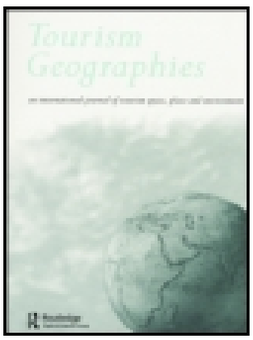

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Movement Patterns of Tourists within a Destination

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ABSTRACT *This paper reports on a study analysing the movements of tourists within an urban destination. A total of 78 discrete movement patterns was identified, which can be categorized into 11 movement styles. Data were analysed using GIS software. The large number of movement patterns is a reflection of the interaction of six factors: territoriality, the number of journeys made per day, the number of stops made per journey, participation in a commercial day tour, participation in extra-destination travel and observed patterns of multi-stop journeys. The 11 movement styles were influenced by territoriality and intensity of consumption.*

KEY WORDS: Spatial movement, GIS, patterns, urban destination

Introduction

The systematic study of tourist movements within a local destination is limited in tourism research (Douglas, 1987), causing Haldrup (2004: 434) to state that 'tourist mobility has often been transformed into a black box explaining the character of specific forms of tourism and tourist behavior, rather than a phenomenon in its own right that has to be explored and explained'. While a number of studies have been conducted mapping and modelling inter-destination movements (Mings and McHugh 1992; Lue *et al*. 1993; Oppermann 1995; Flognfeldt 1999; Lew and McKercher 2002), to date only one conceptual paper has attempted to map movements within a destination (Lew and McKercher, 2006). The authors called for empirical research to test their ideas. Understanding movements within a destination plays a fundamental role in understanding tourist behaviour, which in turn is directly applicable to the entire suite of destination management activities, including planning, tour product development, transport, attraction planning and accommodation development. In short, it is central to the understanding of how tourism works at a destination level. This paper reports on the findings of an empirical study examining the movements of fully independent tourists in Hong Kong.

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Background

A substantial body of literature has mapped and modelled the movements of tourists travelling between their home and destination areas or between destinations. The initial discussion of tourist movements occurred some 40 years ago (Campbell, as cited in Flognfeldt 1999), but little empirical work was conducted until the 1990s. Since then, at least five studies have been undertaken in various locations (Mings and McHugh 1992; Lue *et al*. 1993; Oppermann 1995; Flognfeldt 1999; Lew and McKercher 2002). Collectively, they identified 26 different itinerary types, differentiated by mode of transport, distance, number of stops and domestic versus international travel. McKercher and Lew (2004) argued that, on closer inspection, the patterns can be classified into four broad themes, as summarized in Figure 1.

The simplest itinerary style involves a single main destination, there and back journey with or without a side trip. A second itinerary type involves a transit leg to the destination area, followed by a circle tour stopping overnight at numerous points and then returning by the original transit route. The third style involves a circle tour with multiple stops, where the traveller does not repeat any transit leg. The circle tour may be contiguous where ground transport provides the only mode of transport, or may be open-ended or open-jawed where air transport is involved. The final pattern is a hub-and-spoke pattern, where tourists base themselves in a destination area and take side trips to other destinations.

Since inter- and intra-destination patterns reflect tourist movements at different scales, understanding inter-destination patterns may inform the conceptualization of intra-destination movement patterns, but may not mirror them exactly. Scale considerations make the challenge of modelling movements between destinations much simpler than modelling movements within a destination. Inter-destination movement models essentially consider the combinations of two components: a transit leg and a destination touring element. All travel involves two or more transit legs from the home to a destination region and back again or, in the case of multi-destination trips, transit between destination regions. It also will involve a touring element within the destination region, which is influenced by the number of places where overnight stops are made. Transit legs tend to be uni-directional and logical, leaving from the home and eventually returning to it. Likewise, the number of destinations where tourists stay overnight tends to be relatively small for most trips. Even so, the operationalization task of translating data into discrete patterns is complicated by the highly individualistic nature of most itineraries. As McKercher and Lew (2004: 37) noted

> the relatively simple task of mapping travel from Point A to Point B in reality becomes the extremely complicated task of documenting and then attempting to make sense of hundreds or thousands of individual travel routes, some going directly from A to B, some using different routes to make the trip, other stopping at C, D or E.

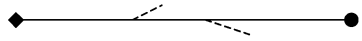
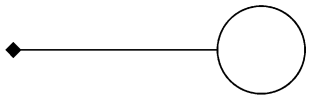
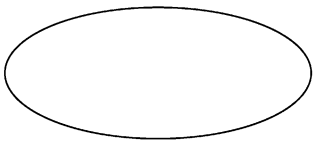
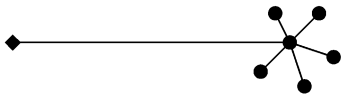
 Single destination, with or without side trips	Lue *et al*. (1993) × 2 Mings and McHugh (1992) × 1 Oppermann (1995) × 2 Flognfeldt (1999) × 1 Lew and McKercher (2002) × 1
 Transit leg and circle tour at a destination (transport modes may vary)	Mings and McHugh (1992) × 2 Lue *et al*. (1993) × 1 Oppermann (1995) × 1 Lew and McKercher (2002) × 2
 Circle tour with or without multiple access, egress points; different itinerary styles possible at different destination areas (transport mode may vary)	Mings and McHugh (1992) × 1 Lue *et al*. (1993) × 1 Oppermann (1995) × 3 Flognfeldt (1999) × 1 Lew and McKercher (2002) × 2
 Hub and Spoke Style (From home community or destination area)	Lue *et al*. (1993) × 1 Oppermann (1995) × 1 Flognfeldt (1999) × 2 Lew and McKercher (2002) × 1

Figure 1. Itinerary types. *Source*: McKercher and Lew (2004).

