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The economics of attitudes: A different approach to utility functions of players in tourism marketing coalitional networks

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HIGHLIGHTS

- Shared attitudes and motivations among actors create a network of interconnected ideas.
- A destination player's network's utility function depends upon the ideas' interconnectedness level in player's network.
- Shapley value solution supports the idea that when distributing the benefits, fairness is sacrificed in favor of stability.
- Free riding is a natural phenomenon in tourism destinations' marketing activities.

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ABSTRACT

The foundation of destination collaboration is based on the interdependency of the organizations involved in producing destination products. The high rate of destination collaboration failure underscores the need for conflict studies. Unlike previous studies, which depend solely on the collaboration monetary values, this study proposes a new approach to define its utility functions based on the attitudinal and motivational values. We employ the network theory to define the utility function of four major players and the game theory to examine three distribution solutions of coalitional activities' values. The results support the notion of "free riders" mentioned in collaboration studies and explains why free riding is a natural phenomenon in tourism destinations' marketing activities. The findings suggest that individual entities and hospitality are the two players with the highest admission fee and the least contribution. We suggest the concepts of fairness and stability to be considered in incentive policies to encourage collaboration among higher admission players.

"And if a beach-head of cooperation may push back the jungle of suspicion, let both sides join in creating a new endeavor, not a new balance of power, but a new world of law, [...] And so, my fellow Americans: ask not what your country can do for you-ask what you can do for your country."

President John F. Kennedy, 20 January 1961

1. Introduction

The large numbers of key players in a tourism destination who share public infrastructures and resources with each other along with the industry's fragmented nature necessitate substantial coordination and collaboration in destination marketing (Pansiri, 2013; Wang & Fesenmaier, 2007). Collaboration becomes even more critical when the concept of free-market at a destination level fails due to lack of economies of scale and coordinated governance (Palmer & Bejou, 1995). In addition, the use of knowledge transfer, learning mechanisms, and relative competitiveness require collaboration to assure destination success (See, Pansiri, 2008; Pavlovich, 2014). To date, however, there is no consensus whether competitiveness and competition in general are the major forces triggering or creating barriers to collaborative behaviors among tourism stakeholders. Although a number of scholars argue that

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facing considerable competition and environmental challenges makes collaboration a necessity for the survival of destinations (Fyall & Leask, 2006), others argue that the competitive nature of destinations is an obstacle to the effective collaboration of tourism businesses (Wang, Hutchinson, Okumus, & Naipaul, 2013).

Studies indicate that integrated delivery systems and collaboration are the best managerial approaches for destination governance (Fyall & Leask, 2006). Individual stakeholders create weak promotional impacts compared to organizations who collaborate with each other since the collaborative organizations can pool more resources to achieve economies of scale, create an effective marketing plan (Palmer & Bejou, 1995), and utilize internal resources efficiently and effectively. In other words, collaboration enables organizations to absorb innovations which leads to higher survival rates, and hence generates considerable benefits for all parties by exploiting partners' resources (Zach, 2012). Accordingly, as Yi, Lee, and Dubinsky (2010, p. 250) indicate that "co-marketing alliances provide a way to develop new offerings using successful brands as signals of quality and image", destination marketing organizations (DMOs) rely heavily on collaboration when developing an amalgam of complex products in accordance with their overall destination marketing objectives.

Depending on the stakeholders' motives and goals, their alliances to promote a tourism destination can take social, economic, or strategic forms (Wang & Xiang, 2007). While successful destination alliances enhance the capacity of meeting and accomplishing goals synergistically (Jetter & Chen, 2012), the competition among the stakeholders can make collaborative arrangements fragile (Wang, 2008). The challenge for organizations, accordingly, is to encourage a relationship-oriented mindset rather than a profit-driven mindset among the destinations' stakeholders (Jetter & Chen, 2012). The situation, additionally, can get even more complicated when stakeholders have different mindsets, and their attitudes toward collaboration as well as their expectations concerning the outcomes become inevitably heterogeneous which results in stakeholders' non-equal contributions. This matter specifically holds true for those who are in "honeypots" in which stakeholders who do not see the necessity for additional contributions due to their stable market become free riders (Palmer & Bejou, 1995). Previous research indicates that about 70% of marketing alliances fail due to relational conflicts (Yi et al., 2010).

Since relational conflicts are the main reasons of marketing collaboration failures (Yi et al., 2010), relational theories, compared to other theories, should be able to provide a better explanation of the mechanism of collaboration complexities of behavioral conflicts in destination marketing (Fyall, Garrod, & Wang, 2012). Therefore, by using coalitional game and network theories, this study aims to investigate a DMO-facilitated collaborative experience of industry stakeholders in an established destination. There are few tourism-related game theory studies which mostly have utilized the monetary values approach (Yang, Huang, Song, & Liang, 2009). The present study, however, proposes a new approach to define the *utility* functions ("A mathematical function which ranks alternatives according to their utility to an individual" (Utility function, n.d.)) of collaboration based on the attitudinal and motivational values and to examine the value distribution system. This approach, compared to monetary approach, in the context of relational conflicts, is more effective because relational conflicts are closely related to attitudes and motivations. The purpose of the current study, therefore, is twofold. First, from a methodological perspective, we quantify the transferable value of the attitudinal and motivational constructs. Second, we examine the distribution (allocation) of gains among the players resulting from the coalitional shared values.

2. Literature review

2.1. Definitions

In collaboration terminology, the following terms are usually used interchangeably: joint ventures, consolidations, networks, partnerships, coalitions, collaborations, alliances, consortiums, associations, conglomerates, councils, task forces, and groups (Park, Lehto, & Morrison, 2008). Collaboration is defined as "a process in which two or more individuals possessing complementary skills and attributes interact to create a shared meaning or understanding that could not have been created without the other individual" (Jetter & Chen, 2012, p. 132). The complementary nature of the collaboration, shared meaning, and interdependency of the individuals are the three major elements of the above definition. Also, Jetter and Chen (2012, p. 132) define strategic alliances as "purposive, inter-organizational relationships, in which the organizations share similar goals, strive for mutual benefits, and have an understanding of a high level of mutual dependence". Apart from the similarity between these two definitions, the second definition assigns concepts such as shared goal and mutual benefits to the collaboration literature.

2.2. Conflicts

As previously stated, behavioral conflicts are major reasons as to why marketing collaborations fail. Conflicts are rooted in many different concepts such as motivation, goals, roles, perceptions, mutual trust, competition, and environmental uncertainties (Wang & Xiang, 2007; Yi et al., 2010). Wang and Fesenmaier (2007) identify five general categories of motivations to enter an alliance relationship: (1) strategy-related, (2) transaction cost-related, (3) learning-related, (4) cluster competitiveness, and (5) community responsibility. Later, they combine these five general categories and introduce three broad categories of transaction cost-oriented, strategy-oriented, and learning-oriented (Wang et al., 2013). Other studies also report similar motivation categories with regard to collaboration (e.g., Naipaul, Wang, & Okumus, 2009). In general, gaining access to critical external resources, rapid technical changes, financial difficulties, risk reduction, and rapid entrance to the market are major reasons for entering an alliance relationship (Wang & Fesenmaier, 2007). Lack of consensus, however, in terms of motivations can create systematic behavioral conflicts and malfunctions in marketing collaborations, and previous studies show that collaboration would not succeed if players stay within their narrow territorial self-interests (Wang et al., 2013).

Previous studies underline the concept of mutual trust as the facilitator of collaboration (Wang et al., 2013) since differences in goals, roles, and perceptions can create conflicts (Yi et al., 2010). When goal incongruity occurs, two or more partners with different and perhaps opposing goals engage in a behavior that leads to conflicts and dissatisfaction. Generally speaking, source of behavioral conflicts can be divided into two categories: composite conflicts and component conflicts. Composite conflicts can arise due to goal incongruity, domain dissensus, and/or perceptual differences (Yi et al., 2010). Component conflicts, on the other hand, can arise due to differences in attitudinal factors such as role expectations, perceptions, and communications, as well as differences in structural factors such as goal divergence, drive for autonomy, and competition for scarce resources (Yi et al., 2010). Composite conflicts increase the degree of the conflict caused by the component conflicts. Environmental uncertainty, furthermore, is an important factor in both composite and component conflicts (Yi et al., 2010). Environmental uncertainty as the result of imperfect information situations in collaborations (i.e., when one player does not provide the other players with enough information) increases goal incongruity (Yi et al., 2010). That being said, regardless of the collaborative form, mission statements or shared vision statements developed by stakeholders can help to mitigate composite and component conflicts.

2.3. Theoretical foundations

Alliances and collaborations are major research paradigms in destination marketing research (Park et al., 2008). In a critical review of the destination collaboration literature, Fyall et al. (2012) categorize 15 different theories into five theoretical groups. The first group, resource-based theories, includes resource dependency, strategic management, and microenvironment theories. These theories are based on various assumptions such as the scarcity of the resources and inter-dependency of the players to maximize the benefits and increase the productivity. Resource-based theories are to explain why collaboration is necessary for destinations and why individuals cannot survive without collaboration. For example, transaction cost theory, which is a subset of microeconomic theory, indicates that individual firms should collaborate with one another in order to minimize the costs of production and marketing.

