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## Destination Neurogenetics: Creation of destination meme maps of tourists

Hilmi A. Atadil<sup>a,\*</sup>, Ercan Sirakaya-Turk<sup>b</sup>, Seyhmus Baloglu<sup>c</sup>, Ksenia Kirillova<sup>d</sup>

<sup>a</sup> Global Hospitality and Tourism Management, College of Business, University of West Florida, 11000 University Pkwy., Pensacola, FL 32514, United States

<sup>b</sup> College of Hospitality, Retail and Sport Management, University of South Carolina, 701 Assembly Street, Columbia, SC 29208, United States

<sup>c</sup> University of Nevada, Las Vegas, William F. Harrah College of Hotel Administration, 4505 S. Maryland Pkwy., Las Vegas, NV 89154, United States

<sup>d</sup> School of Hotel and Tourism Management, The Hong Kong Polytechnic University, 17 Science Museum Road, TST East, Kowloon, Hong Kong

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### ABSTRACT

Seminal marketing studies suggest that the concepts of destination image and meme maps are highly related. Using the Theory of Spreading Activation, this study involves creation, assessment, and comparison of the structure of tourists' destination memes of a mature tourism destination in Turkey. The study reports the findings of two separate studies involving Russian and German travelers to Antalya. Results show *sea, sun, and beach* memes are the three most common general memes activating the Antalya brand; however, the two market segments' (Russian and German travelers) meme maps differ. While traditional marketing theories rely on the Rational Choice Theory that accentuates the role of the conscious choice of a consumer, this study involving Destination Neurogenetics (DNgen) supports the Infection of the Mind Theory. Findings suggest that greater meme-associations represent high-equity and strong brands.

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### 1. Introduction

Dawkins (1976) defines a meme as a unit of cultural transmission that includes a piece of information stored in memory. A meme represents perceptions related to an image, brand, and all other real or fictional entities (Henderson, Iacobucci, & Calder, 1998; Krishnan, 1996). The Theory of Spreading Activation, as a foundational theoretical model of Memetics, postulates that memes link to each other in a person's memory through semantic similarity lines that demonstrate the association between pairs of memes (Collins & Loftus, 1975; Quillian, 1967). A meme map is a generic network comprising of memes and the similarity lines between these memes. Foundational articles in the marketing field contribute to the evolution of Memetics knowledge and literature. For example, Krishnan (1996) examines the characteristics of brand associations following Keller's (1993) consumer-based brand equity conceptualization. In marketing, the term "brand association" refers to a meme map. Similarly, Keller (1993, p. 3) defines an image as "perceptions about a brand as reflected by the brand associations held in consumer memory." Even though image and brand of a destination are two different constructs, the brand's existence depends on the destination's image formation (Cai, 2002). Image formation is the construction of a destination's mental representation influenced by the information cues transferred by image

information agents and personal factors (Alhemoud & Armstrong, 1996; Gunn, 1972). Foundational travel decision-making models explicitly state that travelers' perceived images of destinations play a significant role in their travel decisions, such as making the choice to return to a destination (e.g., Baloglu & McCleary, 1999; Um & Crompton, 1990; Woodside & Lysonski, 1989). At a theoretical level, parallel literature on the subject of destination image and Memetics point to a unifying postulation that destination images and meme maps are highly related mental constructs. Further, meme maps are antecedents of images whereas images are the byproducts of meme maps. Thus, the generation of travelers' meme maps regarding a destination can thoroughly reflect their destination images for a specific destination. A review of the relevant marketing literature suggests highly developed and multi-dimensional meme maps represent well-known brands including favorite tourism destinations (e.g., Low & Lamb, 2000).

Antalya, as the host city of EXPO2016, is the fourth most visited tourism destination in the world with around 300 sunny days in a year (EXPO, 2016). Antalya, known to the visitors as heaven on earth and the Turkish Riviera, is a mature and successful tourism destination. German and Russian travelers represent the top two source markets for Antalya (Turkish Ministry of Culture & Tourism, 2016), despite recent political events (e.g., violent tension between Turkey and Russia, and political instability) temporarily curtailing tourism activity.

The current study's purpose is twofold: (1) to identify the overall Destination Image Meme Maps (DIMMs) of Antalya, Turkey, and the tourists' favorite tourism destination, and (2) to identify and evaluate the similarities and differences in the structures of the previously generated two categories of DIMMs. Both the Spreading Activation and the

\* Corresponding author.

E-mail addresses: atadil@uwf.edu (H.A. Atadil), ercan@mailbox.sc.edu (E. Sirakaya-Turk), seyhmus.baloglu@unlv.edu (S. Baloglu), ksenia.kirillova@polyu.edu.hk (K. Kirillova).

Symbolic Interaction Theories (Blumer, 1969; Quillian, 1967) provide the basis for the study. Although Memetics has been around for over two decades, researchers still consider Memetics a new paradigm in consumer research. To date, methodological challenges involving the conceptualization and operationalization of constructs limit Memetic's use. The present study is likely the first in tourism and advances the knowledge and application of Memetics. This Memetics study's methodology expands the contents of the toolbox available to tourism researchers by shedding a better light on decision-making processes and consumer behavior. This new research paradigm's results will influence new marketing communication and positioning strategies that can activate the most influential and common brand memes stored within individuals' minds as network of meme-maps.

