# Decision making: Tourism and hospitality game

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**SUMMARY**   *This paper introduces the reader to an experiment that proposes an expanded format of cooperative learning techniques with sets of pedagogical innovations to better meet the teaching outcomes.  In this context the paper presents a decision-making game where Tourism and Hospitality students are fully involved in the educational process via active participation in the Tourism and Travel Game. The game demonstrates decision-making processes that must be taken within competitive environment with imperfect information. The individual components of the game allow players to explore the effects of production capacity, production costs, market demand, and government controls within a competitive market. Students are expected to develop various skills and competences during game. The paper presents an assessment instrument in order to provide a feedback if students benefited from opportunities that replaced a lecture with active participation by using the Tourism and Travel Game. An assessment instrument allowed us to evaluate the students' opinion on their knowledge acquisition and retention rate. Each student was given the same questionnaire that evaluated how teaching with Tourism Game had influenced each area of the students' learning outcome: positive interdependence, face-to-face interaction, individual accountability, group processing of the group learning experience, critical thinking, problem solving, decision-making ability, aptitude for detail, oral communication, written communication, knowledge of information, ability to organize and analyze, comprehension, application, synthesis and evaluation. Obtained results indicate a strong support for using the game as a pedagogical tool rather than a traditional lecture.*

*Key words*:
*tourism and hospitality education; decision making; competitive environment; globalization; information*

## INTRODUCTION

A key objective of tourism and hospitality education is to prepare students to be successful decision-makers in their future careers within the industry. Principles and facts about various facets of the tourism and hospitality business can be taught in the traditional classroom.

However, the ability to make decisions in a complex, dynamic, and uncertain environment is best learned through utilizing active learning methods such as games and simulations (Litvin and Elangovan 2000).

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Adding management games to the mix of lectures, tutorials, projects, and examinations can enhance the richness of the educational experience and leave students with an experience that will stay with them for many years (Wells 1991).

The field of experiential learning with games and simulations has experienced substantial evolution during the last two decades (Lewis and Williams 1994, Becker and Watts 1995). A growing number of games and simulations in business education provide students with the opportunity to apply their knowledge of business concepts and to practice and improve their decision-making skills (Becker and Watts 1995).

Smith (1992) claims that experiential group learning using games and simulations begins with concrete experiences. Relying on reflective observations from these experiences, students engage in abstract conceptualization that allows them to generalize and learn principles that integrate their observations into working theories (Lewis and Williams 1994; DeYoung 1993). Similarly, Wells (1991) and Lewis and Wentworth (1971) suggest that learning is facilitated when students reflect upon concrete experiences and use them to form the abstract concepts that they are expected to learn. These concepts are then used and tested when the students face new situations. As games stimulate and encourage experiencing, reflecting, analyzing and questioning, students formulate abstract concepts and come to understand business concepts (Becker and Watts 1995).

Zapalska and Brozik (1999) write that games and simulations prompt students to solve problems and stimulate strategic, reflective, and critical thinking. Mohatar (1994) argues that the activity eliminates memorization and repetition and gives students opportunities to interact with each other. Games and simulations also enable more positive student relationships, increase individual motivation, and promote a healthier psychological environment than any other classroom method (Maier and Keenan 1994; Chamberlin 1995; Lewis and Williams 1994).

Despite the considerable number of games and simulations available for teaching purposes, the standard lecture format still prevails as the main teaching method (Chamberlin 1995; Walker 1987). The Tourism and Travel Game was developed to complement the traditional lecture format and to introduce student participation into the tourism and hospitality classroom.

Travel agencies must make decisions concerning production and product mix in a very uncertain environment. One of the most difficult concepts to convey to students is the dynamic nature of decision making under incomplete or possibly inaccurate information. The Tourism and Travel Game explores the various aspects of a competitive market and emphasizes the different aspects of decision-making that are affected by production capacity, product cost, and market demand. Other important aspects of this game include the observation of external factors such as limited information flow among the competitors and possibly a lack of honesty in the competitive market.

