
1 **Can stopovers be induced to revisit transit hubs as stayovers? A new perspective on the**
2 **relationship between air transportation and tourism**

3
4 **Abstract**

5
6 This research examines the potential of transit hubs and affiliated airlines to stimulate future
7 stayover visits by stopover passengers, thereby securing new market opportunities for the host
8 destination and a new relationship between the transportation and tourism sectors. Data were
9 obtained from 694 stopovers who transited with Singapore Airlines through Singapore Changi
10 International Airport but had no prior stayover visit. ‘High influence’, ‘low influence’ and
11 ‘selected influence’ clusters indicated how nine selected services and facilities differentially
12 stimulated their interest to revisit Singapore. Especially influential are generic services such as
13 the Singapore Girl service style, and specific facilities such as the airport Butterfly Garden.
14 These therefore no longer situate as simple facilities that only provide utilitarian transport
15 services for passengers; occupying the blurred boundaries between the transit and destination
16 regions, they frame Singapore’s hub airport and national carrier as a type of ‘quasi-destination’.
17 Appropriate strategic considerations are recommended to maximise their conversion potential.

18

19 **Keywords:** Tourism transportation, Hub airport, Airlines, Quasi-destination, Transit region,
20 Tourism system, Singapore

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24

25 1. Introduction

26
27 Little is known about the transit component of tourism systems, including the transit hub, despite
28 its indispensable role in connecting origin regions with destinations. In part this is because it
29 does not generate or receive substantial revenue, and is usually regarded by tourists as a
30 necessary inconvenience (Weaver & Lawton, 2014). Because they would usually prefer to spend
31 as little time as possible in transit, the potential of staying longer and obtaining a positive image
32 of such locations is not being realised. Some features and facilities in the transit region,
33 nevertheless, are now marketed to transit passengers as tourism attractions in their own right. As
34 the functional distinctions between ‘transit’ and ‘destination’ become increasingly blurred, more
35 attention should be paid to the potential of transit regions to fulfil non-traditional roles that better
36 support other components of the tourism system. In the contemporary ‘open skies’ era of air
37 travel, a temporary stay as a ‘stopover’ in a transfer hub or gateway city is an increasingly
38 necessary and normal experience (Page, 2005), and the purpose of this exploratory research is to
39 examine the potential of hub airports and affiliated airlines to function as ‘quasi-destinations’
40 that interest some stopovers into becoming future stayover tourists, thereby securing new market
41 opportunities for the host destination and a new perspective on the relationship between
42 transportation and tourism. Specifically, this research aims to:

- 43 1. Assess and classify the features (i.e. facilities, services and activities) of the hub airport and
44 affiliated airlines according to their **stopover-to-stayover** conversion potential;
- 45 2. Examine how stopover passengers differ by conversion potential;
- 46 3. Identify the factors that associate with this differentiation, and
- 47 4. Explore subsequent avenues for the implementation of attendant conversion strategies.

48
49 This novel and innovative research invites a reassessment of conventional tourism system
50 models by demonstrating the hub's potential and aspirational role as a transit/destination hybrid
51 that influences other dynamics in the system. A new model of cooperation between the tourism
52 and air transport industries can be established accordingly, allowing hub and gateway cities to
53 achieve long-term benefits and obtain new market segments for their tourism industry. The
54 exemplary characteristics of Singapore, through the combined efforts of Singapore Changi
55 International Airport and the national carrier Singapore Airlines, position that country as an
56 exemplary case study to examine this issue. Following a review of the relevant literature,
57 successive sections introduce the case study, outline the methods, present the results, and
58 consider their practical and theoretical implications.

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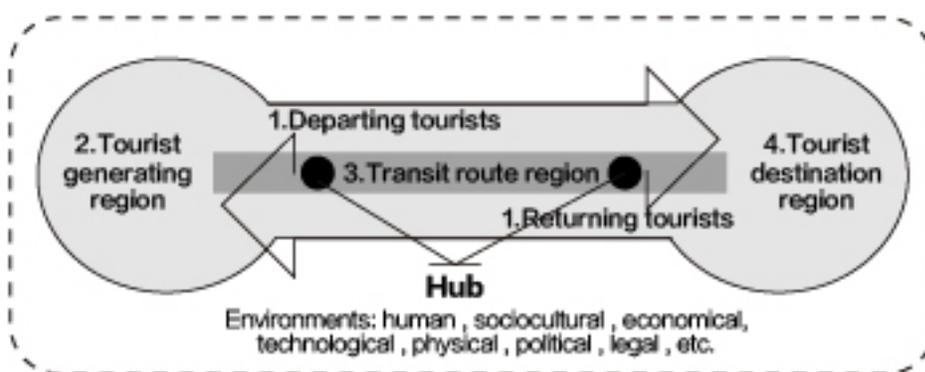
60 2. Literature Review

61

62 Graham, Papatheodorou and Forsyth (2008) emphasise the reciprocity between the tourism and
63 passenger transport industries. Airlines are especially close to tourism, providing vital links
64 particularly for long-haul travel. Tourism, in return, is a significant driving factor that enables
65 many developments in air transport (Bieger & Wittmer, 2006). To conceptualise tourism's basic
66 spatial dynamics, Leiper (2004) developed a simple whole tourism system model which
67 minimally requires at least (1) one tourist, (2) one tourist-generating region, (3) one transit route
68 region, (4) one tourist destination, and (5) a travel and tourism industry (Weaver & Lawton,
69 2010). External technological, political and legal systems additionally influence this tourism
70 system. This model recognises fluidity between destination and transit by framing the transit

71 route region as physical space that can include attractions and places where required stops and
 72 changes can be made. A specific place for such pauses or changes is the hub, which we add to
 73 the model to emphasise its importance and distinctiveness within the transit process (see Figure
 74 1).

75



76

77 *Figure 1* Multiple locations of the 'Hub' in the transit route region (adopted from Weaver &
 78 Lawton, 2010)

79

80 The simplicity of the whole tourism system model does not extend to the unstandardised
 81 terminology variably used to describe tourists when they are physically in the hub. The UNWTO
 82 (2017) provides no formal definition for the latter but makes passing reference to 'transit
 83 visitors' as a tourist subset. 'Transit passengers' and 'transfer passengers' are also commonly
 84 used in this context, while 'layovers' usually refer to those staying overnight in the hub (Beaver,
 85 2005). For simplicity, we adopt the nomenclature of Weaver and Lawton (2010, p. 31), who
 86 define 'stopover visitors' (or 'stopovers') as 'travellers who stop in a location in transit to
 87 another destination'. 'Stayovers', in contrast, spend at least one night in the intended destination.
 88 Unlike the latter, stopovers (sometimes with the exception of layovers) are not normally included

89 in tourist arrival statistics from the transit location's perspective and are not normally subject to
90 usual arrival and departure border formalities.