## 2. Literature review

Berger, Dittenbach, and Merkl (2004, p. 219) define an associative network as "a generic network which includes nodes representing information items (semantic entities) and associations between these nodes that express relationships." Memetics examines the knowledge of associative networks from a Darwinian evolutionary perspective. Dawkins (1976) defines the meme as a unit of cultural transmission or imitation that includes a piece of information stored in memory. A meme can replicate and evolve, similar to a gene. However, a meme only inhabits the mind of a person and spreads by interpersonal communication and artifacts (Williams, 2000). The terms node and meme actually represent the same concept. Along the same lines, are the terms associative network and meme map. Thus, memes also represent an individual's perceptions regarding real or unreal world entities (Henderson et al., 1998; Krishnan, 1996). Moreover, a display of memes and lines connecting these memes becomes a meme map. These lines demonstrate the relationship between a pair of memes. The width of the lines increases as the level of the relationship increases, and vice versa (Berger et al., 2004; Henderson et al., 1998). The terms meme and meme map include the terms node and associative network, respectively, in the current study.

In marketing, the term "brand associations" often refers to a meme map (e.g., Romaniuk & Nenycz-Thiel, 2013). Krishnan (1996) confirms that brand associations have four characteristics. First, the number of associations equals the total number of memes in a meme map. Second, the valence of associations is the value (positive, negative, or neutral) of a certain meme. While a traveler can attach a positive value to a meme (e.g., rich history), a negative value can attach to another meme (e.g., traffic congestion). Third, the uniqueness of associations is the ability of a certain meme or meme map to be unique. For instance, a meme map about the image of Paris might have the Eiffel Tower as a unique meme. Lastly, the origin of associations indicates the source of a meme. These information sources include (1) direct experience with the destination, (2) friends and/or relatives, and (3) advertisements. Henderson et al. (1998) applies social network analysis to brand associative networks. They provide a deeper evaluation of brand associations' characteristics by employing social network analysis.

Furthermore, Low and Lamb (2000) find that popular brands tend to have multi-dimensional meme maps formed of improved memory structures in consumers' minds. Around the same time, Supphellen (2000) suggests that qualitative research approaches (e.g., free association method) enable researchers and managers to obtain a deeper understanding of unconscious and non-verbal brand associations in consumers' minds. More recently, Romaniuk and Nenycz-Thiel (2013) evaluated the relationship between customer's previous behavioral brand loyalty and present brand associations. Authors empirically supported that as the brand loyalty increases, so does the strength of the brand associations. Mühlbacher, Raies, Grohs, and Koll (2016) assessed the relationship between brand association characteristics and brand strength. Further marketing studies evaluated different aspect of the brand associations (e.g., Grohs, Raies, Koll, & Mühlbacher, 2016; Koll &

von Wallpach, 2014; Michel & Donthu, 2014). However, a review of the relevant marketing literature suggests that no common research method or typical analytical tool exists to allow researchers to study Memetics.

Application of the Memetics to Tourism and Hospitality (T&H) research is quite limited. Firstly, Li and Stepchenkova (2012) attempt to generate associative networks that reflect different image dimensions of the United States as a tourism destination as perceived by Chinese travelers. Following Echtner and Ritchie (1993), the authors interviewed the respondents through open-ended questions. Respondents mostly associate urban, advanced economic development, an open and democratic system, improved technology, and big cities with the United States. The authors stress that the usage of convenience sampling limits their study. Secondly, Baloglu, Henthorne, and Sahin (2014) assess the destination image and brand personality of Jamaica. The authors identify destination-specific brand image and personality characteristics through qualitative questions. The authors conclude that individuals possess mixed images regarding a destination's image. Their study demonstrates promising empirical evidence for the usage of the SPSS Modeler in the generation of associative networks. Lastly, Huang, Li, and Li (2015) explore the perceptions of Chinese travelers and generate an associative network for Taiwan as a tourism destination. The authors collected data through a self-administrated survey and employed both quantitative and qualitative techniques to analyze the obtained data. Their overall findings indicate that Chinese travelers' brand associations are highly favorable for Taiwan. In sum, these three studies provide promising empirical evidence for the application of associative networks knowledge to T&H research. However, these studies do not take theoretical information regarding Memetics into consideration. Thus, these studies could only provide a limited understanding for this study subject.