Players are formed into teams representing travel agencies that must decide what is best for them to do in the presence of other agencies trying to do what is best for their firms. Opportunities are created for collaboration and collusion, though agencies are not required to communicate any information with any other party. The interactions of the agencies develop business ethics that can also be examined. The game is composed of several rounds, each designed to illustrate a specific dimension of decision making and the information flows associated with it. The format creates a rich enough environment that factors like group dynamics and market ethics can be examined. Students who actively participate in this game develop general competencies that include: strategies for adapting to change; strategic management decision-making; creative thinking; problem identification and solving; interpersonal verbal communication skills; teamwork; development of a quality service attitude and motivation; and other personal skills.

Students who actively participate in this game develop general competencies such as (1) *positive interdependence*; (2) *face-to-face interaction*; (3) *individual accountability*; (4) *interpersonal and small group skills*; and (5) *group processing of the group learning experience*. Students are also expected to develop various competences during game.

They include critical thinking, problem identification and solving, strategic management decision-making, aptitude for detail, interpersonal verbal communication, written communication, knowledge, organization and analysis, comprehension, application, analysis, synthesis, evaluation, strategies for adapting to change, creative thinking, teamwork, and motivation.

The paper presents an assessment instrument in order to provide a feedback from the students who benefited from playing the Tourism and Travel Game that replaced a lecture with active participation in a game.

## PLAYING THE GAME

### The number of teams and players:

There are four teams, and team sizes can vary between three and five members. For larger classes it is recommended that eight teams be formed and that they alternate playing the rounds. The mechanics of recording the results of each portion of the game will become complex when more than four teams are present. The teams should be formed at least one class session prior to playing the game by whatever protocol the instructor chooses.

### Time requirement:

The game can be run comfortably within two a 50 minute class period. In an 80-minute period, there is time to have discussion of the results and to discuss and help the students prepare their reports.

### The market structure:

Students in each team are informed that they represent a firm that is one of several tourism and travel agencies operating in international market. Due to the recent increase in demand for tourism and travel of the retiring generation of the baby boomers in the United States and other parts of the world, there has been an increased demand for the tourism and travel packages that their firm supplies. As the managers of the firms, students in each group have the responsibility to plan production of travel packages and sell them to meet the demands of a competitive market. The production goal is to maximize the wealth of a firm's owners.

Each group is informed that they have three major competitors that are of the same size and produce tourism and travel packages with the same features. These four firms form an industry subgroup: *Jamaica Vacation Agency, Bahamas Tourist Group, Caribbean Tour Group,* and *Mexico Travel Office.* These firms compete directly on the following items: *Adventure/Ecology Package (AEP), Spa and Health Package (SHP),* and *Ocean Sports Package (OSP).* From the point of view of potential customers, each firm's products are interchangeable with those of any other competitor. For example, an Ocean Sports Package from any of the four firms is considered to be similar in the type of activities offered

and the quality of service. However, an Adventure/Ecology Package is not a substitute for Spa and Health Package or Ocean Sports Package.

Each team is further informed that none of the four firms is based in the United States even though the US is the major market for these products. As the tourism and travel agencies are not bound by US laws there is no legal restriction (anti-trust laws) against sharing information between firms, but there is likewise no requirement that information be shared. The amount of information exchanged between the agencies is decided by the managers of the firm, as is the accuracy of that information. Even though the agencies are based in different countries, since their products are sold in the US, all cost and price information is stated in US dollars.

### The decision making:

There are multiple rounds to the game, each round examining a different aspect of competition and information flow. Cost and price structures may change between rounds, and it is each team's responsibility to make decisions in light of the changing market conditions. During each round, teams will have approximately 10 minutes to decide their package mix.

