【DESCRIPTION】

【Invention Title】

SYSTEM AND METHOD FOR ESTIMATING MARKET PRICE OF REAL ESTATE BY USING BIG DATA

【Technical Field】

The present invention relates to a system and a method for estimating a market price of real estate, and more particularly, to a system and a method for estimating a market price of real estate by using big data.

【Background Art】

Conventionally, to calculate real estate prices, a method that considers brand value, brand preference population information, redevelopment plan, reconstruction plan, new town plan, change of use plan, road plan, housing environment improvement plan, urban environmental reorganization plan, road/subway/train/ports/airport/terminal/public facility relocation plan and land development plan was disclosed, for example, as disclosed by Patent Literature 1.

However, since this conventional method does not consider real transaction prices etc. of real estate to be evaluated, the details of real transaction cases are not reflected on its price calculation. Thus, a problem that the calculated prices have low accuracy may occur.

[RELATED LITERATURES]

[Patent Literatures]

(Patent Literature 1) KR 10-2010-0021849 A

(Patent Literature 2) KR 10-1230561 B1

【Disclosure】

【Technical Problem】

In an example embodiment of the present invention, it is possible to estimate real estate market prices more accurately using big data including transaction information of real transaction real estate within a predetermined distance from a real estate to be evaluated and building-related information, etc. of the real transaction real estate itself.

The technical problem of the present invention is not limited to those mentioned above, and these and other technical problems will be clearly understood by those skilled in the art from the following description.

【Technical Solution】

A system or device for estimating a market price of real estate by using big data according to an example embodiment of the present invention may include a real transaction price acquisition unit which acquires real transaction prices and building-related information of real transaction real estates located within a predetermined region from a real estate to be evaluated, a learning model generation unit which generates a transaction price estimation learning model using the acquired real transaction prices and building-related information of the real transaction real estates, and a market price estimation unit which estimates the market price of the real estate to be evaluated by applying building-related information of the real estate

to be evaluated to the transaction price estimation learning model.

In an example embodiment, the real transaction price acquisition unit may filter out some of the real transaction real estates based on density or real transaction timings of the real transaction real estates.

In an example embodiment, the learning model generation unit may include an real transaction real estate pair generation unit which generates an real transaction real estate pair for real transaction real estates within a predetermined distance among the real transaction real estates, a transaction price ratio calculation unit which calculates a transaction price ratio for each real transaction real estate pair, and a modeling unit which generates the transaction price estimation learning model based on the transaction price ratio and building-related information of the real transaction real estate pair.

In an example embodiment, the transaction price ratio may be related to a value obtained by dividing a first real transaction price of a first real transaction real estate by a second real transaction price of a second real transaction real estate.

In an example embodiment, the modeling unit may generate the transaction price estimation learning model using at least one of multiple regression analysis, artificial neural network, M5P (decision tree), Bayesian Network and CART, but is not limited thereto.

In an example embodiment, the market price estimation unit may further apply building-related information of a predetermined number of real transaction real estates located within a predetermined distance from the real estate to be evaluated to the transaction price estimation learning model.

In an example embodiment, the market price estimation unit may correct the

real transaction price using real transaction prices, real transaction timings of the real transaction real estates and a current cash value, and apply the corrected real transaction price to the transaction price estimation learning model.

In an example embodiment, the market price estimation unit may estimate the market price of the real estate to be evaluated by further using distances or angles between the real estate to be evaluated and the real transaction real estates.

In an example embodiment, the market price estimation unit may calculate candidate group market prices of the real estate to be evaluated for each of the predetermined number of real transaction real estates, and estimate an average of the calculated candidate group market prices as the market price of the real estate to be evaluated.

In an example embodiment, the system may further include a database which stores the building-related information of the real estate to be evaluated and the building-related information of the real transaction real estates.

