

2011—2021 年微博平台无烟环境与立法议题分析： 公众认知、情感倾向与时间趋势

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【摘要】 目的 基于2011—2021年微博平台数据,分析我国公众关于无烟环境建设和无烟立法相关议题的讨论焦点、情感倾向及时间趋势,为优化无烟立法制定与实施提供实证依据。**方法** 使用Python 3.11.3采集2011年1月至2021年12月微博平台中与无烟环境相关的帖子,并在此基础上筛选无烟立法主题下的评论。分别对帖子和评论文本进行主题模型与情感分析,并描述无烟立法相关评论的时间变化趋势。**结果** 共纳入有效微博帖子102 733条,提取无烟立法相关评论455 016条。在无烟环境相关帖子中,“吸烟者形象”(n=988)与“室内公共场所吸烟现象”(n=775)为最受关注议题。针对上述主题的情感分析显示,超过90%的帖子呈现负向态度。在无烟立法相关评论中,“强烈支持无烟立法”(n=848)占比最高;整体上积极情感多于消极情感,消极评论主要聚焦于对政策执行效果的质疑。时间趋势分析显示,相关评论热度在2016—2019年间逐步上升,于2019年前后达到峰值,随后下降。**结论** 无烟环境与控烟立法在微博中持续受到关注,公众讨论主要聚焦于特定场所吸烟行为、吸烟的社会认知以及无烟法规等议题。公众对吸烟行为总体持负向态度,整体上倾向于支持无烟立法并呼吁加强政策落实,无烟立法在社会舆论层面已具备一定共识基础。

【关键词】 社交媒体; 微博平台; 无烟环境; 无烟立法; 主题模型; 情感分析; 时间趋势

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Analysis of smoke-free environment and legislation issues on Weibo platform from 2011 to 2021: public perceptions, sentiment and temporal trends

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【Abstract】 Objective To analyze the discussion topics, sentiment tendencies, and temporal trends of public discourse on smoke-free environment construction and smoke-free legislation in China based on data of Weibo platform from 2011 to 2021, and to provide empirical evidence for optimizing the formulation and implementation of smoke-free legislation. **Methods** Posts related to smoke-free environments published on the Weibo platform from Jan 2011 to Dec 2021 were collected using Python 3.11.3. Comments concerning smoke-free legislation were subsequently identified and extracted. Topic modeling and sentiment analysis were conducted separately for posts and comments, and the temporal trends of

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comments related to smoke-free legislation were characterized. **Results** A total of 102 733 valid Weibo posts and 455 016 comments related to smoke-free legislation were included. Among the posts on smoke-free environments, the most frequently discussed topics were the “smoker image” ($n=988$) and “smoking in indoor public places” ($n=775$). Sentiment analysis of these topics showed that more than 90% of the posts conveyed negative attitudes. Among comments related to smoke-free legislation, the topic “strongly support the smoke-free policy” ($n=848$) was predominant. Overall, positive sentiment outweighed negative sentiment, with negative comments primarily expressing concerns regarding policy implementation. Temporal trend analysis showed that the volume of related comments increased gradually from 2016 to 2019, peaked around 2019, and then declined. **Conclusion** Smoke-free environments and tobacco control legislation remained subjects of sustained public attention on Weibo platform. Public discussion mainly focused on smoking behavior in specific settings, social cognition of smoking, and smoke-free regulations. Overall, the public generally holds negative attitudes toward smoking and broadly support smoke-free legislation, alongside calls for stronger policy enforcement. There is already a degree of consensus on smoke-free legislation at the level of public opinion.

