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Game Analysis of United Airlines Policy Changed Strategy on Emotional Support Animal Aboard Airplane: An Overview of Nash Equilibrium Point

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Abstract: This study aims at giving answers to the questions asked; can unified acceptance list of emotional support animals with specific animals− approve by all diverse intending passengers with dire special needs for emotional support animals be sort for prior to boarding a commercial flight? Can filing application prior to boarding by people with emotional deficiency in company with their animals be enough for assessment and approval as well? A one-style-fit- all approach that can give the maximum desire becomes probabilistic, to further illustrate this just recently, United airlines witnessed a disturbing incidence, when a female passenger wanted to board a flight with her huge live peacock bird claiming to be her preferred emotional support animal. This paper conceptualised and constructed a games theory models of duo actor's situation(s) in which each player choice of actions(s) can boomerang into different results while maintaining mutual benefits of competitiveness and cooperation. In this paper we will argue that for United or any other company in the equal situation the best strategic choice would be to respect and follow the laws and restrictions set by the aviation airlines in which the company chooses to operate. Finally, an analysis is completed through determining the optimal strategy for Passenger and United airlines and finding the equilibrium point. This work provides a new perspective for knowledge engineering.

Keywords: Game Theory, Emotional Animal, Knowledge Engineering, Policy Changed

1. Introduction

What is game theory?

Game Theory was firstly explored by a French mathematician named Borel in 1921. Emile Borel published several papers on the theory of games. He used poker as an example and addressed the problem of second-guessing the opponent in a game. He imagined using game theory in economic and military applications and his goal was to determine, whether a best strategy for a given game exists and find that strategy. However, he did not develop his idea very far. Due to that, most historians give the credit for improving game theory to John Von Neuman (1903), who published his first paper on game theory in 1928, seven years after Borel.

Game theory is a method originated from the mathematical sciences in which is used in competitive or cooperative position to find optimal choices that will lead to desired outcome. It obvious game atleast two or several actors participate for their mutual or personal benefit(s). Every player involved will rather choose the best option to maximize their own benefits with regard to opponent's decision. However, it is becoming more in teresting in the social sciences, psychology and cognitive sciences, engineering fields e.t.c. In the mentioned fields game theory can be used to anticipate the best result. The main characteristics of game theory is measurement and evaluation of opponent's choice and deciding according to that belief. In a game, players according to their briefs about the opponent's choices choose a strategy or strategies that maximize profit for them. Game theory says that whenever people are playing

with each other in the strategic environment, how they behave rationally. Thus this approach can cause the rational and best results for the player. Game theory has different extension and it is categorized into different classification such as dynamic and static game, zero-sum and non-zero-sum game and etc. In dynamic games players make decision in response to other players' decisions while in static games, all players' choices are decided simultaneously.

2. Methodology

2.1. The Matrix of Prisoner's Dilemma Game

The focus of this study was to analyse and apply the principles of game theory method in resolving the issues with emotionally support animal in aviation industry. A dual game theory approaches were analysed; these are prisoner's dilemma and chicken game. The theory of prisoner's Dilemma was propounded by the renowned Merill Flood (1951). The highlight of this game was the arrest of two notorious suspects whose crime lack merit to get prosecuted in a court of law. The police in their wisdom detent the suspects in separate cells without the duo interacting to obtain variety of results that will help solved the crime. When non of the prisoner confesses to the crime a duration of one year awaits them, when both confesses to crime they will be imprison for 5 years each, however, if one of the prisoner confessed and the other refused to confessed the repented one goes free while the unrepentance one who would not confessed to the crime gets 10 years imprisonment At this stage of the prisoners predicament which is crucial certain question revolves in the criminal's mind which is choosing the best out of the opponent's decision. To be able to come up the best available option, it's better to use the game theory approach along with Nash Equilibrium whereas all opposes the solution. To further illustrate this theoretical concept and framework of game theory, first and foremost game should be tabulated in matrix format. All values must be located in a cells showing the imprisonment duration.