A method for estimating a market price of real estate by using big data according to an example embodiment of the present invention may include acquiring real transaction prices and building-related information of real transaction real estates located within a predetermined region from a real estate to be evaluated, generating a transaction price estimation learning model using the acquired real transaction prices and building ledger information of the real transaction real estates, and estimating the market price of the real estate to be evaluated by applying building-related information of the real estate to be evaluated to the transaction price estimation learning model.

In an example embodiment, the step of acquiring the real transaction price

may include filtering out some of the real transaction real estates based on density or real transaction timings of the real transaction real estates.

In an example embodiment, the step of generating the transaction price estimation learning model may include generating a real transaction real estate pair for real transaction real estates within a predetermined distance among the real transaction real estates, calculating a transaction price ratio for each real transaction real estate pair, and modeling to generate the transaction price estimation learning model based on the transaction price ratio and building-related information of the real transaction real estate pair.

In an example embodiment, the transaction price ratio may be related to a value obtained by dividing a first real transaction price of a first real transaction real estate by a second real transaction price of a second real transaction real estate.

In an example embodiment, the modeling step may include generating the transaction price estimation learning model using at least one of multiple regression analysis, artificial neural network, M5P (decision tree), Bayesian Network and CART, but is not limited thereto.

In an example embodiment, the step of estimating the market price of the real estate to be evaluated comprises may include further applying building-related information of a predetermined number of real transaction real estates located within a predetermined distance from the real estate to be evaluated to the transaction price estimation learning model.

In an example embodiment, the step of estimating the market price of the real estate to be evaluated may include correcting the real transaction price using real transaction prices, real transaction timings of the real transaction real estates and a

current cash value, and applying the corrected real transaction price to the transaction price estimation learning model.

In an example embodiment, the step of estimating the market price of the real estate to be evaluated may include estimating the market price of the real estate to be evaluated by further using distances or angles between the real estate to be evaluated and the real transaction real estates.

In an example embodiment, the step of estimating the market price of the real estate to be evaluated may include calculating candidate group market prices of the real estate to be evaluated for each of the predetermined number of real transaction real estates, and estimating an average of the calculated candidate group market prices as the market price of the real estate to be evaluated.

A computer-readable recording medium according to an example embodiment of the present invention may have instructions stored thereon for performing the above-described method.

【Advantageous Effects】

According to an example embodiment of the present invention, a learning model is generated by learning big data including building-related information and real transaction prices of real transaction real estates, etc. around a real estate to be evaluated, and the market price of the real estate may be estimated more accurately using the learning model. Particularly, the system for estimating the market price of real estate of the present invention may be used to estimate the market price of unstructured or atypical house type such as multi-family residential.

Additionally, according to an example embodiment of the present invention,

real transaction real estates for market price estimation are determined based on the absolute distance rather than the administrative division unit, and by using this, the accuracy in market price estimation may be improved.

The effects of the present invention are not limited to those mentioned above, and these and other effects will be clearly understood by those skilled in the art from the appended claims.

【Description of Drawings】

FIG. 1 is a block diagram of a system for estimating the market price of real estate by using big data according to an example embodiment of the present invention.

FIG. 2 is a simplified map illustrating a method for estimating the market price of real estate to be evaluated according to an example embodiment of the present invention.

FIG. 3 is a block diagram of a learning model generation unit 200 according to an example embodiment of the present invention.

FIG. 4 is a representation of real transaction real estates around real estate to be evaluated on a 3-dimensional space.

FIGS. 5 and 6 show a user interface that provides market price information calculated according to an example embodiment of the present invention.

FIG. 7 is a flowchart of a method for estimating the market price of real estate by using big data according to an example embodiment of the present invention.

【Best Mode】

The example embodiments described in the specification may have aspects of entirely hardware, or partly hardware and partly software, or entirely software. The term "unit", "module", "device" or "system", etc. as used herein refers to a computer-related entity such as hardware, a combination of hardware and software, or software etc. For example, the unit, module, device or system, etc. as used herein may include a process being executed, a processor, an object, an executable, a thread of execution, a program and/or a computer, but is not limited thereto. For example, both an application running on a computer and the computer may correspond to the unit, module, device or system, etc. as used herein.

