

Private Sphere Dissolution and Reconstruction in Youth Online Public Space: Baby Food Supplement Tag

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Keywords: Public space; private space; public-private relationship; tag function; baby food supplement

Abstract: Digital technology has restructured the traditional boundaries between public space and the private sphere, and the practice of youth seeking private spheres on online public platforms has become increasingly prominent. The functional alienation of the Xiaohongshu #Baby Food Supplement tag has attracted widespread attention. Taking youth users aged 18–28 under this tag as the research object, this study focuses on the core issue of how youth reconstruct the private sphere in online public space. Adopting a mixed research method of LDA topic modeling and semi-structured interviews, it conducts topic clustering on 9,158 valid blog posts under the tag in 2025 and in-depth interviews with 20 non-maternal content producers under the tag. The study finds that the #Baby Food Supplement tag has been alienated from a maternal content identifier into a digital barrier for youth to construct the private sphere. Youth actively construct the private sphere in public platforms through three strategies: algorithmic resistance (filtering male users), privacy protection (delineating safe expression zones), and community connection (forming female mutual aid circles). Moreover, the public-private boundary in digital space presents fluid characteristics of being designable and adjustable. This study not only provides empirical evidence for understanding youth spatial practices in the digital era but also expands the interpretive dimensions of Lefebvre's spatial theory, Goffman's dramaturgical theory, and Habermas's public sphere theory in digital scenarios, with practical reference value for youth online privacy protection and platform spatial governance.

1. Introduction

Contemporary society is undergoing a drastic restructuring of public space and the private sphere. From offline physical privacy practices such as bed curtains in university dormitories and train sleeper berths to content production under the Xiaohongshu #Baby Food Supplement tag, from scene construction of "immersive homecoming" on Douyin to content presentation in Bilibili's life section[3], youth groups attempt to delineate private spheres in public space through dual strategies of physical separation and digital symbols.[1] Especially on social media platforms, algorithmic recommendation blurs public-private boundaries—recommendation mechanisms not only facilitate content dissemination but also may cause private expressions to be accessed by non-target groups[2], triggering privacy anxiety. The functional alienation of the #Baby Food Supplement tag is a

concentrated manifestation of this contradiction. Such spatial practices not only reflect individuals' pursuit of privacy protection but also embody profound changes in social relations in the technological era.

Taking youth users aged 18–28 under the Xiaohongshu #Baby Food Supplement tag as the research object, this study aims to reveal the strategies and logic of youth constructing private spheres in online public space, clarify the new characteristics of public-private boundaries in the digital era, provide a path reference for youth to avoid online harassment [14] and maintain freedom of private expression, and also offer a basis for platforms to optimize spatial governance (e.g., improving tag functions and protecting user privacy).

2. Literature Review

2.1 Evolution of Public-Private Concepts

The evolution of Western public-private concepts is a historical process deeply intertwined with social structural transformation and the development of political philosophy. Its core context shows a progressive trend from the conflation of public and private and priority of the public sphere to the separation of public and private and protection of private rights, and then to the integration of public and private and restructuring of boundaries, finally forming a modern public-private relationship framework based on rights and the rule of law.[4]

Ancient Greece and Rome were the embryonic stage of the Western public-private divide. Aristotle defined humans as "political animals" and established the core status of the city-state as a public sphere. The private sphere (family) only served as a survival basis attached to public virtue. Ulpian in ancient Rome clearly distinguished public law and private law, proposing that "public law concerns the polity of the empire, and private law concerns individual interests", forming a highly developed private law system and a relatively weak public law system in practice[5], constructing a dual structure that safeguards the sanctity of private property and public order. In the Middle Ages, theocracy and the Church became the supreme public authority, and public-private boundaries were blurred. The private sphere was incorporated into the framework of theological salvation and church obedience, and private affairs such as personal property and family lacked independent legitimacy. [6]It was not until the Reformation that "faith" was included in the private sphere, laying an important foundation for the rise of modern public-private separation. In the early modern period, based on natural rights and social contract theory, Western public-private concepts achieved institutional transformation.[7] Hobbes unified the public and private under absolute sovereignty through contract theory to maintain social order; Locke clearly distinguished the private sphere constituted by natural rights and the public sphere represented by the government, establishing the core principles of "sacred private rights" and "limited public power"; Rousseau's concept of "general will" further realized the theoretical unification of public and private in a moral community. [8]These ideas laid the foundation for the formal establishment of the division between public law and private law in the civil law system in the 19th century, promoting the independent development of administrative law, constitutional law and civil law, and forming an institutional pattern of public-private separation. From the late 19th century to the present, public-private boundaries have shifted from absolute separation to mutual penetration and integration, showing a dual trend of "privatization of public law" and "publicization of private law". The state intervenes in the private sphere through legislation such as anti-monopoly, environmental protection and social security, and optimizes public service supply through contracts and entrustment. Habermas's public sphere theory points out that the public sphere is a public discussion space between the state and society, formed by private citizens with rational criticism as the core, and is an extension of the private sphere to publicity. However, the traditional public sphere has a significant gender blind spot, centered on male subjects, excluding private issues such as