Table 1. *Strategies that can utilised in Prison's Dilamma Game.*

Strategies which can be used for prisoner's Dilemma game		**Player 2 (Criminal 2)**	
		Confess	**Deny**
Player 1 (Criminal 1)	Confess	(5, 5)	(0, 10)
	Deny	(10, 0)	(1, 1)

Table 2. *Strategies that can be utilised by Prisoner's Dilemma game and the Nash equilibrium point.*

Strategies that can be utilised by Prisoner's Dilemma game and the Nash equilibrium point, and choosing the confessing strategy by both parties		**Player 2**	
		Confess	**Deny**
Player 1	Confess	(5, 5)	(0, 10)
	Deny	(10, 0)	(1, 1)

In view of the above matrix playoff, every prisoner under detention is seeking a minimum prison sentence. The dilemma of prisoner 1 and/or actor 1 is not absolutely sure whether his comrade in crime has confessed to crime or not, at first he presumes that he has not. Just in case prisoner 1 is still adamant by refusing confessing to crime committed, both prisoners will bagged 1 year in jail. This is not a bad idea for both parties. Just in case prisoner 1 goes ahead to confess, he will walk away a free man, while his partner in crime goes to jail. However, looking at chances that prisoner 2 confesses. if prisoner 1 decline to confess in spite of, prisoner 2 confession, prisoner 1 goes to 10 years imprisonment. However, once he confess, his jail term will automatically be half a decade (5 years). in this scenario, it seem better to confess. Based on the matrix, it clear from all indications that the best playoff for both suspects is when each prisoner keep his mouth shut. From game theory perspective, the duo confessing is better-off, due to the fact that each prisoner could not be so sure of the decision his opponent may decide to adopt, assumption by either parties could be a disastrous and backfires for both actors.

Having comprehended the outcome of this game, actors in each game must look forward to the discovery and adoption of the best options base on the opposing party's decision in spite of the option not been good to an entire system. In all situation, it must be clearly stated that Nash equilibrium point must not always coincide with the Pareto optimal point.

Table 3. *Strategies applicable for the used of the Chicken game.*

Player 2 (Driver 2)		**Strategies which can be used for chicken game**	
Do not swerve	**Swerve**		
(2, 4)	(3, 3)	Swerve	Player 1 (Driver 1)
(1, 1)	(4, 2)	Do not swerve	

2.2. The Chicken Game

The chicken game conceptualises two cars driven at high velocity in opposition directions on a same single lane by two fellow unknown to each other in a narrow road. A clear chance of sudden disaster of death for both parties is eminence if neither pave way for each other or halt the deadly motion. The ultimate options for both driver in this driving game is that non will foolish enough to allowed the worst happened, therefore the most likely option known as the wisest or most acceptable

option is to lure your opponent become the chicken of the game. So the best payoff is to have your opponent be the chicken. The above issues discussed was in line with the duo game theory and the outcomes laid hold on the utilisation or applicability of game theory approaches in frictions or issues arising in aviation industry as a result to policy changed by united airlines on emotional support animal.

3. Result and Discussion

Table 4. *Strategies applicable in Prisoner's Dilemma for Air passenger's to determine game plan on emotional support animal policy-changed.*

Strategies applied in prisoner Dilemma game Air Passenger with emotional deficient (Player 1)		**Player 2 (United Airlines & Civil Aviation)**	
		Accepting emotional support animal prior flight	**Denying emotional support animal prior flight**
Player 1 (Choice of Emotional Support Animal)	Accepting Animal boarding before flight	(P1, P2)	(P3, 0)
(P4, P4)	(0, P3)	Denying emotional support animal prior flight	

P3= P1+P2, P4 > P1& P2, P3 > P4

Assuming there is not any communication between the both of United airlines and intending passengers in considering or otherwise of the passengers' interests with emotional support animal admission aboard airplane. In fact, it is a non-cooperative game regarding both passengers 1&2 disregards the need to strategize on passengers with emotional needs of animal aboard airplane during flights, the United airlines and intending passenger with emotional support animal do not know each other strategy but only protect internal interest. In above matrix, 4 scenarios were analysed and vividly discussed situation for both sub-contractors.

Scenario 1: [pas-ger1 (accepting), unt-air2 (accepting)]: The achieved benefits by this situation are (P1, P2) for passenger 1 & 2 that P1= P2. In this strategy, benefits are divided between both united airlines and each of them makes profit from that.

Scenario 2: [pas-ger1 (accepting), unt-air2 (denying)]: The benefit achieved in this situation is (P3, 0). In this strategy all of the benefit is achieved by –united airlines1.