Collins and Loftus (1975) develop one of the most influential meme map models based on the Theory of Spreading Activation (TSA). This theory depends on Quillian's (1968) spreading activation theory of human semantic processing that enables computers to imitate human memory search behavior (Anderson, 1983). The crux of Quillian's theory (1968) posits that when a person is reminded of a stimulus or presented with a cue, an activation starts in a corresponding meme. Stimulus meme activation starts and spreads to other memes. This memory search process is called spreading activation (Collins & Loftus, 1975; Henderson et al., 1998). Collins and Loftus (1975) propose an extended version suggesting cue intersection occurs when a stimulus meme(s) reaches the same corresponding meme. At this point, the individual processes the meme map's meaning. This evaluation influences the individual's behaviors, thoughts, and emotions. Moreover, Collins and Loftus (1975) suggest that a meme map includes semantic similarity lines. More links (or lines) connecting two memes exist if these particular memes have more shared characteristics than other memes available in a meme map. This assumption describes the rationale behind the semantic relatedness concept. Based on this concept, the line's width changes in a given meme map. If two particular memes (e.g., croissant, Paris) strongly associate, an individual's likelihood of remembering one meme increases (e.g., croissant) when exposed to the other meme (e.g., Paris).

Many researchers who apply Memetics to marketing research base their studies on the Theory of Spreading Activation (TSA) (e.g., Brandt, de Mortanges, Bluemelhuber, & van Riel, 2011; Henderson et al., 1998). Among the limited T&H studies, Cai (2002) concludes that the strength and favorability of brand associations, as well as these brand associations' connections to the brand identity, strongly relate to the core principles of TSA. Symbolic Interaction Theory (SIT) helps to understand the social foundations of Memetics. SIT asserts that the meanings that individuals attach to things determine their behaviors towards these particular things. Most importantly, these meanings derive from social interactions and they are under the influence of the symbolic environment (Blumer, 1969). A symbol serves as a stimulus that includes a stored meaning and value.

Keller (1993) emphasizes that an organization's most valuable asset for marketing is brand knowledge, formed by brand awareness and image, stored in consumers' minds. Traditionally, destination image is "the sum of beliefs, ideas, and impressions that a person has of a destination" (Crompton, 1979, p. 18). Stepankova and Li (2014) note strong relationships among brand, brand associations, and image concepts. These authors even suggest that destination images and destination brand associations are two sides of the same coin. Based on the previous discussion, Fig. 1 shows the conceptual framework to demonstrate the relationship of the study constructs.

Aforementioned studies jointly claim that meme maps with numerous positive associations relate to well-known brands (e.g., Collins & Loftus, 1975; Low & Lamb, 2000). Krishnan (1996) compares high equity to low equity brands in his seminal study, and empirically confirms that high equity brands have a larger number of associations in their related meme maps. Brands perceived as high equity suggest that customers' attitudes and behaviors towards a particular brand are more positive (Keller, 1993). Thus, within the tourism context, managers would desire their destination's brand image to reflect a larger number of positive associations in travelers' minds. In this way, these travelers' attitudes and behaviors such as revisit behavior are more positive towards this destination. The following research hypothesis was developed:

**H<sub>1</sub>.** Travelers' greater number of positive destination associations positively relates to their likelihood to return.

### 3. Methods

Data comes from two samples consisting of 272 Russian and 262 German travelers visiting a medium-sized city (i.e., Antalya) located in the southern region of Turkey. A convenience sampling using self-administered questionnaires was employed and semantic consistency was ensured. Several steps helped to generate the meme maps. First, a free association method was performed for elicitation of memes. Following Echtner and Ritchie (1993), respondents were asked two questions: (1) Please list all descriptive words, thoughts, characteristics, logos, symbols or images that come to mind when you think of Antalya as a vacation destination, (2) Do any unique activities or sites exist in

Antalya? If yes, please list the unique things that come to mind that do not exist or encountered rarely anywhere else. These questions generated a list of both general and unique memes, respectively, through the words (e.g., sea, local people) that respondents listed to answer these questions. Respondents needed to answer these questions two times to describe their perceptions regarding Antalya and their favorite vacation destinations. These questions enabled authors to collect the related data for the number and uniqueness of associations. Respondents also were asked to provide information regarding the other two characteristics of brand associations: origin (i.e., direct experience with the destination, what they heard from friends and/or relatives, advertising that they have seen or heard) and valence of associations (bad for the destination, good for the destination, neither good nor bad for the destination). Lastly, respondents indicated how influential the memes that they listed in their answers were when determining their overall image for the particular destination (5-point Likert scale).

IBM SPSS Modeler Text Analytics 16 (Modeler) analyzed the open-ended questions to generate the meme maps. The software initially performs a text mining procedure and extracts the common memes (e.g., sea, sun, and beach) for a particular meme map. The software runs concept root derivation and semantic network techniques to categorize and identify common memes (IBM SPSS Modeler, 2016). Additionally, memes were checked manually, and data were screened to increase the trustworthiness of this procedure.

The next step was generating the meme maps. The interactive workbook of the Modeler software enables meme map generation based on two criteria: (1) Frequency of memes, (2) Co-occurrence of memes. Co-occurrence locates pairs of words often found together in respondents' answers to a particular question. Based on the frequency of co-occurrence value, a line appears between a pair of memes. The line's width positively associates with the frequency of co-occurrence. Furthermore, a blue dot represents each meme plotted on the generated meme map. The dot's size also increases as the frequency increases. Lastly, respondents also indicated their likelihood to return Antalya in the future using a 6-point Likert scale question.

