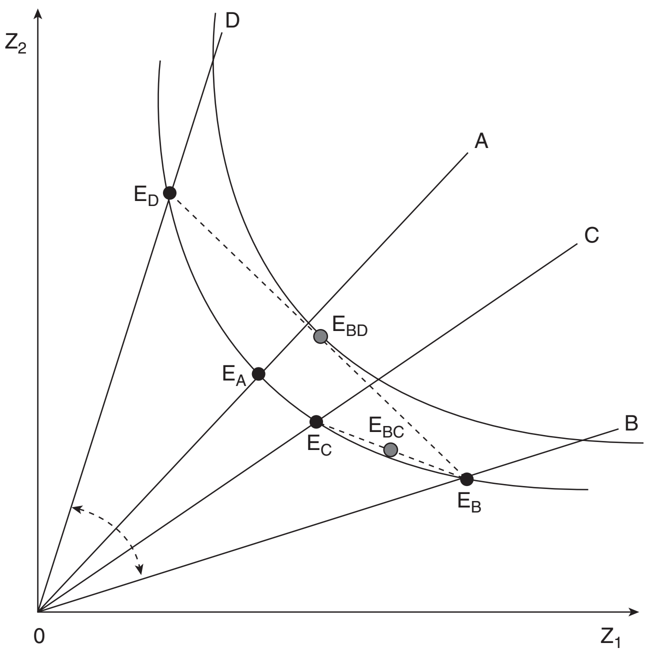
ray *A* and the indifference curve is < 90° and the angle between ray *B* and indifference curve is > 90°) is more efficient than that having the same relative angle of intersection (as in *B* and *C*, where angles between rays *B* and ray *C* with indifference curves are both >90°).

The combination of *A* and *C* (i.e. point E_{AC}) is on the highest indifference curve when the transportation time and cost between destinations are positive. The combination of *A* and *B*, however, offers lower utility than visiting *A* and *B* as single destinations. Taking into account the transportation cost and time, some inefficient destination combinations exist. (See Figure 11.)

Strategies for destinations and tourism authorities. The situation in Figure 8 also draws some implications regarding the destinations. Destinations *A* and *C* in diagram (b) have no better choice than to ally to attract visitors and thereby capture certain market segments. Meanwhile, aware of the possibility that a combination of *A* and *C* would attract a large segment of travelers, destination *B* should implement strategies to maintain its market. Possible strategies include moving the efficiency constraint along the ray of characteristics to meet the higher utility (as in Figure 12, from point E_B to point E_{B2}), for example by reducing transportation costs or lodging expenses, or changing the ray of characteristics to meet the utility function (changing to *B** or *B*** with the efficiency constraints at points E_{B*} and E_{B**} respectively).

Improvement in quality (attraction and inner destination transportation) or a decrease in prices might move the constraint point along the ray of characteristics. Destination *B* can also make innovative attractions, such as festivals or other events, that might accumulate their consumable characteristics, all or only particular characteristics, in one

FIGURE 13
INTRODUCTION OF A NEW DESTINATION



preferable occasion. Such accumulation may increase the destination's utility level to one that is higher than that for other destinations.

Tourism authorities such as a government might seek to introduce a new destination to attract more tourists. Tourists might also combine new destinations with existing ones. Therefore, the choice of which kind of destination to be developed must be made along with the consideration of destination combination. The choice then relies on the characteristics of the new destination, compared with existing destinations. As in Figure 13, given *A* and *B* as existing destinations, developing destination *C* would not be efficient for attracting tourists. On the contrary, developing destination *D*, if it is combined with destination *B*, will increase the overall utility of travel. In conclusion, to generate more demand, it would be more efficient for tourism authorities to develop new destinations that differ greatly from existing ones.

CONCLUDING REMARKS

This study incorporated the number of trips and multidestination travel into the current application of Lancaster's model in tourism destination choice. Travel to multiple destinations is observed as visiting more than one destination on a single occasion as well as in multioccasion travel behavior. The model developed in this article accommodates all possible configurations of trip itineraries in visiting multiple destinations on one occasion, which was not accommodated in the current models. This model also captures the evolution of a tourism structure because it allows for a shift in the ray of characteristics based on traveling occasions.

The model implications prove that combining more than one destination might engender a higher utility and thereby increase the purchase likelihood. The model can be used as a theoretical basis for tourism policy makers and businesses to determine some marketing strategies for destination development.