【Key words】 social media; Weibo platform; smoke-free environment; smoke-free legislation; topic modeling; sentiment analysis; temporal trend

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吸烟是全球范围内主要的可预防死亡危险因素之一^[1]。2024年中国成人烟草调查显示,我国15岁及以上人群的吸烟率为23.2%,非吸烟者的二手烟暴露率为46.5%,烟草流行及其危害仍是突出的公共卫生问题^[2]。全面无烟政策(comprehensive smoke-free policies)作为保护公众免受二手烟危害且具成本效益的干预措施,已被证实不仅能显著降低吸烟率,还可通过改变社会环境与社会规范,削弱吸烟行为的社会可接受性^[3-6]。2011年,哈尔滨市通过《哈尔滨市防止二手烟草烟雾危害条例》(2012年施行),成为国内首个城市级全面无烟法规^[7]。此后,无烟环境建设持续推进,地方无烟立法数量不断增加,全国吸烟率由2010年的28.1%下降至2018年的26.6%,公共场所二手烟暴露情况也有所改善^[8]。截至2024年,全国已有46个城市实行了全面无烟政策^[9]。然而,当前吸烟率仍高于《“健康中国2030”规划纲要》中提出的20%以下的目标^[10],且国家层面尚未出台综合性无烟立法,控烟工作在法规覆盖和制度推进方面仍面临挑战。

既往关于公众控烟认知与态度的研究多采用问卷调查,这类方法易受到回忆偏倚和社会期望偏差的影响^[11-12]。相较而言,社交媒体数据源于用户的自主表达,能够更及时地反映公众认知、态度与情感反应。已有研究利用Twitter分析控烟政策的

网络讨论,发现相关讨论常由不同利益社群主导,并围绕健康风险、立法边界、个人自由和电子烟替代等议题形成分化表达^[13]。范围综述进一步指出,社交媒体数据不仅可用于识别政策支持态度与争议焦点,还可揭示实施过程中的漏洞与执法难点^[14]。国内有研究分析了微博平台中烟草信息的主题特征和情感倾向,结果显示正向情感烟草信息呈现高频性,而控烟相关信息未得到充分关注^[15]。

社交媒体已成为监测控烟政策舆情与公众反应的重要工具。但目前针对中国社交媒体中无烟环境与立法相关讨论的长期研究相对有限,公众态度及其随时间演变特征尚不清晰。微博作为国内主流的社交媒体平台,具有用户规模大、公开数据丰富的特点,相较于短视频或图文分享为主的平台,更适于开展系统性文本挖掘分析,也有利于观察围绕社会公共议题的讨论。本研究旨在分析2011—2021年微博平台中与无烟环境相关信息的主要议题及公众反应态度,为理解社会舆论对控烟政策的支持基础与关注焦点提供实证依据。

资 料 和 方 法

资料来源 本研究经复旦大学公共卫生学院医学研究伦理委员会审核批准(批准号:IRB#2023-

06-1061)。因仅使用公开脱敏数据,豁免知情同意。以社交媒体新浪微博作为数据来源,选取“控烟”“公共场所禁烟”“无烟环境”“二手烟”“吸烟室”“吸烟区”“控烟条例”和“无烟立法”等15个词语作为检索关键词(详见补充材料1),使用Python中的weibo-search工具包抓取与无烟环境相关的微博帖子(包含内容、发布日期和作者ID参数)。鉴于我国最早的全面无烟立法于2011年实施,本研究以11年为时间跨度,探究政策实施以来公众对无烟环境建设与无烟立法的态度。将数据采集时间限定为2011年1月1日至2021年12月31日,初步抓取微博帖子275 925条。对数据集进行清洗,剔除重复项、由非个人账号发布、与研究主题无关或其他无效内容的微博帖子,最终纳入有效帖子102 733条(详见补充材料2)。为进一步探究公众对无烟立法的态度,从上述数据库中筛选出含有“法规”“立法”“规定”“条例”等关键词的帖子,并提取原贴下用户直接发表的原创评论数据,所有由转发产生的评论均排除在外,最终累计获得有效评论455 016条。