In the specification, big data refers to a set of enormous volumes of structured, unstructured or semi-structured data, and may include building-related information and real transaction price information, etc. Here, the structured data is data stored in a fixed field, and includes, for example, a relational database and a spreadsheet, etc. Additionally, the unstructured data is data that is not stored in a fixed field, and includes, for example, text document, image, video and audio data, etc. Also, the semi-structured data is data that is not stored in a fixed field, but includes metadata or schema, and includes, for example, XML, HTML and text, etc.

The building-related information may include at least one of building ledger, land ledger, land use planning decision and publicly notified price (land, house, multi-family residential) information, but is not limited thereto. The building-related information does not include real transaction price information.

In the specification, a big data system or a big data device may have aspects of entirely hardware, or partly hardware and partly software.

The method according to an example embodiment of the present invention

may be implemented in the form of a computer program for performing a series of processes, and the computer program may be recorded on a computer-readable recording medium.

Hereinafter, the example embodiments of the present invention will be described in detail with reference to the accompanying drawings.

FIG. 1 is a block diagram of a system (or device) for estimating the market price of real estate by using big data according to an example embodiment of the present invention. Referring to FIG. 1, the system 1000 for estimating the market price of real estate by using big data may include a real transaction price acquisition 100, a learning model generation unit 200 and a market price estimation unit 300. In another example embodiment, the system 1000 for estimating the market price of real estate by using big data may further include a database 400 or a user interface providing unit 500.

The system 1000 for estimating the market price of real estate by using big data may estimate the market price of real estate to be evaluated, which real estate to be evaluated is selected by a user, using real transaction prices and building-related information of real transaction real estates around the real estate to be evaluated. For this purpose, the system 1000 for estimating the market price of real estate by using big data may acquire and store periodically published building-related information and real transaction information.

For example, because the real transaction information is sorted and disclosed every ten days on the next day after transaction registration, only transaction information from the 1st day to the 10th day of the corresponding month may be used for market price analysis of the corresponding month.

FIG. 2 is a simplified map illustrating a method for estimating the market price of real estate to be evaluated according to an example embodiment of the present invention. Referring to FIG. 2, a real estate A to be evaluated and real transaction real estates B1-B6 actually transacted for the last predetermined period of time (for example, 1 year, 3 months, etc.) are shown. Although not shown, real estates not transacted for the predetermined period of time may be located between the real estate to be evaluated and the real transaction real estates.

The real transaction price acquisition unit 100 may acquire real transaction prices and building-related information of real transaction real estates located within a predetermined region from the real estate A to be evaluated. The above predetermined region may be a region included within a predetermined radius (for example, L1) around the real estate A to be evaluated, but is not limited thereto.

Additionally, the real transaction price acquisition unit 100 may acquire building-related information and real transaction price information by crawling building-related information periodically updated on an external server, and store them in the database of the big data system.

The real transaction price acquisition unit 100 may filter out some of the real transaction real estates based on the density or real transaction timings of the real transaction real estates. For example, referring to FIG. 2, when the transaction timing of the real transaction real estate B6 is older than the reference timing, or when there is no other real transaction real estate or a larger number of real transaction real estates than the reference value around the real transaction real estate B5, the corresponding real transaction real estates may be ruled out.

Additionally, when many residences in a building are transacted at the same

time, the real transaction real estates may be acquired except the transaction of the corresponding residences.

The building-related information described herein may include at least one of address, basement or not, floor, area, structure, gross floor area, floor area ratio, building age, number of households, number of cars permitted to park per household, number of elevators, and publicly notified individual land price, but is not limited thereto.