The second group, politics-based theories, includes political theory, power-relations theory, corporate social performance theory, and institutional theory. Power dynamics and distribution, authority, trust, and credibility are major concentrations of these theories. Politics-based theories along with management theory, which originates from resource-based theories, are useful for studying a destination's governance and its market structure. Political-economy theories, in addition, are a bridge to link politics-based theories to resource-based theories (Fyall et al., 2012).

The third group, chaos-based theories, which includes chaos and complexity theories, are useful for studying complex systems and their interactions. The major assumptions of chaos-based theories are the inclusion of the element of chance and the natural evolution of the systems. Chaos-based theories are employed less frequently compared to other groups because they are difficult to apply.

The fourth group, process-based theories, includes life-cycle and development process theories. These theories try to explain the destination collaboration progress. An example of life-cycle theory is the five-stage sequential cycle of destination alliances which proposes that the more experienced the destinations become, the fewer conflicts they confront (Wang & Fesenmaier, 2007). For instance, knowledge-sharing is one of the primary concerns in early collaborations. While some less experienced firms which are afraid of losing their market-share are less likely to share their knowledge and information, firms with more experiences are more likely to do so (Jetter & Chen, 2012).

The fifth and final group is relation-based theories which are specifically the main focus of the current study because these theories can explain the complexity of mechanism, interactions, strategic decisions, behavioral consequences and conflicts in collaborations (Fyall et al., 2012). Relationship-based theories include a broad range of theories such as relational, stakeholders, network, and game theories (Fyall et al., 2012). Some of the theories in this group treat the collaboration effort as a static unit in destination marketing when in fact it is dynamic due to the repetitive sequence of conflict, cooperation, and interactions among players (Wang, 2008). Game theory, however, as explained by Song, Dwyer, Li, and Cao (2012), in the context of Structure-Conduct-Performance (SCP) paradigm, can overcome the problems associated with the static approach to collaboration. That being said, game theory, compared to other theories in relationship-based theories, have been used less frequently in destination collaboration literature until recent years (See e.g. Huang, Chen, Song, & Zhang, 2010; Song, Yang, & Huang, 2009; Yang et al., 2009; Zhang, Heung, & Yan, 2009). Since the use of cooperative game theory in network analysis is an established approach in collaboration studies (Jackson, 2013), this study utilizes a hybrid of network and game theory to study the destination marketing collaboration. It should be noted that the approach we took to define the utility function of the game we used in this study is unique because it is developed based on the shared attitudes and motivations which are more relevant to behavioral conflicts.

2.4. Coalitional games

Game theory explains how agents make strategic decisions. A game is a mathematical formalization of the real world conflicts and/or cooperation (Cano-Berlanga, Giménez-Gómez, & Vilella Bach, 2015; Lemaire, 1991). Two general branches of game theory formalize the interdependence among the players: cooperative games and non-cooperative games (Cano-Berlanga et al., 2015). To study a destination collaboration, cooperative game theory provides a better explanation of the real world situation. Two common forms of cooperative games can be utilized: repeated games and coalitional games. According to Osborne and Ariel (2006), the repeated game models are useful for explaining phenomena like cooperation. A major assumption of the repeated game models, however, is perfect information situation which is very unlikely in the case of destination management. Another assumption is that the game starts with no history (ø) about players and expectations of their behaviors; therefore, future cooperation or defeat strategies are shaped during time. These criteria make it difficult to employ repeated games in the case of well-developed destinations because they have a rich history of collaboration, and players are well-established with a known reputation. If previous collaborations of a well-developed destination are excluded from the analysis when using repeated games, the results will be biased in terms of rewarding and punishing mechanisms' definitions, discounted values of the future gains, and game ending expectancy.

According to Lemaire (1991), coalitional form of cooperative game theory (coalitional games with transferable utilities) analyzes situations in which participants' goals and motivations are partially cooperative and partially conflicting. In other words, when it is about cooperation, it is in the interest of participants to cooperate with one another to achieve greater benefits. When it comes to sharing the benefits, however, conflicting goals among individuals emerge (Lemaire, 1991). In the context of destination collaboration, Wang, et al. (2013) explain that the latter situation can trigger conflicts because of the competitive nature of the destinations.

An important condition in coalitional games is the type of utility function. Coalitional games are only applicable to the games with transferable utility. In case of non-transferable utilities (NTU), which its benefits are due to structural advantages resulted from the location of individuals, other forms of games should be employed (See, Jackson, 2013). According to Lemaire (1991), coalitional games are useful in situations where participants have some benefits to share (i.e., political power, fiscal resources). In this article, we consider attitudes and motivations as one form of benefits shared among the participants in a collaboration which their value is transferable through sharing with others. Individual players are free to negotiate, bargain, and form coalitions. Conflicting objectives and goal incongruity occur as participants hope to secure the largest portion of the benefits for themselves (i.e., receiving the best ideas from other players while reserving their own ideas). The opportunities to allocate the benefits are not necessarily distributed equally among the individual players and members. Some members are free riders, entering the collaborations with limited ideas and attitudes to share while enjoying others' ideas and attaining some perspectives and possible gains. The situation is a common problem encountered by destinations. Hence, market mechanism fails to distribute the benefits resulting from the collaboration (Palmer & Bejou, 1995), and the distribution mechanism is neither fair nor stable.

To define the utility function based on attitude and motivation and formalize the coalitional game accordingly, this paper makes the following assumptions. Members are allowed to freely cooperate, negotiate, bargain, collude, make binding contracts with one another, form groups and subgroups, and even withdraw from the coalition. Members are aware of the rules of the game, the payoffs of each possible coalition, and the available strategies. Members can negotiate about sharing utilities (here, the attitudes and ideas), which are fully transferable between players and are evaluated the same by all players. One might argue that attitudes are not evaluated the same by everyone in collaboration since evaluation is subjective. Although this claim might be true for rating (assigning numeric value) attitudes, it doesn't apply to determination of dichotomous values such as right/wrong, good/bad, beneficiary/non-beneficiary, positive/negative, and important/unimportant. These values usually are awarded based on norms, which most of the players behave accordingly. For example, if a member evaluates the value of networking as 4, other member might assign a value of 5; however, both members would agree that networking is important. Lastly, players do not directly negotiate their attitudes, however, their behaviors are the reflection of their attitudes. As a result, all members can benefit from the ideas and attitudes generated by other members by interacting with them.

2.4.1. *Players*

Buhalis (2000) suggests a framework for destination attractiveness evaluation known as the 6 A's: "Attractions (natural, human-made, artificial, purpose built, heritage, special events), Accessibility (entire transportation system of routes, terminals and vehicles), Amenities (accommodation and catering facilities, retailing, other tourist services), Available Packages (pre-arranged packages by intermediaries and principals), Activities (all activities available at the destination and what tourists will do during their visit), and Ancillary Services (services such as banks, telecommunications, post, newsagents, hospitals, etc., used by tourists)" (Lee & Huang, 2014, p. 276 & 277). In this article, we use a combination of these categories represented by players in four industry sectors: Attractions (A) comprised of art and museums, entertainment and event, and attractions; Hospitality Enterprises (H) comprised of hotels and restaurants; Transportation (T) comprised of airlines, buses, taxis, and tour operators; and Individual Entities (E) comprised of firms with supplementary products and services, including hospitals, churches, public relations and marketing companies, retailers, and wineries.

2.4.2. *Payoffs*

d'Angella and Go (2009), who evaluate collaboration from the perspective of destination firms, suggest that the success of a collaboration is a function of rewards obtained as the result of firms' contributions. Trust in different forms (e.g., mistrust, lack of trust, and distrust) is one of the major characteristics of alliances which affect satisfaction from collaboration and performance evaluation of partners (Pansiri, 2008). When actors do not trust each other, they prefer to maximize their own benefits instead of cooperating with one another. As a result, the total value becomes the sum of all individual benefits, which is less than what actors would have obtained through collaboration (Della Corte & Aria, 2014).

The foundations of destination collaborations are based on the interdependency of the organizations involved in producing and promoting destination products (Palmer & Bejou, 1995). According to the resource dependency theory, organizations enter partnerships when they have a strategic interdependence with other players (Wang & Xiang, 2007). It is crucial, first, to recognize the payoffs resulted from players' interdependencies and compare them to their motivations in order to have a clear idea of motivation formation process. Understanding the success and failure factors can help actors to clarify their best responses to the decisions and behaviors of the other players. As such, network theory provides a useful tool to study such interdependencies and motivations.