In each round of the game, each travel agency is required to decide how many of each type of package to sell in order to maximize the wealth of its owners. The quantity of each package agency plans to offer must be a multiple of ten. For example, if an agency has 100 packages, it can choose to offer 10 AEP, 20 SHP, and 70 OSP or any other combination that adds to 100 as long as each individual allocation is a multiple of ten. An agency cannot choose to produce 3 AEP, 5 SHP, and 92 OSP. Should an agency choose to allocate production quantities that are not multiples of ten, the number that agency chooses will be rounded down to the nearest multiple of ten, in this case 0 AEP, 0 SHP, and 90 OSP. This will result in an agency losing production and thus losing revenues.

In order to maintain the ability to offer a package in the next round, an agency must offer at least 10 of that package in the preceding round. This requirement assures that the necessary contracts and personnel will be available. For example, if in Round 1 an agency chooses not to produce any AEP, that agency will not be allowed to offer any AEP in Round 2. The agency will be allowed to offer AEP in Round 3 should it wish to do so. The reason that an agency must skip the subsequent

round after not offering a package is that it will take an agency this much time to restart the production process.

The game has several rounds, each taking about 15 to 20 minutes. It is not necessary to complete the entire game in one session, and in fact it would be difficult to do so. The rounds are sequenced to allow the instructor to choose those that best match the class material. This means that the entire game could be completed in possibly two consecutive class periods or that the individual exercises could be done periodically throughout the term.

### The market incentives:

In order to receive credit for this part of the course, students are required to submit a paper documenting the game and team's performance during the game. This paper should be graded on a 100 point scale. The members of the winning team in each round of the game can receive a 5 point bonus that will be added to the grade on the paper. For example, if a single team were able to win four rounds, it would be possible for the members of that team to receive a score of 120 points on the 100 point paper (if the paper itself does not merit a score of 100, the bonus points can still be added to whatever score the paper receives). In each round, the members of the second place team can receive a bonus of 3 points, and the members of the third place team can receive a bonus of 1 point.

In the event of a two-way tie in any round, the points should be split between the tying teams. If the tie involves more than two teams, that is, if three or more teams receive the same score in a specific round, no bonus points should be awarded to those teams for that round.

## SETTING THE GAME

### The handouts:

Each team is given a Student Information Packet that describes exactly how the game is played at the close of the previous class session. This permits each team to use the time between classes to meet and possibly determine an initial strategy. The information packet contains all relevant information about the game and sheets to facilitate score keeping. The Instructor's Forms (Appendices) include the various sheets and other schedules needed by the instructor.

### The game set-up:

Round 1 - This round examines decision making in isolation. All teams have the same cost structure and production capacity, so there are no inherent differences in market power. No communication is allowed between teams, and the results of the round are random. Sometimes all groups will choose to pursue a middle-of-the-road strategy, and each group gets roughly the same score. The purpose of this round is to demonstrate the disadvantages of decision making without information.

Round 2 - This round allows the teams to communicate with each other. They can collude or allocate markets or do anything they wish. This gives the players a chance to experience the advantages of information and presents them with the opportunity to use it for personal gain. No requirement is made that the information exchanged must be accurate. Players are allowed to lie if they so choose. This is the beginning of the development of a market ethical system that may or may not change during the game.

Rounds 3 and 4 - A roll of a single die is used to determine the production capacity of each team in each round. The production capacity of each firm is 50 times the pip count of the die. For example, when the die is rolled and comes up as a 4, the firm has a production capacity of 200 packages. The costs and market demand remain unchanged. Agencies with greater production capacity have greater potential market power than those with less production. During round 3, each agency must regard its production capacity as privileged information that cannot be released to the other agencies. This restriction is removed in round 4. It is expected that players discover that the agency with the greatest capacity often wins. Even with collusion, smaller agencies are often unable to overcome the superior production power of the larger agencies. In these rounds, it becomes painfully obvious to some of the players that life may not be fair. Personalities begin to surface as individuals may attempt to structure the information flow to meet their needs. Alliances can form between agencies, and those agencies that are perceived as not playing fairly develop a "reputation" which follows them to the later rounds.