Scenario 3: [pas-ger1 (denying), unt-air2 (accepting)]: The benefit achieved in this situation is (P3, 0). In this strategy all of the benefit is achieved by united airlines2.

Scenario 4: [pas-ger1 (denying), unt-air2 (denying)]: In this situation both of the united airlines think that if they do not accept the passenger with emotional need prepositions which including flying their animal airlines will lose alot of fund in their operations. Then both sub-contractors can make more profit. In fact this strategy can be used when both. Then both sub-contractors can make more profit. In fact this strategy can be used when both United airlines and Passenger are complete aware of each other strategy.

The benefit achieved by united airlines is P4 that P4>P1 & P2 and P3>P4. But in this situation, there would be no guarantee that any of the ones will not infract the agreement. Based on the just concluded discussion in respect to the prisoner's dilemma game, however there are three Pareto options (denying, denying). Not with standing, the Nash equilibrium point is always (accepting accepting) that will be the most important strategy which can help attain the most lucrative profit for each airlines especially united airlines while considering the passengers' interest especially those with emotional deficiency. The ideal strategy in game theory is (accepting accepting).

3.1. The Matrix of Chicken Game

In some non-compromise situations, the young drivers will get killed while speeding and refusing to yield to corporative game. Likewise, the need for both air passengers with emotional deficiency need corporate with the policy-changed with United airlines in other that neither of them should become the chicken. The chances of instance death is high on both sides if both driver failed to swerved or avoid the other. The ultimate choices is both drivers will not act stubbornly to their death, so the best playoff is to have both opponents to be a chicken or chicken-out of the road be alive. The worst possible payoff is to crash to each other. So in the matrix for this game, this situation has the least value. We assign it 1. The worst that can playoff that can occur is an head-on collision by both parties. Therefore the Statistical matrix for this game or scenario is least value. We therefore assign it 1. as stated earlier is the opponent to chicken, therefore we assign it. value 4. the next worst scenario to be the chicken, so we assign this value 02. The last possibility is that both drivers swerve at the same time. In this strategy they can maintain their pride and life, so this is preferable to being the chicken. We assign this a value 3. But in these situation neither of the opponents opposes yielding up to each other. Therefore, it will be a loser nor winner situation.

Table 5. *Strategies which can be used by passenger & united airlines in chicken game theory.*

Player 2 (United Airlines)		**Strategies which can be used by passenger & united airlines in chicken game theory**	
Non admission of Animal (fixed speed)	**Apply for Animal approval a forthweek prior flight (increase mobility)**		
(2, 4)	(3, 3)	Gives policy-changed and conditions	Player 1 (passenger)
(1, 1)	(4, 2)	Gives time to apply prior flight	