Benefits-seeking is one of the most important factors impelling tourism enterprises to collaborate (Wang, 2008). Prediction strategies and payoffs are two important factors which affect the behavior of players in a collaboration. According to the game theory, firms define their payoffs based on their motivations, and decide on their behavior based on their expected payoffs. Players do not wish to collaborate when they predict that the collaboration will lead to goal incongruity and perceptional differences (Yi et al., 2010). This situation possibly is due to the beliefs of players that they need to share the resources and compete over them at the same time (Jetter & Chen, 2012). Jap (2001, p. 91) indicates that "the ability to understand the other party's transformation process […] enables an organization to map a reasonable expectation of the payoff to the collaboration".

Sharing resources in forms of knowledge, information, human capital, financial, etc., is the primary practice in collaborations. Previous studies show that the sharing process significantly affects the overall relationship quality (Jap, 2001). Two of the sharing principles are equity and equality. Equity means each member's payoff is a function of its resources to collaborate. Equity is typically advocated by players with high resources and is used when productivity is the primary goal. Equality, on the other hand, is expecting similar outcomes for all members regardless of their size, power, and inputs. Equality is typically advocated by players with low resources and is used when the primary goal is to maintain group harmony, social relationships, and reduce dissension (Jap, 2001). To stabilize a collaboration, it is essential to match these two sharing principles with the structure of partnership; otherwise, conflicts can quickly arise. In coalitional games, the similar concepts for benefits distribution are fairness and stability. The distribution mechanism should be designed in a way that (1) players receive benefits in proportion to their inputs (fairness as the outcome of equity), and (2) the mechanism is stable for all of the collaborative activities (stability as the outcome of equality). Moreover, in accordance with the sharing process, shared values become critical factors of success for collaborations at a destination level.

According to the definition of collaboration by Jetter and Chen (2012), shared meaning (value) is one of the end results of collaboration. It is possible to estimate the numerical value of a collaboration's shared values by extracting its structural interdependencies of the attitudinal and motivational constructs (e.g., trust, strategic interdependence, benefit seeking, expectations, and equity and equality of resource sharing) from the collaboration. Shared values are considered as the success factors among the players. These values are transferable, and others can enjoy the individuals' values in case of goal congruity. If a mechanism could be defined to assess the shared values (payoffs) of the attitudes that individuals hold concerning a collaborative act, it is possible to use these values instead of monetary units to evaluate each player's inputs and gains obtained from participating in a collaboration.

3. Methodology

3.1. Study setting

This study uses Orlando, Florida as the study setting. In 2015, the State of Florida hosted about 105 million tourists from 190 countries who spent 89.1 billion dollars. The large number of tourists and the large amount of money spent resulted in the creation of 1,194,500 jobs (Visit Florida, 2016b, 2016a). As the largest single local employer, Orlando's travel and tourism industry accounts for approximately 40% of Florida's travel and tourism employment (Visit Orlando, 2011). In 2014, 62 million people visited Orlando, which exceeds the 60 million visitor threshold responsible for contributing $2.1 trillion annually to the US economy (Bilbao, 2015; Visit Orlando, 2015). Also in 2014, the 32 million rooms nightly sold generated $200 million bed tax collection for Orlando. Orlando is the second largest convention destination in the US nation, with upscale convention and conference centers, theme parks, first-class hotels, an international airport, and diverse arts/entertainment and shopping centers (Wang et al., 2013).

The geographic location of Central Florida and Orlando allow tourists to drive to any area of the region within two hours. The 60-mile distance across the region and the region's transportation network of major highways and two airports (Orlando International Airport and Sanford International Airport), make Central Florida an attractive destination for both short and long vacations. Moreover, the region's complementary nature of the products provide opportunities for collaborative marketing efforts (Wang et al., 2013).

Orlando's DMO, Visit Orlando, founded in 1984, is a 501(c) 6 corporation. It is a not-for-profit private organization which is responsible for sales and marketing and works with 1200 private members of businesses as well as local government agencies. In 2010, the former corporation, Orlando/Orange County Convention and Visitors Bureau (OOCCVB) were renamed to Visit Orlando (Conference and Meeting World, 2010) which represents the $60 billion leading industry of the Central Florida area (Orlando Convention & Visitors Bureau, n.d.; Visit Orlando, 2016a). Apart from the US, Brazil, Canada, Colombia, Mexico, and United Kingdom are major market segments that are within the target marketing radar of Orlando (Visit Orlando, 2016b). Visit Orlando as one of the top DMOs in US is equipped with satellite sales and marketing offices in Chicago, New York, Mobile, Ala., Rhode Island, and Washington, DC (Orlando Convention & Visitors Bureau, n.d.). Making Orlando "the most visited destination in the world" is the vision of Visit Orlando (Visit Orlando, 2016a). Sixty percent of the Visit Orlando budget comes from tourist development tax and the rest is from entrepreneurial activities such as publications, membership fees, destination meeting services, ticket sales, and cooperative marketing campaigns (Morrison, 2013).

3.2. Procedures and material

Purposeful selective sample of 24 firms of Visit Orlando were interviewed. Purposeful selective sampling was employed to: 1) exclude firms with autonomic control (e.g., Disney World) over collaboration as it creates domain dissensus, and 2) intentionally select the businesses/sectors that would add attitudinal values to the collaboration. The latter reason is specifically important to avoid uneven distribution of businesses/sectors considering that there are more of some businesses such as hotels compared to others such as hospitals. A variety of actors (stakeholders) are included in the sample which Table 1 shows their types and abbreviations.

Table 1
The abbreviation of the sample firms (based on firm's business).

Firm Type	Abbreviation
Airline1	AIRLN1
Airline2	AIRLN2
Art & Museum1	ARTMU1
Art & Museum2	ARTMU2
Art & Museum3	ARTMU3
Attraction1	ATRCN1
Attraction2	ATRCN2
Attraction3	ATRCN3
Bus & Taxi Services	BUSTX
Event & Entertainment1	EVENT1
Event & Entertainment2	EVENT2
Hospital	HSPTL
Hotel1	HOTEL1
Hotel2	HOTEL2
Hotel3	HOTEL3
Hotel4	HOTEL4
Hotel5	HOTEL5
Promotion & Marketing Company	PRCMP
Restaurant1	RSTRN1
Restaurant2	RSTRN2
Restaurant3	RSTRN3
Retailer	RTLER
Tour Operator	TOUOP
Winery	WNERY

To produce some insights about the content and dynamics of the collaborative experience among the Orlando DMO members, fourteen open-ended questions were designed. These fourteen open-ended semi-structured questions were developed to investigate the nature of the collaboration experience and the collaboration methods adopted by the members during previous years. Five out of these fourteen questions were specifically designed for the purpose of this study to investigate the firms' activities, partnerships, co-marketing activities, supporting and facilitating capacities, roles, and motivations for being a member of DMO. The questions were worded as follows:

1. When networking with the local DMO for your marketing activities, what kind of co-marketing activities are you usually involved in? How closely do you work with the DMO? In general, how would you describe the relationship?
2. Besides working with the local DMO of your destination, what other tourism organizations/businesses do you work with at the local, regional, national, or even international levels for your marketing activities? In what kind of co-marketing activities are you involved in with these organizations?
3. What kind of support capacities (systems) does your organization/business have to possess in order to facilitate these co-marketing activities? How important do you think these capacities (systems) are, and why?
4. What role, do you think, your organization/business leadership plays in the process of networking and collaborating with the DMO and other tourism industries? Why?
5. What does motivate you to get involved in co-marketing relationships with both the DMO and other local tourism industry businesses?

The purpose of the study was first explained to the interviewees. The interviewees were then given the questions one at a time. Participants had no time limit for their answers, and they could spend as much time as they need to answer the question. In some cases, they asked to halt the interview session so that they can think about the questions for a few days in order to provide more accurate answers. In cases of short answers, we encouraged the participants to elaborate on their answers using follow-up questions.

The interviews were transcribed and double checked for their accuracy. Transcriptions, separately, were coded by two independent researchers using content analysis with an inductive approach. The results of the coding process for two separate coders were compared and discrepencies were checked by the third coder. Coding process was conducted in a single round since the thematic relationships behind the codes were not the main interests of this study. We used “RQDA” package (Huang, 2016) under R platform (Team, 2017) to code the transcripts and create the coding tables. The extracted codes were used to build separate networks based on the combination of the four main catagories of players: Attractions (A), Hospitality (H), Transportation (T), and Individual Entities (E). The networks were created based on the membership networks in the similarity category (See, Borgatti, Mehra, Brass, & Labianca, 2009). In other words, networks were created in form of bipartite networks with firms as one type of vertices and the attitudes and ideas manifested by the representatives of the firms as the attitudinal variables attached to the firms. The utility values of each coalition were calculated using degree centrality and density measures. The networks were built and the measures were calculated by “statnet” package (Handcock et al., 2016). Shapley value, nucleolus, and proportional nucleolus solutions were employed using “GameTheory” package to calculate the distribution of the benefits among players and to identify the firms who benefit from the collaboration (Cano-Berlanga et al., 2015).