研究方法 采用以下步骤对采集所得的微博帖子和评论数据进行分析。(1)文本预处理:用正则表达式去除HTML标签、停用词、特殊符号、数字及非中文字符,通过Python 3.11.3中的Jieba库进行分词,并加载自定义词典以保障特定词汇的准确切分,例如“二手烟”“无烟立法”等词汇;(2)主题模型分析:采用BERTopic主题模型进行聚类分析,基本流程为“文本嵌入—降维—密度聚类—c-TF-IDF主题表示”。根据文本主题归属及其包含的文本数量,统计各主题文本占比,从而揭示微博中关于无烟环境及无烟立法讨论相关的主题内容分布特征(详见补充材料3);(3)对于无烟环境相关微博帖子,采用适用于中文社交媒体文本的BosonNLP情感词典对其情感表达进行分析。在完成文本预处理后,将文本词汇与BosonNLP情感词典进行匹配,并提取各重点主题下主要情感词的出现频率及分布特征。对于无烟立法相关评论,则在主题模型聚类结果的基础上,根据各主题下评论文本的总体情感得分,将其划分为积极取向和消极取向,并统计各类主题所对应的文本频数(详见补充材料4);(4)时间趋势分析:描述无烟立法相关微博下不同情感倾向评论数量随时间的变化趋势。所有分析均通过R 4.2.0和Python 3.11.3实现。分析流程见图1。

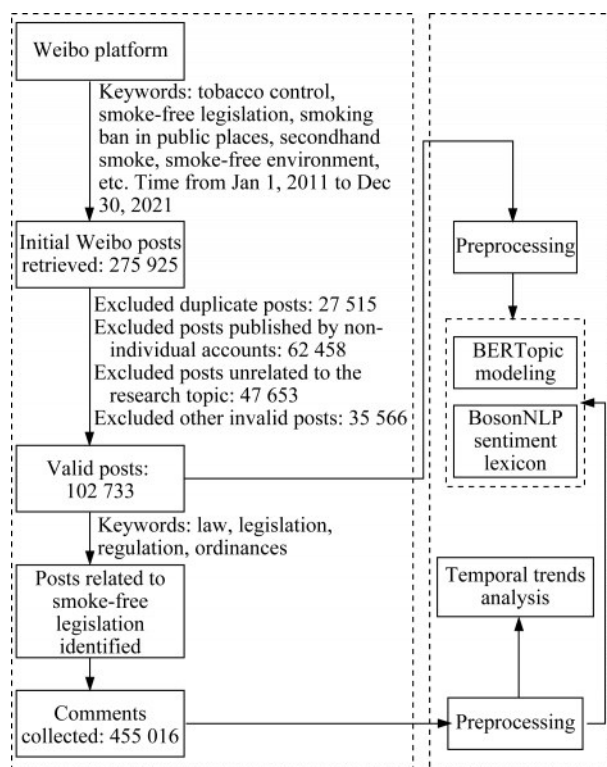


图1 文本分析流程图

Fig 1 Text analysis flowchart

结 果

无烟环境相关微博的主题呈现与情感态度 无烟环境相关微博原文经主题聚类后,依据各主题包含的帖子数量排序,选取文本频数排名前10的主题,并结合各潜在类别下的高频主题词及代表性例句进行命名。根据主题内容的相近性归纳为3个维度:无烟法规维度、场所控烟维度和吸烟的社会认知维度。无烟法规维度主要涵盖公众对无烟法规制定与执行的讨论,如呼吁尽快出台或完善控烟条例、支持在公共场所劝阻吸烟等;场所控烟维度主要反映公众对不同场所与情境中吸烟现象的评价,涉及办公室、餐厅、列车等室内公共场所及室外游烟现象;吸烟的社会认知维度则聚焦于公众对吸烟者形象、明星吸烟事件以及二手烟暴露等的态度与观点(表1)。

从主题分布来看,无烟法规维度中关于无烟法规出台与完善的讨论热度较高;场所控烟维度中,“室内公共场所吸烟”和“工作场所吸烟现象”受到较多关注;吸烟的社会认知维度中,“吸烟者形象”和“明星吸

烟事件”话题较为活跃。总体而言,“吸烟者形象”(n=988)和“室内公共场所吸烟”(n=775)是讨论最集中的主题,而“三手烟现象”(n=95)和“公众场所劝阻吸烟”(n=60)的讨论相对较少(图2)。

