Geo-Spatial Technologies Application in the Management of Intensive Field Data Gathering for a Hedonic Price Model (hpm) of Lands

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SUMMARY

The real estate plays a vital role in the economy of a nation. Knowing the factors affecting urban land value is very important in determining the future of urban land development and anticipating potential land-use changes. The hedonic price model is the major scientific method by which we can observe the effects of one or more attributes on land prices, with the other factors holding constant, since researchers cannot conduct controlled experiments in the laboratory. The hedonic pricing model (HPM) breaks down the item being researched into its constituent characteristics, and obtains estimates of the contributory value of each characteristic. It is always expected that an investment through transit corridor will increase economic development. This study is focused on gathering and tabulating physical and economic property market data for the development of a hedonic price model of properties affected by transit-oriented development. It requires more than 800 samples, with each sample containing 42 parameters, to be accomplished in a very short span of 60 days. This daunting task is made possible with the aid of geo-spatial technologies. The sampling strategy applied is stratified systematic random sampling. The subject area is strategically divided or segmented into seven (7) regions or strata then sampling locations or areas of interest are systematically selected in each stratum. From each sampling locations, samples of residential and commercial areas are randomly selected using various Geographic Information Systems (GIS) operators. Field valuers need to accomplish the Field Plan before any fieldwork is conducted to list the targeted sample points allowing the easy forecasting of accomplished sample points and the monitoring of field personnel in the field. Every field valuer is equipped with an android phone with a GPS App capable to navigate, manage waypoints, tracks, routes, and build customized dashboard from 45 widgets. The output is primarily presented in a Microsoft Excel spreadsheet containing the master database of the 817 samples, GIS files and maps. The interactive GIS map integrates the coordinate location of samples and the 42 land value parameters. The gathering and tabulation of physical and economic property market data for HPM is both very laborious and challenging, but

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the application of geospatial technologies facilitates the management of intensive field data gathering.