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**Unintended Effects of Non-Cash Food Assistance Program: Evidence on Cigarette Consumption among Poor
Households in Indonesia**
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ABSTRACT

This study examines the effect of Indonesia's Non-Cash Food Assistance program (Bantuan Pangan Non-Tunai/BPNT) on cigarette consumption among poor households, and investigates whether this effect varies between urban and rural recipients. BPNT delivers in-kind food transfers through electronic vouchers redeemable at registered vendors, yet the fungibility of household budgets raises the concern that the transfer may inadvertently free up cash for non-food expenditures, including tobacco. Using pooled cross-sectional data from six waves of the National Socioeconomic Survey (SUSENAS) covering 360,087 household-year observations from 2019 to 2024, this study employs a combination of Propensity Score Matching (PSM) and Tobit regression to address selection bias and the left-censored distribution of cigarette consumption. The PSM results estimate an Average Treatment Effect on the Treated of +2.985 cigarette sticks per week, and the Tobit unconditional average marginal effect is +1.078 sticks per week, both statistically significant and directionally consistent with the fungibility mechanism. The effect operates predominantly through the intensive margin among existing smokers rather than through new smoking initiation. Heterogeneity analysis using an augmented Tobit with an interaction term reveals a sign-reversal: the effect is concentrated among urban recipients (+2.218 sticks/week, $p = 0.007$) and is statistically indistinguishable from zero in rural areas (+0.485 sticks/week, $p = 0.449$). This urban concentration is attributed to greater operational completeness of the transfer mechanism in urban settings. These findings are consistent with a fungibility-driven behavioral spillover that persists in BPNT's mature form and carry implications for complementary anti-tobacco policy targeting.

Keywords: BPNT, cigarette consumption, fungibility, propensity score matching, Tobit regression, urban-rural heterogeneity, Indonesia

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INTISARI

Penelitian ini mengkaji dampak program Bantuan Pangan Non-Tunai (BPNT) terhadap konsumsi rokok rumah tangga miskin di Indonesia, serta menginvestigasi apakah dampak tersebut berbeda antara penerima di perkotaan dan perdesaan. BPNT menyalurkan bantuan pangan secara non-tunai melalui voucher elektronik yang dapat ditukarkan di e-Warong terdaftar. Namun, sifat fungibilitas anggaran rumah tangga menimbulkan kekhawatiran bahwa transfer tersebut dapat secara tidak sengaja membebaskan kas yang sebelumnya dialokasikan untuk pangan, sehingga berpindah ke pengeluaran non-pangan termasuk rokok. Menggunakan data penampang lintang terpooling dari enam gelombang Survei Sosial Ekonomi Nasional (SUSENAS) yang mencakup 360.087 observasi rumah tangga-tahun dari 2019 hingga 2024, penelitian ini menggabungkan Propensity Score Matching (PSM) dan regresi Tobit untuk mengatasi bias seleksi dan distribusi tersensor kiri pada variabel konsumsi rokok. Hasil PSM mengestimasi Average Treatment Effect on the Treated sebesar +2,985 batang per minggu, dan rata-rata efek marjinal tidak bersyarat dari Tobit sebesar +1,078 batang per minggu, keduanya signifikan secara statistik dan konsisten dengan mekanisme fungibilitas. Efek tersebut beroperasi terutama melalui margin intensif pada rumah tangga perokok yang sudah ada. Analisis heterogenitas menggunakan Tobit dengan interaction term mengungkapkan pembalikan tanda: efek terkonsentrasi pada penerima perkotaan (+2,218 batang/minggu, p = 0,007) dan tidak dapat dibedakan secara statistik dari nol di perdesaan (+0,485 batang/minggu, p = 0,449). Konsentrasi urban ini dikaitkan dengan kelengkapan operasional mekanisme transfer yang lebih tinggi di perkotaan. Temuan ini konsisten dengan adanya spillover perilaku berbasis fungibilitas yang persisten dan memiliki implikasi langsung bagi kebijakan anti-tembakau komplementer.

Kata kunci: *BPNT, konsumsi rokok, fungibilitas, propensity score matching, regresi Tobit, heterogenitas urban-rural, Indonesia*