### 4. Results

More females answered survey for both German (56%) and Russian (84%) samples. While slightly more than one-half of the Russian respondents (51%) had undergraduate university degrees, almost one-half of the German respondents (49%) had a high school or lower level of education. With the total sample, a regression analysis determined the predictive power of number of associations as an independent variable in respondents' likelihood to return dependent variable (see Table 1). The results demonstrate significant correlations for the number of associations variable with the standardized coefficient beta value of 0.70. As a result, the *likelihood to return* model ( $F(1, 115) = 112.355, P < 0.001$ ) explains 50% of the variation in the dependent variable ( $R^2 = 0.50$ , adjusted  $R^2 = 0.49$ ). The regression analyses for each sample show similar results (see Table 1).

**Table 1**  
Regression model for likelihood to return.

Sample	Independent variable	Standardized coefficient beta	t-Value
Total sample <sup>a</sup>	Number of associations	0.70	10.60 <sup>d</sup>
Russian sample <sup>b</sup>	Number of associations	0.30	2.35 <sup>e</sup>
German sample <sup>c</sup>	Number of associations	0.80	10.01 <sup>d</sup>

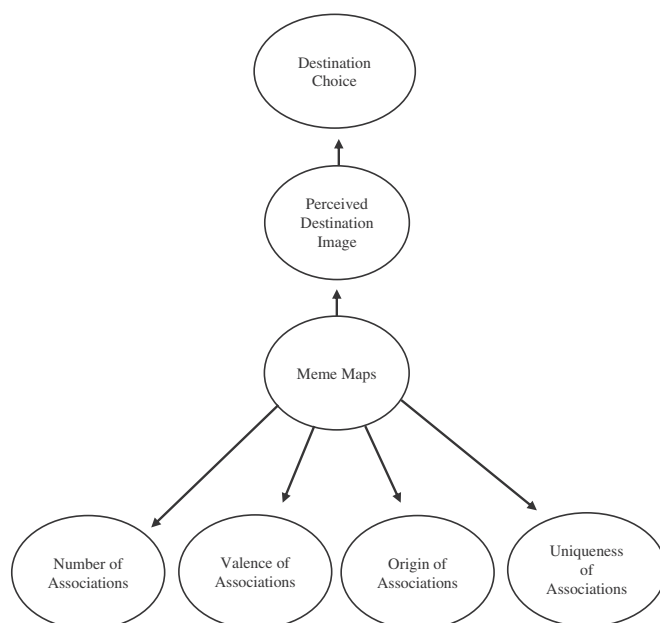
<sup>a</sup> Dependent variable = likelihood to return. Overall model:  $F(1, 115) = 112.355, P < 0.001, R^2 = 0.50$ , adjusted  $R^2 = 0.49$ .

<sup>b</sup> Dependent variable = likelihood to return. Overall model:  $F(1, 58) = 5.557, P < 0.05, R^2 = 0.09$ , adjusted  $R^2 = 0.07$ .

<sup>c</sup> Dependent variable = likelihood to return. Overall model:  $F(1, 55) = 100.226, P < 0.05, R^2 = 0.65$ , Adjusted  $R^2 = 0.64$ .

<sup>d</sup> Significant at  $P < 0.001$ .

<sup>e</sup> Significant at  $P < 0.05$ .



**Fig. 1.** Conceptual framework.



For Russian visitors, the most common top five general memes were *sea* (131), *sun* (75), *beach* (54), *nature* (50) and *nightlife* (38). Characteristics of brand associations for each meme map were calculated considering all memes provided by respondents for a question (e.g., general memes for Antalya). All general memes of Antalya provided by Russian travelers had a mean number of associations value of 3.90. The mean influentiality value of these general memes was 4.39 (see Table 2). Most general memes for Antalya by Russian travelers originated from direct experience (92.6%) and were considered as favorable for the destination (98.8%) (see Appendix, Table 3). These significant category overlaps indicate that Antalya is mainly perceived as a typical 3S (Sea, Sun, and Sand) destination by Russian travelers.

In the general meme map of Antalya by Russians, the strongest association appeared between *sea* and *sun* memes with a co-occurrence value of 59 (see Fig. 2). The next four strongest associations were between the memes of *sea* and *beach* (co-occurrence: 38), *sea* and *mountains* (co-occurrence: 18), *nature* and *sea* (co-occurrence: 16), and *sun* and *beach* (co-occurrence: 16). These findings suggest that Antalya's general image also includes natural attractions in addition to the "top of the mind" image of being a 3S destination. On the other hand, the weakest associations for this meme map are between several pairs of memes such as *architecture* and *nightlife* (co-occurrence: 1).