91

92 Air transport has become an essential element in the transit component, and commercial airports
93 are arguably the most critical and complex setting for the interaction between the tourism and
94 transport industries (Page, 2005). It is argued that the arrival airport is the first place for the
95 tourists to evaluate the service quality of the destination, and thus significantly influences their
96 image (Martincejas, 2006, Barros, 2014). Currently, over 70% of international tourists access
97 their destinations by air (Air Transport Action Group, 2017). The rapid development of the air
98 transport network significantly promotes global tourism and positively influences the inbound
99 and outbound tourism of a destination (Khan *et al*, 2017). Although advances in aviation
100 technology are enabling airlines to launch more long-haul flights, airline-related hubs will
101 continue to be significant due to the failure of long-haul flights fail to achieve consistent cost
102 efficiencies (Wenseveen, 2007). Most major airlines apply the operationally efficient hub-and-
103 spoke network model, which increases stopover traffic in suitable hub locations (Duval, 2007,
104 Page, 2007). These networks involve a central hub, to and from which flights are directed.
105 Airlines based in small countries such as Singapore, Qatar and Hong Kong have innate
106 competitive advantages for establishing hub-and-spoke networks because flights to and from all
107 other destinations must eventually be hubbed through the home airport.

108

109 *Satisfaction and Image*

110

111 Despite the increasingly critical facilitating role of transit regions and hubs, few studies have
112 emphasised their importance within tourism systems or potential for influencing the overall
113 tourist experience. For example, the service quality offered during transit will significantly
114 influence overall tourist satisfaction (Freyer, 1993 in Grob & Schroder, 2007), and competitive
115 business strategies therefore aspire to improve transit experience quality. Some facilities and
116 services in the transit region are now being marketed as tourism attractions in their own right.
117 For example, Hong Kong International Airport is also a shopping and entertainment precinct,
118 and the new Airbus 380 is intended to be not just an aircraft but a memorable flight experience.
119 This blurred transit/destination distinction has been captured in the concept of ‘transit tourism’,
120 which McKercher and Tang (2004) define as a short-stay visit by transit tourists (i.e. stopover
121 visitors) in the transit point while en route to their final destination. It is also captured by
122 Lohmann and Pearce (2010), who argue that a place can have simultaneous nodal functions as
123 transit point and destination based on the number of passenger nights and the primary reason for
124 visiting.

125
126 Passenger satisfaction, in turn, is strongly related to service quality (Wells & Richey, 1996) and
127 associates further with beneficial consumer behaviour such as repeat purchase intentions and
128 positive word-of-mouth communication that indicates a broader construct of customer loyalty
129 (Soderlund, 1998). In our research, passenger satisfaction with the carrier and hub airport is
130 deemed crucial for converting stopovers into stayovers, with dissatisfied passengers likely being
131 less receptive to marketing efforts designed for this purpose. Because passengers have legally
132 binding contracts with airlines, airports have traditionally perceived them as part of the airline’s
133 business parameters rather than their own, and have done very little to proactively generate

134 revenue from passengers and offer better service. However, since the mid-1990s, airports have
135 paid more attention to the potential of non-aeronautical revenue sources. The relationship
136 between airports and airline passengers has adapted accordingly (Francis, Humphreys & Ison,
137 2004), with passengers now being recognised as new and lucrative airport clients (Sulzmaier,
138 2001). An important consideration is that the first impressions of a destination received at a hub
139 airport, in terms of efficiency, design, services and friendliness, significantly influence
140 subsequent destination image (Gunn, 1988), and hence, potentially, interest in returning to the
141 destination in future as a stayover.

142
143 Destination marketers try to establish positive destination images (Bramwell & Rawding, 1996),
144 but projected or induced images may not be received as such due to intervening external and
145 internal factors, including personal experience (Bramwell & Rawding, 1996; Court & Lupton,
146 1997). To capture these multiple dimensions, Gunn (1988) developed a whole travel experience
147 model which includes (1) accumulation of mental images about vacation experiences, (2)
148 modification of those images by further information, (3) decision to take a vacation trip, (4)
149 travel to the destination, (5) participation at the destination, (6) return home and (7) modification
150 of images based on the vacation experience. We modify this to account for potential stopover
151 conversion effects. Stopover passengers may already have an organic image of their transit
152 points through variable secondary resources and may choose their transit points based on
153 resultant incipient images. After receiving additional stimulus from the airline and the transit
154 airport as well as experiencing their service, they may adjust their perceived image of the hub,
155 hopefully even to the point where stayover re-visitation interest emerges if the image is
156 sufficiently positive.

157
158 Intention to re-visit, regarded as a consequence of visit satisfaction, is an anticipated behaviour
159 that follows from revisitation interest generated by positive experiences (Swan, 1981). Intention
160 represents expectations about a particular behaviour in a given condition and can be
161 operationalised as the likelihood to act. Where there is an opportunity to act, intention results in
162 behaviour. If measured accurately, intention provides the best predictor of behaviour, according
163 to Fishbein and Ajzen (1975). However, intention does not always lead to actual behaviour
164 (Ajzen, 1991) just as interest does not lead necessarily to intention. This is a basic but
165 unavoidable conundrum in any social science research that solicits intentions rather than actual
166 outcomes.