3.2. Airlines' Concept of Emotional Support Animal Policy Using the Games Theory

The emotional support animal policy is highly thoughtful in rendering help to emotionally disturbed passengers while on board an airplane, the issue of choosing the best solutions or complying and implementing emotional support animal is usually difficult especially due to the many-sided hazardous threat to safety if the animal is extra-ordinary in physique or built-up as witnessed by United airline in Newark on the incident of a peacock breed. The characteristics of peacock is not suitable for a cabin situation with other passengers on board. The particularities of some unique animals informed United airlines for changed in policy on emotional support animal to be allowed into the cabin. For choosing solutions risky conditions such changing of policy and guidelines might offend some interests, however, planning model is provided by the games theory to be able to forecast possible options(s) in the most complicated and worst possible scenarios if a decision could possibly have resolved to change of previous policy on emotionally support animal. In this paper, simplifying the real life situation to a great extent was explored, we therefore discovered that the best mixed strategies helped us provide reasonable solutions for the Airliner so that they could efficiently and effectively plan the rule and regulations as informed by the policy in compliance with statutory law of the land to provide solace to emotionally deprived individual who required the support of friendly animal. Games theory provides models of situations in which each chosen action can give us in different cases, different results with a known probability. The objective is to find the optimal mixed strategy for the United airlines to ensure the best possible result, giving any mixed response strategies of propose passenger(s) choice of animal within the regulations. One of the basic conditions for a policy is satisfy basic principle that are desirable. The United Nations Convention on the Rights of Persons with Disabilities (CRPD) is being used to argue for wider recognition of the legal capacity of people with mental disabilities especially people with emotional disability which informed the need requiring animal support. The implications of particular moral or political norms are likely to be different in these two legal contexts, and this may justify asymmetries in the relevant standards for legal capacity informing acceptance of emotional support policy by airlines for passenger(s) benefit. In order to get the expected result, the most favourable number of rules and regulations be taken into account. While too many unfavourable regulations may prevent smooth implementation, too few of them may be dysfunctional for example the peacock incident in Newark U.S.A was dramatic following a female passenger attempting to board with her huge bird by all standard unsuitable for the cockpit. It showed abused of privilege to transit with pets. According to the game theory, a conflict comes up. Due to a certain factor the accumulation of mutual harmony improves the general boarding rules due to another factor mis-interpreting policy. In this conflicting situation, an airlines carrier (United) must find the proper strategy to ensure the best medium result of all the possible ones. The situation may be considered as a game pattern, where the parties are the United airlines and the passenger (Owner of the peacock). The conflict arises between the Airliner's or method to applied the policy and the Passenger's characteristics which prevent the achievement of the expected pedagogical results through this method. Hence, the airlines may use it discretion to further update it specifications of rules and regulations as informed by the intent of the policy with safety and comfort measures in mind to fix the specific challenge(s) while still complying with CRPD's act, at the same time considering the safety first hallmark of the aviation industry. We call it the pure strategy no. 1. On the other hand, the passenger(s) may use only different types of airliner's choice at the point of booking ticket to fix the policy restrictions and this is the pure strategy no. 2. In case the airliner uses each of these possible methods, the passenger's results depend on the category that Airliner belongs to. For instance, the correlative analysis has shown that in order to completely assimilate the primal simplex Algorithm (of medium difficulty degree) there are necessary 8 problems on average, regardless of the passengers' choice of animal. What will happen when the airliner chooses the pure strategy No. 1 and they are going to fix the emotion support policy using 8 regulations of the same type? The emotional support animal policy is highly thoughtful in rendering help to emotionally disturbed passengers while on board an airplane, the issue of choosing the best solutions or complying and implementing emotional support animal is usually difficult especially due to the many-sided hazardous threat to safety if the animal is extra-ordinary in physique or built-up as witnessed by United airline in Newark on the incident of a peacock breed. The characteristics of peacock is not suitable for a cabin situation with other passengers on board. The particularities of some unique animals informed United airlines for changed in policy on emotional support animal to be allowed into the cabin. For choosing solutions risky conditions such changing of policy and guidelines might offend some interests, however, planning model is provided by the games theory to be able to forecast possible options(s) in the most complicated and worst possible scenarios if a decision could possibly have resolved to change of previous policy on emotionally support animal. In this paper, simplifying the real life situation to a great extent was explored, we therefore discovered that the best mixed strategies helped us provide reasonable solutions for the Airliner so that they could efficiently and effectively plan the rule and regulations as informed by the policy in compliance with statutory law of the land to provide solace to emotionally deprived individual who required the support of friendly animal.

3.3. A Case Study

A United airlines passenger's massive peacock bird was barred from boarding in Newark Airport

Figure 1. *A Boeing anplane belonging to United's airlines taxing at Newark Airport.*

Figure 2. *A huge Live peacock bird abandoned by passenger at Newark Airport.*

As seem in figure 2 above, It was reported in Foxnews, New York Times and several other media houses both electronics and print media, about a female passenger of United airlines, who recently abandoned her huge emotional support animal at Newark airport departure hall, after she was barred by United airlines from boarding with her massive bird. An analysis of this incidence can be seen as a playoff between two game players; the passenger and the airline. Since the fractic incidence at Newark airport a policy changed was issue out in a press conference by the airlines demanding ‘’an application atleast a forthnight by all passengers with emotional support animal to facilitate approval prior to any schedule flight henceforth’’. In reaction to that incidence Passenger has a choice whether to fly with any choice of emotional support animal in compliance with United airlines policy on public safety and comfort derived from American aviation laws or not, thus in the short term following its mission statement to the latter, but with different long term consequences. P_m = {Freedom to choice of emotional support animals}

United airlines can allow or block access to Passenger's boarding its airplane, in order to maintain its interests of air safety and comfort of everyone on board its airplane. U_m = {allow access to Passenger to board, block access to Passenger}

We will assume that this is a strategic game, i.e. that each player has no more than a single move available, reflecting the fact that strategic changes by one player would negatively affect the political will of another player to cooperate with the first player. Passenger moves first, making a strategic decision whether restrict its access on boarding with emotional support animal or not. United airlines, being in the position of power, respond to the move made by Passenger.