For Germans, the most common top five general memes: *sun* (79), *sea* (58), *beach* (45), *culture* (21), and *friendliness* (14). The memes listed by German travelers had 2.64 and 4.24 values as the mean number of associations and mean influentiality values, respectively (see Table 2). German travelers also reported that most general memes for Antalya originated from direct experiences (83.2%) and they are good for the destination (77.3%). German traveler's general meme map of Antalya shows the top associations between the following meme pairs: *sea* and *sun* (co-occurrence: 42), *sun* and *beach* (co-occurrence: 27), *sea* and *beach* (co-occurrence: 10), *recreation* and *sun* (co-occurrence: 7), and *water* and *sun* (co-occurrence: 6). These category associations confirmed that German travelers have a similar image of Turkey (3S destination) as Russian travelers. Weak associations occur for several pairs of memes such as *culture* and *mosques* (co-occurrence: 1) (see Fig. 2).

Regarding the unique memes of Antalya, *sea* (19), *beautiful climate* (18), *nature* (17), *mountains* (12) and *pamukkale* (7) were the most common top five unique memes listed by Russian travelers. Whereas, the following were the most common top five unique memes listed for Antalya by German travelers: *waterfall* (23), *sea* (19), *hospitality* (15), *culture* (13) and *people* (12). Mean values for the number of associations about the unique memes of Antalya were 2.22 and 2.05 in the Russian and German samples, respectively (see Table 2). The strongest

associations in the Russian tourist unique meme map occur between the memes of *sea* and *mountains* (co-occurrence: 7), *mountains* and *beautiful climate* (co-occurrence: 4), *nature* and *sea* (co-occurrence: 4), *nature* and *mountains* (co-occurrence: 4), and *nature* and *beautiful climate* (co-occurrence: 4). Based on German travelers' responses, the strongest associations are between the unique memes of *sea* and *mountains* (co-occurrence: 4), and *sea* and *sun* (co-occurrence: 4) (see Appendix, Fig. 4).

In the last step of the analyses, the study compares memes relating to travelers' favorite destinations to Antalya. Russian travelers listed their favorite destinations. Their top five most common tourism destinations were *Egypt* (42), *Kemer* (38), *Barcelona* (28), *Marmaris* (27), and *Side* (22). Moreover, the most common top five general memes of the favorite destinations for Russian travelers were *sea* (41), *nature* (27), *architecture* (25), *beach* (18), and *local trips* (17). All general memes of the favorite destinations provided by Russian travelers had the values of 4.78 and 4.04 as the mean number of associations and mean influentiality, respectively (see Table 2). The majority of these favorite destination general memes for Russian travelers originated from direct experience (64.3%) and perceived as good for the destination (100%). The following are the pairs of general memes that present the strongest associations: *sea* and *beach* (co-occurrence: 10), *sea* and *sun* (co-occurrence: 9), *sea* and *nightlife* (co-occurrence: 8), *nature* and *sea* (co-occurrence: 7), and *people* and *architecture* (co-occurrence: 7) (see Fig. 3).

Finally, the top five most common favorite destinations by German travelers were *Majorca* (36), *Istanbul* (19), *Greece* (18), *Bodrum* (17) and *Paris* (16). Based on the destinations selected, German travelers are attracted to destinations with cultural attractions and lifestyle experience in an urban setting. The following were the top five most common general memes about the favorite destinations of the German travelers: shopping (15), beach (8), cuisine (7), people (7), and culture (7). The mean number of associations and mean influentiality values were, respectively, 4.30 and 4.28 for the favorite destination general memes listed by German travelers (see Table 2). Similar to the previous findings, most favorite destination general memes originating from direct experience (91%) and are considered good for the destination (80%). On the map (see Fig. 3), the strongest associations were *culture* and *shopping* (co-occurrence: 2) and *weather* and *beach* (co-occurrence: 2).

## 5. Discussion and conclusion

A regression analysis determined the predictive power of number of associations in travelers' likelihood to return a tourism destination behavior. The research hypothesis of the study (H1), "travelers' greater number of positive destination associations positively relates to their likelihood to return," receives support. Results show individuals tend to make positive decisions towards that certain brand because they possess richer memory structures in relation to that brand (Keller, 1993; Krishnan, 1996; Low & Lamb, 2000). The current study supports that this hypothesis also works in the travel decision-making context.

In terms of descriptive analysis, respondents had higher mean numbers of associations for the general memes of Antalya when compared to those of unique memes of Antalya in both samples. Due to their unique nature, lower frequencies for unique memes were expected. In both samples, most general memes originate from direct experience with the destination. This finding is logical since the data were collected on-site. Woodside and Walser (2007) propose that customer experience mostly determines brand strength. Thus, direct customer experience is critical not only for the formation of the meme maps, but also for the brand's strength. When building destination brands and communicating brand associations, tourist destinations need to identify the most effective and

**Table 2**  
Average associations and influentiality.

	Mean number of associations	Mean influentiality <sup>b</sup>
General memes of Antalya by Russians	3.90 (1.90) <sup>a</sup>	4.39 (0.86)
General memes of Antalya by Germans	2.64 (0.93)	4.24 (1.03)
Unique memes of Antalya by Russians	2.22 (1.15)	
Unique memes of Antalya by Germans	2.05 (1.37)	
General memes of the favorite destination by Russian travelers	4.78 (2.05)	4.04 (1.17)
General memes of the favorite destination by German travelers	4.30 (1.86)	4.28 (0.96)

<sup>a</sup> Standard deviations appear in parentheses.