167

168 *Marketing Mix and Marketing Sequence*

169

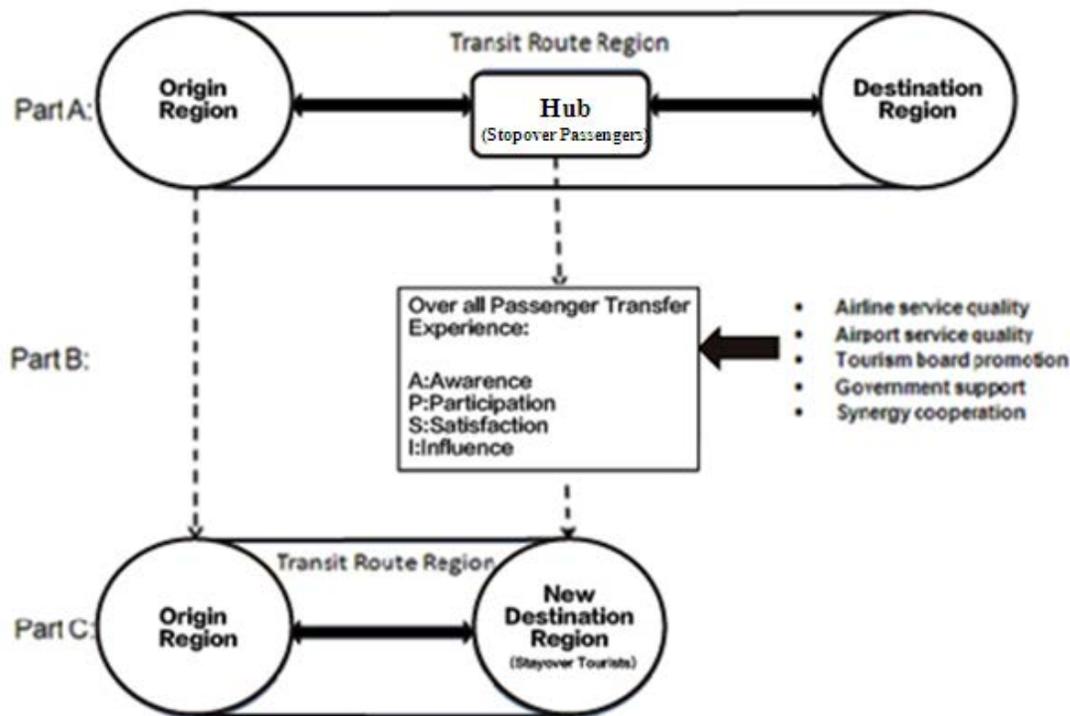
170 Destination image is related to tourism marketing, and the attributes that influence the perceived
171 image of a destination image can be accommodated within the tourism ‘marketing mix’, framed
172 as an 8P configuration (product, price, place, promotion, people, packaging, programming,
173 partnership) by Morrison (2009). The 8P model contains the critical components that determine
174 the demand for a business or destination product, including transit services and facilities, and
175 which must therefore be implicated in strategies to convert stopover passengers into future
176 stayover visitors. The idea of ‘partnerships’ in the tourism marketing mix also implicates the
177 concept of “co-creation”, whereby consumers interact with organisations to add product value
178 and develop stronger ties and loyalty with those entities (Prahalad & Ramaswamy, 2004). This
179 could occur, for example, through social media product endorsements or participation in

180 'improve the product'-type competitions. The actual 'consumption', however, is captured in the
181 widely applied AIDA (Attention, Interest, Desire and Action) marketing communication model
182 (Kotler, 2002). Based again on the theory of reasoned action (Ajzen & Fishbein, 1975), AIDA
183 requires definition of the desired target market, and then development of an effective message
184 (advertisement and promotion) in conjunction with mediating allied agencies such as national
185 airlines and hub airports. Ideally, the message should gain the attention of the desired customers,
186 hold their interest, arouse their desire and elicit their final action (i.e. a stayover visit to
187 Singapore) (Lin & Huang, 2005).

188
189 APSI is a specialised AIDA variant devised for this study. Phases 1 and 2 of the modified transit
190 passenger image formation model are related to '*awareness*' of the transit point. Awareness,
191 critically, is an ability to perceive, feel, or be conscious of events, objectives, thoughts or sensory
192 patterns (Milman & Pizam, 1995). Phases 4 and 5 relate to '*participation*', or the actual
193 experience with the airlines and the transit point and their affiliated facilities and services.
194 According to Gunn (1988), participation is essential for image formation to mature, as the
195 image perceived is more realistic and visceral. The modification of the image of the transit point
196 (Phase 6) is closely related to '*satisfaction*'. After experiencing the activities or services provided
197 by the airlines and the transit point, people will compare their actual experience with their
198 original perceived image (Laws, 2001). Phase 8, finally, considers how positive reassessments of
199 the transit point experience can generate '*interest*' in revisitation as a stayover. If strong enough,
200 this interest can be converted into re-visit intentions and then actual visits.

201

202 The literature has not previously considered the potential role of transit hubs and affiliated
 203 activity to directly support the stayover tourism industry in those locations by conveying positive
 204 experiences to stopovers that induce interest to revisit as stayover tourists. The conceptual map
 205 to explore this issue is summarised in Figure 2. Part A, the status quo, depicts Leiper's
 206 conventional tourism system with our added hub. Part B indicates a significant modification to
 207 the status quo by adding the desired conversion of this transit point to a destination for stopover
 208 passengers who are positively exposed to the hub destination through the strategic manipulation
 209 of airline and airport services and facilities. Following a sequential process of awareness,
 210 participation and satisfaction, they are influenced to build up re-visit interest as stayovers (Part
 211 C).
 212



213
 214 *Figure 2* Research conceptual map

215

216 3. Case Study Selection

217

218 The research will focus on a comprehensive case study of Singapore that involves Singapore
219 Changi International Airport, Singapore Airlines and, more tangentially, the Singapore Tourism
220 Board. Singapore is suitable for examining whether these three types of entity individually or
221 collectively help to generate interest among stopovers to become future stayover tourists in the
222 hub city, thereby providing economic benefits for the three organisations as well as for
223 Singapore more generally. The status of Singapore Airlines and Changi International Airport,
224 respectively, as the sole major airline and airport of Singapore further simplifies the research
225 context. Economic factors also justify the selection. Tourism is a major and growing industry in
226 Singapore, generating around 3% of GDP and long supported by government as part of efforts to
227 capitalise on its strategic location and cultural assets, and foster a more resilient and diversified
228 economy (STB, 2010). In 2015, 15.2 million international stayovers were reported, compared
229 with 8.9 million in 2005 (STB, 2016, Singapore Department of Statistics, 2016). In concert with
230 its prosperity and stability, Singapore has long been associated with a family-orientated, safe,
231 and modern destination brand cultivated since 1964 by a well-funded destination marketing
232 organisation (Hui & Wan, 2003).

233

234 However, notwithstanding this robust performance, continuing economic development in
235 Southeast Asia and the current world economic downturn has generated strong competition for
236 tourists within the region. With increasing marketing efforts by Hong Kong, Thailand and
237 Malaysia in particular, Singapore is losing market share. Therefore, using Singapore as the case

238 study can provide very practical solutions for this country to survive strong regional competition
239 in a way that entails innovative new opportunities for its tourism and air transportation sectors.
240 Attesting to Singapore's strategic location and the concomitant potential for stopover-to-stayover
241 conversion, Singapore Changi International Airport (IATA code: SIN) is the world's sixth
242 busiest international airport and a major aviation transit hub exemplifying classic hub-and-spoke
243 dynamics (Singapore Airport, 2014). Facilitated by the liberalisation of air policies, Changi
244 Airport strategically links Europe, Far East, Middle East and the Americas with Southeast Asia
245 and Oceania. Currently, the airport serves more than 100 airlines flying to 380 cities in over 90
246 countries. In 2016, its total passenger volume was 58.7 million and the number of transfer
247 passengers about 13.3 million (Singapore Airport, 2017a), thereby indicating significant
248 stopover-to-stayover conversion potential. Changi Airport provides numerous services including
249 business lounges, free WIFI, nursing rooms, entertainment centres and airport hotels. Over 230
250 retail and service outlets and over 100 food and beverage establishments are available (Singapore
251 Airport, 2017b). Some facilities, such as the butterfly garden, rainforest lounge and free city tour
252 are featured to explicitly promote Singapore. Singapore Airlines (IATA code: SQ), the national
253 carrier, is internationally recognised as one of the world's best carriers with a large and advanced
254 fleet. Having served the industry for over 60 years, it has been consistently one of the most
255 profitable airlines in the world and complements the success of Changi Airport (Wirtz &
256 Johnston, 2003). Singapore Airlines has vigorously promoted the country as an attractive
257 destination through its iconic and durable 'Singapore girl' image, which was introduced in 1973.