3.2.1. Utility function

The current study is not the only study trying to quantify an abstract concept like attitude. Smets and Kennes (1994) devised a function, called transferable belief model (TBM), to quantify beliefs. Quantifying models can either be in the form of statistical models such as probabilistic Bayesian models or mathematical functions (Smets & Kennes, 1994). Utility function in this study is defined as a mathematical expression based on the logic that the more the attitudes/ideas being shared among the actors in a collaboration, the greater the values of the collaboration.

In the typology of network analysis based on the type of the ties (edges), similarity networks is a category of networks comprised of three major variations of location, membership, and attribute networks (Borgatti et al., 2009). The method used in this study was categorized into attribute and/or membership networks. Each player (i.e., A, H, T, and E) was a network of firms, along with their connected attitudes. Each network of firms was a two-mode (bipartite) network with non-directed edges. The two types of nodes (vertices) in each network were: the firms, and the related attitudinal & motivational constructs. When there was a common attitudinal construct between two or more firms, the construct was connected to the firms. A simple node level measure of centrality in graph theory is the actor's degree of centrality (simply “degree”), defined as (Otte & Rousseau, 2002):

$$d(i) = \sum_j m_{ij}, \tag{1}$$

in which m_{ij} is equal to 1 if there is a link between vertex i and j, and 0 if there is no relationship between two vertices.

In addition, in graph level measures, density is one of the popular measures which shows the sparsity of the relationships among vertices (Wasserman & Faust, 1994):

$$\Delta = \frac{L}{g(g-1)/2}, \tag{2}$$

in which L is the number of edges and g is the number of vertices.

Density is a standard measure between 0 (no tie among vertices, empty network) and 1 (all possible ties among vertices, complete network). The most popular way to standardize the degree of centrality is to divide the degree by *N-1* in an N-vertices network (Wasserman & Faust, 1994). If an actor with a specific number of attitudes enters different networks with different vertices, the degree of centrality will be the same along the different networks. In the current study, however, we will standardize the degree centrality by dividing it to the density. The reason that density is used instead of N-1 is that since the network is bipartite, degree distributions are different for each type of vertices (firms have larger average degrees compared to attitudinal constructs). Therefore, density provides a better standardization values.

In destination collaboration, attitudinal constructs are important for the following reasons. The first reason is a) the more attitudinal constructs (i.e., ideas) join an actor (firm), the more the actor contributes to the network, and b) the more the attitudinal constructs are shared among the firms, the denser the network becomes. The second reason indicates that the strongly-connected attitudinal constructs (i.e., the attitudinal constructs which are connected to many different firms) determine the added-value creation because of their high level shared-ness. Finally, the utility function for every player (sector) was defined as the sum of the standardized centrality degree of actors in a player's network:

$$v(P_z) = \sum_k \frac{d(i)}{\Delta} = \sum_k \frac{\sum_j m_{ij}}{\frac{L}{g(g-1)/2}} = \sum_k \frac{g(g-1)\sum_j m_{ij}}{2L}, \tag{3}$$

in which L is the number of edges, g is the number of vertices, m_{ij} is a binary value indicating existence of the tie between vertices i and j, k is the number of actors in each network, $v(P_z)$ is the value of the utility function for coalition z, which is also called the worth or power of coalition.

3.2.2. Defining the game

A four-sector game in utility function form of $\mathscr{G}$ is a pair of $[N, v]$, where $N = \{A, H, T, E\}$ is a set of 4 players (sectors). v is a real valued utility function of 2^4 coalitions of all subsets S of N. v assigns a real number, $v(S)$, to each subset S of N, and $v(\emptyset) = 0$. The subsets S of N are called coalitions. The full set of players, N, is the grand coalition. Intuitively, $v(S)$ measures the worth or power (value) of the coalition that S can achieve when its members act together. Since cooperation creates synergy, it is assumed that v is superadditive, that is:

$$v(S \cup T) \geq v(S) + v(T) \text{ for all } T, S \subset N \text{ such that } S \cap T = \emptyset, \tag{4}$$

where $S \cap T = \emptyset$ means that there is no common actor (firm) in any combination of players. In other words, actors are mutually exclusive for different players. There are $2^4 = 16$ coalitions. The first one is a null set ($\emptyset$) with no coalition, and the other sets are A, H, T, E, AH, AT, AE, HT, HE, TE, AHT, AHE, ATE, HTE, and the grand coalition, AHTE. It should be noted that the order of the players makes no difference in forming new coalitions (e.g., AE is the same as EA).

The Shapley value is a solution based on the marginal contribution of the agents. Given $(N, v) \in \mathscr{G}^N$, for each $i \in N$, and each $S \subset N$, the marginal contribution of agent (actor) i to coalition S, is denoted by $\Delta_i v(S) = v(S \cup \{i\}) - v(S)$. AHTE's worth is distributed assuming that agents' arrivals orders to the grand coalition are equally probable. Formally, for each $(N, v) \in \mathscr{G}^N$, the Shapley value is defined as:

$$\gamma_i^{Sh}(N, v) = \sum_{S \subseteq N\{i\}} [(s!(n-s-1)!)/n!]\ \Delta_i v(S) \tag{5}$$

The Shapley value solution satisfies three axioms at the same time: Symmetric (the benefits are distributed based on contributions of individuals), dummy players (players who do not contribute, receive nothing), and additivity (the sum of the benefits of individuals separately is equal to or less than the sum of the benefits of them together) (Lemaire, 1991).

The second solution is nucleolus. For each $(N,v)\in\mathscr{G}^N$, $I(N,v)=\{x\in\mathbb{R}^n:\sum_{i\in N}x_i=v(N),\ x_i\geq v(\{i\})\ for\ all\ i\in N\}$ is the set of imputations. For each $x\in\mathbb{R}^n$ and each coalition $S\subseteq N$, $e(x,S)=v(S)-\sum_{i\in S}x_i$ is the excess of coalition S with respect to x and represents a measure of dissatisfaction of the coalition. The excesses of all coalitions in reference to x is a vector of $e(x)=\{e(x,S)\}_{S\subseteq N}$. Given $x\in\mathbb{R}^n$, $\theta(x)$ is the vector which results from permuting the coordinates of x in decreasing order. $\leq_L$ stands for the lexicographic order, that is, given $x,y\in\mathbb{R}^n$, $x\leq_L y$ if there is $k\in N$ such that for all $j\leq k$, $x_i=y_j$ *and* $x_{k+1}\leq y_{k+1}$. The nucleolus solution is based on the minimization of the maximum dissatisfaction which results from the value distribution of the grand coalition among the players. Formally, for each $(N,v)\in\mathscr{G}^N$, the nucleolus Y^{nu} is the vector $Y^{nu}(N,v)=x\in I(N,v)$ such that $\theta(e(x))\leq_L\theta(e(y))$ for all $y\in I(N,v)$. The linear programming model which looks for an imputation that minimizes the maximum excess, ε, among all coalitions computes the solution as (Cano-Berlanga et al., 2015):

$$\begin{aligned}&\min_x \varepsilon\\&\text{subject to } v(s)-\sum_{i\in S}x_i\leq\varepsilon,\quad\forall\ S\subset N,\ S\neq\varnothing\\&\sum_{i\in N}x_i=v(N),\quad \varepsilon\in\mathbb{R},\ x_j\in\mathbb{R};\forall j\in N\end{aligned}\tag{6}$$

The third solution is the proportional nucleolus (Lemaire, 1991). The proportional nucleolus is simply the distribution of the benefits based on the proportion of each player utility value to the total (algebraic sum not including superadditivity nature of the game) utility value of the grand coalition:

$$\alpha_j=\frac{\sum_{i=1}^{N}\alpha_i}{v(j)\Big/\sum_{i=1}^{N}v(i)}\tag{7}$$

4. Results and discussion

Semi-structured interviews were recorded, transcribed and checked twice for accuracy. The transcripts were studied carefully to gain a clear understanding of their structures. Using content analysis, the statements were coded into meaningful constructs of attitudes, motivations, roles, and opinions. The process of the content analysis produced 30 meaningful attitudinal and motivational constructs (Table 2).

All the negative attitudes as well as the passive states of DMO members were removed since they do not provide the materials needed to serve the purpose of this study. Codes were extracted from the meaningful chunks of the interview transcriptions. For example, the answer below, coded as "Procedural Contribution (PCCN)" is from airline 1 (AIRLN1) as part of their response about their role in collaboration and networking (question 4).

> *"[…] we participate by hosting familiarization tours in Orlando to entice travel agents and event or meeting planners to come to Florida […]."*

Another example would be the answer from art & museum 1 (ARTMU1), coded as "Networking & Partnership (NTPN)", as part of their response to the reasons and motivations of collaboration with the DMO (question 5).

Table 2
The abbreviation of the extracted codes.