Mapping tourist movements within a destination area, on the other hand, is complicated by the virtually unlimited number of places that tourists could visit, an unpredictable sequencing order between places, the potential for stochastic movement patterns that may follow no logical pattern, and the unique needs and wants of individual tourists. Leiper (1990) argued that each tourist operates within his or her own individual tourism system. These systems may overlap at certain points, but each is discrete. Reduced to a destination level, his work suggests that the individual

movements by tourists may be unique, even though the patterns may involve visits to many of the same places. This idea is supported empirically by McKercher (2004), who examined visits to classes of attractions. His study of 1,304 visitors to Hong Kong asked respondents to identify which of 24 different classes of attractions and activities (i.e. heritage, beach, shopping, rather than the name of a specific place) they visited or participated in during their stay. A total of 1,002 different combinations emerged, prompting the author to conclude 'tourist movements are highly individualistic. Each visitor picks and chooses from the many activities available to create a personalized itinerary that suits their interests' (McKercher 2004: 19).

Intervening variables may exert a disproportionate influence on tourist behaviour at a destination level. Time availability will influence how deeply tourists explore the destination as well as both the number of places visited and intensity of visitation. Time is one of the few absolutes tourists must face, for it cannot be stored for use at a future date (Truong and Henscher 1985). In addition, Shoval and Raveh (2004) observed that people on limited time budgets often set their itinerary prior to departure and rarely change it once in the destination. Those with more time have greater flexibility and may follow a less predictable path.

Tourists generally exhibit both characteristics of 'space searchers' and 'space sitters' within the same trip (Walmsley and Jenkins 1991). Space searchers refer to tourists who demonstrate a wider and more active participation and visitation of sites, whereas space sitters are those who travel within a confined area of movement. According to Walmsley and Jenkins (1991), space searchers are more active, travel over a larger area and visit more places. Space sitters, in contrast, are more passive in their exploration patterns and are more willing to stay in their circle of familiarity. The choice of movement patterns depends on the personal power of control and the knowledge of the destination.

Haldrup (2004) adopted a post-modernist approach, suggesting that movements may be interpreted as a 'performed art' with their own styles and modalities. He suggested that places serve a multiplicity of roles that are rooted in social and cultural narratives that inform the way tourists inhabit, navigate and drift through space. Different travel patterns, therefore, can reflect how people sense and make sense of places and sites, as well as how these place encounters are framed within divergent social and cultural codes.

Motives clearly influence behaviour, with multiple-benefits seekers being more active than individuals travelling to have a single need met (Lue *et al*. 1993; Tideswell and Faulkner 1999). Lew and McKercher (2006) further recognized that a number of destination characteristics will influence movement patterns. The number and spatial organization of attractions and whether they are clustered or dispersed influence whether tourists move widely or narrowly within the destination. The spatial relationship between accommodation and attraction will also influence how far people have to travel to enter tourist precincts. Transport accessibility, cost, ease of convenience and whether the individual has access to private cars also influence mobility.

They attempted to model tourist movements conceptually using an inductive approach based on urban transportation modelling and tourist behaviour. Their study categorized tourist movements by one of two dimensions: territoriality and linearity. Territoriality reflects the distance that tourists are willing to venture from their place of accommodation. Movement patterns range from extremely restricted, where the tourist does not leave the accommodation property or limits movements to the immediate vicinity of the accommodation house to completely unrestricted movements where they travel freely through the destination. The linear path models mirror, more closely, the inter-destination movement models identified above. They include point-to-point patterns, circle loops with or without a transit leg, multiple patterns and the prospect that the pattern is random and exploratory in nature. Each of the linear path models can be superimposed on the territorial models. Thus, for example, a repetitive point-to-point pattern could be observed equally by individuals staying in close proximity to the hotel, as well as those who travel to popular outlying attractions.

Method

This study examined the daily movements of the fully independent pleasure tourists staying in one of four hotels located in close proximity to each other in the tourist precinct of Kowloon, in Hong Kong. Fully independent tourists (FITs) were selected for they have 'flexibility in their itinerary and some degree of freedom in where they choose to travel within a destination region' (Hyde and Lawson 2003). Their movements, therefore, are not influenced artificially by the constraints imposed by an organized packaged tour.

The study involved a three-stage data collection process, including an arrival interview, completion of a trip diary and a post-departure survey. Prospective study participants were approached on check-in in the hotel lobby. The sample is, therefore, both purposeful and convenience: purposeful in the context of selecting FITs and limiting the number of hotels targeted to a select group of four- and five-star properties in close proximity to each other; and convenience by the nature of the selection process. Respondents who indicated a willingness to participate completed the arrival interview, which sought information on the trip profile, motivations, planned activities and basic demographic details. They were given a trip diary and instructed to record their daily movements, provide information on places visited, points of interests or activities that the tourists participated in, time of day, duration of time spent at each place and the transport mode used to navigate around the destination. The trip diaries were collected on departure and the respondent was then given a further questionnaire asking for more detailed information on places visited, pre-departure awareness of attractions and intentions. They were instructed to return this survey by post.