258

259 4. Methodology

260

261 To reiterate, this paper examines the potential of hub airports and affiliated airlines to induce
262 interest in future stayover visits from stopover passengers. Specifically, the extent to which they
263 exhibit interest in becoming future stayover tourists in Singapore due to their transit experience
264 with Singapore Airlines and stopover experience with Changi Airport is identified, and related to
265 key facilities and services as well as travel and demographic characteristics. How this interest
266 relates to precursive *awareness of, participation in and satisfaction* with these facilities and
267 services is also investigated. Participant observation (i.e. multiple visits to Changi Airport) and
268 secondary sources (i.e. relevant corporate and trade magazine web sites) were initially used to
269 identify tentative relationships and clarify the research topic, and this was followed by surveying
270 involving, respectively, a questionnaire and semi-structured interviews that sought more details
271 about the quantitative responses. The mostly Likert-scaled questions, which followed the APSI
272 framework, were directed to adults (18 and older) who stated that they had had a stopover
273 experience of Changi Airport through Singapore Airlines during the two year period prior to the
274 survey, but no prior stayover experience. A three-point Likert-scale was sufficient to evaluate the
275 awareness of the respondents towards the relevant services and facilities ('not aware', 'somewhat
276 aware', 'very aware'), while a five-point Likert-scale was applied to examine their satisfaction
277 level and influence. Five-point Likert-scales are frequently used in the social science research
278 due to their demonstrated reliability and validity (Dawes, 2012, Bigerna, Bollion & Micheli,
279 2016, Peng & Finn, 2016).

280

281 The frame of reference was selected generic and specific services and facilities of the airline and
282 airport, based on the premise that people more easily perceive an image of a place and evaluate
283 satisfaction based on individual elements (Beerli & Martin, 2004). Thirteen services and

284 activities from Changi Airport, and nine from Singapore Airlines (i.e. 22 in total), were selected
 285 for the survey and defined according to the extent to which the conversion functions were
 286 deliberate and explicit at the time of the data collection (Table 1). One main factor influencing
 287 this selection is the degree to which these services and activities provide stopover passengers
 288 with opportunities to participate in their consumption during their flight or transfer. Second,
 289 these services and activities should convey a positive image of Singapore through the projection
 290 of representative Singaporean culture and hospitality. While economic and other factors may
 291 also influence revisitation intention beyond the transit experience itself, these factors are not
 292 directly related to the objectives of this research and were therefore omitted from the study.

293

294 Table 1: *The classification of the services and activities of Changi Airport and Singapore*
 295 *Airlines*

Changi Airport	Explicitly deliberate group	Free city tour provided by Singapore Tourism Board
		Special themed exhibition or display in the terminal
	Implicitly deliberate group	The souvenir shop
		The local interest section of a bookstore
		Butterfly garden
		Cactus Garden
		Fern Garden and Koi Pond
		Orchid Garden and Koi Pond
		Sunflower and Light Garden
		Fragrant Garden
	Non-deliberate group	Bamboo strip
Free internet service		
		Postal kiosk
Singapore	Implicitly deliberate	Onboard Singapore promotion video

Airlines	group	SilverKris Magazine –TouchDown category
		Personal communication about Singapore with cabin crew
		Singapore stopover holiday package
		Hop-on bus
		Boarding pass privileges
		Cabin food
		Cabin beverage
		Singapore Girl service style

296

297

298 *Data Collection*

299

300 The questionnaire was composed and pilot-tested to require less than 15 minutes to complete
301 (Neuman, 2006). It was originally intended to conduct the survey on site at Changi Airport, but
302 permission was denied for security and privacy reasons. Accordingly, the instrument was
303 administered through the Qualtrics online survey tool. Initially, the survey link was promoted
304 between October 2011 and January 2012 through the international personal social networks of
305 the researchers, including Facebook, Twitter and Micro-blog. Among these connections, who
306 were also asked to further disseminate the survey through their own social networks, there is a
307 high portion of followers with prior transfers at Changi Airport through Singapore Airlines.
308 Subsequently, to augment this snowball sampling procedure, the survey link was promoted on
309 the websites of Flyertea, CARNOC, Flyertalk, and Australian Business Traveller, the most
310 popular international travel blogs for global frequent flyers. These methods are not necessarily
311 conducive to obtaining a representative sample of the target population, but this is unnecessary in

312 the selected technique of cluster analysis (see below), wherein a sufficiently large non-
313 probability sample is effective and reliable enough to identify distinct types of stopovers based
314 on their stayover intentions (Anderberg, 1975, Chen, 2011).

315

316 *Data Analysis*

317

318 To fulfil the first research objective, the APSI responses on the questionnaire were analysed
319 visually to divide the 22 selected services and facilities into relatively uniform segments. Since
320 only the respondents who experienced these services and facilities answered the questions related
321 to satisfaction, it was not possible to apply cluster analysis to obtain these segments due to the
322 high level of ‘satisfaction’ non-response. However, hierarchical cluster analysis was suitable to
323 attain the second objective of segmenting the target population by revisitation influence using an
324 appropriate service/facility sub-sample (Bryman & Bell, 2011). Such analysis, frequently applied
325 in exploratory social science research, provides effective data reduction and population
326 segmentation that maximises intra-group homogeneity and inter-group heterogeneity, thereby
327 identifying distinct groups whose members can be targeted in similar ways (Fredline, 2012,
328 Kaufman & Rousseeuw, 2005). Our intent was that only those items which revealed sufficient
329 levels of participation and response heterogeneity would be used for clustering purposes,
330 although all of the original 22 services and activities would be subsequently included in the
331 analysis of cluster differences. Respondents who claimed that they did not access the
332 activities/services were assigned a value of zero for influence rate. **Ward’s method is used, as it
333 is widely regarded as the most appropriate method for clustering quantitative variables when the
334 desired group proportions are approximately equal (Hands & Everitt, 1985). Most other**

335 measures have a tendency to produce one large and numerous much smaller clusters, which is
336 less conducive to market segmentation and further statistical analysis (Hair, Black, Babin,
337 Anderson & Tatham, 1998). Comparison-of-means and chi-squared tests, as warranted, were
338 subsequently used after each clustering option to see how the clusters significantly differ, and
339 similarly sized clusters were therefore preferred to achieve research reliability. The third
340 objective was achieved by comparing the clusters against respondent demographics and patterns
341 of airport and airline engagement. Follow-up semi-structured interviews were also conducted
342 with selected survey respondents by email or Skype to attain data enrichment, using
343 representatives from each of the resultant clusters.