women's intimate life and physical experience from public discussion, resulting in long-term aphasia of women's discourse. Cyberspace in the digital era provides the possibility to break this barrier. Expressions in the private sphere can be transformed into subcultural publicity with public value through community interaction, providing a theoretical basis for youth to restructure public-private boundaries.

Overall, the evolution of Western public-private concepts has always been driven by economic forms, power structures and ideological paradigms, achieving a core shift from "public-oriented, public-private conflation" to "private-oriented, public-private separation", and then to "public-private interaction and dynamic balance of boundaries". Under the challenges of new issues such as digital governance and public health in contemporary times, how to balance individual rights and public interests has become the core direction for the further development of public-private concepts.[9]

The evolution of Western public-private concepts takes social structure and ideological change as the context: ancient Greece and Rome laid the foundation for the public-private divide, with urban public life respected and Roman law initially defining public-private rights;[18] in the Middle Ages, under the Christian dual structure, public-private concepts became religious, public life centered on the Church, and private life strictly regulated by doctrines[10]; the modern Enlightenment, with rationality as the core, reshaped public-private relations by Locke, Rousseau and others, emphasizing the balance between individual rights and public will; after the Industrial Revolution, public-private spheres accelerated differentiation, the legitimacy of personal self-interest was recognized under the free market economy, and Marx revealed the class opposition between public and private interests under capitalism; in modern society, public-private concepts tend to be diverse, the welfare state expands public sphere intervention, social movements promote reflection on traditional public-private boundaries, and postmodern thought emphasizes the fuzziness of public-private boundaries and the diversity of individual interests.

In traditional Chinese thought, the categories of "public" and "private" can be traced back to pre-Qin classics. [21]The Book of Rites · The Conveyance of Rites puts forward the idea of "the world is for the public", emphasizing the priority of public interests. The Confucian logic of "cultivating the self, regulating the family, governing the state, and pacifying the world" closely links self-cultivation with public responsibility, forming a public-private view of "the state and family as an integral whole" (Wu Liqun, 2014). Legalists advocated absolute centralization of "abolishing private for public", while Taoists and Mohists proposed natural public and universal love public. From the Qin and Han dynasties to the Sui and Tang dynasties, the centralization system was established, and public-private concepts tended to be institutionalized. The county system of the Qin Dynasty restructured public-private power; the Han Dynasty "valued public and suppressed private" became ethical; public-private boundaries were blurred under the political power of powerful families in the Wei, Jin, Southern and Northern Dynasties; the imperial examination system of the Sui and Tang dynasties promoted a reshuffle of public-private power. During the Song, Yuan, Ming and Qing dynasties, Neo-Confucianism metaphysicized public and private, and the development of commodity economy in the late Ming Dynasty promoted the awakening of the legitimacy of "private"[11]. Gu Yanwu, Wang Fuzhi and others put forward institutional reflections.[20] In modern times, under the impact of Western learning, from Liang Qichao's dichotomy of "public morality—private morality" and Yan Fu's theory of "the boundary between group and self" (Yan Fu, 1903) to the restructuring of public-private concepts under the influence of the New Culture Movement and Marxism, the transformation to modernity was completed; in contemporary times, public-private concepts continue to adjust in the re-interpretation of traditional resources, dual construction of institutions and ethics, and the expansion of global publicity.[19]