<sup>b</sup> On a scale ranging from 1 = least influential to 5 = most influential.

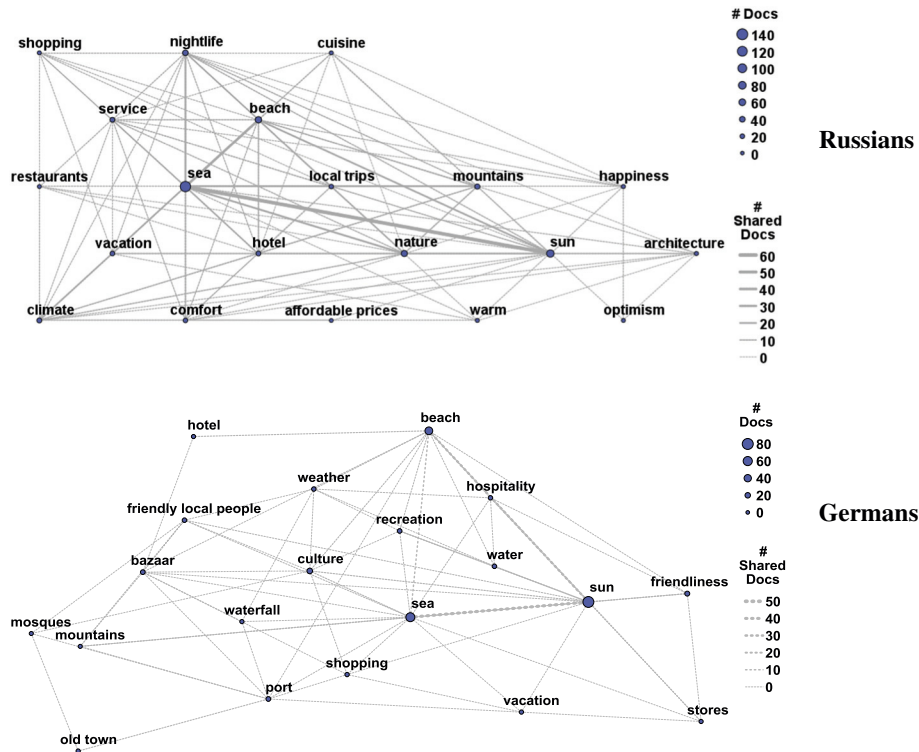


Fig. 2. General meme map of Antalya by Russian vs. German travelers.

influential brand image memes and communicate them to different market segments.

The *sea*, *sun*, and *beach* memes were the top three most common general Antalya memes in both samples. Moreover, the pairs of

memes *sea* and *sun*, *sea* and *beach*, and *sun* and *beach* appear in the top five associations based on their co-occurrence values in both samples. These and all other findings in the general meme maps of Antalya provide innovative practical implications for the

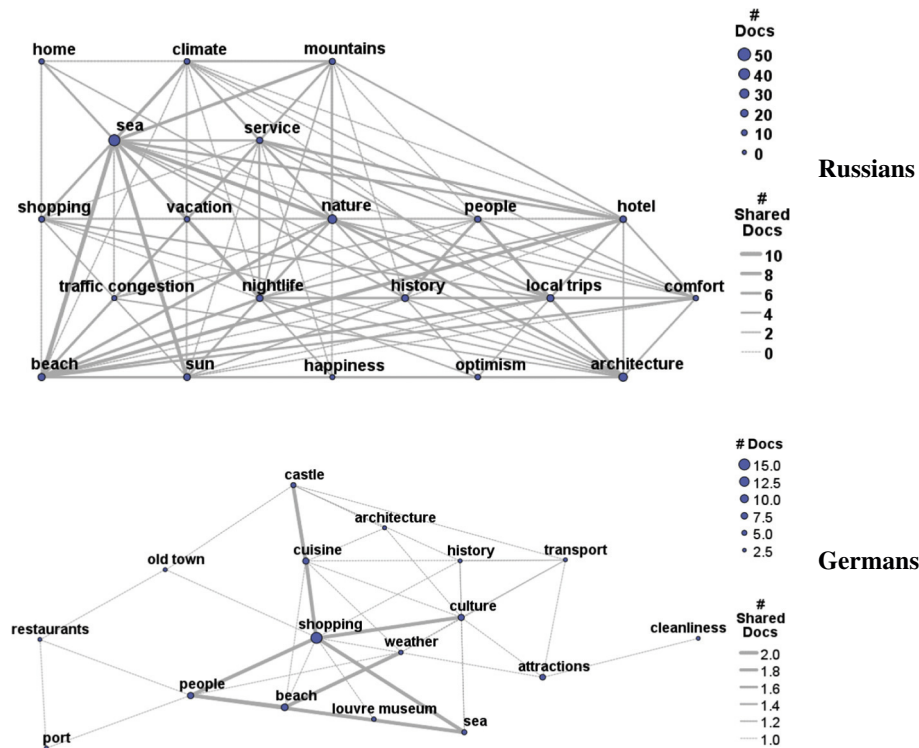


Fig. 3. General meme map of the favorite destination by Russian vs. German travelers.