表 1 无烟环境相关微博主题及代表性例句

Category	Topic	Description	Keywords	Representative example
Smoke-free regulations	Smoke-free regulations introduced	Views on smoke-free legislation and enforcement	regulations, implementation, legislation, smoking ban, strictly prohibited, directive	<i>I really hope the ban on smoking in public places can be fully enforced!</i>
	Discouraging smoking in public places	Views on discouraging smoking behavior and the effectiveness of such discouragement	discourage, dissuade, remind, pregnant women, public places, indoors	<i>How could anyone think smoking in public is normal? When asked to stop, they even retort, "Is there a pregnant woman here?"</i>
Smoking in specific settings	Smoking in indoor public places	Opinions about others smoking in indoor public places	indoors, enclosed space, public places, public setting, rooftop, restroom, dormitory	<i>I can't stand people who smoke in enclosed spaces-the secondhand smoke makes my head spin.</i>
	Smoking in workplaces	Opinions about supervisors/colleagues smoking in workplaces	company, office, manager, supervisor, colleague	<i>The cigarette smoke in the office is suffocating-I feel surrounded by secondhand smoke every day.</i>
	Smoking in restaurants	Opinions about smoking in restaurants	eating, restaurant, dining, dining hall, eatery, hotel restaurant, private dining room	<i>I really hate it when people smoke during banquets!</i>
	Smoking on trains	Opinions about smoking on trains	train, railway carriage, compartment, conventional passenger train, high-speed rail, secondhand smoke, smoking ban	<i>When will trains other than high-speed trains also become completely smoke-free?</i>
	Smoking while walking	Opinions about smoking while walking	smoking while walking, pedestrian, roadside, street	<i>People who smoke while walking are like mobile sources of secondhand smoke-so irritating!</i>
Social perceptions of smoking	Celebrity smoking	Public reactions to online reports of celebrities smoking	smoking, quitting, apology, image, wrongdoing, punishment, violation, public figure, celebrity	<i>As a public figure, their smoking behavior has had an extremely negative social impact.</i>
	Thirdhand smoke	Awareness and attitudes toward thirdhand smoke	thirdhand smoke, furniture, clothes, walls, carpet, smoke residue, disgusting, harm	<i>Every day after work, my hair and coat reek of a nauseating smell of smoke.</i>
	Smoker image	Public perceptions of smokers and their social image	image, dislike, damage, impaired, cool, handsome, civility, morality, unethical, lack of manners, annoying, public-mindedness	<i>I absolutely hate the way you blow smoke-it's not cool at all; it's disgusting.</i>

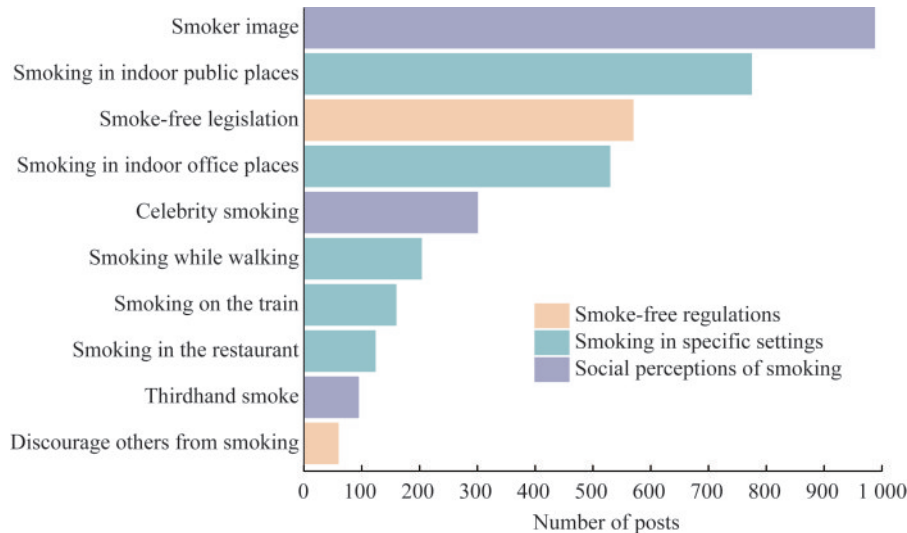


图 2 无烟环境相关微博帖子主题分布

Fig 2 Topic distribution of Weibo posts related to smoke-free environments

情感分析结果显示,在“吸烟者形象”“室内公共场所吸烟”“办公场所吸烟”“游烟现象”和“餐厅吸烟”主题下,超过90%的微博帖子呈现负向情感,“讨厌”“恶心”等词汇高频出现,反映出公众对吸烟