344

345 5. Results

346

347 Of 1159 responses received, 694 were complete and valid. Fifteen semi-structured interviews
348 with selected participants in the questionnaire were subsequently conducted from 8-28 July
349 2013. The profile of questionnaire respondents is 52% male, mean age of 28.8, 48% from China
350 (including Hong Kong, Macao and Taiwan), and 91% with university qualifications. On average,
351 they transferred twice through Changi Airport during the previous 24 months and most
352 commonly reported a transfer time of two to three hours. It was not possible to determine
353 whether this profile reflects the overall Singapore Airlines stopover population at Changi, given
354 that the latter are not subjected to experience immigration formalities and hence do not have their
355 personal data collected by airport authorities.

356

357 *Objective 1: Assess and classify the features of the hub airport and affiliated airlines according*
 358 *to their conversion potential*

359

360 Based on their APSI responses, seven distinct service/facility categories were identified. In Table
 361 2, the satisfaction rate is based on those participating in that feature, while influence (interest) is
 362 based on all respondents, thus indicating overall rather than selective (i.e., based on actual
 363 participation) effectiveness.

364

365 Table 2 *Category table for the selected activities/services based on respondents' interaction*

Activities/Services	Awareness (out of 3)	Participation %	Satisfaction (out of 5)	Influence (out of 5)
Very High A-P-S-I - High Effect Generics				
<i>SA – Singapore Girl service style</i>	2.82	100.0	4.79	4.77
<i>SA – Cabin food</i>	2.94	100.0	4.76	4.76
<i>SA – Cabin beverage</i>	2.92	100.0	4.73	4.60
<i>C - Visiting a specialised souvenir shop</i>	2.76	91.1	4.59	4.15
<i>C - Accessing internet</i>	2.89	98.1	4.79	4.42
High A-P-I				
Very High S - High Effect Specifics with Growth Potential				
<i>C - Visiting Butterfly Garden</i>	2.50	74.9	4.80	3.59
<i>C - Visiting a special themed exhibition or display in the terminal</i>	2.59	83.3	4.77	3.96
<i>SA – Singapore promotion video on board</i>	2.44	75.5	4.66	3.53
Very Low A-P-I				
Lower (but still positive) S - Low Effect Generics and Specifics				
<i>SA – SIA boarding pass privileges</i>	1.39	13.5	3.92	0.58
<i>C - Visiting Orchid Garden and Koi Pond</i>	1.28	15.9	3.93	0.67
<i>C - Visiting Fragrant Garden</i>	1.20	14.8	3.84	0.62
<i>SA – SIA Singapore stopover holiday package</i>	1.30	13.0	3.89	0.52
<i>C - Visiting Cactus Garden</i>	1.27	15.1	3.81	0.59
<i>C - Visiting Fern Garden and Koi Pond</i>	1.21	15.1	3.44	0.59

<i>SA – SIA hop-on bus</i>	1.30	13.0	3.81	0.50
<i>C - Visiting Bamboo Stripe</i>	1.29	17.1	3.78	0.63
Very Low A-P-I High S - Variable Effect Generic				
<i>C - Collecting local stamps at a postal kiosk</i>	1.44	18.0	4.27	0.74
High A Low P-I Very High S - High Awareness and Satisfaction but Low Influence Generic				
<i>SA – Personal conversation with cabin crew about Singapore</i>	2.34	49.0	4.79	2.39

366

367

368 Table 2 Category table for the selected activities/services based on respondents' interaction
369 (Cont'd)

Activities/Services	Awareness (x/3)	Participation %	Satisfaction (x/5)	Influence (x/5)
High A Very Low P-I Very High S - High Awareness and Satisfaction but Very Low Influence Generic				
<i>C - Joining the free city tour organised by the Singapore Tourism Board</i>	2.30	16.9	4.54	0.79
Low /Very Low A-P High S Low/Very Low I - High Satisfaction but Low Effect Generics and Specifics				
<i>C - Visiting the local interest section of a book store</i>	2.08	45.8	4.40	2.00
<i>SA – SilverKris Magazine – TouchDown section</i>	1.86	37.0	4.31	1.64
<i>C - Visiting Sunflower and Light Garden</i>	1.40	22.9	4.51	0.99

370

371 Note:

Items	Very High Value	High Value	Medium Value	Low Value	Very Low Value
Awareness (mean on a 3-point scale)	3.00-2.60	2.59-2.00	1.99-1.70	1.69-1.40	1.39-0.00
Participation (percentage)	100-90.0	89.9-70.0	69.9-50.0	49.9-30.0	29.9-0
Satisfaction (mean on a 5- point scale)	5.00-4.50	4.49-4.00	3.99-3.00	2.99-2.50	2.49-0.00

Influence (mean on a 5-point scale)	5.00-4.50	4.49-4.00	3.99-3.00	2.99-2.50	2.49-0.00
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372

373 *Objective 2: Examine how stopover passengers differ by conversion potential*

374

375 Since the overall purpose of the research is to identify the influence of the activities/services of
 376 Changi Airport and Singapore Airlines on building up the re-visit interest of stopovers as
 377 stayovers in the future, the variables used for clustering were based on the 'influence' values.
 378 The frequency of the variables chosen should not be higher than 80% or lower than 20%, as
 379 outside these parameters there is little latitude for differentiating the sample. More particularly
 380 for this research, the 'participation rate' of the chosen variables should ideally also not be higher
 381 than 80% or lower than 20%. The nine services and activities that satisfied these criteria and
 382 were thus selected as items for the cluster analysis were the free city tour organised by the
 383 Singapore Tourism Board, Butterfly Garden, Sunflower and Light Garden, specialised souvenir
 384 shop, book store, special themed terminal exhibition/display, on-board Singapore promotion
 385 video, personal conversations about Singapore with cabin crew, and TouchDown Category of
 386 SilverKris magazine.