The nested public-private relationship under the traditional "state-family as an integral whole" system has evolved in the digital era. Yan Fu's *On the Boundary between Group and Self* is a

localized translation and introduction of Western public-private concepts. Yan Fu transformed John Stuart Mill's core idea of "individual freedom prior to social control" into a dual framework of "the boundary between group and self", essentially defining the right threshold of private space and public space. Yan Fu emphasized that "the freedom of the self is bounded by not infringing the freedom of others" (Preface to the Translation of *On the Boundary between Group and Self*), endowing individuals with "private sphere autonomy" in the fields of thought, speech and behavior. This echoes the view in modern communication theory that "private space is a field for individual identity construction"—such as Goffman's "front stage-back stage" theory, where individuals can express themselves without role in private spaces (e.g., diaries, letters, early social media accounts). Yan Fu's "self-right" essentially strived for an "expression enclave" for individuals free from excessive interference of public opinion in the era of emerging media (e.g., newspapers, academies). For example, he opposed suppressing individual dissent with "the virtue of group unity", arguing that "the pressure of public opinion is crueller than the pressure of the monarch" (Chapter 3 of *On the Boundary between Group and Self*), which provided a theoretical basis for modern journalists (e.g., Liang Qichao) to criticize current politics and advocate reform in newspapers.[12]

Foreign research on public-private concepts focuses on theoretical definition of public-private boundaries and gender criticism with legal philosophy and public sphere theory as the core; domestic research explores the modern transformation of public-private concepts based on the traditional "state-family as an integral whole" and the localized thought of "the boundary between group and self". However, existing research mostly stays at the theoretical level, lacking empirical analysis of youth actively constructing private spheres and restructuring public-private boundaries with algorithmic strategies on digital platforms, and research on the transformation of women's intimate discourse into sub-publicity is particularly weak.

2.2 Evolution of Spatial Concepts

Scholars have explored the evolution of public and private space and the shift from physical space to cyberspace from multiple dimensions. Based on Tönnies' "community—society" theory, Park distinguished traditional community public space centered on emotional bonds and modern social private space based on rational contracts (Park & Burgess, 1925). [14]As a founder of urban human ecology, Park took Chicago as an empirical research laboratory and systematically revealed the shaping effect of physical space on social interaction patterns, social disorganization and urban problems from the perspective of regional spatial distribution and ecological organization (Robert E. Park, 1987).[17] Lefebvre's spatial triad dialectic emphasizes that space is a product of social relations, including spatial practice, representations of space and representational spaces. He proposed that space is a product of social relations and emphasizes the dynamic construction of space by power and capital (Lefebvre, 1974).[13] Habermas further revealed that commercialization and mediatization continue to erode the traditional public sphere, leading to its decline. Online platforms in the digital era have spawned circled sub-public spheres,[23] which are independently constructed by specific identity groups and have both the sense of belonging of the private sphere and the interactivity of the public sphere, becoming the core field for the restructuring of public-private boundaries. Foucault revealed the power discipline mechanism in space with the theory of "panopticon"; in the media and network era, Castells proposed the distinction between "space of flows" and "space of places", pointing out the restructuring of spatial structure by modern technology. Benjamin's discussion of urban roaming extends to the mobile Internet era, interpreting how technology makes public space present a private perception; Goffman's dramaturgical theory is reflected in the division between social performance and real expression in cyberspace, such as the use of anonymous accounts. Arendt pointed out that the real public sphere faces de-realization due to

the absence of "the presence of others". Overall, spatial concepts have undergone a process from the traditional dual opposition of public and private in physical space, to the game of power and capital in space in modern social construction, and then to the restructuring of public-private boundaries by technology in cyberspace. Among them, the virtualization impact of technology on space, the fluidity of public-private boundaries and related ethical issues have become research focuses.[15]

Foreign spatial theories have formed a complete pedigree from urban ecology, spatial production to space of flows, and feminist spatial theory further reveals the inequality of spatial gender power; domestic research focuses on the fuzziness of public-private space and youth online privacy practices in the Chinese context. However, existing research has not fully paid attention to the unique role of "tag symbols" as boundary carriers in digital space, and research on the fluid characteristics of "designable and adjustable" public-private boundaries and the combination of spatial practices and algorithmic mechanisms is insufficient.