In an example, the structure may be 1 in case that the main structure code on the indication part is 21-49, and in other cases, may be 0, but the present invention is not limited thereto, and the values for each structure code may change depending on algorithms.

The gross floor area may be the total gross floor area on the indication part, and the building age may be days determined by subtracting the use approval date on the indication part from the current date. The number of households may be the same as indicated on the indication part. Additionally, the most recent publicly notified individual land price may be used. Here, the 'indication part' may refer to the indication part of the building ledger.

The learning model generation unit 200 may generate a transaction price estimation learning model using the acquired real transaction prices and building-related information of the real transaction real estates. For example, the learning model generation unit 200 may generate the transaction price estimation learning model through a machine learning method, and the machine learning method may include at least one of multiple regression analysis, artificial neural network, M5P (decision tree), Bayesian Network and CART, but the present invention is not limited

thereto.

FIG. 3 is a block diagram of the learning model generation unit 200 according to an example embodiment of the present invention. Referring to FIG. 3, the learning model generation unit 200 may include a real transaction real estate pair generation unit 210, a transaction price ratio calculation unit 220 and a modeling unit 230.

The real transaction real estate pair generation unit 210 may generate a real transaction real estate pair for real transaction real estates within a predetermined distance among the real transaction real estates. Referring to FIG. 2, the real transaction real estate pair generation unit 210 may generate a B1-B2 pair using real transaction real estate B1 and real transaction real estate B2. In this way, B1-B3, B1-B4... may be generated. Additionally, explaining the B1-B2 pair as an example, the former B1 may be taken as a dependent transaction, and the latter B2 may be taken as an independent transaction. Accordingly, a B1-B2 pair and a B2-B1 pair may be each generated.

The transaction price ratio calculation unit 220 may calculate a transaction price ratio for each real transaction real estate pair. The transaction price ratio may be related to a value obtained by dividing a first transaction price of a first real transaction real estate by a second transaction price of a second real transaction real estate. For example, when the real transaction price of B1 is KRW 1,200,000 and the real transaction price of B2 is KRW 1,000,000, the transaction price ratio of the B1-B2 pair may be 1.20.

The modeling unit 230 may generate the transaction price estimation learning model based on the transaction price ratio of the real transaction real estate pair and

building-related information of the real transaction real estate pair. For example, the modeling unit 230 may generate the transaction price estimation learning model using at least one of multiple regression analysis, artificial neural network, M5P (decision tree), Bayesian Network, Classification And Regression Tree (CART) in the machine learning, but is not limited thereto, and a variety of machine learning methods may be applied.

In an example embodiment, for the generated real transaction real estate pairs, the modeling unit 230 may generate random numbers, and perform sorting and grouping into a training data group for machine learning and a validation data group.

In an example, the modeling unit 230 may define the transaction price ratio using the following Equation 1, but is not limited thereto. For example, the Equation may be used in modified form according to the real estate type such as key money type, monthly rent type etc.

[Equation 1]

Y (transaction price ratio) = β1 * X1 (whether B1 is basement)

+ β2 * X2 (B1's floor)

+ β3 * X3 (B1's area)

+ β4 * X4 (B1's structure)

+ β5 * X5 (B1's gross floor area)

+ β6 * X6 (B1's floor area ratio)

+ β7 * X7 (B1's building age)

+ β8 * X8 (B1's number of households)

+ β9 * X9 (B1's number of cars permitted to park)

+ β10 * X10 (B1's number of elevators)

+ β11 * X11(B1's publicly notified individual land price)

+ β12 * X12 (whether B2 has basement)

+ β13 * X13 (B2's floor)

+ β14 * X14 (B2's area)

+ β15 * X15 (B2's structure)

+ β16 * X16 (B2's gross floor area)

+ β17 * X17 (B2's floor area ratio)

+ β18 * X18 (B2's building age)

+ β19 * X19 (B2's number of households)

+ β20 * X20 (B2's number of cars permitted to park)

+ β21 * X21(B2's number of elevators)

+ β22 * X22 (B2's publicly notified individual land price)...