Round 5 and 6 - Several rolls of a single die are used to determine the costs of each tourism and travel package for of each agency in each round. For each agency, the die is rolled three times, once for each type of travel package. The costs associated with each roll are found

in the Appendices. Capacity and market demand remain unchanged. Agencies with lower costs for specific products have greater potential market power than those with higher costs. During round 5, each agency must regard its capacity as privileged information that cannot be released to the other agencies. This restriction is removed in round 6. In these rounds it becomes possible for all market participants to benefit by focusing their production on their lowest cost packages. The existence of four agencies and three packages assures that at least two of the agencies will still have to compete in at least one product line. In these rounds the agencies often cut deals with each other to segment the markets, but there are also often "misunderstandings", intentional or not, about exactly what deal was made. The ethical environment is again tested.

### Data recording:

During each round, the instructor will need to record sufficient information to assure that each team's decisions and its results are properly specified. Master Sheets have been provided for this purpose, but it is also a good idea to maintain copies of the individual team Tally Sheets. A portion of each student's grade will depend on the accuracy of the record, and having two sources of information assures that an accurate accounting can be kept.

### Class dscussion:

The six rounds allow the class to experience decision making under various conditions and to develop a market ethic. There should be class discussion after each round concerning the success of each team and the market conditions that led to that success. Subsequent discussion can focus on the value of specific market structure and product characteristics, the development of the information flow, and the behavior of market participants. It is important to foster a discussion concerning each team's opinion of the relative honesty of the other teams. There are definitely different opinions of exactly what happened, and it can be shown that concepts like truth can be relative or misunderstood.

Some of this discussion should focus on what information was available, the utility of this information, and the validity of the information. Students sometimes act as they expect all other players to be totally honest at all times. This leads to the realization that the real world markets may not behave in such a manner. During the middle rounds, some of the discussion can be directed towards ways to improve performance in subsequent rounds.

The final discussion provides the overview to the problems of decision making in a dynamic environment.

## ASSESSMENT OF STUDENTS' LEARNING WITH THE USE OF GAMES AND SIMULATIONS

The various types of teaching assessment have been presented in educational literature. Teaching assessment takes into account the various forms. The most currently used teaching assessment methods according to the source of information that they entail include: external evaluation, student opinion, opinion of colleagues, and self-evaluation among many others.

As games and simulations have been recognized as primary mechanisms for teaching cooperation in business classes, "cooperative learning" through games and simulations develop skills that are applicable throughout the business world. The model of cooperative learning used within the game presented (David and Roger Johnson) stresses five essential components that must be integrated into the classroom in order for active learning to be truly cooperative and successful. These essential elements are (1) *positive interdependence*; (2) *face-to-face interaction*; (3) *individual accountability*; (4) *interpersonal and small group skills*; and (5) *group processing of the group learning experience*. Proper implementation of each of these elements is critical to the success of the method.

The instructor's first job is to foster *positive interdependence* by structuring the classroom experiment so that students will recognize their linkage with one another in learning. One technique for creating positive interdependence is to give the group clearly stated joint learning goals and to distribute resources needed to complete the task to different members of the group. Completion of the task requires interaction among group members.

*Face-to-face interaction* refers to the physical arrangement of the room and the orientation of group members to each other. For example, the structure of a game might allow the students to freely walk around the room to accomplish their tasks. A different game might create artificial barriers that students must overcome to be successful. Room dynamics may change over time as the players become more and more involved with their tasks. Students can learn how to restructure their environment to accomplish their tasks efficiently.

Instructors are usually required to evaluate students on an individual basis even when learning is cooperative or collaborative. An assignment completed by a student without assistance from the learning group is a traditional method of measuring individual competence. Other techniques that can be used to measure *individual accountability* include choosing a student's work to represent the group, having students teach what they have learned to someone else or having students explain concept(s) to the class. The use of collaborative learning techniques forces the instructor to identify those learning goals that are most important and devise methods by which to measure them.