2.3 Concepts of Public Space and Private Space

Scholars have found that traditional public-private views show a certain tension in the process of urbanization. For example, in spaces such as urban villages and old communities, residents embed private needs into public space through behaviors such as building balconies and occupying public green spaces, forming a "semi-private" transition area (Xiang Biao, 2000). This practice reflects the cultural trait of "public-private fuzziness" in Chinese society—private space is often realized through temporary occupation or transformation of public space, and the definition of public space often relies on informal social negotiation rather than clear legal boundaries (Zhao Xiaofeng, 2015).

With the popularization of the Internet, social media has become a key field for the extension of private space and the integration of public space.[8] Fan Haichao proposed "fluid sense of intimacy", where users construct solitary spaces through media practices such as headphones and bed curtains (Fan Haichao, 2024). Li Jie analyzed the "fluid privacy" of mobile phone viewing, revealing the paradox of private consumption in public occasions (Li Jie, 2024). Behaviors such as youth using Weibo sub-accounts and Xiaohongshu "male-avoidance tags" are active constructions of private space under algorithmic recommendation and social pressure (Zhao Dan, 2025; Wang Qin & Cong Ying, 2024). Weibo sub-accounts provide users with a "back stage" for emotional catharsis and real self-expression, isolated from real social relations, alleviating performance anxiety (Zhao Dan, 2025). Female Xiaohongshu users use tags such as "baby food supplement" to avoid male gaze and online harassment, and restructure the gender order of cyberspace through algorithmic resistance (Wang Qin & Cong Ying, 2024).

The rise of online communities has changed the interaction mode of public and private spaces. In virtual communities, individuals construct private spaces with a sense of belonging on public platforms by participating in interest groups and online forums. Studies have found that patients with rare diseases form mutual aid communities through social media, realizing emotional communication and experience sharing in the "middle zone", which not only meets private emotional needs but also participates in public issue discussions (Jiang Rui & Wang Jiali, 2023). However, the anonymity and openness of cyberspace have also brought problems such as privacy leakage and cyberbullying, triggering blurring and conflicts of public-private boundaries (Chen Huadong, 2024).[16]

Domestic and foreign research has paid attention to youth online privacy construction and algorithmic resistance, but there are obvious research gaps: first, most research focuses on a single privacy behavior and does not reveal the complete logic of "motivation—cognition—behavior"; second, there is a lack of special empirical research on tag functional alienation and digital barrier construction; third, it fails to combine the reconstruction of private sphere with the formation of sub-public sphere, making it difficult to respond to the localized extension of Habermas's theory in digital

gender scenarios.[17]

2.4 Literature Review

Comprehensive existing research shows that public-private concepts, spatial theories and online privacy practices have formed relatively rich research results: foreign research focuses on theoretical construction and platform power criticism, while domestic research focuses on youth online privacy behaviors and local spatial characteristics. However, overall, there are three core deficiencies in the research: first, limited research perspective, mostly focusing on the "passive dissolution" of the private sphere and ignoring the subjective practices of youth actively designing and dynamically adjusting public-private boundaries in public platforms; second, single research object, existing research on "male-avoidance tags" is mostly qualitative analysis[18], lacking empirical evidence of mixed methods of LDA topic modeling + semi-structured interviews, and insufficient special research on alienated tags such as Xiaohongshu "baby food supplement"; third, insufficient theoretical connection, failing to integrate algorithmic resistance, private sphere reconstruction and female sub-public sphere formation into a unified analytical framework, and not fully expanding the interpretive dimensions of classic theories such as Habermas, Lefebvre and Goffman in digital gender scenarios. Based on this, this study takes the Xiaohongshu #Baby Food Supplement tag as the entry point to systematically analyze the logic of dissolution and reconstruction of youth private sphere in online public space, making up for the methodological and perspective gaps in existing research.