行为的高度反感。相比之下,在“无烟相关法规出台”主题下,大多数微博帖子则呈现正向情感,“倡导”“必须”“严格”等词汇出现频率较高,体现出公众对强化无烟立法和严格执法的广泛支持(图3)。



图3 无烟环境相关微博情感分布

Fig 3 Sentiment distribution of Weibo posts related to smoke-free environments

无烟立法相关评论的主题呈现与情感态度。无烟立法相关评论经主题模型聚类 and 情感分析后共归纳出20个主题,其中积极取向主题13个,消极取向主题7个。积极取向主题一方面围绕支持无烟立法的出台与完善,包括“关注控烟法规”“立法保障健康”“扩大禁烟范围”等,强调应加快无烟立法

进程、在公共场所全面禁烟,并通过政策手段减少吸烟和二手烟危害;另一方面聚焦强化无烟立法的执行环节,包括“加大执法和处罚力度”“鼓励劝阻吸烟行为”等。消极取向主题则主要集中在对政策执行效果的质疑,包括“控烟执法力度不足”“监督举报途径缺失”等,也存在“反讽禁烟无用”“吸烟是

个人自由”等否定或抵触无烟立法的声音(表2)。从数量分布来看,表达积极情绪的评论显著多于消极评论,绝大多数用户在评论中表现出对无烟政策的认同与支持。在积极取向主题中,“强烈支持无

烟立法”(n=848)占比最高,是公众最为关注的议题焦点;而在消极取向主题中,“反讽禁烟无用”(n=553)和“控烟执法力度不足”(n=435)是高频观点,反映出部分公众对无烟政策仍心存疑虑(图4)。

表2 无烟立法相关评论主题及代表性例句

Tab 2 Topics and representative example sentences of comments related to smoke-free legislation

Category	Topic	Description	Representative example
Positive	Strong support for smoke-free legislation	Strong support for smoke-free legislation and enforcement	<i>I support this-what an excellent proposal!</i>
	Prohibit smoking in public places	Belief that smoking should be prohibited in public places	<i>Ban smoking in public places; refuse secondhand smoke.</i>
	Increasing penalties for smoking violations	Belief that violations of smoke-free regulations should be heavily penalized	<i>How could fifty yuan fine be enough? It should be much higher.</i>
	Importance of enforcement	Belief that enforcing smoke-free regulations is crucial	<i>I hope this rule will be strictly enforced.</i>
	Calls for greater attention to tobacco control	Calling on the public to pay attention to tobacco-control regulations	<i>Follow tobacco-control hot topics and updates.</i>
	Urge enforcement	Urging the government to implement smoke-free regulations as soon as possible	<i>Hurry up and implement tobacco control!</i>
	Legislation to safeguard health	Belief that smoke-free legislation helps protect public health	<i>Protect people's health-comprehensive smoke-free policies are imperative.</i>
	Discouraging others from smoking	Support for the public discouraging others from smoking	<i>People should have the courage to say "no" to secondhand smoke around them.</i>
	Calls for progress in smoke-free legislation	Calls for the enactment or advancement of smoke-free legislation at national and local levels	<i>I hope China will introduce relevant laws soon and promote their widespread implementation.</i>
	Eliminate exposure to secondhand smoke	Belief that smoke-free regulations help people avoid secondhand smoke	<i>Great-no more secondhand smoke for me!</i>
	Smoking harms health	Emphasizing the health hazards of smoking	<i>Please remember: smoking in public places harms others' health.</i>
	Expanding smoke-free areas	Belief that areas legally designated as smoke-free should be expanded	<i>Rental housing also urgently needs smoking bans.</i>
Negative	Opposition to designated smoking areas	Opposing the establishment of smoking rooms or areas in public places	<i>What's the difference between having a smoking room and smoking indoors?</i>
	Perceived ineffectiveness of smoke-free policies	Belief that smoke-free policies are ineffective	<i>What's the benefit of controlling smoking anyway?</i>
	Insufficient law enforcement	Belief that enforcement of smoke-free regulations is inadequate	<i>What smoking-control rules? They're meaningless in practice.</i>
	Sarcastic reactions to smoke-free legislation	Sarcastic or dismissive reactions to smoke-free legislation	<i>After hearing that, I got scared-so I lit a cigarette to calm down!</i>
	Lack of supervision and reporting channels	Belief that channels for supervision and reporting are unclear	<i>I just want to ask: who is responsible for this?</i>
	Difficulty in enforcement	Belief that enforcing smoke-free regulations is difficult	<i>Issuing the policy is fine, but implementation is somewhat difficult.</i>
	Difficulty in discouraging smoking	Belief that discouraging smoking in public places is difficult	<i>Before you try to stop someone, you have to weigh whether it could be dangerous.</i>
	Smoking as an individual right	Belief that smoking is a personal freedom and should not be banned	<i>No need to fine them-smokers have the right to smoke.</i>