Destination Management Organizations (DMOs) in Turkey. Meme maps demonstrate the real pictures of destination images of Antalya. DMOs can generate positioning and advertisement strategies that concentrate on the identified common memes in the general meme maps of Antalya. For example, a social media marketing campaign with visual and audio cues focusing on the *sea*, *sun*, and/or *beach* memes will strongly activate the meme maps for both Russian and German travelers. Previously discussed co-occurrence values point DMOs to the traveler's next meme when they are primed with a specific meme. For example, travelers reminded of the *sea* meme should jump to *sun* and *beach* memes automatically. This association helps to generate effective ad campaigns, such as a million dollar 30-s Super Bowl ad. For example, a Super Bowl ad campaign on Antalya, Turkey need to provide cues to activate the *sea* meme (assuming similarities exist between the study results and intended target market) and focus the rest of the ad on providing information to activate memes other than *sun* and *beach*, potentially delivering an effective marketing message.

Furthermore, the most common unique memes (e.g., Pamukkale, Waterfall) and the unique meme maps surface opportunities to gaining and sustain a competitive advantage for the Turkish DMOs. Promotion strategies concentrating on these unique meme maps will remind Russian and German travelers of taking a unique vacation to Antalya. For example, an advertising campaign that delivers a particular promotional message to German travelers can incorporate the unique memes of *waterfall*, *sea*, *hospitality*, *culture*, and *local people*. Direct and/or indirect presentation of these memes through different cues (e.g., audio cues, visual cues) will activate the related unique meme maps of German travelers. Promoting a destination becomes more challenging if travelers have mixed images regarding a destination (Min, Martin, & Jung, 2013). The current study identifies the meme maps regarding these mixed images of Russian and German travelers.

DMOs should utilize the findings of the identified general and unique meme maps simultaneously to develop tailored and more effective marketing strategies. For example, an advertisement campaign focusing on *sea*, *sun*, and *beach* general memes should also concentrate on unique memes. Since many summer tourism destinations can position themselves with the general memes of *sea*, *sun*, and *beach*, including unique memes help to differentiate a destination. For example, *Pamukkale*, a member of the World Heritage List, is a unique meme identified by Russian travelers (UNESCO, 2016). Similarly, *beautiful climate*, *architecture*, and *mountains* are other unique memes identified by these travelers. DMOs developing print advertisement campaigns could include several vacation pictures of a Russian couple taken in Pamukkale and Turkey.

The study highlights that two market segments (Russian and German tourists) have somewhat distinctive meme maps, particularly for favorite tourist destinations. While Russian travelers associate Antalya with nightlife and nature, German travelers associate the destination with culture and friendliness. Favorite Russian tourist destinations relate to the presence of sea, nature, and beach, whereas for German tourists prefer shopping, local cuisine, and meeting local people. Inglehart and Welzel (2010) suggest cultural values help explain these divergent views. The authors suggest that Russia is a society strongly orientated on survival; however, Germany prioritizes self-expression, as opposed to survival. Hedonic vacations favored by Russians arguably are ultimate breaks from the routine in which security, financial stability are common concerns. The quest for personal development through encounters with local cultures and their people may drive Germans towards holiday travel. Such findings can assist DMOs in identifying differences in the positioning of a destination in the minds of two traveler segments.

The Russian and German travelers in the study provided the memes of *warm*, *fun*, *friendliness*, *happiness*, *optimism*, and *beauty* relating to their perceptions regarding Antalya. These particular memes also describe human characteristics. A person can also be warm, friendly, and optimistic. Thus, these particular memes provide insights regarding the brand personality of Antalya.

The current study also identifies the general meme maps of the favorite tourism destinations for each sample. This study's segment-based approach provides richer understanding of the memes and segment-specific marketing implications for emphasizing brand associations for each segment. The generated meme maps for the favorite tourism destinations had the highest mean number of associations compared to the mean values obtained for the meme maps of Antalya. This finding also supports the finding that high-equity strong brands relate to a higher number of associations (Keller, 1993; Krishnan, 1996). The most common general memes are *sea*, *nature*, *architecture*, *shopping*, *beach*, *local trips*, and *cuisine* in the related meme maps by the German and Russian travelers. Turkish DMOs can generate more effective promotion strategies by using these memes to better position Antalya against the top competing destinations.

The current study also provides significant theoretical contributions by leading the adoption of Memetics knowledge into the T&H field. The Theory of Spreading Activation and Symbolic Interaction Theory support the findings of the study (Blumer, 1969; Charon, 1979; Quillian, 1968). Generated meme maps, identified co-occurrence values, and previously made practical implications depend on the principles of these theories. Researchers consider Memetics as a new but challenging paradigm in destination marketing. This approach has the potential to improve understanding of consumer behavior and decision-making (e.g., Lynch, 1996). In this new paradigm, the role of tourism marketing and marketing communication is to engineer imitating and evolving memes that spread like a virus in the minds of current and prospective tourists. While traditional marketing theories rely on the rational choice theory that accentuates the role of the conscious choice of a consumer, Destination Neurogenetics (DNgen), on the other hand, supports the infection of the mind theory rather than conscious choice. Martin (2010) highlights the influence of unconscious thinking on decision-making behavior. As Marsden argues (1998) for tangible products, Destination Memetics (DMem) can be a powerful mind-craft tool for tourism behavior studies.