3. Research Methods

This study uses LDA topic modeling to conduct topic clustering on 9,158 valid blog posts under the Xiaohongshu #Baby Food Supplement tag in 2025 and analyze the correlation between content dimensions and the private sphere.[19] Then, semi-structured interviews are conducted with 20 non-maternal content producers to explore behavioral motivations and cognitive logic, so as to systematically analyze the logic of youth private sphere construction.

3.1 LDA Topic Model

LDA (Latent Dirichlet Allocation) topic model is an unsupervised machine learning model whose core function is to automatically cluster latent topics in texts and judge the number of topics contained in texts and the proportion of each topic through statistical word distribution. Perplexity is the core indicator to evaluate the model—the lower the perplexity, the stronger the model's explanatory power for texts.[20]

First, this study uses the Python Scrapy framework to crawl original blog post data under the Xiaohongshu #Baby Food Supplement tag from January 1 to December 31, 2025. After four steps of preprocessing: MD5 hash deduplication (based on blog post ID + text), invalid content cleaning (deleting texts < 10 words and advertisements), Jieba word segmentation (loading custom dictionaries such as "male-avoidance tags"), and stop word removal (combining Harbin Institute of Technology stop word list and platform-specific vocabulary), 9,158 valid blog posts are finally retained to construct a corpus. Then, the Python Gensim library is used to build a "word-ID" mapping dictionary (filtering words with low frequency < 5 and high frequency > 0.8 to reduce noise), and blog posts are converted into a "bag-of-words model"; the Sklearn library is used to calculate perplexity for topic number $k \in [2, 20]$, draw a "topic number-perplexity curve", and determine $k=5$ as the optimal topic number (with the lowest perplexity, Perplexity=892.3); finally, an LDA model with $k=5$ is trained to extract high-frequency keywords of each topic for naming, and the topic proportion is counted to analyze the correlation between content dimensions and private sphere construction.

3.2 Semi-Structured Interviews

Semi-structured interview is a commonly used semi-open interview method in qualitative research. Based on a preset core interview outline, it not only asks questions around the core research issue but also allows interviewees to freely supplement and extend expressions according to their own experience, combining structure and flexibility. It can deeply explore the internal motivations, cognitive concepts, behavioral logic and emotional experience of interviewees, and is suitable for exploring the deep mechanisms behind complex social behaviors, serving as a core method to interpret individual subjective practices and meaning construction.[21]

This study adopts the semi-structured interview method and designs an interview outline around the core issue of "how youth construct private spheres in public platforms". Twenty non-maternal content producers of the #Baby Food Supplement tag are selected as interviewees, with sample characteristics: aged 18–28 (12 college students, 8 working women), educational background (15 undergraduates, 5 postgraduates), and Xiaohongshu usage duration of 6 months to 3 years, ensuring the sample covers the core circles of youth groups. Interviews were conducted via Tencent Meeting voice from May to August 2025, each lasting 15–20 minutes, with full recording and transcription into 82,000 words of text. After the interview, interviewees confirmed the accuracy of the text to avoid information bias. The study uses Nvivo 12 for three-level coding: open coding extracts initial concepts such as "afraid of male comments arguing", "talking about female topics safely here" from transcripts; axial coding classifies initial concepts into four categories: "algorithmic resistance motivation", "privacy protection demand", "community sense of belonging",[22] "public-private boundary cognition"; selective coding refines the core category of "active construction of private sphere in public platforms" and establishes a logical chain of "motivation→cognition→behavior" to reveal the internal mechanism of youth private sphere construction.[23]

4. Data Analysis

4.1 Results of LDA Topic Model Analysis

4.1.1 Topic Word Distribution and Naming

Based on the "topic-word probability distribution" output by the LDA model, the 5 topics are named and interpreted, as shown in Table 1.