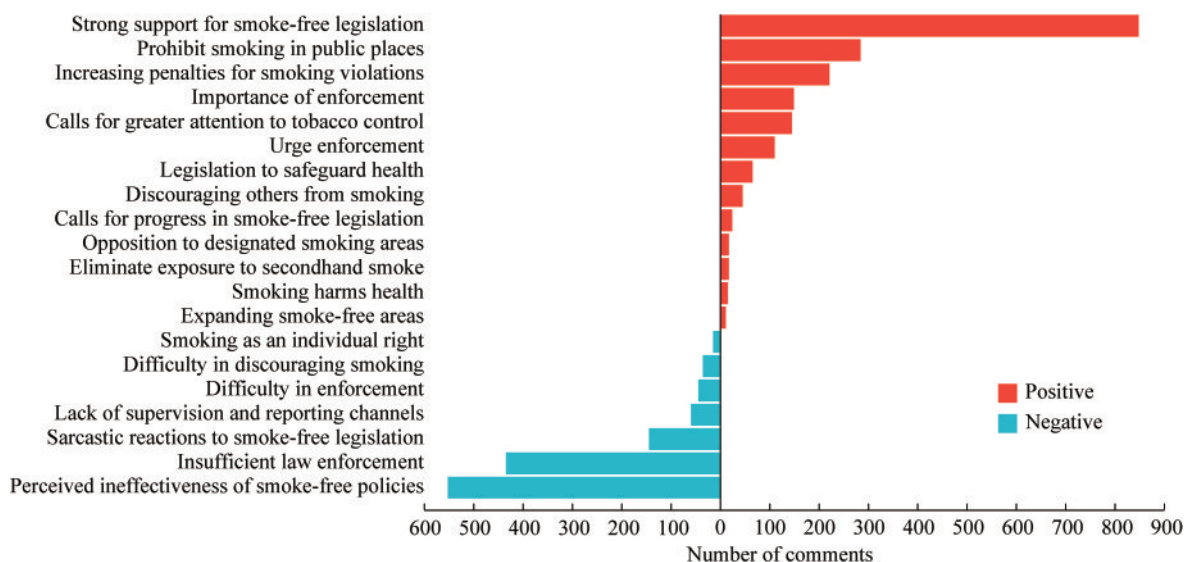


图4 无烟立法相关评论主题与情感分布

Fig 4 Topics and sentiment distribution of comments related to smoke-free legislation

无烟立法相关评论的时间趋势 时间趋势分析表明,无论是积极取向还是消极取向的无烟立法相关评论,整体上呈现高度一致的变化轨迹:自2016年起在微博平台上开始出现聚集,评论数量随后逐年上升,于2019年达到讨论高峰,2020年之后评论数量开始相对下降,但关于无烟立法的讨论仍保持一定热度和关注度(图5)。

