

Model optimasi ridership dan land value tod untuk peningkatan nilai tambah dan kelayakan proyek = TOD ridership and land value optimization model to increase the added value and project feasibility

Gunawan, author

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Abstrak

Pengembangan wilayah dengan pendekatan *transit oriented development* (TOD) sangat berpotensi meningkatkan kelayakan proyek infrastruktur transit, sehingga dapat menarik minat para investor. Dalam konsep TOD terdapat minimal dua tujuan yang harus dipenuhi yang mungkin berkonflik satu sama lain, yakni memberikan pendapatan (*revenue*) maksimal dari sudut pandang pengembang properti, dan di saat yang sama memberikan *ridership* maksimal pula bagi sistem transit. Penelitian ini merupakan upaya untuk menghasilkan model TOD yang dapat mengoptimalkan kelayakan dua tujuan tersebut diatas. Sehingga kita tidak hanya mendapatkan TOD dengan jumlah penumpang (*ridership*) transit yang maksimal, namun juga memberikan nilai pendapatan properti yang maksimal, yang akhirnya dapat memberikan sumber alternatif pendanaan bagi investasi pembangunan, operasional dan pemeliharaan proyek infrastruktur transportasi. Penelitian menggunakan kombinasi pendekatan kuantitatif dan kualitatif melalui analisa fungsi, *linier programming*, *big data*, *Hedonic Price Modeling*, *Focus Group Discussion* dan *life cycle costing*. Dengan studi kasus yang digunakan adalah proyek pengembangan TOD di jalur LRT Jabodebek. Hasil penelitian menunjukkan bahwa peningkatan kepadatan melalui koefisien lantai bangunan (KLB) dan koefisien dasar bangunan (KDB) mampu meningkatkan nilai kelayakan bisnis property di TOD sampai dua kali lipat (200%). Optimasi proporsi luas lantai jenis pembangunan (apartemen, perkantoran, hotel dan ritel komersial) dapat meningkatkan jumlah penumpang 10% dari kondisi ideal. Model optimasi *ridership* dan *land value* mampu meningkatkan kelayakan proyek TOD secara keseluruhan (bisnis property dan operator transit) sampai 3 kali dari kondisi existing.

Urban development with transit-oriented development (TOD) approach has the potential to increase the feasibility of transit infrastructure projects to attract investors. In the concept of TOD, there are at least two objectives that must be achieved, namely providing maximum revenue from the perspective of property developers and providing maximum ridership for the transit system at the same time. However, as conflicts between these two objectives may likely occur, this research attempts to produce a TOD model that can optimize the feasibility of the two above objectives. Therefore, we don't only get the TOD area that provides the maximum number of transit ridership, but also maximum property income value, which can offer a potential alternative source of funding for the investment of the development, operation, and maintenance of transportation infrastructure projects. The study uses a combination of quantitative and qualitative approaches through function analysis, linear programming, big data, Hedonic Price Modeling, Focus Group Discussion, and life cycle costing. The case study used is the TOD development project in the Jabodebek LRT line. The results showed that the increase of density in terms of the building's gross floor area (GFA) and floor area ratio (KLB) could increase the value of the feasibility of the property business in TOD up to two times (200%). The optimization of floor area proportion of the development types such as apartments, offices, hotels, and commercial retail can increase the number of passengers about 10% higher than ideal

conditions. The ridership and land value optimization model can increase the feasibility of the overall TOD project development up to 3 times from the existing conditions.