Codes	Abbreviation
Association	ASCT
Commitment	CMTN
Cost Reduction	CSRD
Dependency	DEPN
Discounting	DSCT
Diversify	DVSF
Expertise	EXPT
Human Resource	HRSC
Idea Generation	IDGN
Information & Communication	INCM
Leadership	LDSP
Learning Culture	LRCL
Managerial Contribution	MGCN
Market Development	MKTD
Market Penetration	MKTP
Membership Fee	MMFE
Mutual Interests	MTIN
Negotiation	NGTN
Networking & Partnership	NTPN
Outsiders	OUTS
Participation	PRTC
Public Relation & Promotion	PRMT
Procedural Contribution	PCCN
Product Bundling	PDBN
Resources	RSCR
Service Exchange	SREX
Shared Vision	SRVS
Supporting Community	SPCM
Time Investment	TMIN
Value Creation & Selling	VLCR

> *"[…] the formation of the partnerships also may give you a different understanding […]."*

Some of the sentences have more than one meaning. For instance, the ARTMU1 answer, which is mentioned above, to question 5 could also take on the connotation of "Mutual Interests (MTIN)". Such dual meanings, however, were only extracted when both coders were in agreement. The abbreviations of the participants and codes are presented in Table 2. The primary codes extracted from the content analysis were used to build the incidence matrix of firms (first five rows) and the constructs (first eleven columns) shown in Table 3.

The incidence matrix shows the memberships of attitudinal and motivational constructs of the firms. The matrix is the contribution of each actor in the four players' networks. Since the focus of this paper is the different attitudinal constructs affiliated to the actors rather than the strength of each construct, the incidence matrix was transformed to the binary format, converting all non-zero numbers to one. The transformed matrix, in this format, is made up of zeros and ones; zero indicates that there is no relationship between the construct and its respective actor, and one indicates that the actor, at least, has mentioned the attitudinal construct once (Luke, 2015). Apart from the null coalition, 15 other coalitions consist of A, H, T, and E players and their combinations. The value of the players' attitudinal contribution is calculated based on equation (3) and is normalized to the equal number of actors included in each player. The process of normalization is conducted by calculating the mean of the utility functions of each actor in a player multiplied by the number of the vertices for the biggest single player network. Fig. 1 shows an example of a player's network, which is the least dense network of actors in "individual entities (E)" player.

In player E, there are four actors of retailer (RTLER), hospital (HSPTL), winery (WNERY), and promotion and marketing company

Table 3
Bipartite network incidence matrix.

	ASCT	CMTN	CSRD	DEPN	DSCT	DVSF	EXPT	HRSC	IDGN	INCM	LDSP	.	.	.
AIRLN1	1	0	0	0	0	0	1	0	0	0	0	.	.	.
AIRLN2	0	0	1	0	0	0	0	0	1	0	1	.	.	.
ARTMU1	0	0	0	0	0	0	0	0	0	0	0	.	.	.
ARTMU2	1	0	0	0	0	0	0	0	0	3	0	.	.	.
ARTMU3	1	0	0	3	0	0	1	0	0	1	0	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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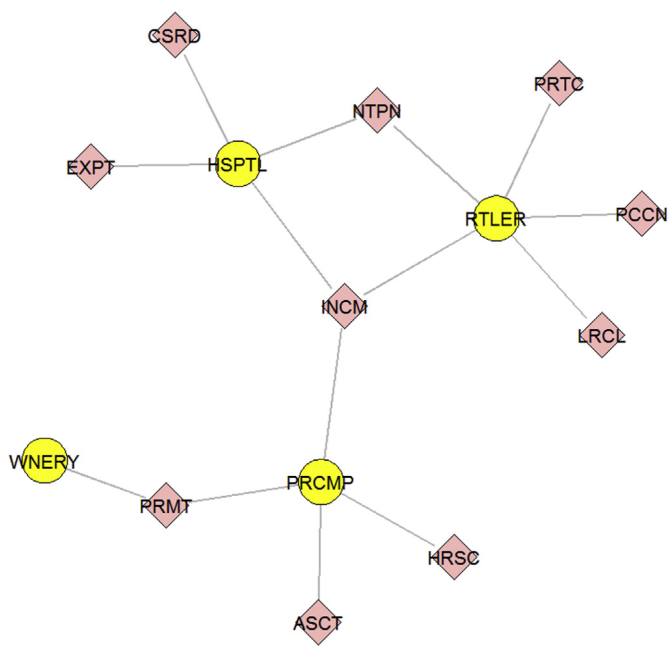


Fig. 1. The Player's, Individual Entities (E), Network of Four Actors with Density of 0.154. Yellow circles show actors of the network: player E (e.g. public relation company (PRCMP) and winery (WNERY)). Rosy brown squares show the attitudinal/motivational/idea constructs related to each actor (e.g. promotion (PRMT) which is a shared concept between the winery and public relation company). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

(PRCMP). As it is shown in Fig. 1, not all actors in player E contribute equally. For example, whereas RTLER looks for networking and partnership (NTPN) with other actors, would like to participate (PRTC) in different events with DMO and other actors, wants to join in different tasks and procedures (PCCN), and expect a learning culture (LRCL) that actors can mutually learn from each other by sharing and receiving information (INCM), the WNERY only wants to promote (PRMT) its business to the network. As a result, RTLER has a degree of five (Eq. (1)), followed by HSPTL (4), PRCMP (4), and WNERY (1).

The valuable attitudinal constructs are those that are shared among different firms and hold the network together. For example, INCM is shared among all four actors except WNERY. The density of this network is 0.154 that is calculated based on Eq. (2). The utility of the player E network can be calculated from Eq. (3), which is 91. E player's network, however, is not the largest network and should be normalized using the procedure explained above. The average utility of this network is 22.8 which creates the utility of 182 for a player as big as eight actors (the largest single player network includes eight actor). Appendix A depicts all 15 possible coalitions and their utility values. Table 4 also shows the utility values of both

Table 4
The utility of individual players' networks and coalitions.

Coalition	$v\ (P_z)$	% of gains
(A) Attractions	496.0	–
(T) Transportation	462.0	–
(H) Hospitality	300.0	–
(E) Individual Entities	182.0	–
AT	988.0	3.13%
AH	861.0	8.17%
AE	888.0	30.97%
TH	748.0	−1.84%
TE	756.0	17.39%
HE	661.3	37.21%
ATH	1411.2	12.18%
ATE	1419.0	24.47%
AHE	1297.2	32.64%
THE	1170.0	23.94%
Grand Coalition ATHE	1908.0	32.50%

individual players (network of firms in the sector), and players entering different coalitions. The results show that the players' contributions to different coalitions are based on their dependency level to tourism industry. Attractions and transportation are the most dependent and contribute the most (496 and 462, respectively), whereas hospitality and individual entities are less dependent and contribute the least (300 and 182, respectively). Hospitality services, especially restaurants, are built to serve both locals and tourists. It should be noted, however, that since tourists have few alternatives to substitute the hospitality services, they are mandated to use them. On the other hand, individual entities primarily built to serve locals can serve tourists as well; churches, hospitals, retail stores, etc. have the least dependency on the tourism industry and contribute the least to the collaborative activities.

According to Table 4, all coalitions satisfy the assumptions of the coalitional games. Players, compared to individual utilities, gain more when being in coalitions, with the exception of TH where T and H's algebraic sum of the added value is more than the utility value of their coalition (i.e., the TH coalition is non-probable). This specific violation of the assumption indicates the lack of shared values between transportation and hospitality players. Nevertheless, even this coalition is beneficial for all players because its value is larger than individuals not collaborating. Furthermore, the percentage of gains for HE and AHE are greater than the grand coalition; however, the amount of gain is substantial in the grand coalition because it includes all parties. The higher rate of benefits for HS and AHE also is the presence of individual entities in both coalitions, because (1) the individual entities are the smallest network with the least contribution, and (2) the huge gap between the gains and the contribution increases exponentially. It should be noted that although the same situation can be true for the grand coalition, the grand coalition is denser compared to the sub-coalitions.

Inspecting the networks of coalitions with two players shows that the two coalitions of hospitality & individual entities, and attractions & individual entities had the lowest density among other coalitions. Low density indicates that individual actors' degree of centrality creates more power for them (Eq. (3)) In other words, actors (firms) with more ideas and attitudes entering the two coalitions generate higher added value compared to other coalitions. In both of these coalitions, individual entities, which has the least contribution among the four players and is a part of both coalitions, shows a significant escalation in gains from AE and HE (30.97% and 37.21%, respectively) compared to the algebraic sum of the players together. In contrast, TH is the densest network among others. Higher density indicates more interactions which is beneficial in general, but one should note that when there are high-density networks, individuals need to have a high degree of centrality to contribute the most to the network. Although TH network is denser than the other coalitions, the increase in the actors' centrality degree is not proportionate to the increase in the density, which results in lower utility value. Therefore, the ultimate value of TH is less than the algebraic sum of the transportation and hospitality players' network separately, indicating TH is illogical to be formed.