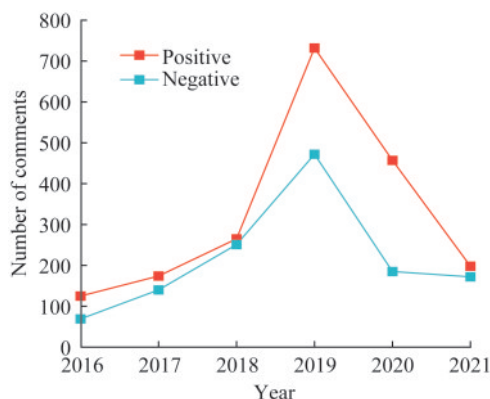


图5 无烟立法相关评论时间趋势

Fig 5 Temporal trends of comments related to smoke-free legislation

讨 论

在无烟环境相关微博的主题分析中,场所控烟维度下对多类公共场所吸烟现象集中讨论,表明公众对特定场景中二手烟暴露问题具有较高敏感性,也提示不同场所禁烟规定的执行状况仍存在差异。

既有研究同样表明,尽管地方性无烟法规已取得积极进展,但部分高暴露场景与全面无烟的最佳实践还存在差距。例如,上海市控烟条例实施后的评估发现,农贸市场与酒吧的依从性较弱,且厕所吸烟未见明显改善^[16]。西宁市无烟法规依从性评价研究也显示,室内区域无烟达标率存在显著差异(65%~100%),公共交通与教育机构较高,而休闲娱乐与住宿场所较低^[17]。针对控烟薄弱环节,应加强场所层面的精细化治理,通过完善禁烟标识设置、合理规划室外吸烟区域、配备劝阻人员,并依托常态化督导强化场所管理^[18]。其中,工作场所吸烟问题值得关注。文本梳理研究显示,在全国各级控烟相关法规中,办公室被明确要求全面禁烟的比例最低,仅占15.7%;超过半数(56.1%)的城市对此类场所没有任何限制。制度规范的不足,可能是工作场所吸烟持续成为公众关注议题的重要原因。事实上,室内工作场所全面禁烟不仅能直接减少吸烟行为的发生,还可提升员工对吸烟危害的认知与戒烟意愿^[19]。近年来,各地无烟党政机关建设已取得一定成效,截至2022年,全国各级无烟党政机关建成率达82.4%^[20]。未来可进一步推广典型经验,倡导领导干部和管理者带头不在工作场所吸烟,并将控烟纳入机构考核指标。此外,“明星吸烟事件”在吸烟的社会认知维度中较为活跃,说明公众对吸烟问题的关注并不限于日常生活中的二手烟暴露,还延伸至公众人物吸烟所产生的社会示范效应。明星和影视作品中的吸烟形象,容易把吸烟包装成

“酷”“成熟”的象征,会直接降低受众的风险感知并增加其尝试吸烟风险^[21]。在无烟环境建设中,除了强化重点场所控烟,还应减少吸烟行为在大众文化中的正向呈现。相比之下,“三手烟现象”和“公共场所劝阻吸烟”等议题的讨论度相对较低。基于此,应加强健康教育,系统普及烟草危害与戒烟知识,通过控烟领导力与执法能力培训,增强公共场所劝阻吸烟的沟通与应对技巧;并进一步鼓励公众参与,逐步完善控烟社会共治机制^[22]。

对无烟环境相关微博的情感分析结果显示,“吸烟者形象”“室内公共场所吸烟”“工作场所吸烟”“游烟现象”和“餐厅吸烟”等主题均呈现显著负面情绪(“讨厌”“恶心”“无法忍受”等词汇高频出现),在一定程度上说明了公众对吸烟行为已形成较为明确的负面评价,吸烟在公共场所中的社会可接受性正在下降。已有研究指出,当吸烟被视作一种不受欢迎的行为,特别是在年轻群体中,能独立且显著地降低其开始吸烟的可能性^[23-24]。2023年上海市一项室外二手烟暴露调查显示,超过60%的受访者表示无法接受在室外遭遇二手烟^[25]。越来越多人公开表达对吸烟的不赞成态度,公众对无烟环境的价值取向正在由被动接受吸烟存在转向主动强调他人免受烟害的权利,反对吸烟的社会规范正逐渐形成。这些结果提示了无烟环境建设不仅具有健康效益,也正在获得更广泛的社会认同,为进一步完善控烟政策提供了有利的社会舆论基础。

