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**Local Brand Smoking Among Adult Smokers in China: Findings from Wave 5 International Tobacco Control China Survey**

**Abstract**

**Introduction:** China has an unusually high smoking rate, with more than 300 million smokers consuming 2.3 trillion cigarettes each year. Cultural norms and branding strategies, including use of local symbols and landmarks on cigarette packaging, may influence smoking behaviour. This study aimed to explore impact of local brand (LB) cigarette consumption among adult smokers in China, examining demographic factors and smoking patterns associated with LB smoking.

**Methods:** This study used data from International Tobacco Control (ITC) China Wave 5 survey conducted from November 2013 to July 2015 to analyze smoking behaviors of 6,642 current smokers from ten locations in China. The primary outcome was LB smoking status, and covariates included demographic characteristics, urban or rural residence, and smoking behavior. Multivariable logistic regression models adjusting for these covariates were used to estimate LB's propensity to smoke.

**Results:** The study found that 47.67% of current smokers preferred LB. Significant differences in LB smoking were observed among different demographic groups, with individuals aged 25–39 and 40–54 years, middle-income earners, and residents of residences with local businesses (LVs) having a higher likelihood of LB smoking. In contrast, LB smoking rates were lower among those with higher educational attainment and those living in urban areas. The geographical distribution of LB smoking varies significantly, suggesting that supply-side factors and targeted marketing strategies may have an influence.

**Discussion:** The findings indicate that LB smoking is significantly affected by local production, which has implications for effectiveness of tobacco control policies. Research shows that smokers in provinces where LB cigarettes are produced are more likely to consume these brands, possibly due to local government incentives and protections. Furthermore, although sociodemographic factors such as age, income, and education level are important, association of these factors with LB smoking may be mediated by price and affordability considerations. The study highlights need for tobacco control policies to address local branding and marketing strategies to reduce smoking rates in China.

**Introduction**

Nearly one-third of world's smokers (i.e., more than 300 million smokers) live in China, where an estimated 2.3 trillion cigarettes are consumed annually (1). According to 2018 China Global Adult Tobacco Survey (GATS), current smoking rate among people aged 15 and above in China is 2.1% for women and 50.5% for men (2). The high prevalence of smoking among Chinese men may be due to continued normalization of smoking in Chinese culture, where cigarettes are often used as a form of sharing or gifting for interpersonal relationships and generosity during festivals and weddings, as well as for business gifting. (3).

Due to richness of cigarette brands and varieties in China, cigarette brands may play a unique role in influencing smoking behavior of Chinese smokers. This is largely due to brand consolidation strategy of China National Tobacco Corporation (CNTC), which has a monopoly on Chinese cigarette market, accounting for 98% of domestic sales (4). From 1990 to 2013, China National Tobacco Corporation reduced its 2,000 cigarette brands to 90 brands (4). CNTC includes several major local/regional subsidiaries that produce flagship cigarette brands. These local brands (LB) are often packaged and advertised through use of symbols and images that represent regions and local landmarks. Smokers may use cigarette brands as symbols of their hometown, suggesting that they prefer cigarettes from their hometown to cigarettes from other regions (5).

To our knowledge, this study is first to conduct an empirical analysis of local brands in China. The purpose of this study was to assess percentage of local brand (LB) cigarettes among adult smokers in multiple cities in China and to identify factors associated with LB smoking, including demographic characteristics and smoking patterns (e.g., number of cigarettes smoked per day).

**Methods**

This project analyzed data from fifth wave of International Tobacco Control (ITC) China Survey conducted between November 2013 and July 2015 (6,7). The ITC China Survey is a longitudinal cohort survey of smoking behaviors and knowledge, beliefs, opinions, and attitudes about cigarettes and tobacco use among adults aged 18 years and older in China. The fifth wave survey was conducted in 10 locations, including urban residents in 5 major cities (Beijing, Guangzhou, Kunming, Shanghai, and Shenyang) and residents in 5 rural areas (Changzhi, Huzhou, Tongren, Yichun, and Xining). The 10 sites were selected based on size, geographic representation, and level of economic development (8,9).

A total of 9,880 adults participated in survey, including 7,583 current smokers, 234 former smokers and 2,063 never smokers. This study focused on current smokers, defined as those who have smoked at least 100 cigarettes in their lifetime and currently smoke at least once a week (8). After excluding persons with missing data on LB smoking status, sample size for analysis of LB smoking percentage included 6,642 current smokers. For multiple logistic regression described below, participants with missing values for age, race, education, marital status, and smoking intensity were excluded, resulting in a final study sample of 6,419 participants.

**Results**

Table 1 shows that among 6642 current smokers, majority of participants were male (96.2%), aged 40–54 years (41.9%), Han Chinese (87.4%), high income (59.7%), with secondary education ( 62.7%), married or living with a partner (86.6%), lived in an urban area (51.4%), lived in a low-smoking area (56.5%), smoked daily (92.4%) or were heavy smokers (60.0%), smoked Smoking first cigarette 0-30 minutes after getting up (58.2%).

Table 1 also shows that proportion of LB smokers among current smokers was 47.6%. Bivariate analysis results showed that there were significant differences in proportion of LB smoking in terms of gender (34.8% for women, 48.1% for men), age, ethnicity (75.2% for non-Hans, 43.7% for Hans), income, education, and age. Marital status, area type (44.8% in rural areas, 50.4% in urban areas), NLV (10.5%) and LV (76.2%), smoking frequency (48.3% for daily smokers, 40.1% for non-daily smokers) ), and smoking intensity (49.9% for heavy smokers and 44.4% for light smokers), but there was no statistical difference in time to smoke first cigarette after waking up.

**Discussion**

This study shows evidence that smokers living in provinces that produce LB cigarettes are more likely to smoke LB cigarettes than smokers living in provinces that rely on NLV. This may be due to current tobacco excise tax system that rewards local governments relying on tobacco finance to enact protectionist measures to protect production and sales of local brands (10). The study found that among nine urban/rural areas, Kunming and Tongren had highest proportion of LB, and both are famous for their provincial cigarette brands, such as Yunnan's Hongtashan and Guizhou's Yunyan.

This study has several limitations. First, this study lacks analysis of specific cigarette brands and their characteristics (such as brand name and packaging). Some cigarette brands may have explicit direct marketing targeting local sentiment, i.e. being named after local landmarks or icons. Second, cigarette pricing and related taxes are also important predictors of cigarette consumption behavior, as many Chinese smokers tend to switch to cheaper brands in response to tax increases. Third, urban and rural areas included in this analysis may be differentially affected by availability of LB cigarettes. Inclusion of other fields may help provide a more comprehensive understanding of LB smoking in China.

In summary, our study found significant differences in LB smoking among smokers based on multiple sociodemographic characteristics and smoking intensity. Large differences in LB smoking rates between urban and rural areas may indicate external factors such as supply-side policies to ensure LB sales or targeted cultural marketing that is more attractive to certain groups. Tobacco control policies that restrict marketing strategies using LB-related names and icons may have potential to reduce smoking and ultimately reduce health burden of smoking in China.