To calculate the distribution of benefits resulted from the grand coalition, the utility values of each player is calculated using the three solutions. The Shapley value is calculated by Eq. (5), the nucleolus is calculated by Eq. (6), and the proportional nucleolus is calculated by Eq. (7). Table 5 lists the results. The percentages of the gains are also calculated for each player based on the initial contribution of the players and their distributed value based on one of the three solutions. While the Shapley value produces a better solution in terms of fairness (equity), the nucleolus better reduces the amount of dissatisfaction from the maximum inequality. As explained in the methodology, the Shapley value is the only solution that, simultaneously, satisfies the three axioms of symmetry, dummy players, and additivity. Attraction, transportation, hospitality, and individual entities receive the gains from the highest to the lowest of the absolute values of the gains compared to their initial contributions. Absolute values of the gains are proportionate to the players' contributions for all three solutions although the amount of the increase in gains depends upon the solution used for the allocation. In the proportional nucleolus, all players gain almost the equal value of 32% of their contribution.

At first glance, the proportional nucleolus seems to be the preferred solution because (1) the gains are proportionate to the contribution, (2) the absolute value of the gains are in proportion, and (3) the ultimate benefits are divided equally. Compared to the Shapley value, however, the proportional nucleolus has some drawbacks. For example, although the individual entities player contributes the least (182) to the grand coalition, if the player avoids participation, the total utility of the coalition decreases by 496.8 (from 1908 for the grand coalition to 1411.2 for the ATH coalition). This reduction also shrinks the percentage of gains by 20.32% (from 32.5% for the grand coalition to 12.18% for the ATH coalition). In other words, the players are unable to receive the utility value of 1908 without individual entities player. This concept is known as the admission value of the specific player. According to the Shapley value (Table 5), individual entities player has enough incentives to join the grand coalition because the gains for this player will increase 100% by doing so. That said, the admission value of individual entities is high because the other players are dependent on the individual entities player to obtain the highest utility value.

In this study, there is a sub-coalition that individual players avoid joining because the utility value of this coalition (i.e., TH) is less than the algebraic sum of the contributions of individual actors. This situation, however, is not exactly the same as the core situation (i.e., the situation where the grand coalition is not the best possible and some players are reluctant to join the grand coalition); in other words, the grand coalition still creates the highest value among all possible coalitions but at the same time, the percentage of the *gains* for the sub-coalitions, E and AHE, are larger than the percentage of the gains for the grand coalition. Therefore, besides looking for the fairness of the distribution, it is valuable to check the stability of the nucleolus solution by minimizing the maximum dissatisfaction in distribution. In the nucleolus, the percentage of the gains for individual entities decreases by almost 20% (Table 5), allowing all the other players to gain more compared to the Shapley value solution. Notably, although all other players gain more compared to the Shapley value, the rate of the increase for the hospitality player, which is the second player with the highest admission value, is larger than attractions and transportation. Again, this is true because individual entities and hospitality services are the least dependent players on tourism, particularly to a DMO. Although, there are minimal changes in the percentage of the gains for players of hospitality and attractions across all three solutions, the individual entities' percentage of gains show the largest change.

5. Conclusions and implications

The analyses presented above demonstrate that the distribution mechanism of the benefits resulting from the collaboration of a tourism destination's players is a significant component of destination management. Supporting the notion of free riders suggested by Palmer and Bejou (1995), this study acknowledges that free riders are natural consequence of the tourism industry's umbrella-like nature. Players who have the least dependency on tourism and the least contribution to collaboration have the highest admission fee. Since the existence of least-dependent players is essential for the collaboration to obtain the maximum utility, the value distribution favors free riders. As explained by Palmer and Bejou (1995), these players are in the "honeypot" with established market that would not suffer from collaboration failure. In other words, highly dependent players receive fewer benefits because they have no other options so that they act alone. Less dependent players require higher incentives to join collaborations and usually their contributions are less than the dependent sectors. In Orlando's case, from the attitudinal perspective, attractions and transportation were the largest contributors to the collaboration. Shapley value solution supports the idea that when the benefits, resulted from the collaboration among players, are distributed, fairness, to some extent, is sacrificed in favor of stability. The results of the research described in this paper can be used as policy-making and decision-making criteria for other tourism destinations in order to avoid

Table 5
The value distribution based on three solutions.

	$v(P_k)$	Shapley Value	% of gains	nucleolus	% of gains	Proportional nucleolus	% of gains
Attractions (A)	496.0	621.4	25.28%	635.9	28.21%	657.0	32.46%
Transportation (T)	462.0	526.9	14.05%	536.4	16.10%	612.1	32.49%
Hospitality (H)	300.0	395.3	31.77%	409.2	36.40%	397.5	32.50%
Individual Entities (E)	182.0	364.4	100.2%	326.5	79.40%	241.2	32.53%

market failures in similar cases. This innovative approach represents a new tool for examining the attitudinal and motivational constructs as the primary drivers of the actions of players in a DMO.

There are some limitations that should be addressed when interpreting the results of this study. The most important point is the main assumption of this study. Similar to Smets and Kennes (1994), in the current study, we assumed that the attitudes have transferable utilities. While numerous arguments of the current article are in favor of this assumption, the counterargument can be valid as well. It is possible to argue that depending on the network topology, actors can more or less benefit from others' attitude without anything being transferred. Therefore, following the NTU logic, other studies should test this assumption. Another limitation is that not all actors are included in this study. For example, theme parks, a major part of Orlando as a tourism destination, were excluded since their autonomic control over other firms and the DMO can pose a serious threat to a tourism collaboration (please see section 2.2, the role of component conflicts in relational conflicts).

One of the objectives of this study was to provide a method of quantifying the value of attitudinal constructs to be included in mathematical solutions which usually are appropriate for monetary units. The equation developed to calculate the utility function is only one of the possible ways to quantify attitudinal constructs. Several utility functions exist in the literature of network games (Jackson, 2013) that can be employed to calculate actors' costs and benefits. These utility functions are based on the structural locations of actors in relation to other actors in the network. In this study, however, we defined the utility function according to the overall density of the attitudes' network. Other centrality measures in network theory or other similar approaches should also be considered as potential utility functions. Other studies can empirically examine the other types of gains and benefits such as monetary values to compare the results and validate (or refute) the claims of the current study. This study assumed that attitudes, motivations, and ideas were a proxy of firms' performance. While these assumptions are true to some extent, other objective utilities should be examined to verify this assumption. Finally, other game theory approaches such as repetitive games could provide more insights into strategic collaborative decision making process.

Authors' contribution

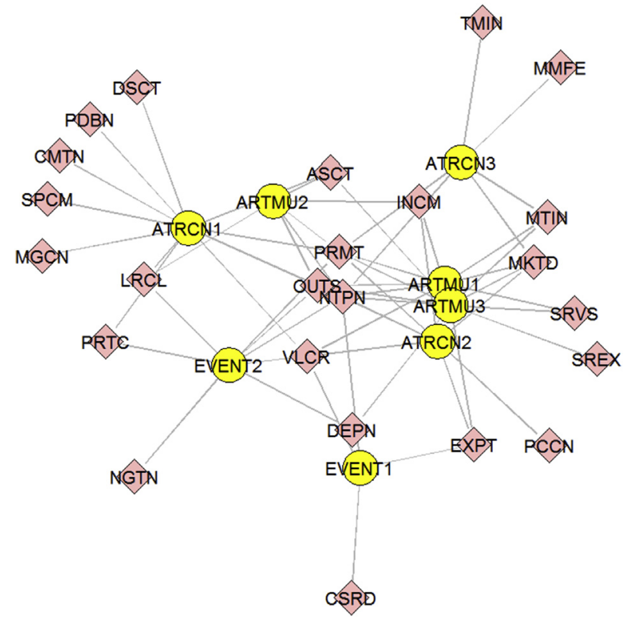
Dr. Youcheng Wang was responsible for literature and interview protocol development. He collected the data by interviewing Orlando's DMO members. Furthermore, he contributed to the methodology section of the manuscript by explaining the interview process. Mr. Jalayer Khalilzadeh developed the mathematical modeling section of the manuscript and conducted the analyses and calculations of the results section.