无烟立法相关评论的分析结果显示,积极取向主题占主导,表明公众对公共场所禁烟及无烟立法具有较高支持度。这一结果与既往研究相吻合。2018年中国成人烟草调查显示,90.9%的公众支持室内工作场所全面无烟^[8]。2019年杭州公共场所控烟条例实施后,微博中明确表达立场的用户中,91.66%表示支持,仅约1%明确反对^[26]。需要指出的是,本研究中的负面评论也并非完全否定无烟立法本身,而更多集中于“执法力度不足”“执法难度大”“监督举报渠道不清晰”等执行层面的疑虑与不满。这反映出公众讨论的重点已不再局限于是否需要无烟立法,而是对政策执行提出了更明确、更具体的要求。时间趋势分析显示,无烟立法相关讨论在2016—2019年逐步升高,并于2019年前后达到峰值,此后有所回落。这一变化趋势与政策事件及外部环境等多种因素有关。2014、2015年前后,深

圳^[27]、北京^[28]等地相继实施控烟条例,2017年上海也正式施行修订后的无烟法规^[29]。上述城市均为国内具有代表性的严格控烟地区,其政策落地、后续宣传及执法活动,共同推动了无烟立法议题在社交媒体上的集中讨论。而2020年后,随着突发公共卫生事件在社交媒体中占据更多关注,控烟议题的可见度可能相对下降^[30-31]。基于上述结果,未来推进无烟立法应重点回应公众关注点。首先,在已有较高社会支持度的基础上,继续推动无烟法规覆盖范围扩大。同时,细化责任主体、处罚措施和监督流程,提高法规的可执行性^[32]。此外,可充分利用社交媒体平台开展控烟宣传与政策解读,提升公众对法规执行进展的认知,并增强社会监督参与度^[33]。

本研究也存在一些局限性。(1)社交媒体用户生成内容通常具有非正式特征,包含大量冗余信息、噪声(如口语化表达、缩写、网络俚语、表情符号等)及无关内容,增加了分词与词性特征提取的难度,对文本分析的稳定性与解释性构成一定挑战^[34]。本研究采用BERTopic模型提取主题,主题数及截断值的设定难以避免具有一定主观性。研究主要关注各主题在总体讨论中的相对分布,而非推断其绝对频次。未来可结合人工标注与机器学习方法,并引入更先进的自然语言处理技术,以提升主题识别的全面性与准确性^[35]。(2)微博用户结构与全国人口特征存在差异,微博用户总体更年轻(90后和00后占比近80%),且女性用户规模高于男性^[36]。因此,本研究结论外推需保持谨慎。(3)受数据授权限制,本研究无法获得用户层面的人口学特征信息,因而无法对样本特征展开详细描述。同时,微博平台自2022年起才开始显示用户的IP属地,而本研究样本覆盖时间为2011—2021年,故结果主要反映中文语境下微博用户对无烟环境和无烟立法议题的讨论情况,未能比较不同地域用户在控烟关注焦点或情感倾向上的差异。(4)本研究数据仅截至2021年,未能充分反映近年来无烟政策推进与社会舆论的最新变动。此外,电子烟等新型烟草制品已逐渐成为控烟领域重要的传播议题,但本研究未将其作为独立内容进行分析^[37-38]。未来研究可纳入2022年及之后的数据,拓展社交媒体平台覆盖范围,并着重考察电子烟等新型烟草制品的公共讨论。

本研究基于2011—2021年微博帖子与评论数据,分析了公众围绕无烟环境建设及相关立法的讨论焦点、情感倾向及时间变化特征。结果显示,无烟环境与控烟立法在社交媒体中持续受到关注,公众讨论主要围绕特定场所吸烟现象、吸烟的社会认知及无烟法规出台等议题。公众普遍对吸烟行为,尤其是室内公共场所吸烟,持反感与否定态度。无烟立法相关评论的总体倾向于支持立法并呼吁强化执法。推进更高层级无烟立法不仅符合公共卫生目标,也具有较好的社会支持基础。未来应在扩大法规覆盖范围的同时,进一步强化执法与监督机制,以巩固和提升政策效果。

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利益冲突声明 所有作者均声明不存在利益冲突。

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