Just like any social science study, this study had some weaknesses. For example, respondents were not required to list a minimum number of memes. Consequently, some respondents provided only one or no memes. Since the study uses a convenience sampling, the findings are not a representative sample using any of the probability sampling methods. In the Russian travelers' sample, there were proportionally more female respondents indicating an unbalanced gender distribution. Further, the identified memes and structure of the meme maps might change based on different variables not tested in the current study. For example, variables such as frequency of visit and level of education can influence the structure and characteristics of meme maps. Richer image meme maps likely exist for travelers who visit a certain destination four and/or five times than for those who have visited only once. Future research should also focus on the travelers' images for a destination that they have never visited before. Moreover, researchers can generate the meme maps of other tourism products and services such as lodging organizations, theme parks, sightseeing tours, and guest service. Finally, Memetics offers a variety of applications for different research contexts. For example, researchers can generate meme maps of different stakeholders (e.g., residents, tour operators, transportation companies) to better understand the similarities and differences in their projected images of a certain destination.

Appendix A

Table 3

Valence and origin of associations.

	Valence*		Origin of Associations**			
		F <sup>a</sup>	%		F	%
Antalya General Memes by Russians	Bad	0	0	Direct experience	75	92.6
	Good	79	98.8	Friends, and/or relatives	4	4.9
	Neither good nor bad	1	1.2	Advertising	2	2.5
Antalya general memes by Germans	Bad	33	16	Direct experience	144	83.2
	Good	160	77.3	Friends, and/or relatives	17	9.8
	Neither good nor bad	14	5.7	Advertising	12	7
Favorite city general memes by Russians	Bad	0	0	Direct experience	54	64.3
	Good	56	100	Friends, and/or relatives	15	17.9
	Neither good nor bad	0	0	Advertising	15	17.9
Favorite city general memes by Germans	Bad	3	0.05	Direct experience	48	0.91
	Good	47	0.80	Friends, and/or relatives	2	0.04
	Neither good nor bad	9	0.15	Advertising	3	0.06

\* On a scale where 0 = bad for the destination, 1 = good for the destination, 2 = neither good nor bad for the destination.

\*\* On a scale where 1 = direct experience with the destination, 2 = what you have heard from your friends, and/or relatives, 3 = advertising that you have seen or heard.

<sup>a</sup> Frequency.

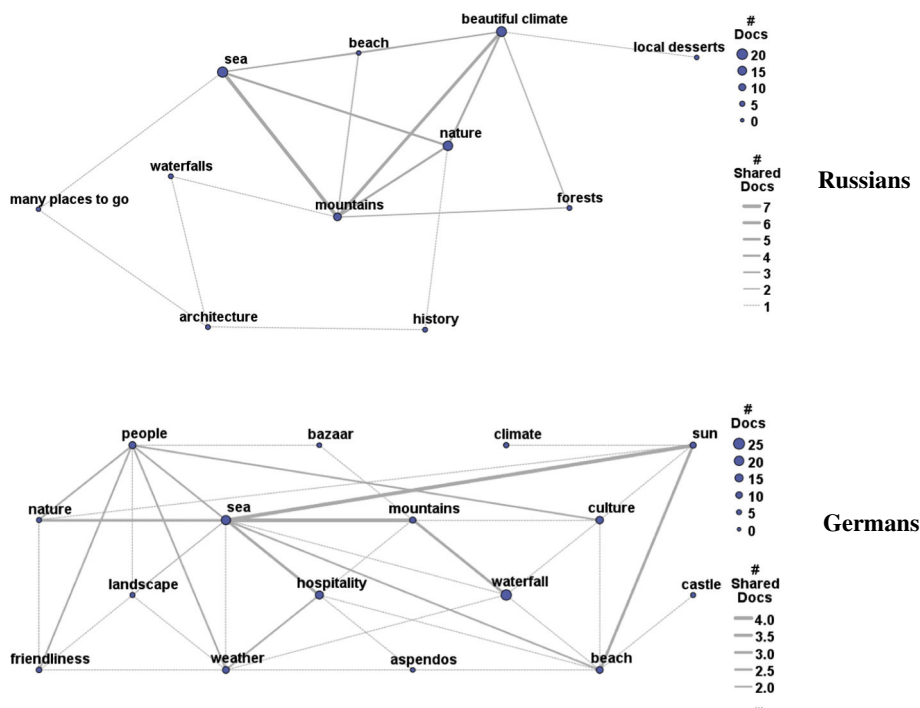


Fig. 4. Unique meme map of Antalya by Russian vs. German travelers.

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