+ ε

Here, Y is a dependent variable, XN is an independent variable (N is an integer), βN is a regression coefficient (N is an integer), ε is an error term, and () denotes a term corresponding to attribute of a criterion transaction and a dependent transaction. N may be subject to change depending on the attribute to reflect. For example, although Equation 1 uses basement or not, floor, and area, etc., in other examples, other building-related information including information on the building ledger and information on the land ledger etc. may be added or substituted.

Additionally, in another example embodiment, in the calculation of the transaction price ratio, the modeling unit 230 secures the individual attributes of each transaction (for example, transaction A, transaction B), namely, basement or not (a1, b1), floor (a2, b2), area (a3, b3), structure (a4, b4), gross floor area (a5, b5)..., etc.

Subsequently, the independent variable may be set as (a1-b1), (a2-b2), (a3-b3), etc., and the dependent variable may be set as (A transaction price / B transaction price) - 1. Here, by performing analysis with the error term ε set to 0, only a correction ratio caused by an individual attribute difference may be reflected.

The market price estimation unit 300 may estimate the market price of the real estate to be evaluated by applying the building-related information of the real estate to be evaluated to the transaction price estimation learning model.

Additionally, the market price estimation unit 300 may further apply the building-related information of a predetermined number of real transaction real estates located within a predetermined distance from the real estate to be evaluated to the transaction price estimation learning model. Referring to FIG. 2, the market price may be estimated by applying building-related information and real transaction prices of real transaction real estates B1-B3 included in a distance L2 together to the above learning model.

When the market price estimation unit 300 applies the building-related information of the real estate to be evaluated to the learning model, the initial output value is expressed as a relative ratio (for example, the above-described transaction price ratio) to the real transaction real estate. Accordingly, the market price of the real estate to be evaluated may be estimated by multiplying the real transaction price of the corresponding real transaction real estate by the above ratio.

For example, when twenty real transaction real estates are used to estimate the market price, twenty candidate market prices may be calculated. The market price estimation unit 300 may estimate an average of the plurality of candidate market prices as a final market price.

In an example embodiment, the market price estimation unit 300 may estimate the market price further considering the spatial value. The real estates have different real estate values depending on their locations, and a price difference of the space occurs, for example, even within 300 m radius. Accordingly, it is intended to reflect this aspect. FIG. 4 is a representation of the real transaction real estates around the real estate to be evaluated on a 3-dimensional space. Using this, the market price estimation unit 300 may estimate the market price of the real estate to be evaluated further using distances or angles between the real estate to be evaluated and the real transaction real estates. In FIG. 4, X1 indicates the latitude, X2 indicates the longitude, and the height indicates the real estate price. Additionally, each point denotes individual real estate. Additionally, the 2-dimensional plane denotes a price difference on space of individual real estates.

In an example, the market price estimation unit 300 may express a distance m and an angle between a real estate A to be evaluated and a real transaction real estate B as X-Y coordinates. For this purpose, the following Equation 2 may be used.

[Equation 2]

X coordinate = distance (m) * cos (angle), Y coordinate = distance (m) * sin (angle)

In this case, the estimated market price may be calculated through the following Equation 3, and regression analysis may be applied to Equation 3. In Equation 3, β denotes the regression coefficient.

[Equation 3]

Estimated market price = β1 * X coordinate + β2 * Y coordinate + ε (error

term)

The market price estimation unit 300 may calculate a difference in real estate market price estimation resulting from the location of the latitude and longitude through the multiple regression analysis model. The market price estimation unit 300 may calculate the slope β of the market price with the changes in latitude and longitude when learning the multiple regression analysis model using the price as the dependent variable and the latitude and longitude as the independent variable.