387

388 Concurrently, these nine selected activity/service variables broadly represent the attributes
 389 influencing destination image formation, which include nature resources and nature environment,
 390 culture, art and history, social environment and atmosphere of the place. The ratio of 75
 391 respondents per item comfortably exceeds the threshold of 70 recommended by Dolnicar et al
 392 (2014) for achieving validity. To ascertain the most effective cluster solution, five rounds of
 393 testing were conducted, from a two-cluster solution to a six-cluster solution, using Ward's

394 **method.** A three-cluster solution most effectively differentiated the sample. Cluster 1 (n=331,
 395 47.7%) is described as the ‘Selected Influence’ segment because members were only influenced
 396 by the specialised souvenir shop, the special theme terminal exhibition or display, the Butterfly
 397 Garden and the on-board Singapore promotion video. Cluster 2 (n=203, 29.3%) is the ‘Low
 398 Influence’ group as it displayed hardly any influence at all. Cluster 3 (n=160, 23.0%), in contrast,
 399 showed substantial influence from all the clustered elements and is therefore labelled as the
 400 ‘High Influence’ group (Table 3). The outcomes for the non-clustered services and facilities
 401 validate the original patterns of response.

402

403 Table 3 *The influence mean of the activities/services by clusters*

Activity/Service	Overall Mean (N=694)	Selected Influence Cluster (n=331)	Low Influence Cluster (n=203)	High Influence Cluster (n=160)
Services & facilities included in the cluster analysis				
Visiting a specialised souvenir shop	4.15	4.46	<u>3.33</u>	4.17
Visiting a special themed exhibition/display at the terminal	3.96	4.95	<u>2.05</u>	4.33
Visiting Butterfly Garden	3.59	5.00	<u>0.64</u>	4.40
Singapore promotion video	3.53	4.23	<u>1.86</u>	4.20
Personal conversations with Cabin Crew about Singapore	2.39	2.60	<u>0.89</u>	3.86
Visiting the local interest section of a book store	2.00	2.09	<u>0.57</u>	3.63
SilverKris Magazine – Touch Down Category	1.64	1.33	<u>0.74</u>	3.43
Visiting Sunflower and Light Garden	0.99	0.01	<u>0.08</u>	4.18

Joining the free city tour organised by the Singapore Tourism Board	0.79	0.00	0.00	3.42
Services and facilities NOT included in the cluster analysis				
'Singapore Girl' service style	4.77	4.96	4.56	4.63
Cabin food	4.76	4.93	4.55	4.66
Cabin beverage	4.60	4.75	4.39	4.55
Accessing internet	4.42	4.73	<u>3.87</u>	4.49
Collecting local stamps at a postal kiosk	0.74	0.18	0.14	2.67
Visiting Orchid Garden and Koi Pond	0.67	0.01	0.16	2.68
Visiting Bamboo Strip	0.63	0.01	0.04	2.68

404 Table 3 *The influence mean of the activities/services by clusters (Cont'd)*

Activity/Service	Overall Mean (N=694)	Selected Influence Cluster (n=331)	Low Influence Cluster (n=203)	High Influence Cluster (n=160)
Visiting Fragrant Garden	0.62	0.01	0.00	2.69
Visiting Cactus Garden	0.59	0.01	0.08	2.44
Visiting Fern Garden and Koi Pond	0.59	0.01	0.10	2.42
SIA boarding pass privileges	0.58	0.00	0.09	2.40
SIA Singapore stopover holiday package	0.52	0.00	0.11	2.10
SIA hop-on bus	0.50	0.00	0.09	2.40

405

406 Note 1: The Influence uses a five-point scale.

407 Note 2: ANOVA Sig for all activities/services is <0.001

408 Note 3: The number in bold indicates that the influence degree is significantly higher than the other two
 409 groups. The number with the underline indicates that the influence degree is significantly lower than the
 410 other two groups.

411

412 *Objective 3: Identify the factors that associate with this differentiation*

413

414 Regarding significant selected independent variables (Table 4), the High Influence cluster
 415 displays much greater transfer frequency and time, and is much more likely to have post-
 416 graduate qualifications and to reside in 'Grand China'. There was no gender influence. Fifteen
 417 semi-structured interviews with selected respondents were subsequently conducted from 8-28
 418 July 2013. Outcomes are addressed in the Discussion section since they provide insight into the
 419 patterns and strategies, as per Objective 4.

420

421 Table 4 *Cluster comparisons: Independent variables*

Item	Overall N=694	ANOVA Sig.	Selected Influence Cluster (n=331)	Low Influence Cluster (n=203)	High Influence Cluster (n=160)
Times transferred through Changi Airport during the past 24 months (Singapore Airlines only)	1.99	<0.001	1.98	<u>1.39</u>	2.74
Average transfer time 3 hours or more			8.5%	14.8%	50.0%
Age	28.84	<0.001	28.6	29.7	28.2
Postgraduate education (Count 185 / 26.7%)			13.9%	33.5%	44.4%
Student (214/30.8%)			26.9%	41.9%	25.0%

'Grand China'			47.1%	41.9%	58.1%
---------------	--	--	-------	-------	-------

422

423 Note: The number in bold indicates that the transfer/travel frequency is significantly higher than the other
 424 two groups. The number with the underline indicates that the transfer/travel frequency is significantly
 425 lower than the other two groups.

426

427 6. Discussion

428

429 *Service/Facilities Management Implications*

430

431 Our results demonstrate that hub airports and associated carriers are not just simple utilitarian
 432 elements of transit that merit scant attention from researchers and destination managers.

433 Concurrently, however, neither satisfies the definitions normally associated with 'tourist

434 attractions'. Occupying the blurred boundaries between transit region and destination region,

435 both Changi Airport and Singapore Airlines together with their embedded facilities and services

436 therefore may be described as a type of 'quasi-destination'. These are essentially transit locations

437 or services such as a flight path, aircraft or hub airport that also possess some characteristics of a

438 destination. The most important criterion that qualifies these elements as quasi-destinations is the

439 presence of services and facilities that have potential effects of attracting interest from stopovers

440 to revisit the hub city as a future *stayover* visitor. This potential, however, is not uniform, given

441 the identification of three distinct passenger clusters wherein transfer frequency and time, not

442 unexpectedly, are correlated strongly with re-visitation interest.

443

444 Some of these services and facilities explicitly perform these conversion effects while for others
445 the apparent effect is incidental and the quasi-destination function therefore less articulated. To
446 maintain focus, only the major specifics and generics with high converting effectiveness or
447 strong converting potential (i.e. with high awareness and satisfaction levels) will be discussed.
448 Based on the similarity of APSI patterns (see Table 1), these include (1) High Effect Generics,
449 (2) High Effect Specifics with Growth Potential, (3) High Awareness and Satisfaction but Low
450 Influence Generics, and (4) High Awareness and Satisfaction but Very Low Influence Generics.