Cooperative learning recognizes that participants must have certain skills in order to achieve the learning goals of the group. The Johnson model differs from other group learning pedagogies in that it explicitly recognizes the individual accountability within cooperative learning. The focus here is on developing techniques for learning and practicing social skills appropriate to the content learning task. Games and simulations are excellent tools for learning these interpersonal and social skills since such skills are almost instantaneously developed while students play the game.

In order to maintain the functioning and efficiency of the group, Johnson's model advocates taking time for *group processing of the group learning experience*. The use of post-game review of the group results allows the groups to think about their success in completing the assigned task and to plan how to improve group functioning. Collaborative learning provides a natural environment for implementing the Johnson model. Games and simulations can be constructed to require specific types of group interaction. By designing and using games properly both group learning and individual learning can be enhanced.

## ASSESSMENT INSTRUMENT

A questionnaire form was used to collect students' feedback that helped the instructors gain a perspective of the range of attained learning, as well as student competence. This type of assessment was beneficial because it allowed us to evaluate the students' opinion on their knowledge acquisition and retention rate. More specifically, we focused on the use of the Tourism Game and its effect on improving the quality of students' learning in areas of: critical thinking; problem solving; decision-making ability; knowledge of information; and ability to organize and analyze.

Forms were set-up so that students were not required to identify themselves while replying to the form's questions. Anonymous feedback offered an opportunity for students to make comments they would not ordinarily have mentioned openly during face-to-face or in-group meetings. We believe that this type of environment encourages students to take learning more seriously, and hence, teaching and learning becomes more efficient and effective.

The data were collected at the course's conclusion. Each student was given the same questionnaire that evaluated how teaching with Tourism Game had influenced each area of the students' learning outcome: positive interdependence, face-to-face interaction, individual accountability, group processing of the group learning experience, critical thinking, problem solving, decision-making ability, aptitude for detail, oral communication, written communication, knowledge of information, ability to organize and analyze, comprehension, application, synthesis and evaluation. Students had to rate the influence as "Yes", or "No", or "No opinion".

The survey was conducted in the "Principles of Macroeconomics" course in the Fall 2005 semester. Because all sixty-seven students who were enrolled in the course participated in our survey, the survey data is not represented by a simple random sample.

However, because all of the students who participated in our course were typical freshman students, we see no source of potential bias in a student sample. Consequently, the group of participants has been treated as a valid representation of students who take Principles of Macroeconomics courses.

## RESULTS OF THE TEACHING ASSESSMENT

Assessment instrument with the results of the teaching assessment are provided in Appendix C. P-values listed in Table 2 Appendix C represent the results of testing the hypothesis that the proportion of students who had favorable opinion (selected category "Agree") was higher based on a game than based on a lecture.

P-values marked with the asterix (*) indicate that the Fisher's exact test was used, because the normal approximation was inappropriate. In all other cases large sample test for comparison of two proportions was applied.

Obtained results indicate that only in the case of "Evaluation" (item 17 in the Table 2) and "Written communi-cation" (item 10) there was no advantage of the game over a lecture. In all other cases statistical evidence was strongly supportive for using of the game as a pedagogical tool rather than a traditional lecture. Because of the sample size, the 0.1 significance level for the tests was used.

## CONCLUSION

The use of games can be valuable in curriculum design and development for tourism and hospitality education and training. The use of games changes the face of traditional educational techniques and presents students with a dynamic learning vehicle. Students who play are involved in a discovery of the dynamic market processes and have to make strategic decision making about allocating resources to meet the product demand.

They observe how their behavior affects and is affected by the decision making activities of other teams. Students are given instantaneous feedback and the experience of seeing the results of their behavior in a competitive market.

The use of the game contributes to students' learning and makes classroom study more real as the students have the opportunity to experience decision making in a dynamic setting. Competing agencies may or may not have similar production processes, and they may or may not have similar information. The information received may or may not be accurate. The game shows the importance of information to decision making, and it also illustrates that market conditions may affect those decisions. Players are required to establish a market ethical system, and honesty may or may not be a part of that system.

