chips.

[0004]

PCT/JP 2015/000171 discloses a card game monitoring system which determines whether chips placed on a game table are collected or repaid as a win or lose result by performing an image analysis on a movement of chips and monitors a fraudulent act.

[0005]

In the game hall such as the casino, the game table is recorded by the surveillance camera, and when the amount of money won at a time by a game participant is large, the recorded VTR is played to confirm whether or not there is a fraudulent act. However, there is a problem that fraudulence such as sophisticated fraudulence acts in a game table and continuous winning of a small amount of money cannot be found by simply detecting that the game participant wins the large amount of money. In addition, the related art does not sufficiently prevent a fraudulence act by collusion of a dealer and a player.

[0006]

Embodiments of the present disclosure seek to prevent damage due to a fraudulent act by continuously monitoring an amount betted by a game participant and win or lose of a game, comparing data of a probability statistic calculation or past statistical data, and detecting a suspicious pattern suspected of being fraudulent.

[0006a]

According to an aspect of the present invention, there is provided a fraudulence monitoring system of a table game, the fraudulence monitoring system comprising: a win or lose determination device configured to determine win or lose results for each game at a game table; a bet chip measuring device configured to determine, for each game, an amount of bet chips bet by at least one game participants on the game table and a bet target to which the at least one game participants bet the game chips; and a management control device configured to: determine a win or lose result of the bet chip based on the win or lose result determined by the win or lose determination device and the bet target determined by the bet chip measuring device, and calculate a winning rate of each game participant or each player position at the game table based on the win or lose result of the bet chip, inspect the winning rates during a period from an exchange of a shuffled playing card set to a next exchange of the shuffled playing card set, and when there is a significant difference between an actual winning rate obtained by the inspection and a winning rate obtained by a probability statistics calculation determine that the shuffled playing card set is abnormal.

[0007]

According to the present disclosure, a fraudulence

there is a significant difference based on the data of the spots from a series of games and enumerates the fraudulence cause with the possibility.

[0017]

The management control device may estimate the fraudulence cause determined that there is the significant difference using any one or both of big data on past games or past fraudulent data, and enumerate the cause with the fraudulence possibility.

[0018]

According to the present disclosure, a fraudulence monitoring system of a table game, includes: an income and expenditure grasping device which grasps income and expenditure of a casino side for each game table in a plurality of game tables; and a management control device which stores the number of games performed on each game table and sequentially grasps and stores a transition of the income and expenditure of the casino side in each game, wherein the management control device includes a calculation function which compares results of the income or expenditure of the casino side with figures obtained by a probability statistic calculation at the time of an end of a predetermined number of games, on the basis of a calculation on a total number of games performed on each game table and the transition of the income and expenditure of the casino side in each game to determine whether there is a significant difference therebetween, and

specifies any one of the game table or a room having the game table where the significant difference is occurring.

[0019]

According to the present disclosure, a fraudulence monitoring system of a table game, includes: a win and lose determination device which determines win and lose results for each game in a game table; a bet chip measuring device which grasps an amount of game tokens that a game participant bets on the game table in each game; and a management control device which stores the number of games performed on the game table and specifies positions and the amount of game tokens that the game participant places on the game table using a measurement result by the bet chip measuring device in each game and stores the specified positions and amount of game tokens in each game participant or player positions of the game table, wherein the management control device includes artificial intelligence having past data of a fraudulent game taught as training data, and further includes a calculation function which determines whether a significant difference with fraudulence possibility occurs in any one of the game participant or player position, the game table, or a room having the game table at the time of an end of a predetermined number of games, on the basis of a calculation on a total number of games in which the same person participates in each game participant or player position, a transition of bet chip amounts for each game, a win and lose for each game,

According to the present disclosure, a fraudulence monitoring system of a table game, includes: an income and expenditure grasping device which grasps income and expenditure of a casino side for each game table in a plurality of game tables; and a management control device which stores the number of games performed on each game table and sequentially grasps and stores a transition of the income and expenditure of the casino side in each game, wherein the management control device includes artificial intelligence having data of a past fraudulent game taught as training data, and further includes a calculation function which compares results of the income or expenditure of the casino side with figures obtained by a calculation of the artificial intelligence having the data of the past fraudulent game taught as the training data on the basis of a calculation on a total number of games performed on each game table and the transition of the income and expenditure of the casino side in each game to determine whether there is a significant difference therebetween, and determines a possibility that fraudulence occur in any one of the game table or a room having the game table where the significant difference is occurring.

[0029]

According to the present disclosure, a fraudulence monitoring program of a table game, includes: a win and lose determining step of grasping win