A total of 1,273 arrival interviews were conducted between November 2004 and December 2005 at the four participating hotels. The author's prior experience with multi-stage research suggested that up to three-quarters of initial respondents would

not continue with the study. This pattern was observed here, as only 340 respondents completed the trip diary. Data cleaning to eliminate non- or partial responses and to exclude extremely long stay visitors yielded a viable database of 250 respondents. Participants originated mainly in Western countries, with Australians, North Americans and UK citizens accounting for 80 percent of the sample. Asians, in general and residents of China Mainland in particular, were under-represented. Three reasons are cited. First, the hotels cater more to a Western clientele than to an Asian market. Secondly, up to half of visitors from the China Mainland visit Hong Kong as members of package tours, which excluded them from the study. Thirdly, there is no culture of participating in this type of study within China. Past experiences of running international visitor surveys indicate that the participation rate amongst Westerners is typically high, while the success rate of interviewing visitors from China Mainland is typically less than ten percent. The respondents were typical of the long haul pleasure tourist market attracted to Hong Kong (HKTB 2006). About 55 percent were first-time visitors, 36 percent identified Hong Kong as their main destination and 21 percent identified it as their only destination. The mean length of stay was 3.8 nights, with the mean total trip duration being 19 nights.

The most appropriate way to identify movement patterns within a destination is to analyse daily movements, rather than movements throughout the entire visit. Daily movements represent discrete journeys beginning and ending at the hotel. The 250 respondents made a total of 930 person-day trips. They visited a total of 5,273 points, or an average of 3.6 places per day, including the hotel. The daily itinerary, as recorded in the trip diary represents the spatial data which were analysed using geographic information systems (GIS) software. Data were coded into an Excel spreadsheet and transformed into the GIS format, with exact coordinates of attractions digitized on maps as points and transit routes between attractions as straight lines connecting points.

GIS is an analysing tool which is used extensively in geographical studies. Its application in tourism, though, is limited especially on the topic of tourist movement patterns. In this study, GIS is used as the mapping tool for data input and analysis. As McAdam (1999) mentioned, 'the significant value of GIS technology therefore, is in its ability to provide desk-top mapping through the graphical display and manipulation of data in order to identify patterns or relationships based on particular criteria'. The use of GIS helps to transform data into meaningful information available for analysis. An important aspect of GIS in this research is the ability to visualize spatial data. The geometrical aspects of tourist movement can be represented in the GIS environment through mapping. Maps become an essential element for spatial data analysis.

GIS helps to visualize tourist daily itineraries through digitization of attractions and connections between sites on the map. Figure 2 shows the digitized map of the movements of one tourist's movements during one day. Starting from the hotel (H), this person then proceeded to explore the immediate vicinity of the hotel, before travelling to an outer island to visit its two main attractions. The person returned to the hotel after visiting the ladies market. This individual did not leave the hotel again that

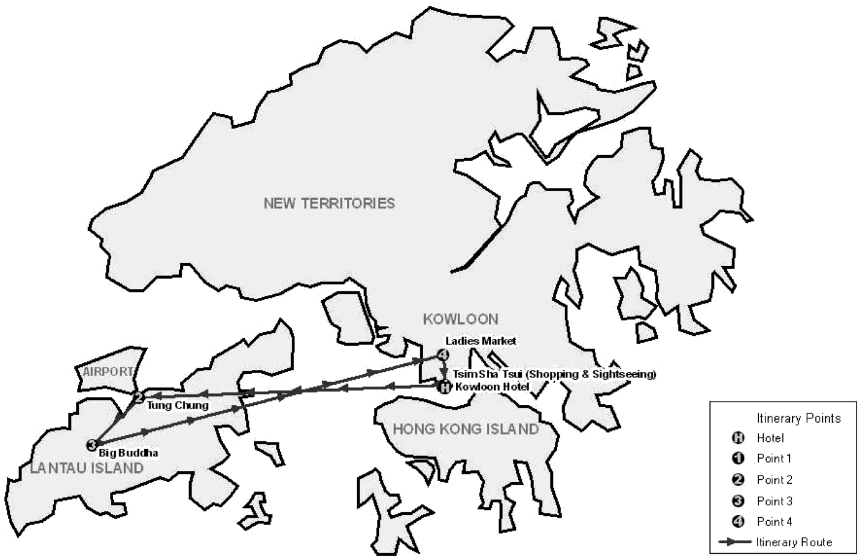


Figure 2. Sample itinerary pattern.

evening. This movement pattern has been characterized as a circular loop with multiple stops, including local exploration. Each of the itineraries was analysed to define the underlying, or common itinerary styles. Individual patterns were inferred or discerned from the common nature of the movement pattern. Items of the same pattern exhibit comparable and corresponding qualities which differentiate them from other patterns. Movement patterns were identified independent of places visited. Thus, two itineraries could match the same movement pattern style even if different places were visited.

The dataset has some limitations, which must be acknowledged. A self-completion survey method was chosen to reduce disturbance of the participants, and to facilitate ease of completion. This method has been used in the other movement studies discussed previously. The quality of the returned trip diaries influences the quality of the dataset. Some variance was noted, with some of the returned trip diaries providing insufficient details for GIS mapping. In addition, the predominance of Western, long haul tourists introduces a level of cultural bias. The patterns discussed below, therefore, are representative of a long haul tourist, but no conclusions can be inferred about the movements of Asian and, especially, Chinese tourists.

