TEACHER'S GUIDE

Why Pay More?

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For the teacher

The aim of this video is to make it easier for students to understand the introduction to concept of Multiple Regression Analysis, MRA based on property valuation setting. In order to facilitate students' understanding, scaffolding method is used whereby students are first exposed to basic equations. Then they will be introduced to the concept of variables, teaching them to calculate property value based on only 2 variables. Their understanding is further enhanced by exposing them to multiple variables related to property valuation. Finally, they are asked to calculate property value based on multiple variables. It is shown in this video that finding the value of two variables is possible using the paired comparison method but the same method cannot be applied if we have more than 2 equations; that is when Multiple Regression Analysis is needed. MRA can solve problems related to more than 2 equations.

For property valuation students, a prerequisite needed before learning this session is the Sales Comparison Method in valuation. For other students, an understanding of basic statistics such as total, average, mod, mean and median is necessary before starting this lesson.

Activity 1
The objective of this activity is for the students to be familiarized with the terms related to property valuation. As such, the students will be able to know the real-life application of MRA. Teachers can refer to document labelled 'Activity 1' to have idea about the terms in this activity.
During this time, the teacher should move around to assist students and provide suggestions where necessary.

Activity 2

The objective of this activity is to make students aware of what determines the price of houses. Although in reality there are many other factors that determine property value, students are only expected to come up with common factors such as features associated with the house (pool, car porch, tennis court, studio, garage et cetera).

1. Students will be asked to form a group and elect a chairperson to lead the discussion. (estimated 1 minute)

2. Students will be asked to make a list of possible factors determining property value related to the question. (estimated 5 minutes)
3. Students are required to share the list to the other members and transfer the information to the whiteboard. (est. 3 minutes)
4. Teacher concludes and explains that the list of factors given by students are called variables in MRA. (estimated 2 minutes)

Activity 3
In this activity, students are introduced to simple equations to be solved individually.

Activity 4
This activity is a similar activity to Activity 3 but the students have to solve the equation in a real-life situation where L is the land area and B is the build-up area. Students have to find the value of L and B based on 2 equations given.

Activity 5
This activity is about finding the value of a house C, given that the students know the value of L and B based on Activity 4. Students have to refer to Handout 1.

Activity 6
In this activity, students have to find the price of each features of a house using the paired-comparison method. Students have to compare all the equations to finally find the answer. Students have to refer to Handout 2.

Activity 7
Upon knowing the price of each feature in Activity 6, students have to calculate the value of another house termed 'Subject Property'. In this activity, students use the Handout 3 in order to assist them to calculate the Subject Property. The teacher will go around the classroom to assist each group.

Activity 8
The aim of this activity is to let the students learn that there are many more factors that affect the property value which is not limited to the features of the house. For example, a house near a shopping complex is more expensive than a house far from a shopping complex. Thus, when forming the equation, the factors contributed to the value of the house is not limited to L (land area) and B (build-up area) only.

Teacher should first give an example and let the students discuss and come up with other examples in groups.

Activity 9
This activity is driving the students towards extensive thought about property valuation and finally the need of using MRA for equations with more variables. The students have to think of other factors that cause the buyer to buy a house that might be more expensive than other houses, although the houses have the same features.

As the students might be unfamiliar with this, teachers have to first give an example and encourage students to discuss the answers.

Activity 10
This activity summarizes the lesson. Students have to present their understanding to the class about how simple equation with only two variables (L and B) can be solved in the context of property valuation. Also, students have to present their understanding that there are many more variables involved in property valuation and these variables cannot be simply solved using paired comparison method but MRA is needed for this purpose.