The market price estimation unit 300 may estimate a relative market price for each real transaction real estate, further considering the spatial concept as described above, and estimate a final market price based on the remaining market prices except a predetermined number of market prices. For example, objects having a great difference between the estimated values with and without consideration of the spatial concept (for example, the market price of the real estate to be evaluated relative to the real transaction real estate B3) may be excluded.

Additionally, in an example embodiment, the market price estimation unit 300 may correct the real transaction price using the transaction prices and the real transaction timings of the real transaction real estates and the current cash value, and apply the corrected real transaction price to the transaction price estimation learning model.

For example, in correcting the real transaction price, regression analysis may be performed using the equation, Estimated price = β (the current month – the transaction month) + ε.

The system 1000 for estimating the market price of real estate by using big data according to an example embodiment may further include the database 400 to

store the building-related information of the real estate to be evaluated or the building-related information of the real transaction real estates.

FIGS. 5 and 6 show a user interface that provides the market price information calculated according to an example embodiment of the present invention. The user interface may be provided to the user through a web or an application. FIGS. 5 and 6 show an example in which a specific residence of a small-sized multi-family residential is selected, and the market price estimated for the selected residence is provided.

Referring to FIG. 5, the user interface providing unit 500 may provide a map 510 to the user. The user may select a real estate 511, the market price of which the user wants to know, on the map 510. For the real estate 511A selected by the user, the user interface unit 5100 may provide the estimated market price or building ledger information. For this purpose, the user interface providing unit 500 may provide a building ledger information display unit 520 or a real estate details display unit 530 along with the map 510 or as an alternative to the map 510.

The building ledger information display unit 520 may display information of the selected real estate 511A including use, area and configuration as shown in FIG. 5. The real estate details display unit 530 may display detailed real estate information (for example, residence number) of the selected real estate 511A. In the case of a multi-family residential, the real estate details display unit 530 may display a rough location of a parking lot 531 or a residence number 532 of each house, etc. The user may select a necessary residence number 532 and see the estimated market price of the selected residence 532A.

FIG. 6 shows an example showing the market price estimated by the market

price estimation unit 300. The real estate selection for market price estimation may be performed according to the method described above with reference to FIG. 5, but is not limited thereto. Additionally, market price estimation of the selected real estate 532A may be performed by the above-described market price estimation method. That is, the market price of the selected real estate may be estimated based on the learning model generated based on real transaction in the neighborhood and building ledger information.

Referring to FIG. 6, the user interface providing unit 500 may represent the market price changes over time as a graph. In the graph, the market price may be displayed as an average value 61, or the range of top 30% 62 or bottom 30% 63 may be displayed together with the average value 61. Here, the range of the top and bottom % may be changed, and any method, for example, median and arithmetic mean may be selected and used for the averaging method. FIG. 7 is a flowchart of the method for estimating the market price of real estate by using big data according to an example embodiment of the present invention. The method for estimating the market price of real estate by using big data may be implemented by the elements of the system 1000 for estimating the market price of real estate by using big data as described above.

The method for estimating the market price of real estate by using big data may include acquiring real transaction prices of real transaction real estates located within a predetermined region from real estate to be evaluated (S100), generating a transaction price estimation learning model using the acquired real transaction prices of the real transaction real estates (S200) and estimating the market price of the real estate to be evaluated by applying building-related information of the real estate to be

evaluated to the transaction price estimation learning model (S300).

The step (S100) of acquiring the real transaction price may include filtering out some of the real transaction real estates based on the density or the real transaction timings of the real transaction real estates.

The step (S200) of generating the transaction price estimation learning model may include generating an real transaction real estate pair for real transaction real estates within a predetermined distance among the real transaction real estates, calculating a transaction price ratio for each real transaction real estate pair, and modeling to generate a transaction price estimation learning model based on the transaction price ratio and building-related information of the real transaction real estates. Here, the transaction price ratio may be related to a value obtained by dividing a first real transaction price of a first real transaction real estate by a second real transaction price of a second real transaction real estate.