Results

78 Movement Patterns

A total of 78 discrete patterns emerged, as shown in Figure 3. Figure 3 also identifies the frequency each pattern appeared both among the 930 daily journeys and the 250

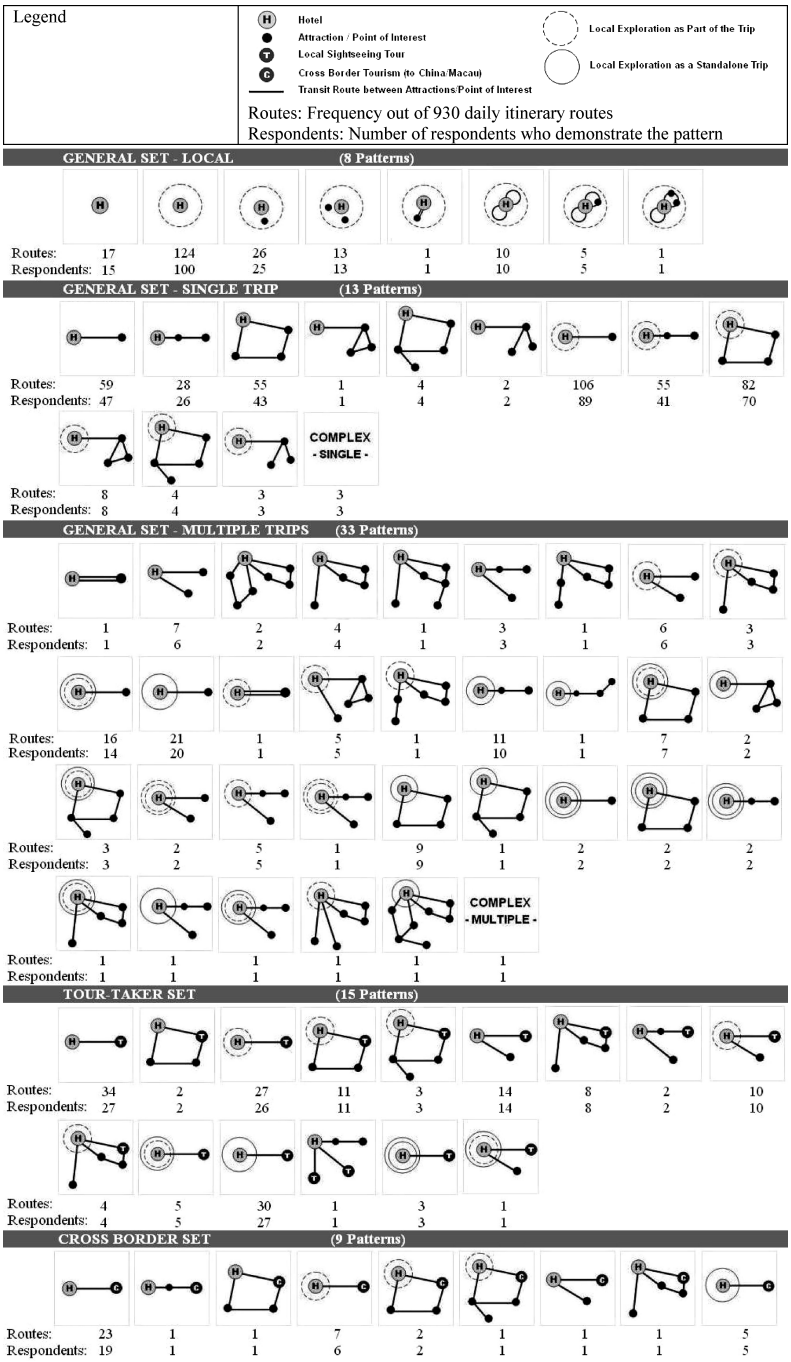


Figure 3. Observed movement patterns.

respondents. The 'H' represents the hotel where the journeys started and ended. A black dot represents a place visited in the trip diary. 'T' indicates joining a local sightseeing tour and the 'C' represents a day trip to China or the Macau Special Administrative Region. Multiple lines indicate the person took more than one trip during the day. Some tourists confined their activities entirely or largely to within a 500 m radius of the hotel. This movement pattern is represented as a circle. A solid line reflects a discrete journey that was confined entirely within the radius, while a dotted line circle indicates the person visited places within the immediate region and also travelled beyond it on a single journey.

The designation of a discrete pattern was based on the consideration of seven factors:

1. territoriality – movements completely within a 500 m radius of the hotel or journeys beyond this threshold;
2. the total number of journeys taken each day;
3. the number of stops made per journey;
4. the observed pattern of multi-stop journeys;
5. participation in a commercial day tour;
6. participation in an extra-destination cross-border day trip to China or Macau; and
7. various combinations of the above criteria (i.e. two journeys, including one within the immediate vicinity of the hotel and one further afield; a single day trip involving the purchase of a commercial tour and visitation to other activities).

The total number of journeys taken each day, the number of stops made per journey and the observed pattern of multi-stop journeys are self-explanatory. Other factors, though, require further elucidation. A number of individuals confined their movements exclusively or largely to the immediate surrounds of the hotel and, in a small number of cases, never left the hotel grounds. This type of pattern was observed most commonly during the first day of the visit where respondents settled into the hotel and familiarized themselves with their surroundings. However, follow-up in-depth interviews with a small sample of respondents indicated that some people were simply overwhelmed by the strangeness and cultural distance of Hong Kong and rarely ventured beyond the immediate vicinity of the hotel (McKercher *et al*. 2006).

Day tour participation was identified as a separate category, for tours include visits to multiple sites, even though the consumer has purchased a single product. Mapping the full day tour itinerary would tend to distort artificially the movement patterns, for the itinerary is set and the number of stops is predetermined. More insights can be gained by observing whether the tour is the only activity pursued during the day or whether it is combined with other activities. As such, the day tour was considered as a single point. The same situation applies with cross-border tourism. The World Tourism Organization (2002: n.p.) identified a local destination as 'a physical space . . . [with] physical and administrative boundaries defining its management, and images and

perceptions defining its market competitiveness... They are the focal point in the delivery of tourism products and the implementation of tourism policy'. Like joining a tour group, the cross-border destination was considered as a single point in the movement pattern.