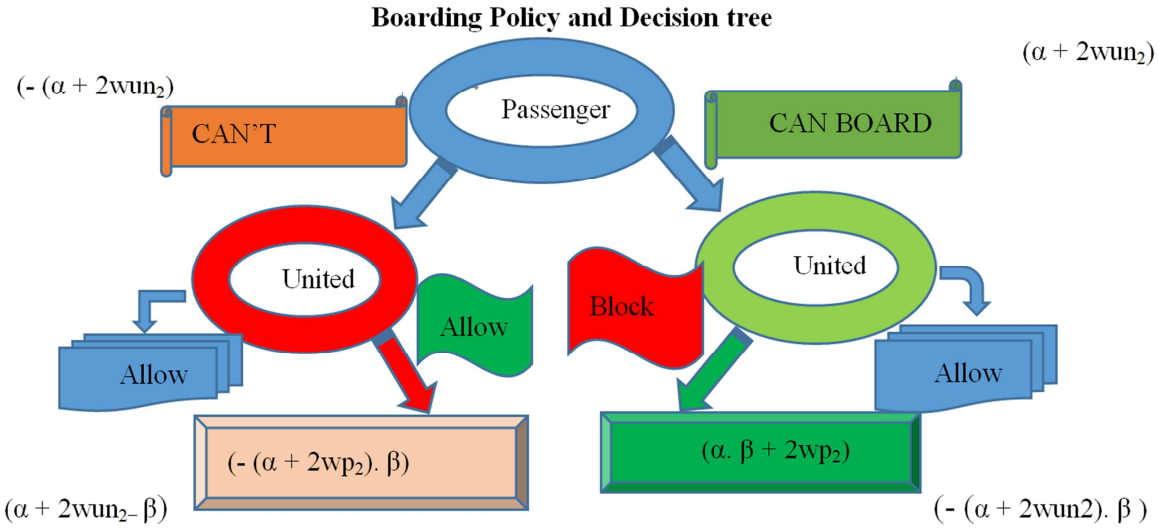


Figure 3. *Passenger and United Airlines' Decision channels.*

3.4. Game Modelling Construction for Playoff Between Passenger and United Airlines

We can define this game as a two-player game, with Passengers and United airlines as players. Intending passengers, who react predictably to the policy changed as regard to prohibition of all emotional support animals aboard airplane's cabin without trying to affect the actions of United authority's sudden policy changed, are not considered to be players, just an environmental parameter that affects weights and coefficients of payoff matrix. United's current and potential airlines competitors on the American aviation industry aren't included in the game in order not to overly

complicate the model, but their effect on payoff matrices of Passengers and United airline airlines respectively is considered and accounted for.

Each of the players has a goal to maximize his payoff by choosing an optimal action from the set of available actions. Passenger's payoff is influenced by the factors laid out in its mission statement: providing the aviation services in American airspace and beyond in accordance to its global commitment on one hand and completeness of the service provided (i.e. freedom of choice of emotional support animal among other conditions) by passengers on board. United airlines' goals are national aviation services with optimal comfort and safety without tampering with passenger's fundamental human's right to freedom and liberty. its prerequisite on one side and resource exchange with Passenger's participation on American aviation industry as a prerequisite on another. For the purpose of this game, make the assumption that each player is rational and that each player is aware about the rationality of the opponent. The game in question is a game with perfect freedom of choice of emotional animal – consequences of the choices for each player are known in advance. The game contains both competitive and cooperative elements, since goals of Passengers and United airlines authorities are partially overlapping and partially conflicting.