Table 1 Subject Term Frequency Distribution

Topic No.	High-Frequency Keywords (Sorted by Probability, Top 15)	Topic Naming	Topic Proportion
Topic 1	female topics, safety, discussion, harassment, freedom, emotion, secrets, complaints, troubles, sharing, personal, ideas, feelings, expression, privacy	Discussion Space for Female Intimate Topics	34.7%
Topic 2	baby food supplement, recipes, nutrition, month age, ingredients, methods, matching, food supplement machine, rice paste, vegetables, fruits, meat paste, egg yolk, allergy, feeding	Original Tag Meaning (Maternal Baby Food Supplement Content)	9.2%
Topic 3	male gaze, male avoidance, boys, filtering, no entry, males, disturbance, arguing, comments, aversion, avoiding,	Algorithmic Resistance Against Male Gaze	26.1%

	blocking, unwanted, seeing, intervention		
Topic 4	privacy, space, private, public, boundary, safe zone, sphere, delineation, protection, personal, undiscovered, hidden, exclusive, independent, scope	Active Construction of Public-Private Spatial Boundaries	18.5%
Topic 5	sisters, mutual aid, emotion, support, company, same frequency, comfort, encouragement, together, community, connection, friends, communication, understanding, resonance	Emotional Mutual Aid of Female Communities	11.5%

4.1.2 Interpretation of Topic Results

Comprehensive research findings show that the #Baby Food Supplement tag has completely deviated from its initial positioning as a "maternal content classification identifier" and has been alienated into a digital tool for young women to construct private spheres in public platforms. This construction process presents a complete logical chain of "expression demand—defense strategy—boundary design—community consolidation". The specific interpretation is as follows:

(1) Topic 1 and Topic 3: Core Evidence of Tag Functional Alienation—From "Maternal Content" to "Digital Barrier for Female Private Sphere"

The #Baby Food Supplement tag has been transformed from an original maternal content aggregation tool into a "digital barrier" for women to construct private expression fields and resist external interference in digital space. Topic 1 (Discussion Space for Female Intimate Topics, 34.7%) and Topic 3 (Algorithmic Resistance Against Male Gaze, 26.1%) account for 60.8% in total, constituting the absolute core content under the tag, which fully confirms the fundamental transformation of its function.[25]

From the characteristics of keywords, words such as "secrets", "complaints" and "feelings" in Topic 1 reflect young women's strong demand for a "safe space to express private emotions and topics". They migrate content not suitable for discussion in public spaces,[26] such as "physical troubles" and "emotional confusion", to posts under this tag, essentially seeking a "private expression field".

Words such as "filtering", "blocking" and "no entry" in Topic 3 reflect active exclusion of "male users", a defense strategy to cope with "male gaze" and harassment in cyberspace. The two together form a dual behavioral logic: producing intimate content on the one hand, and setting defense mechanisms on the other.[27] This phenomenon echoes Lefebvre's theory that "space is a product of social relations", further supporting the viewpoint of this study—the digital space under this tag is essentially a concrete manifestation of social relations in which women resist online gender harassment and fight for the right to safe expression. Users actively delineate an exclusive private discussion field on the public platform of Xiaohongshu through the above behaviors, thus completely restructuring the initial function of the tag.

(2) Topic 4: Active Construction of Public-Private Boundaries—Youth's Subjective Control of Digital Space

Youth do not passively accept the preset public-private dual boundaries of the platform, but actively design and control the public-private scope of digital space through the use of the #Baby Food Supplement tag. Keywords such as "privacy", "boundary", "safe zone" and "delineation" in Topic 4 (Active Construction of Public-Private Spatial Boundaries, 18.5%) directly confirm this subjective practice.

From the perspective of behavioral logic, youth clearly recognize the public platform attribute of

Xiaohongshu, but use tags to limit content audiences to female groups who understand the tag function, creating a "private safe zone in a public platform". This behavior is not blurring public-private boundaries, but precise control of boundaries. This practice is highly consistent with Yan Fu's "theory of the boundary between group and self". The "boundary between group and self" in the digital era has shifted from passive definition at the legal level to active balance through behavioral strategies. While meeting the demand for private expression, youth use tag semantics to screen audiences and standardize expression content, taking into account private autonomy and public order, showing clear cognition and active construction ability of digital public-private boundaries.

(3) Topic 5: Community Support—Non-Institutional Guarantee for the Stability of Private Sphere

The construction of youth private sphere is not an isolated individual behavior, but a collective practice based on community connection. Keywords such as "sisters", "mutual aid" and "resonance" in Topic 5 (Emotional Mutual Aid of Female Communities, 11.5%) complement the logical closed loop for the stable maintenance of the private sphere.