The frequency of each pattern ranged from one case to 124 daily itineraries and was demonstrated by as few as one tourist to as many as 100. The single exploratory trip within the immediate vicinity of the hotel with no specific places mentioned was the most common daily pattern type (13.3% of all patterns and 40% of all tourists), followed by local exploration within the immediate hotel vicinity plus a journey to one place outside of this zone (11.4% of all movements and 36% of all visitors). The circular loop trip with local exploration was the third most common pattern observed (8.8% of all movements and 28% of all visitors). Twenty-four (24) of the patterns appeared only once. The inclusion of these patterns is warranted given the small sample size, for they would likely have appeared more frequently had the sample been larger.

For the most part, respondents engaged in different movement patterns during each day of their trip. However, the likelihood of repeating one pattern increased with length of stay. As Table 1 indicates, virtually all respondents who stayed two days, and a large majority of those who stayed three days, displayed different movement patterns each day, while more than half of the sample who stayed five days or longer repeated the same pattern at least once during their stay. Those who repeated the same pattern typically did so only once. Ten respondents repeated two different patterns, and all stayed five nights or longer. These findings contradict the movement patterns proposed by Lew and McKercher (2006), who suggested that tourist movements may follow a repetitive pattern, especially among long-stay tourists who might consume the destination in a systematic manner. A direct trip to and from a distant place, with an intermediate stop, combined with local exploration was the most frequent repeated pattern (13 cases), while a direct trip to and from a distant place combined with local

Table 1. Percent of different patterns by length of stay

Length of stay	1 day ($n = 15$)	2 days ($n = 40$)	3 days ($n = 69$)	4 days ($n = 49$)	5 days ($n = 29$)	6 or more days ($n = 45$)
% of respondents with different movement patterns each day	100.0	93.0	75.4	59.2	48.3	37.8
Mean number of different patterns shown	1	1.9	2.7	3.4	4.3	5.1
Median number of different patterns	1	2	3	4	4	5

exploration (12 cases) was the second most common repeated movement style. A visit to a single attraction outside the immediate environs of the hotel, followed by a return back to the hotel was the third most common repeated movement pattern (10).

Reducing 78 Patterns to 11 Movement Styles

While one goal of this study was to explore the diversity of movement patterns, small cell size, coupled with general similarity makes further analysis difficult. The large number of patterns is a function of the various permutations and combinations of the six factors of territoriality, number of journeys made each day, number of stops per journey, different spatial movement patterns across the destination, plus participation in commercial tours and cross-border tourism. Yet, within this apparent diversity, some common movement styles emerged. For example, eight different day trip patterns involved journeys exclusively within the immediate confines of the hotel.

Further assessment enables the 78 patterns to be reduced into 11 broad movement styles, as shown graphically in Figure 4. Table 2 describes the styles, the frequency of occurrence and also the number of respondents in each category. The styles are:

- no movement – where the individual stays in the hotel for the entire day;
- unspecified local exploration only – unspecified wandering within 500 m of the accommodation locus;
- local exploration with specified stops – as above but with specific stops identified;
- single distant stop – a journey trip more than 500 m from the accommodation locus to a specified attraction or attraction node;
- multiple distant stops – a journey trip more than 500 m from the accommodation locus to more than one specified attraction or attraction nodes;
- local exploration and a single distant stop – unspecified wandering within 500 m of the accommodation locus plus a journey trip more than 500 m from the hotel to a specified attraction or attraction node,
- local exploration and multiple distant stops – unspecified wandering within 500 m of the accommodation locus and a journey trip more than 500 m from the hotel to more than one specified attraction or attraction nodes;
- multiple trips – more than one journey taken in a day, returning to the accommodation locus before voyaging out again;
- inter-destination travel – a day trip to a neighbouring destination;
- tour with or without other activity – purchase of a commercial sightseeing tour with or without any other activities undertaken;
- multiple day trips including a tour as one of the trips – more than one journey from the accommodation locus during the day, one of which involves a commercial day tour.

The most common style was a single day trip that included both a local exploration component and visits to one or more distant attractions (17% of daily movements,