According to the survey results, the Tourism and Travel Game gives the instructor the ability to tailor the learning experience to classroom needs and provides the instructor with approach to effective learning processes where various skills areas can be developed. According to our survey result, games can be used to develop the following skills: positive interdependence, face-to-face interaction, individual accountability, group processing of the group learning experience, critical thinking, problem solving, decision-making ability, aptitude for detail, oral communication, knowledge of information, ability to organize and analyze, comprehension, application, and synthesis. Our results indicate that the games used in our class did not provide development of evaluation and written communication skills among our students.

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## APPENDIX A
## COMPETITIVE MARKETS: ROUNDS 1-6

**Product Demand:** A tourism and travel industry marketing board has surveyed potential buyers of tourism and travel services. Based on the information from this survey, the following demand schedules have been constructed for the packages your agency provides. Due to market conditions, the minimum price for any package is $400 regardless of the quantity available in the market.

**Marketing and Production Costs:** The cost to produce a single package, *Adventure/Ecology Package (AEP), Spa and Health Package (SHP),* or *Ocean Sports Package (OSP)* is $300.
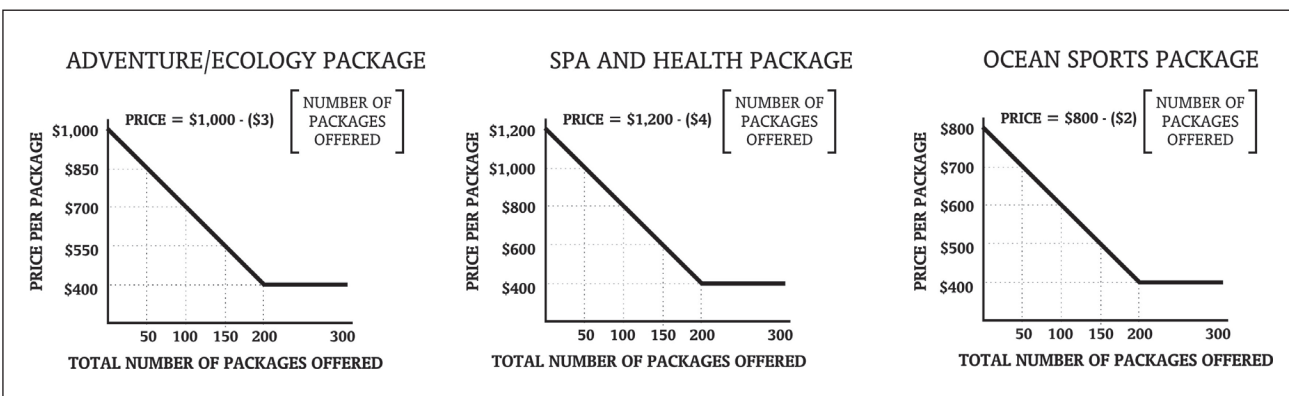
## Rounds 1 and 2

**Tourism and Travel Package Production Capacity:**
Each tourism and travel agency has the potential to produce a total of 150 packages. Due to the marketing process, it takes the same amount of time and effort for each package. The firm can therefore produce various combinations of finished packages, like 150 AEP and 0 SHP and 0 OSP, or 50 AEP and 50 SHP and 50 OSP, or any other combination that totals 150 units.

**Round 1:** Make your decision concerning your output mix *without* communicating with any of the other teams. Use the Tally Sheet to record your decision. Once all teams have announced their production decisions, the sales price of each item will be calculated, and you can calculate the total profits earned.

**Round 2:** Prior to making the output mix decision, you may share information with the other teams. The type of information you share and its accuracy is up to you. You are under no compulsion to share information nor will there be any direct sanction for sharing inaccurate information. Use the Tally Sheet to record your decision. Once all teams have announced their production decisions, the sales price of each item will be calculated, and you can calculate the total profits earned.

## Rounds 3 and 4

**Tourism and Travel Package Production Capacity:**
Your firm's package capacity will be determined by the roll of the dice. One member of the team will roll a single die. Your total package capacity will be 50 times the pip count on the die. For example, if the pip count is 4, your capacity is 200 units of whatever products you choose.