The modeling step may include generating the transaction price estimation learning model using at least one of multiple regression analysis, artificial neural network, M5P (decision tree), Bayesian Network, and CART.

The step (S300) of estimating the market price of the real estate to be evaluated may include further applying building-related information of a predetermined number of real transaction real estates located within a predetermined distance from the real estate to be evaluated to the transaction price estimation learning model.

Additionally, the step (S300) of estimating the market price of the real estate to be evaluated may include correcting the real transaction price using the real transaction prices and the real transaction timings of the real transaction real estates

and the current cash value, and applying the corrected real transaction price to the transaction price estimation learning model.

The step (S300) of estimating the market price of the real estate to be evaluated may include estimating the market price of the real estate to be evaluated, further using the distances or angles between the real estate to be evaluated and the real transaction real estates.

The step (S300) of estimating the market price of the real estate to be evaluated may further include calculating candidate group market prices of the real estate to be evaluated for each of the predetermined number of real transaction real estates, and estimating an average of the calculated candidate group market prices as the market price of the real estate to be evaluated.

The computer-readable recording medium according to an example embodiment of the present invention may store the instructions for performing the method for estimating the market price of real estate by using big data as described above.

While the present invention has been hereinabove described with reference to the example embodiments shown in the drawings, this is provided for illustration purpose only and those skilled in the art will understand that various modifications and variations can be made thereto. However, it should be noted that such modifications fall within the technical protection scope of the present invention. Therefore, the true technical protection scope of the present invention shall be defined by the technical spirit of the appended claims.

【Industrial Applicability】

According to an example embodiment of the present invention, a learning model is generated by learning big data including building-related information and real transaction prices of real transaction real estates around the real estate to be evaluated, and the market price of the real estate may be estimated more accurately using the learning model. Particularly, the system for estimating the market price of real estate of the present invention may be used to estimate the market prices of unstructured or atypical house type such as multi-family residential.

【CLAIMS】

【Claim 1】

A system for estimating a market price of real estate by using big data, comprising:

a real transaction price acquisition unit which acquires real transaction prices and building-related information of real transaction real estates located within a predetermined region from a real estate to be evaluated;

a learning model generation unit which generates a transaction price estimation learning model using the acquired real transaction prices and building-related information of the real transaction real estates; and

a market price estimation unit which estimates the market price of the real estate to be evaluated by applying building-related information of the real estate to be evaluated to the transaction price estimation learning model.

【Claim 2】

The system for estimating a market price of real estate by using big data according to claim 1, wherein the real transaction price acquisition unit filters out some of the real transaction real estates based on density or real transaction timings of the real transaction real estates.

【Claim 3】

The system for estimating a market price of real estate by using big data according to claim 1, wherein the learning model generation unit comprises:

a real transaction real estate pair generation unit which generates a real

transaction real estate pair for real transaction real estates within a predetermined distance among the real transaction real estates;

a transaction price ratio calculation unit which calculates a transaction price ratio for each real transaction real estate pair; and

a modeling unit which generates the transaction price estimation learning model based on the transaction price ratio and building-related information of the real transaction real estate pair.

【Claim 4】

The system for estimating a market price of real estate by using big data according to claim 3, wherein the transaction price ratio is related to a value obtained by dividing a first real transaction price of a first real transaction real estate by a second real transaction price of a second real transaction real estate.

【Claim 5】

The system for estimating a market price of real estate by using big data according to claim 3, wherein the modeling unit generates the transaction price estimation learning model using at least one of multiple regression analysis, artificial neural network, M5P (decision tree), Bayesian Network and CART.

【Claim 6】

The system for estimating a market price of real estate by using big data according to claim 1, wherein the market price estimation unit further applies building-related information of a predetermined number of real transaction real estates located

within a predetermined distance from the real estate to be evaluated to the transaction price estimation learning model.