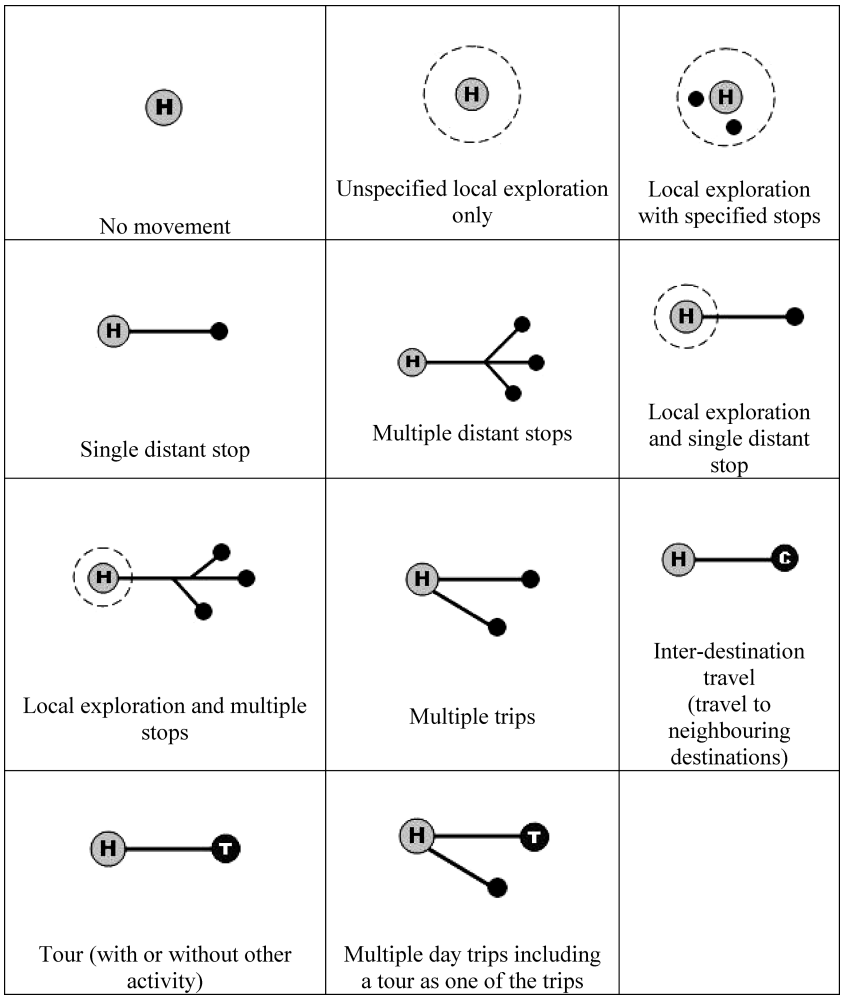


Figure 4. Movement styles.

42% of respondents). Multiple day trips ranked second, while a single unspecified local exploration trip ranked third.

A significant relationship is noted between movement style and both length of stay and total trip duration (Table 3). Multiple day trips or a single day trip to a distant attraction or attraction node were also associated with longer stays. People who engage in cross-border tourism stayed the longest, while those who displayed an unspecified local movement pattern had the shortest overall lengths of stay. Tours or complex movement patterns were also associated with short stays. Interestingly,

Table 2. Common movement styles

Movement style	Frequency	% of day trips	Number of respondents	% of respondents
No movement	17	1.8	15	6.0
Unspecified local exploration only	123	13.2	100	40.0
Local exploration with specified stops	56	6.0	50	20.0
Single distant stop	59	6.4	47	18.8
Multiple distant stops	90	9.7	66	26.4
Local exploration and a single distant stop	106	11.4	89	35.6
Local exploration and multiple distant stops	155	16.7	105	42.0
Multiple trips	126	13.6	84	33.6
Inter-destination travel (travel to neighbouring destinations)	42	4.5	37	14.8
Tour with or without other activity	77	8.3	62	24.8
Multiple day trips including a tour as one of the trips	78	8.4	63	25.2

Table 3. Relationship between movement style with length of stay and trip duration

Movement style	Mean length of stay in Hong Kong (nights)	Mean total trip duration (nights)
No movement	4.0	23.6
Unspecified local exploration only	3.9	18.0
Local exploration with specified stops	4.5	19.1
Single distant stop	4.8	18.6
Multiple distant stops	4.5	15.8
Local exploration and a single distant stop	4.5	17.7
Local exploration and multiple distant stops	4.3	19.5
Multiple trips	4.7	16.3
Inter-destination travel (travel to neighbouring destinations)	5.4	15.4
Tour with or without other activity	4.2	27.5
Multiple day trips including a tour as one of the trips	4.5	21.9
All	4.4	18.9
F	3.227	2.015
p	<0.001	0.029

Table 4. Level of packaging and movement style

Movement style	Purchased air fare and hotel together	Purchased air fare and hotel separately	Totals
No movement	73	50	123
Unspecified local exploration only	32	24	56
Local exploration with specified stops	35	24	59
Single distant stop	40	50	90
Multiple distant stops	53	53	106
Local exploration and a single distant stop	59	96	155
Local exploration and multiple distant stops	57	69	126
Multiple trips	20	22	42
Inter-destination travel (travel to neighbouring destinations)	48	29	77
Tour with or without other activity	58	20	78

$\chi^2 = 40.364$, df = 9.
$p < 0.001$.

people who purchased day tours tended to be travelling for the longest periods of time, while those who engaged in cross-border tourism, took multiple day trips or visited many places outside of the local area had the shortest overall trip durations. Few other differences were noted between itinerary style and trip profile. Itinerary style was not influenced by first-time or repeat visitation, whether Hong Kong was the main or secondary destination and whether it was the only destination or part of a multi destination trip.

However, differences were noted between movement style and the level of packaging involved in the trip. Two types of independent tourists exist. Some tourists will pre-purchase accommodation and airfare packages, with no sightseeing tours included, enabling them to behave as fully independent tourists within the destination. Others will purchase these items separately. As indicated in Table 4, those who booked an airfare and accommodation package were far more inclined to purchase day tours once in the destination, or to restrict their movements to the area in close proximity to the hotel. On the other hand, people who purchase these items separately were more likely to engage the destination more deeply by travelling outside of the immediate local or to take multiple journeys each day. McKercher *et al*. (2006) observed previously that people who purchase day tours, in general, tended to be more risk-averse tourists who behaved in a more cautious manner within the destination. This conclusion is reinforced in this study, with the observation of their reluctance to travel outside of the immediate confines of the hotel without a tour guide. The

Table 5. Intended activities (based on results of the arrival survey)