**Round 3:** One member of the team will roll the die to determine the production capacity for the firm. Prior to making the output mix decision, you may share information with the other teams EXCEPT information concerning your production capacity. You are to treat your production capacity as privileged information that is not to be shared in any way or form with outside parties. The other information you share and its accuracy is up to you. You are under no compulsion to share information nor will there be any direct sanction for sharing inaccurate information. Use the Tally Sheet to record your decision. Once all teams have announced

their production decisions, the sales price of each item will be calculated, and you can calculate the total profits earned.

**Round 4:** One member of the team will roll the die again to determine a new production capacity for the firm. Prior to making the output mix decision, you may share information with the other teams INCLUDING information concerning your production capacity, if you choose to do so. The information you share and its accuracy is up to you. You are under no compulsion to share information nor will there be any direct sanction for sharing inaccurate information. Use the Tally Sheet to record your decision. Once all teams have announced their production decisions, the sales price of each item will be calculated, and you can calculate the total profits earned.

## Rounds 5 and 6

**Tourism and Travel Package Production Capacity:**
Each firm has the capacity to produce a total of 150 packages.

**Marketing and Production Costs:** The cost to produce a single package (AEP, SHP, or OSP) will be determined by a roll of a die. For each package, the production cost will be Cost = $150 + ($50)(pip count of the die). For example, if the die cast for the AEP is 4, the cost of producing one AEP is [$150 + ($50)(4)] = $350.

**Round 5:** One member of the team will roll the die to determine the manufacturing costs for the firm. Prior to making the package mix decision, you may share information with the other teams EXCEPT information concerning your marketing and production costs. You are to treat your cost information as privileged, and it is not to be shared in any way or form with outside parties. The other information you share and its accuracy is up to you. You are under no compulsion to share information nor will there be any direct sanction for sharing inaccurate information. Use the Tally Sheet to record your decision. Once all teams have announced their production decisions, the sales price of each item will be calculated, and you can calculate the total profits earned.

**Round 6:** One member of the team will roll the dice again to determine new marketing and production costs for the firm. Prior to making the output mix

decision, you may share information with the other teams INCLUDING information concerning your manufacturing costs, if you choose to do so. The information you share and its accuracy is up to you. You are under no compulsion to share information nor will there be any direct sanction for sharing inaccurate information. Use the Tally Sheet to record your decision. Once all teams have announced their production decisions, the sales price of each item will be calculated, and you can calculate the total profits earned.

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## APPENDIX B
## COMPETITIVE MARKETS TALLY SHEET

**Team Name/Members:**  **ROUND 1AND 2**

| PACKAGE | AEP | SHP | OSP | |
|---|---|---|---|---|
| Sales Price per Package | | | | |
| Cost per Package | $300 | $300 | $300 | |
| Profit per Package | | | | Total Units Sold |
| Packages Sold | | | | 150 |
| Total Profit per Package | | | | |

Grand Total Profit

**Team Name/Members:**  **ROUND 3 AND 4**

| PACKAGE | AEP | SHP | OSP | |
|---|---|---|---|---|
| Sales Price per Package | | | | |
| Cost per Package | $300 | $300 | $300 | |
| Profit per Package | | | | Total Units Sold |
| Packages Sold | | | | |
| Total Profit per Package | | | | |

Grand Total Profit

**Team Name/Members**  **ROUND 5 and 6**

| PACKAGE | AEP | SHP | OSP | |
|---|---|---|---|---|
| Sales Price per Package | | | | |
| Cost per Package | | | | |
| Profit per Package | | | | Total Units Sold |
| Packages Sold | | | | 150 |
| Total Profit per Package | | | | |

Grand Total Profit

## DICE OUTCOMES FOR ROUNDS 5 AND 6

• = $200

• • = $250

• • • = $300

• • • • = $350

• • • • • = $400

• • • • • • = $450

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## APPENDIX C
## EVALUATION FORM AND SURVEY RESULTS

Please respond briefly to the following questions regarding the usefulness a game as a nontraditional teaching instrument, and feel free to add any other thoughts or ideas, which you had regarding this type of teaching instrument.