【Claim 7】

The system for estimating a market price of real estate by using big data according to claim 1 or 6, wherein the market price estimation unit corrects the real transaction price using real transaction prices and real transaction timing of the real transaction real estates and a current cash value, and applies the corrected real transaction price to the transaction price estimation learning model.

【Claim 8】

The system for estimating a market price of real estate by using big data according to claim 1 or 6, wherein the market price estimation unit estimates the market price of the real estate to be evaluated further using distances or angles between the real estate to be evaluated and the real transaction real estates.

【Claim 9】

The system for estimating a market price of real estate by using big data according to claim 6, wherein the market price estimation unit calculates candidate group market prices of the real estate to be evaluated for each of the predetermined number of real transaction real estates, and estimates an average of the calculated candidate group market prices as the market price of the real estate to be evaluated.

【Claim 10】

The system for estimating a market price of real estate by using big data according to claim 1, further comprising:

a database which stores the building-related information of the real estate to be evaluated and the building-related information of the real transaction real estates.

【Claim 11】

A method for estimating a market price of real estate by using big data, comprising:

acquiring real transaction prices and building-related information of real transaction real estates located within a predetermined region from real estate to be evaluated;

generating a transaction price estimation learning model using the acquired real transaction prices and building-related information of the real transaction real estates; and

estimating the market price of the real estate to be evaluated by applying building-related information of the real estate to be evaluated to the transaction price estimation learning model.

【Claim 12】

The method for estimating a market price of real estate by using big data according to claim 11, wherein the step of acquiring the real transaction price comprises filtering out some of the real transaction real estates based on density or real transaction timings of the real transaction real estates.

【Claim 13】

The method for estimating a market price of real estate by using big data according to claim 11, wherein the step of generating the transaction price estimation learning model comprises:

generating a real transaction real estate pair for real transaction real estates within a predetermined distance among the real transaction real estates;

calculating a transaction price ratio for each real transaction real estate pair; and

modeling to generate the transaction price estimation learning model based on the transaction price ratio and building-related information of the real transaction real estate pair.

【Claim 14】

The method for estimating a market price of real estate by using big data according to claim 13, wherein the transaction price ratio is related to a value obtained by dividing a first real transaction price of a first real transaction real estate by a second real transaction price of a second real transaction real estate.

【Claim 15】

The method for estimating a market price of real estate by using big data according to claim 13, wherein the modeling step comprises generating the transaction price estimation learning model using at least one of multiple regression analysis, artificial neural network, M5P (decision tree), Bayesian Network and CART.

【Claim 16】

The method for estimating a market price of real estate by using big data according to claim 11, wherein the step of estimating the market price of the real estate to be evaluated comprises further applying building-related information of a predetermined number of real transaction real estates located within a predetermined distance from the real estate to be evaluated to the transaction price estimation learning model.

【Claim 17】

The method for estimating a market price of real estate by using big data according to claim 11 or 16, wherein the step of estimating the market price of the real estate to be evaluated comprises correcting the real transaction price using real transaction prices and real transaction timings of the real transaction real estates and a current cash value, and applying the corrected real transaction price to the transaction price estimation learning model.

【Claim 18】

The method for estimating a market price of real estate by using big data according to claim 11 or 16, wherein the step of estimating the market price of the real estate to be evaluated comprises estimating the market price of the real estate to be evaluated further using at least one of distances and angles between the real estate to be evaluated and the real transaction real estates.

【Claim 19】

The method for estimating a market price of real estate by using big data according to claim 18, wherein the step of estimating the market price of the real estate to be evaluated comprises calculating candidate group market prices of the real estate to be evaluated for each of the predetermined number of real transaction real estates, and estimating an average of the calculated candidate group market prices as the market price of the real estate to be evaluated.

【Claim 20】

A computer-readable recording medium having instructions stored thereon for performing the method according to claim 11.