Appendix A

1) Coalition ø:

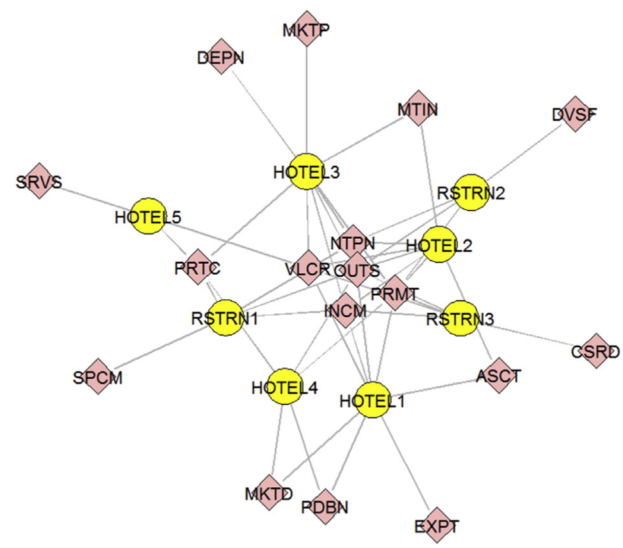
$v(P_ø) = 0$

2) Coalition A:



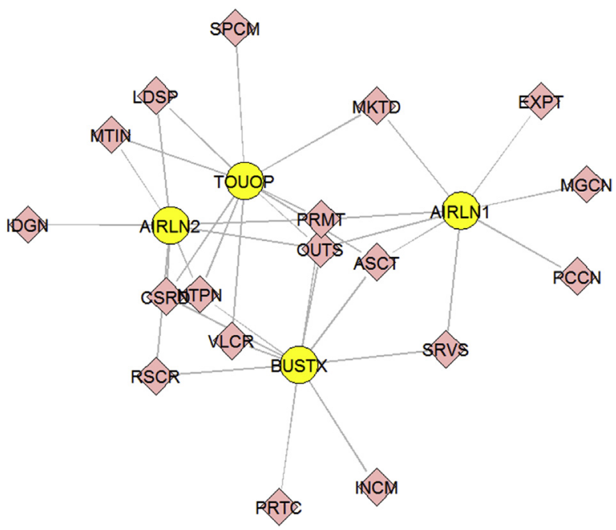
$v(P_A) = 496$

3) Coalition H:



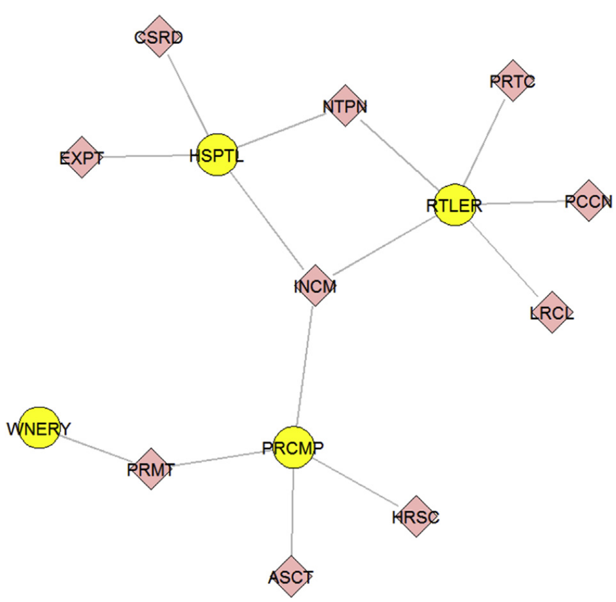
$v(P_H) = 300$

4) Coalition T:



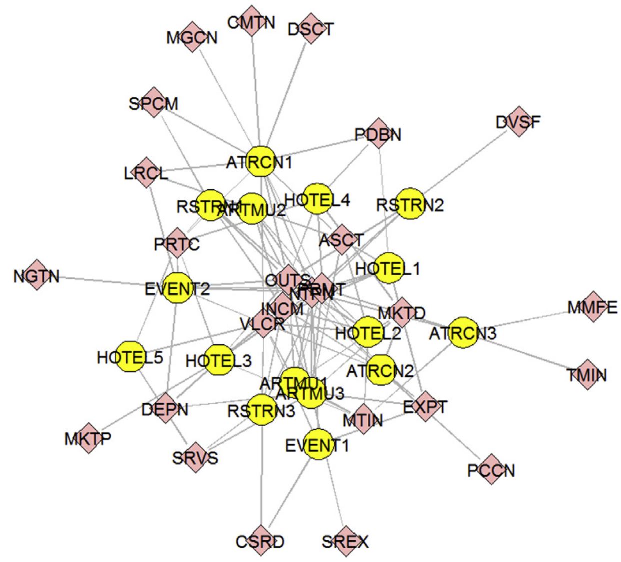
$v\ (P_T) = 462$

5) Coalition E:



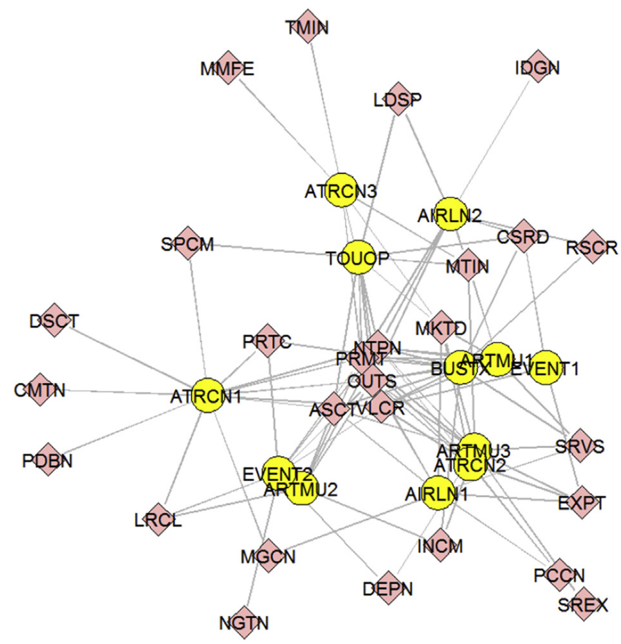
$v\ (P_E) = 182$

6) Coalition AH:



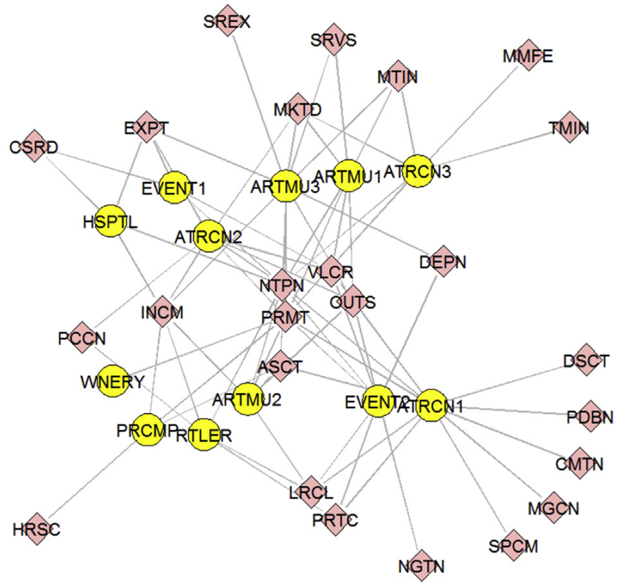
$v\ (P_{AH}) = 861$

7) Coalition AT:



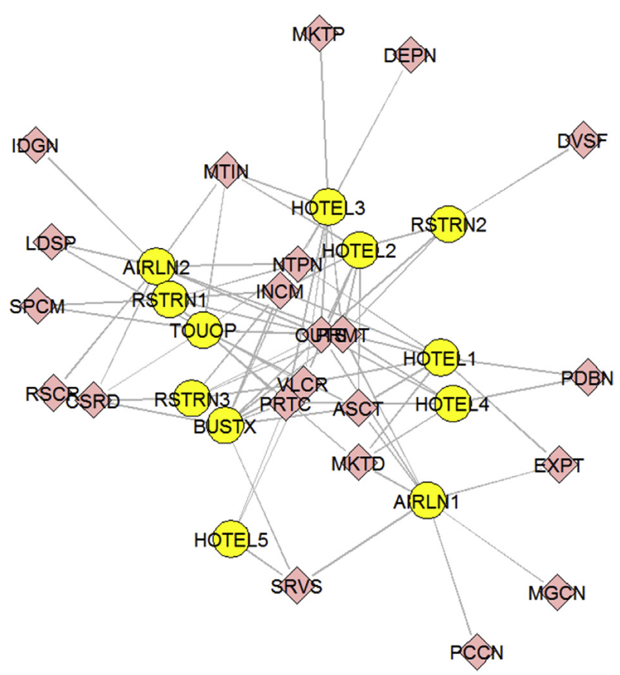
$v\ (P_{AT}) = 988$

8) Coalition AE:



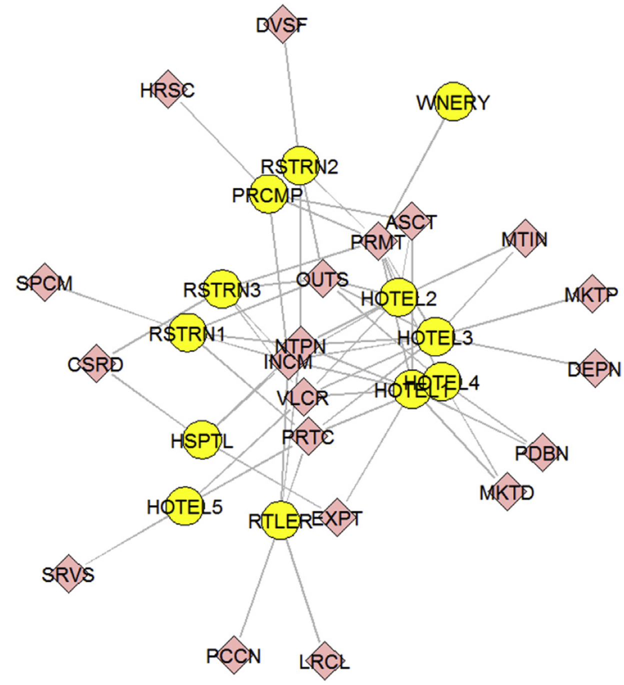
$v\ (P_{AE}) = 888$

9) Coalition HT:



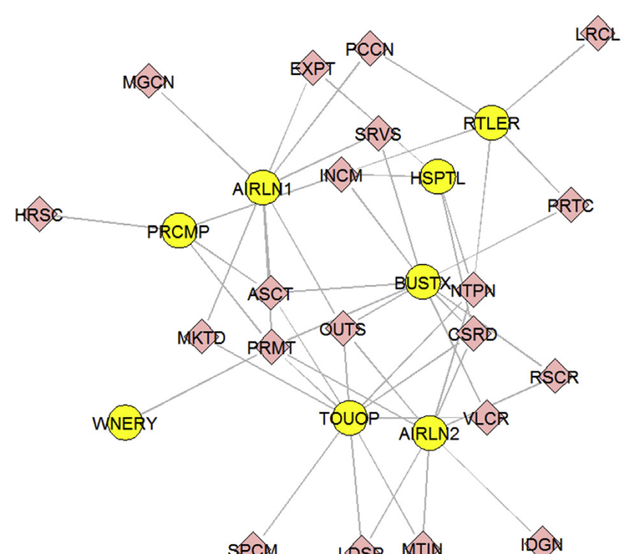
$v\ (P_{TH}) = 748$

10) Coalition HE:



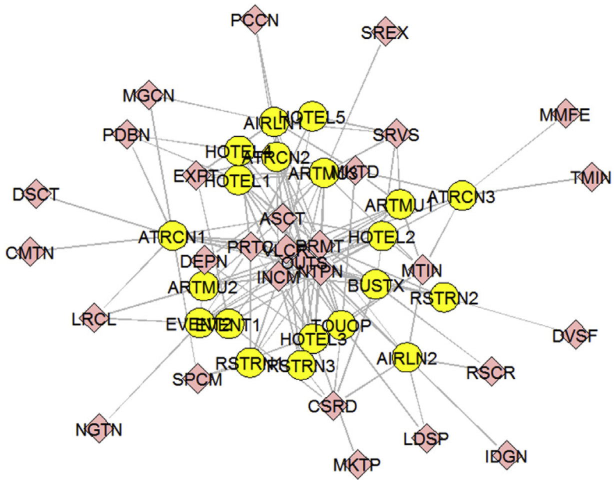
$v\ (P_{HE}) = 661.3$

11) Coalition TE:



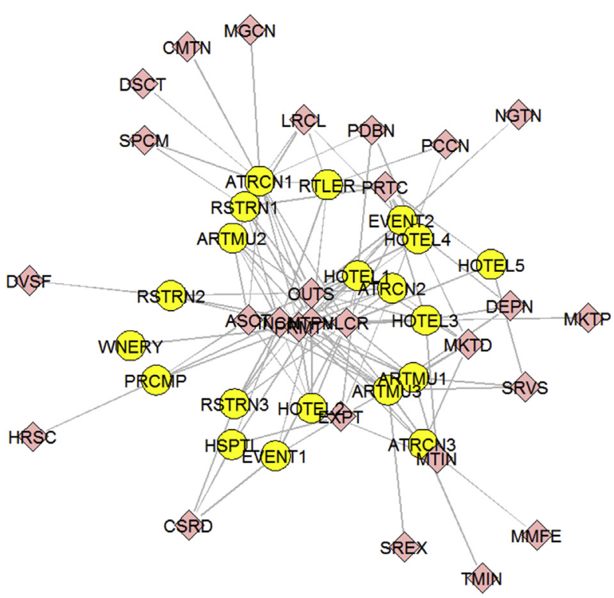
$v\ (P_{TE}) = 756.$

12) Coalition AHT:



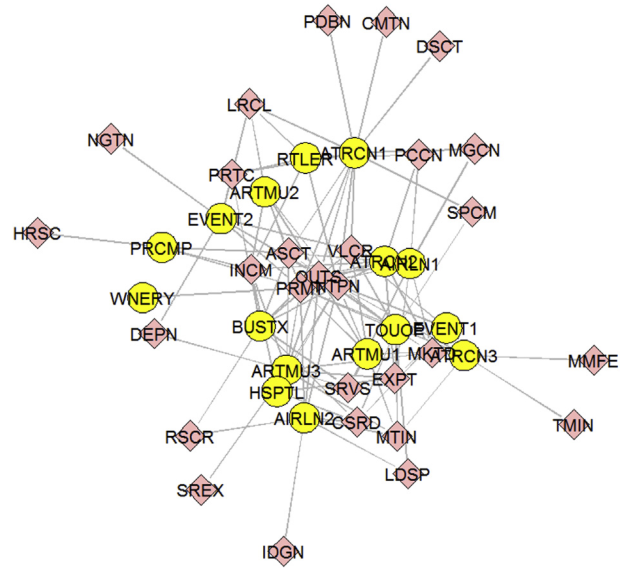
$v\ (P_{AHT}) = 1411.2$

13) Coalition AHE:



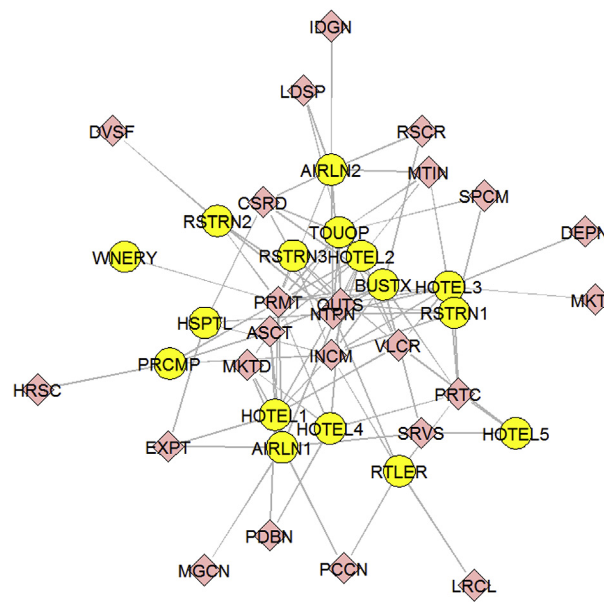
$v\ (P_{AHE}) = 1297.2$

14) Coalition ATE:



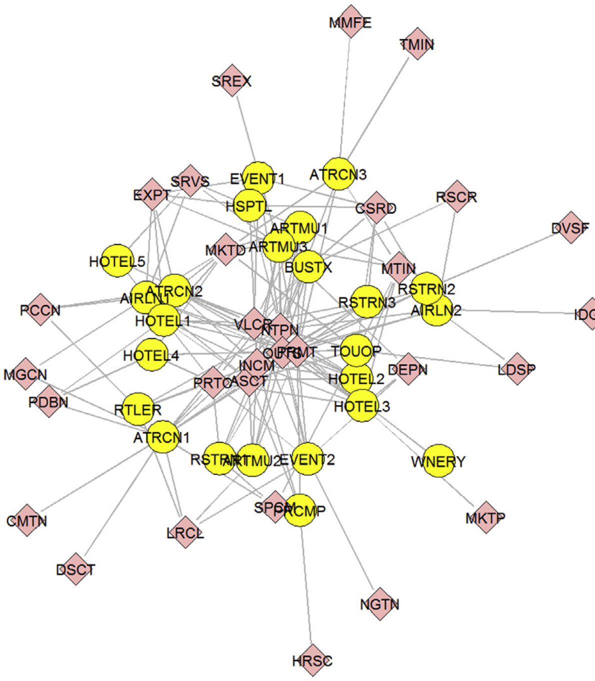
$v\ (P_{ATE}) = 1419$

15) Coalition THE:



$v\ (P_{THE}) = 1170$

16) *Coalition AHTE:*



$v\,(P_{AHTE}) = 1908$

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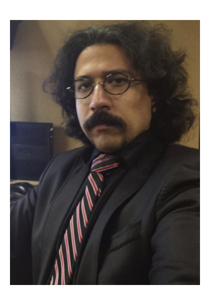

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