451

452 *High Effect Generics*

453

454 The High Effect Generics are intriguing because they display the highest levels of attention,
455 participation, satisfaction and revisitation interest, yet have only implicitly deliberate or non-
456 deliberate conversion functions. As noted, the ‘Singapore Girl’ service style is a longstanding
457 and effective business strategy. Along with cabin food and beverage, such ‘unavoidable’ services
458 exceed international service quality standards but also emphasise unique Singaporean culinary
459 styles which have a major influence on destination image construction and identity (Beerli &
460 Martin, 2004; Govers & Go, 2004). The free internet serves as a goodwill gesture demonstrating
461 willingness to provide high service quality and convenience to passengers without distinguishing
462 between stopovers and stayovers. The 10 of 15 interviewees who were positively influenced by
463 this service all mentioned that it ‘shows the consideration of the airport to the passengers’ and
464 demonstrates exemplary ‘Singaporean hospitality’. They also believe that they can experience
465 ‘similar high quality service if they visit the city’. The specialised souvenir shops provide
466 opportunities to obtain a quick understanding about Singapore, featuring as they do local

467 traditions such as the Sarong, curry sauces and orchid-themed items. The airport promises that all
468 products sold at the terminals have the same price and quality as those in the city, which provides
469 a positive indication of what might be expected during a future stayover experience. Several
470 interviewees mentioned that souvenir prices were ‘reasonable’ and ‘worth the money’ and
471 indicate that ‘Singapore is therefore not an expensive city to visit’.

472

473 Such results suggest that the status quo quality of the Singapore Girl service style, cabin food,
474 cabin beverage, free internet service and the specialised souvenir shops is optimal from a
475 stopover conversion perspective. They are ‘core’ elements of the hub airport and airline that
476 build up people’s re-visit interest and are especially important from a proactive quasi-destination
477 management perspective. Pending further investigation, it may well be that these select services
478 and facilities can sustain the desired conversion objectives on their own, even if other activities
479 lack similar articulation or efficiency. However, to capitalise on their potential to stand as the
480 highest level of quasi-destination articulation, synergistic cooperation between providers should
481 be encouraged. For example, when the passengers first launch the website browser using the free
482 internet service, Changi Airport could sponsor promotion related to the cabin food, cabin
483 beverage and Singapore Girl service style of Singapore Airlines. Concurrent exposure to
484 multiple destination icons serves to reinforce the powerful message of comprehensive positive
485 branding. This implicates the ‘packaging’ component of the marketing mix.

486

487 *High Effect Specifics with Growth Potential*

488

489 The High Effect Specifics with Growth Potential group, containing the Butterfly Garden, special
490 themed exhibition or display, and on-board Singapore promotion video, denote specific or
491 unique named products widely experienced but less effective in generating revisitation interest.
492 The programming of the exhibition or display usually includes passenger participation (co-
493 creation) such as handicraft making and painting, which can significantly increase their
494 attractiveness, especially if they produce tangible souvenirs. The heavily promoted Butterfly
495 Garden, an explicitly deliberate feature, attracts reduced participation because of its peripheral
496 location. Eleven of the 15 interviewees, however, agreed that it is the 'icon' or 'must see
497 attraction' at Changi Airport, and is 'special' and 'unique'. The Singapore promotion video is
498 viewed by most passengers because it allows people to better understand Singapore in a short
499 time and positively promotes its icons and features. All three features in this group are notable in
500 yielding very high interest in revisitation from the Selected Influence cluster members, but low
501 interest from the Low Influence members. For the Butterfly Gardens, interviewees cited
502 insufficient time to access its remote location. The same may pertain to some special exhibitions
503 which require substantial queuing and participation time. Possibilities to increase their
504 conversion potential include the provision of electric carts to access the Gardens, and greater
505 consideration to reducing exhibit waiting times. Meanwhile, given the high levels of visitation
506 and strong links with revisit interest, the Butterfly Gardens would be a good subject for
507 exploratory co-creation strategies that ask visitors to identify the butterfly species and write
508 about their experience in social media describing how it affects their image of Singapore and
509 their revisit intentions.

510

511 *High Awareness and Satisfaction but Low Influence Generics*

512
513 The High Awareness and Satisfaction but Low Influence Generic category also has a single
514 member - the personal conversation with cabin crew about Singapore. Awareness is high but
515 participation is low. Four interviewees who did not participate were 'afraid to disturb their work'
516 or did not know that they can communicate with the cabin crew about Singapore. Other non-
517 participating interviewees 'did not like to talk to strangers'. However, the five interviewees who
518 did communicate with the cabin crew about Singapore felt privileged to do so, all agreeing that a
519 cabin crew member is 'the right person to talk about Singapore' because they are 'Singapore
520 Girls. Also, some indicated that it is a good way to overcome boredom during the flight.
521 Substantially higher revisitation interest in the High Influence cluster may result from a high
522 comfort level due to conversations held on prior flights. Cabin crew (or specially designated and
523 trained crew) could perform an enhanced ambassadorial role by actively promoting Singapore
524 during the flight rather than waiting for passengers to take the initiative, especially during
525 medium- and long-haul flights. This would also enhance service consistency and quality by
526 disseminating common messages, while retaining a personal touch.

527

528 *High Awareness and Satisfaction but Very Low Influence Generics*

529

530 Finally, the High Awareness and Satisfaction but Very Low Influence Generic category
531 describes the free city tour organised by the Singapore Tourism Board. This explicitly deliberate
532 service is well known and satisfying, but caters only to those with over five hours of transfer
533 time; hence the overall influence is very low except from the High Influence cluster, which
534 displays such long transfer times. Surrogate 'visits' should therefore be developed. For example,

535 the airport can use 3D and other virtual technology to make the icons of Singapore into a
536 promotion video suitable for viewing in the terminal or movie theatre. People can then feel they
537 are really conducting a city tour in Singapore and visiting the attractions inside the city. During
538 this experience, the participants could also be served authentic Singaporean food. Against
539 conventional wisdom, it may also be possible to encourage passengers to allow for extra transit
540 time to facilitate actual tour participation.

541

542 By way of summary, it is notable that the awareness and satisfaction levels are consistently high
543 in all groups. Any subsequent quasi-destination articulation strategy must focus on differences in
544 participation and influence. The High Effect Generics and High Effect Specifics with Growth
545 Potential are strong in all three of these other dimensions though can be strengthened further.
546 The Butterfly Garden, for example, has the highest satisfaction of all (4.80) but yields a mediocre
547 influence mean (3.59). The High Awareness and Satisfaction but Low or Very Low Influence
548 Generics display weakness in the participation and conversion rates, indicating room for
549 promotion and product development.