Movement style	More likely to engage in the activity	Less likely to engage in this activity
No movement	Shopping in malls	Sightseeing, museums and art galleries, natural areas, cross-border tourism
Unspecified local exploration only	Visit friends and relatives, festivals and events, museums and art galleries	Cross-border tourism, shopping in malls
Local exploration with specified stops	Markets, theme parks, natural areas	Museums and art galleries, shopping in malls
Single distant stop	Theme parks, historic sites, museums and art galleries	Sightseeing
Multiple distant stops		Sightseeing
Local exploration and a single distant stop	Sightseeing, theme parks, historic sites, museums and art galleries	
Local exploration and multiple distant stops	Shopping in malls, markets, natural areas, beaches	Theme parks
Multiple trips	Shopping in malls, markets, cross-border tourism	Natural areas
Inter-destination travel (travel to neighbouring destinations)	Sightseeing, shopping in malls, visit historic sites	Visit friends and relatives
Tour with or without other activity	Sightseeing, markets, visit historic sites, visit natural area	Visit friends and relatives, shopping in malls

tendency to purchase an air and hotel package is also symptomatic of the desire to reduce risk or uncertainty.

As mentioned at the outset of the paper, the study involved three data collection phases. The arrival questionnaire included a section asking respondents to identify activities they intended to pursue during their visit. Table 5 indicates that a relationship exists between intentions and later movement styles. People who engaged in unspecified local movement were generally less interested in sightseeing and participating in cultural or natural area tourism and, instead, more interested in shopping. By contrast, the single distant destination daily trip pattern was associated with heavier intended consumption of markets, theme parks and natural areas. People who visited more than one distant location appear to be the most focused tourists, showing a strong intention to visit theme parks, historic sites and museums or art galleries. They are least interested in general sightseeing. Visitors who engaged in multiple visits to distant sites and included a local exploration component to their day trips had similar intentions, with the notable exception of placing a higher priority on sightseeing. Multiple day trip takers were the most interested in shopping, either in malls or local street markets

Table 6. Grouping by motive

Group	Frequency	% of styles	Number of cases	% of cases
Fun and Discovery	162	17.4	39	15.6
Familiar Holiday Makers	204	22.0	54	21.6
Short Break Escape	172	18.5	42	16.8
Aspirational Stopover	271	29.2	81	32.4
Taste of China	120	12.9	34	13.6

and were also most interested in visiting some of Hong Kong's natural assets. Not surprisingly, those individuals who took tours expressed the highest intention to do generalized sightseeing, to visit historic sites and go shopping.

A series of binary questions that tested factors that influenced the decision to visit were also included in the arrival survey. Two-step cluster analysis of the responses identified five discrete types of visitor (Table 6). The Familiar Holiday Maker group is the oldest, has the lowest educational attainment, is predominantly a repeat visitor and is most likely to identify the city as their main destination. The Short Break Escape group, as the name implies, is travelling for the shortest period of time overall but recorded the highest mean length of stay in the city. This group is both the second oldest and second least well-educated cohort. Two-thirds are from Australia. The Fun and Discovery cluster is a recreational tourist who travels for both a sense of discovery and pleasure. This cohort represented the intermediate stage between the two more escapist-orientated groups described previously and the final two groups of aspirational tourists described next. The Aspirational Stopover tourist is a first-time visitor who is least likely to identify Hong Kong as a their main destination. Instead, the city represents a highly attractive stopover, for it represents some place they have always wanted to visit. This group registered the longest overall total trip duration and the shortest mean length of stay in Hong Kong. The Taste of China cluster is also a stopover tourist engaged in multiple destination travel. This person is interested in experiencing Hong Kong's cultural differences, seeing its cultural heritage and also gaining, as they say, a taste of China. This group is the most highly educated cohort.

The various segments displayed quite different movement styles during their visits (Table 7). The Fun and Discovery cohort took multiple day trips, maximizing their consumption of the destination and was also more likely to engage in cross-border tourism than others. The Familiar Holiday Maker displayed three predominant styles on different days of their visit: unspecified local movement; local movement with a trip to a distant locale; and multiple day trips. They were least likely to take tours or engage in travel that did not include some local exploration element. The Short Break Escape tourist engaged in highly focused, purposeful movement patterns, preferring longer duration day trips, either to a single more distant attraction node or to multiple distant attraction nodes. Unlike the Familiar Holiday Maker, they tended to eschew

Table 7. Comparison of motivation clusters with movement styles (%)

Movement style	Fun and Discovery (162)	Familiar Holiday Makers (204)	Short Break Escape (172)	Aspirational Stopover (271)	Taste of China (120)
No movement	14.1	17.4	10.1	14.2	9.3
Unspecified local exploration only	6.4	6.0	5.3	6.3	6.8
Local exploration with specified stops	7.1	4.0	10.7	4.9	7.6
Single distant stop	8.3	6.5	13.6	9.3	13.6
Multiple distant stops	9.6	15.9	13.0	8.6	11.9
Local exploration and a single distant stop	15.4	15.9	12.4	18.3	24.6
Local exploration and multiple distant stops	16.0	17.9	11.2	13.4	8.5
Multiple trips	5.8	5.5	6.5	2.2	4.2
Inter-destination travel (travel to neighbouring destinations)	9.0	4.0	9.5	10.1	10.2
Tour with or without other activity	8.3	7.0	7.7	12.7	3.4

$\chi^2 = 61.051$, df $= 35$, $p = 0.006$.
n = number of day trips per cluster.

local movement. The Aspirational Stopover visitor was most likely to purchase tours, providing them with a quick way to maximize their consumption of the destination. They were also quite active visitors, preferring to visit multiple locations during the day. The Taste of China cohort displayed rather eclectic movement patterns, showing a preference for visiting many sites during the day.