3.5. Payoff Matrix for Passenger

Primary goal of Passenger with emotional deficiency patronising the aviation industry in company of his or her emotional support animal is to enjoying his or her flight in perfect freedom. Secondary goal of United airlines Inc. is promoting the freedom and comfort of air travel while ensuring safety first. The first goal is by its nature directly related to freedom of choice and also represents a necessary prerequisite for the fulfilment of the second goal. Hence the importance of the first goal is necessarily higher than the importance of the second goal, with the difference in importance expressed by the positive constant α. Constant α can vary to reflect the presence of Passenger's competitors on United airlines aviation industry.

$$wp_1 = \alpha + wp_2 \text{ - the importance of providing service in aviation industry} \quad (1)$$

wp_2 - the importance of enabling the free choice of emotional support animal

All weights and coefficients are positive.

Payoff matrix for Passenger has the following elements:

a_{11}: payoff in case Passenger doesn't come on board with choice animal in the cabin and United airlines allow access to Passenger on boarding.

a_{12}: payoff in case Passenger doesn't come on board with choice animal in the cabin and United airlines block access to Passenger on boarding.

a_{21}: payoff in case Passenger come on board with choice animal in the cabin and United airlines allow access to Passenger on boarding.

a_{22}: payoff in case Passenger come on board with choice animal in the cabin and United airlines block access to Passenger on boarding anyway Using the weights wp_1 and wp_2, we calculate: The resulting payoff matrix for Passenger is:

$$P\left(\frac{a+2WP2-(a\ 2wp2)}{a-(a+2wg2)}\right) \quad (2)$$

In its dealings with Passenger, United airlines have two goals. The first goal is controlling the freedom to chosen of emotional support animal, passenger choice must be appropriate, in order to maintain safety and comfort of everyone on board the cabin. Another goal is a mutually beneficial business relationship with Passenger in term of patronage both on short and long terms basis, with additional positive effect on public opinion on the aviation industry. Currently, United airlines prioritize the choice of emotional support animal control, reflected in the value of a positive constant β. The weights are:

$$wun_1 = \beta + wun_2 \text{ - importance of controlling emotional support animal} \quad (3)$$

wun_2 - importance of maintaining a business relationship with Passenger

All weights and coefficients are positive. Payoff matrix for the United airlines has the same layout as the one for Passenger, but different coefficient values.

$$C \begin{matrix} -\beta & \beta \\ -\beta + 2\text{wun } 2 & \beta \end{matrix} \quad (4)$$

3.6. Final Payoff Bi-Matrix for the Game

Seeing as goals of Passenger and United airlines in this game are partially conflicting and partially overlapping, the game has elements of cooperation. It is described by a payoff bi-matrix, which consists of ordered pairs formed from respective payoff matrices for Passenger and United airlines.

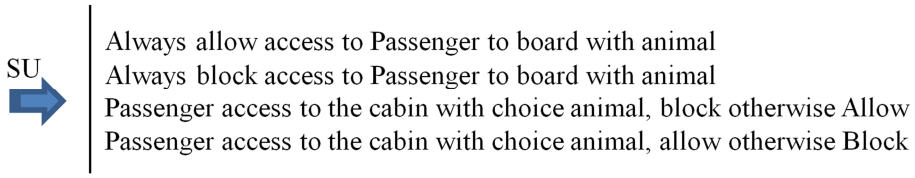
$$(\alpha + 2wp_2\ \alpha\beta)\ (-(\alpha+2wp_2), \beta)$$

$$M = (\alpha\ \beta + 2wun_2,)\ (-(\alpha+2wun2), \beta) \quad (5)$$

Passenger moves by choosing a personalised animal as appropriate emotional support animal, first action corresponding to choosing personal emotional support animal, second action corresponding to boarding with a choice of emotional support animal. United airlines move by choosing a change in policy, first policy changed corresponding to allowing the access to Passenger's boarding with emotional support animal, second policy changed corresponding to blocking Passenger access to boarding the cabin without emotional support animal before flight.

Passenger, since it moves first, has only two strategies

available: to board with choice of emotional support animal or not to board with. SP = {boarding with choice of emotional support animal, no boarding} United airlines, since they move second, have a number of strategies available:



The last strategy is strongly dominated by other strategies, so we can discount it at the beginning.