This article provides tour operators some guidelines for designing a package tour: choosing a proper destination and designing the duration of stay at each destination. Packaging destinations would be accomplished most efficiently by combining two (or more) destinations that differ in characteristic proportions (marked as the angle between rays of characteristics) and in the angle of intersection between those rays with an indifference curve. This consideration is also important for tourism authorities to determine the development of new destinations. Developing new destinations that are differing greatly from existing ones could increase the overall utility of travel and thereby attract more travelers.

This study undertook no empirical work. Nevertheless, using particular techniques, the model is applicable for analyzing and estimating real-world travel patterns. The value of destination characteristics and consumer preferences can be measured using scaling techniques and a hedonic approach. The model provides a clear and strong basis for multiple destination choice analysis; the next extension can be done to transform the model into a discrete choice model, extending the current address approach to accommodate a combination of selected products. Further extension can be done to develop the model into a dynamic multiperiod model because it already includes a dynamic aspect: inclusion of traveling occasions (n).

The model in this article does not include the issue of *route* characteristics. Further research is possible to estimate the characteristics of routes between the origin and destinations and routes between alternate destinations, and how they determine the decision to take multidestination travel.

REFERENCES

Cooper, C. P. (1981). "Spatial and Temporal Patterns of Tourist Behaviour." *Regional Studies*, 15 (3): 359-71.

Debbage, K. (1991). "Spatial Behaviour in a Bahamian Resort." *Annals of Tourism Research*, 18: 251-68.

Fernandez-Castro, A. S., and P. C. Smith (2002). "Lancaster's Characteristics Approach Revisited: Product Selection Using Non-parametric Methods." *Managerial and Decision Economics*, 23: 83–91.

Fesenmaier, D. R., and S. R. Lieber (1985). "Spatial Structure and Behavior Response in Outdoor Recreation Participation." *Geografiska Annaler B*, 67: 131-38.

Gourville, J. T., and D. Soman (2002). "The Potential Downside of Bundling: How Packaging Services Can Hurt Consumption." *Cornell Hotel and Restaurant Quarterly* (June 2002): 29-37.

Gunn, Clare A. (1994). *Tourism Planning: Basics, Concepts, Cases*. Washington, DC: Taylor & Francis.

Hwang, Y. H., and D. R. Fesenmaier (2003). "Multidestination Pleasure Travel Patterns: Empirical Evidence from the American Travel Survey." *Journal of Travel Research*, 42: 166-71.

Kim, S., and D. R. Fesenmaier (1990). "Evaluating Spatial Structure Effects in Recreational Travel." *Leisure Sciences*, 12: 367-81.

Lancaster, Kelvin J. (1966). "A New Approach to Consumer Theory." *Journal of Political Economy*, 74 (2): 132-57.

——— (1968). *Mathematical Economics*. New York: Dover.

Lew, A. L., and B. McKercher (2002). "Trip Destinations, Gateways and Itineraries: The Example of Hong Kong." *Tourism Management*, 23: 609-21.

Lue, C. C., J. L. Crompton, and D. R. Fesenmaier (1993). "Conceptualization of Multi-destination Pleasure Trip Decisions." *Annals of Tourism Research*, 20: 289-301.

Lue, C. C., J. L. Crompton, and W. P. Stewart (1996). "Evidence of Cumulative Attraction in Multidestination Recreational Trip Decision." *Journal of Travel Research*, 35 (1): 41-49.
Morley, C. L. (1992). "A Microeconomic Theory of International Tourism Demand." *Annals of Tourism Research*, 19: 250-67.
Oppermann, M. (1995). "A Model of Travel Itineraries." *Journal of Travel Research*, 33: 57-61.
——— (2000). "Tourism Destination Loyalty." *Journal of Travel Research*, 39: 78-84.
Papatheodorou, A. (2001). "Why People Travel to Different Places." *Annals of Tourism Research*, 28 (1): 164-79.
Rugg, D. (1973). "The Choice of Journey Destination: A Theoretical and Empirical Analysis." *Review of Economics and Statistics*, 55 (1): 64-72.
Seddighi, H. R., and A. L. Theocharous (2003). "A Model of Tourism Destination Choice: A Theoretical and Empirical Analysis." *Tourism Management*, 23: 475-87.
Stewart, S. I., and C. A. Vogt (1997). "Multi-destination Trip Patterns." *Annals of Tourism Research*, 24 (2): 458-61.
Tideswell, C., and B. Faulkner (1999). "Multidestination Travel Patterns of International Visitors to Queensland." *Journal of Travel Research*, 37: 364-74.
Wall, Geoffrey (1978). "Competition and Complementarity: A Study in Park Visitation." *International Journal of Environmental Studies*, 13: 35-41.