550

551 *Theoretical contributions*

552

553 These empirical outcomes corroborate the view that hubs, while acknowledged by Leiper (2004),
554 should be physically added to his model's transit region to emphasise their important, distinctive
555 and diverse role within the transit process. Recognition of such locations as quasi-destinations
556 will change conventional perceptions of the transit route region in the tourism system and
557 encourage less compartmentalised thinking. Beyond Singapore, this re-thinking is meaningful for

558 major hub or gateway cities such as Dubai, Hong Kong, and Frankfurt, as the quasi-destination
559 concept provides a framework for further highlighting and articulating their important position
560 and multiple functions in the tourism system. Additionally, through awareness of this concept,
561 airport transit facilities will no longer be simply considered as basic transportation infrastructure,
562 since their potential to function as a quasi-destination can now be recognised and pursued. It may
563 be argued that privately owned airports do not fit into this model given their revenue-focused
564 operation strategy. However, most of the major airports that can represent the identity of a
565 country or a destination are controlled or operated by the government, so that their operation
566 should not only focus on revenue generation but also take into account a social responsibility to
567 promote the country or destination they represent. Even though the airport is fully
568 commercialised or corporatised, innovative operation is vital for the airport management
569 company to contend with strong competition from other hubs. The concept of quasi-destination
570 can provide such innovation.

571

572 Theoretical implications for the service component of the transit literature are also evident.
573 Traditionally, research on airport/airline services has only considered internal operational
574 benefits. For example, Wells and Richey (1996) believe that there is a significant relationship
575 between passenger satisfaction and airline service quality, which is therefore positioned as a
576 significant precursor of passenger loyalty. Similarly, Yeh and Kuo (2003) argue that airport
577 service quality and passenger satisfaction levels are the most important performance indicators
578 for airport operation. The facilities and services provided by the airport can significantly
579 influence the passenger's choice of transfer airport. The current research extends this focus by
580 demonstrating that the services and facilities provided by the airlines and airport will no longer

581 only influence their own operation but can be also be considered as quasi-destination
582 articulations contributing to tourism development in the home destination. Through experiencing
583 these articulations, stopover passengers can perceive a positive image and thus build up their re-
584 visit interest as stayover tourists, allowing the implicated airlines and airports to also accrue
585 further financial benefits in accommodating this extra traffic.

586

587 The majority of tourism research that investigates place image formation mainly focuses on the
588 destination perspective, and thus links the destination image with destination marketing. As a
589 result of this research, the transit route region will attract more attention from the tourism
590 scholars as an object of focused marketing efforts. This requires the classical theories and models
591 discussing the destination image formation to be adjusted to better suit the expanded functions of
592 the transit route region A relevant example is illustrated in the literature review, where the
593 classical destination image formation model of Gunn (1988) was modified to incorporate the
594 image formation process of stopover passengers in transit locations.

595

596 All strategies suggested in relation to Singapore Airlines and Changi International Airport to
597 maximise the effectiveness of the quasi-destination articulations can be contextualised within
598 and structured using classic tourism marketing mix theory. For example, the 3D city tour inside
599 the terminal implicates the ‘product’ component. It can be argued from our research, however,
600 that another P – ‘projection’ – should be added to the tourism market mix in quasi-destinations.
601 Changi International Airport and Singapore Airlines are microcosms or reflections of Singapore
602 that can only partially demonstrate or capture the comprehensive characteristics and features of
603 its represented destination (i.e. Singapore). However, through effective quasi-destination

604 articulations, they can *project* these characteristics in compelling ways that induce stopovers to
605 revisit as stayovers. For example, the Butterfly Garden is not a real rainforest but a
606 representation that projects the essence of a rainforest so that people can ‘pseudo-experience’
607 Singapore’s tropical climate and lush vegetation. From the tourism marketing mix perspective, it
608 is the ‘place’, ‘people’ and ‘product’ elements specifically that are projected. Regarding the
609 people component, the staff from Changi International Airport and Singapore Airlines, for
610 example, cannot represent Singapore’s entire population. However, they can be trained to project
611 the hospitality style of Singapore through their high quality service delivery.

612
613 This research also devised and applied an innovative method, the APSI (Awareness –
614 Participation – Satisfaction – Influence) framework, based on the established AIDA method. The
615 APSI framework is proposed as a demand-side method that facilitates the analysis of the quasi-
616 destination in terms of evaluating its potential effectiveness in influencing the travel decision and
617 behaviour of the tourists. While a causal sequence is not intended, statistical and subsequent
618 analysis indicates that the APSI framework effectively assesses the degree to which designated
619 services and activities attract awareness, participation, satisfaction and influence (revisitation
620 interest), allowing the degree of sequential engagement and articulation to be quantified. This
621 subsequently serves to enhance that level of articulation for the mutual benefit of the attendant
622 destination, airport and airline.

623

624 7. Conclusion

625

626 A possible limitation of this research is the interrogation of revisit *interest*. Numerous studies
627 demonstrate that interest or intentions are not necessarily predictive of actual behaviour (Terry,
628 Hogg & White, 1999). Declarations of interest to re-visit Singapore as a result of exposure to
629 certain facilities and services in Changi Airport or Singapore Airlines therefore do not mean that
630 such visits will necessarily occur. Longitudinal research therefore needs to be undertaken to
631 ascertain the extent to which ‘high interest’ first-time stopover visitors to Singapore actually do
632 re-visit as stayovers and what these visits reveal in terms of timing, duration, and activities
633 pursued. Considering the research scale, this research uses Singapore as a case study place, but
634 **further clarity as to the robustness of the model now requires its testing in other major hub cities**
635 **such as Dubai, Hong Kong and Frankfurt.**

636
637 Limitations notwithstanding, this innovative research has the potential to provide substantial
638 benefits for Singapore, Singapore Changi Airport and Singapore Airlines in demonstrating that
639 stopover-to-stayover conversion strategies are feasible, especially for certain market segments.
640 Through the quasi-destination model, hub and gateway cities around the world can achieve long-
641 term benefits and cultivate a new market segment for their stayover tourism industry. **This is the**
642 **first research to reconfigure conventional tourism system models through the identification of an**
643 **innovative and potentially lucrative stopover-to-stayover tourism conversion function that**
644 **strongly implicates the air transport industry.** As such, it has substantial theoretical and practical
645 implications in the areas of tourism systems, transit regions, airlines and airport service, tourism
646 marketing mix and the empirical research and analysis method. Hopefully, this research will
647 attract more attention from researchers into the complexities of transit route regions in order to

648 contribute to a more holistic and integrated theory of the tourism system that better reflects
649 emerging contemporary tourism dynamics.

650

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