3.7. Optimal Strategy and Equilibrium Point Determination by *Players*

Our goal is to determine the optimal strategy for Passenger (if one exists), i.e. whether Passenger should board with chosen emotional support animal or not. In order to determine the optimal strategy, a construction of the minimax tree representing the possible choices for both players, and analyse the consequences of players' choices, starting from the bottom up. Passenger moves first. Therefore, its choice is placed at the root of the tree, with left branch representing the choices not to board with their choice of emotional support animal or abandoned them at the airport terminal to fetch them up afterward. Nodes at the second, final level (United airlines, in the position of authority, has the final word) represent subsequent decision by United airlines, whether to allow access to Passenger's emotional support animal (left branch) or block access to Passenger's emotional support animal (right branch). At each stage, a player will make a decision that will maximize its utility, given that the opponent will follow-up with a rational decision that will maximize its own utility. If Passenger chooses not to board with their emotional support animal (taking the left branch from the node), United airlines decide between allowing the access to Passenger, resulting in the utility of -β for United airlines, and blocking the access to Passenger's emotional support animal boarding, resulting in the utility of β for United airlines. Therefore, in case Passenger chooses not to board with their emotional support animal, United airlines will choose to block Passenger's emotional support animal, resulting in a negative payoff $+-2(\alpha^{wp}{}_2)$ for Passenger and positive payoff β for United airlines. If Passenger chooses to board with their emotional support animal, United airlines have a choice between allowing access to Passenger's animal boarding, resulting in maximum payoff $\beta+ 2wun_2$ for United airlines, or blocking it, resulting in payoff β for United airlines. Therefore, United airlines will choose to allow access to Passenger, and the final payoff of this sequence of moves for Passenger would be α. Consequently, at the beginning of the game Passenger chooses between no board with their emotional support animal, with the payoff of $+ -2(\alpha^{wp}{}_2)$ for Passenger and boarding with emotional support animal, with the final payoff of Passenger. Therefore, Passenger will choose boarding with emotional support animal. Hence, at the present the optimal strategy for Passenger is to board with their emotional support animal. Optimal strategy for United airlines is to allow access to Passenger if Passenger board with their emotional support animal and block access to Passenger otherwise. No player has incentive to deviate from this strategy, given that no other players deviate, as deviation would result in a decrease of payoff. The expected payoff of the game is (βα, + 2*wun* 2) representing the fact that Passenger's application to airlines on the need to travel with choice animal and then examines by vegetarian prior to boarding of a schedule flight. Similarly, providing services including consideration for those in need of emotional support animal, but doesn't provide unrestricted access to boarding for passenger choice of emotional support animal brought with intention travel with; and the fact that United airlines maintain both control of safety and a sound business relationship with Passengers. It is hope that, Passenger in choosing the current best move that through the passage of time and its cooperation with Airlines it will be able to reduce the factor β to a smaller and eventually negative value, so that in the future requests for boarding with emotional support animal will not diminish and eventually free right to movement and emotional freedom would be achieved for passengers in dare need of emotional support animal on board airplane during flight

4. Conclusion

According to the analysis of Passenger's with emotional deficiency which are in dare need of object such as support animal of their personal choices; by applying the principles of game theory, we can conclude that given the current circumstances of policy changed by airlines; Passenger's optimal strategy is not to continue boarding with emotional support animal, therefore being in compliance with the rules and regulations of American aviation authority. The United airlines' optimal strategy is to allow access to Passenger if Passenger to board with appropriate animal, so long it does not jeopardise safety and prior application must be file a fortnight to flight schedule and block access to Passenger violating the guidelines. In the situation where United airlines, or any airlines' airlines for that matter, are the principal stakeholder alternative strategy would result in a decrease of payoffs. However, the situation might be changed if prohibition of flying with emotional support animal wouldn't correspond with United's higher profit or if decision to move to other rival airlines will negatively affect United's airlines to conduct business with Passengers with emotional support animal. In addition, continue patronage with Airlines' competitors which may affect weights and the

optimal strategy of both actors. This game theory analyses and presents an innovative approach in determining an adequate strategy in a cross-cultural dynamic environment in which airlines airlines and different passengers with special kind of needs are the key participants. Given the increase in the air travels business activity and the conflicts that arise in between the participants there are different models introduced in order to ensure that the right business strategy is chosen by each player. Lastly, with our model we attempt to provide an innovative way of selecting a strategy for an airlines industry when facing specific need from a special passenger such as providing emotional support animal aboard airplane. No doubt, this strategic game theory model provides the basis for further development of the new approaches.

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