1. Do you feel that Tourism Game causes you to develop your understanding of a concept more throughly than any other type of teaching technique such as lectures, discussions, other class activities:

      Yes  <u>67</u>   No  <u>0</u>   No opinion  <u>0</u>

2. Would you recommend that games be utilized more within the class?

      Yes  <u>67</u>   No  <u>0</u>   No opinion  <u>0</u>

3. Did you learn more in this class because of the use of games?

      Yes  <u>62</u>   No  <u>0</u>   No opinion  <u>5</u>

4. Please indicate your level of agreement on how the use of (a) traditional teaching technique such as a lecture; and (b) nontraditional teaching technique such as a game developed positively influenced each of the following skill areas:

Table 2
**SURVEY RESULTS**

| Skill area | Agree | P-Values | Neutral | Disagree |
|---|---|---|---|---|
| 1. Positive interdependence | | | | |
| a. From a lecture | 0 | 0.000 | 0 | 67 |
| b. From a game | 67 | | 0 | 0 |
| 2. Face-to-face interaction | | | | |
| a. From a lecture | 0 | 0.000 | 0 | 67 |
| b. From a game | 67 | | 0 | 0 |
| 3. Individual accountability | | | | |
| a. From a lecture | 51 | 0.018 | 16 | 0 |
| b. From a game | 60 | | 7 | 0 |
| 4. The group learning experience | | | | |
| a. From a lecture | 0 | 0.000 | 0 | 67 |
| b. From a game | 67 | | 0 | 0 |
| 5. Critical Thinking | | | | |
| a. From a lecture | 45 | 0.001 | 22 | 0 |
| b. From a game | 59 | | 8 | 0 |
| 6. Problem Solving | | | | |
| a. From a lecture | 40 | 0.000* | 27 | 0 |
| b. From a game | 67 | | 0 | 0 |
| 7. Decision Making Ability | | | | |
| a. From a lecture | 23 | 0.000* | 37 | 5 |
| b. From a game | 64 | | 3 | 0 |
| 8.  Aptitude for Detail | | | | |
| a. From a lecture | 56 | 0.053 | 11 | 0 |
| b. From a game | 62 | | 5 | 0 |
| 9. Oral Communication | | | | |
| a. From a lecture | 0 | 0.000 | 0 | 67 |
| b. From a game | 67 | | 0 | 0 |
| 10. Written Communication | | | | |
| a. From a lecture | 55 | 0.106 | 12 | 0 |
| b. From a game | 60 | | 7 | 0 |
| 11. Knowledge (the acquisition of facts and information) | | | | |
| a. From a lecture | 57 | 0.084 | 10 | 0 |
| b. From a game | 62 | | 5 | 0 |
| 12. Organize | | | | |
| a. From a lecture | 42 | 0.000* | 15 | 10 |
| b. From a game | 67 | | 0 | 0 |
| 13. Comprehension (explaining complex ideas and processes) | | | | |
| a. From a lecture | 45 | 0.000* | 22 | 0 |
| b. From a game | 63 | | 4 | 0 |
| 14. Application (using ideas in new contexts) | | | | |
| a. From a lecture | 30 | 0.000* | 40 | 6 |
| b. From a game | 67 | | 0 | 0 |
| 15. Analysis (taking ideas and processes apart) | | | | |
| a. From a lecture | 60 | 0.003 | 7 | 0 |
| b. From a game | 67 | | 0 | 0 |
| 16. Synthesis (combining ideas to form new ideas) | | | | |
| a. From a lecture | 47 | 0.000 | 20 | 0 |
| b. From a game | 67 | | 0 | 0 |
| 17. Evaluation (judging the quality, value, fit, or validity of ideas and processes) | | | | |
| a. From a lecture | 58 | 0.398 | 9 | 0 |
| b. From a game | 59 | | 8 | 0 |

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