Discussion and Conclusions

Tourist movements in local destinations are an understudied phenomenon, in spite of the recognition by the World Tourism Organization (2002) that local destinations are the focal point in the delivery of tourism products and the implementation of tourism policy. In particular, little research has been conducted on how tourists consume destinations. Data collection and analysis challenges created by technology limitations may be one of the reasons why so little research has been conducted on this important topic. This study sought to document and model tourist movements within a local destination area using GIS software. This study revealed great diversity

and complexity in movements, as the sample of 250 tourists demonstrated 78 discrete patterns that were influenced by six interrelated factors of territoriality, the number of journeys per day, the number of stops per journey, participation in a commercial day tour, cross-border tourism and different sequencing of visits to multiple locations. GIS provides a means to order and analyse visually these patterns to classify them accordingly. Further adoption of GIS modelling techniques is recommended, for its efficacy was demonstrated in this study.

Much of the observed diversity, though, is a function of minor permutations within broadly generalized movement styles, rather than a reflection of truly unique patterns. As a result, the set of 78 patterns cannot be identified as being either definitive or complete. In reality, the number of movement patterns is more likely a function of the geography of the destination and the sample size. A larger sample would likely result in more patterns being identified, while a different spatially organized destination might also produce different patterns.

Yet, within this set, 11 broad movement or itinerary styles did emerge that appear to be more generalizable in nature. Analysis of these patterns both supports and challenges the underlying assumptions made by Lew and McKercher (2006) in their conceptual paper. They assert that movements are a function of territoriality and linearity. Territoriality relates to distance travelled from the hotel, while linearity relates to the movement patterns displayed. Territoriality is supported, in general, but the merits of adopting linearity as the second dimension can be questioned.

The 11 movement styles are influenced clearly to some degree by the territorial engagement the individual has with the destination on a daily basis. Daily territorial engagement can range from the highly constrained, at one end, where no movement occurs, to limited or convenience-based engagement in the immediate surrounds of the hotel or to deep engagement where the visitor moves freely throughout the destination. The extent of territorial engagement can be mediated by involvement of the travel trade, through the purchase of day tours that enable some people to venture more deeply into the destination in a controlled manner. Lew and McKercher (2006) suggested that a concentric exploration movement pattern may also be evident, where the individual progressively travels more deeply into the destination as his or her confidence grows. No evidence was noted of that type of engagement in this study. Instead, movements tend to be a convenience-based or unfettered.

Linearity, though, was not observed as a critical factor defining movement styles. It is arguably the most influential consideration in the identification of the 78 discrete movement patterns, but its inclusion as a second dimension seems to confuse the situation rather than add clarity, when aggregate styles are identified. Instead, intensity and, to a lesser degree, specificity emerge as the other critical dimension explaining behaviour within a destination. Intensity relates to the number of stops made or attraction nodes visited during the day. Substantive differences in observed styles were noted between individuals making single or multiple stops, or single or multiple day trips. Specificity can be considered as a moderating variable in the overall intensity

dimension, in much the same way that purchasing day tours mediates territoriality. Clear distinctions are noted between individuals who wander within the immediate hinterland of their hotel and those who visit specific attractions in the same area. It also helps distinguish extra destination travel and people who purchase commercial day tours from others who travel deeply into the destination.

This paper examined empirically the movements of tourists within an urban destination. In doing so, it built on some of the earlier conceptual work examining this under-studied the issue. The research confirmed the complex nature of tourist movements, but also identified underlying factors that influenced movements. While movements may appear to be stochastic at first, they are influenced in large part by the visitors' intentions prior to arrival, their willingness to engage the destination, length of stay and risk avoidance. A large number of patterns can be identified, but they can be collapsed into 11 common different movement styles.

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Notes on Contributors

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Résumé: Tracé des déplacements des touristes à l'intérieur de leur destination

Dans cette étude on a analysé le mouvement des touristes dans une destination urbaine. Soixante dix huit tracés de déplacements ont été identifiés et catégorisés en 11 styles. Les informations furent analysées à l'aide d'un logiciel SIG (GIS dans le texte). Le grand nombre de tracés révèle l'interaction de six facteurs : la territorialité, le nombre de déplacements par jour, le nombre d'arrêts par déplacement, la participation dans un tour commercial, la participation dans un voyage au-delà de la destination et les tracés de voyages à arrêts multiples. Les onze styles de mouvement étaient influencés par la territorialité et par l'intensité de l'activité de consommation.

Mots-clés: Déplacements, SIG, tracés, destination urbaine

Zusammenfassung: Bewegungsmuster von Touristen inerhalb einer Destination

Dieser Beitrag berichtet über eine Studie, welche die Bewegungen von Touristen innerhalb einer städtischen Destination untersucht. Eine Gesamtmenge von 78 getrennten Bewegungsmustern wurde festgestellt, die in 11 Bewegungsstile kategorisiert werden können. Die Daten wurden unter Verwendung von GIS-Software analysiert. Die große Anzahl der Bewegungsmuster ist eine Reflexion der Interaktion von sechs Faktoren: Territorialität, Zahl der Reisen pro Tag, Zahl den Halte pro Reise, Teilnahme an einer kommerziellen Tagestour, Teilnahme an Reisen außerhalb der Destination und beobachtete Muster von Multi-Stop-Reisen. Die 11 Bewegungsstile wurden beeinflusst durch die Territorialität und die Konsumptionsintensität.

Stichwörter: Räumliche Bewegung, GIS, Muster, städtische Destination