From the perspective of interactive practice, female mutual aid and emotional resonance under the tag not only meet youth's emotional needs but also spontaneously form an implicit community norm of "not inviting men to participate and focusing on female intimate topics". This norm, without platform rules and legal constraints, can become a natural protective barrier for the private sphere, enabling youth to dare to express intimate content in the space, further consolidating public-private boundaries and enhancing community sense of belonging. It can be seen that the private sphere constructed by youth is a community space based on common needs, and community connection is the key support for maintaining its stability.

In summary, the results of the LDA topic model clearly present the content ecology and user behavior logic under the #Baby Food Supplement tag: centered on female intimate expression and defense (Topic 1 + Topic 3), taking active design of public-private boundaries as the method (Topic 4), and taking community emotional mutual aid as the support (Topic 5), jointly promoting the alienation of the tag from a "maternal content identifier" to a digital tool for female private sphere.

4.2 Results of Semi-Structured Interview Analysis

Through three-level coding, the core category of "active construction of private sphere in public platforms" is extracted, and a complete logical chain of "motivation—cognition—behavior" is sorted out. The specific coding results are shown in Table 2.

Table 2 Coding Table

Coding Category	Typical Interview Quotes	Frequency (Mentions)
1. Algorithmic Resistance Motivation	"I posted complaints under the 'female growth' tag before, and many boys argued in the comments. After using 'baby food supplement', there are no more. The algorithm seems not to push to boys." (Interviewee A, 22-year-old college student); "The name of this tag is too 'maternal', boys usually won't click in, equivalent to a natural 'filter'." (Interviewee F, 26-year-old working woman)	17 times (mentioned by 85% of interviewees)
2. Privacy Protection Demand	"There are some topics I don't want boys to see, such as girls' physical troubles. Posting under this tag feels like talking in 'my own small room'." (Interviewee C, 20-year-old college student); "Public platforms are too 'public', I need a place to speak the truth safely. This tag is my 'safe	16 times (mentioned by 80% of interviewees)

	zone'." (Interviewee M, 24-year-old working woman)	
3. Community Sense of Belonging	"Seeing 'those who know understand' in the comments, I know I met 'my own people'. I don't need to explain why to avoid men here, everyone understands." (Interviewee H, 21-year-old college student); "Commenting under this tag, someone will respond to my troubles. I don't feel alone, like a small community." (Interviewee Q, 25-year-old working woman)	12 times (mentioned by 60% of interviewees)
4. Public-Private Boundary Cognition	"Xiaohongshu is a public platform, but under the 'baby food supplement' tag it's like a 'private small circle'. What I say here won't 'go viral', this is the public-private boundary I want." (Interviewee E, 23-year-old college student); "I know this is a public platform, but I use tags to make it 'private'. It neither disturbs others nor protects myself." (Interviewee T, 27-year-old working woman)	14 times (mentioned by 70% of interviewees)

4.3 Research Findings

Through three-level coding of interview texts from 20 non-maternal content producers, the core category of "active construction of private sphere in public platforms" is extracted, and a complete logical chain of "motivation—cognition—behavior" is sorted out. The specific findings are as follows:

4.3.1 Motivation Level: Algorithmic Resistance and Safe Expression, Core Drivers of Private Sphere Construction

Algorithmic resistance, avoidance of male gaze and pursuit of safe expression space are the core motivations for youth to use the #Baby Food Supplement tag. 85% of interviewees (17 mentions) regarded filtering male users as the primary purpose of using this tag. For example, Interviewee A, a 22-year-old college student, mentioned: "I posted complaints under the 'female growth' tag before, and many boys argued in the comments. After using 'baby food supplement', there are no more. The algorithm seems not to push to boys." Interviewee F, a 26-year-old working woman, also believed: "The name of this tag is too 'maternal', boys usually won't click in, equivalent to a natural 'filter'." [28]

Youth use the "maternal attribute" of the tag to form a cognitive barrier, reversely utilize the recommendation logic of platform algorithms to achieve implicit filtering of male users. This behavior is not passive avoidance of harassment, but an adaptive strategy to actively counter the imbalance of gender power in cyberspace.

This strategy breaks through the defense limitations of traditional physical separation and direct blocking, realizing implicit exclusion through algorithmic logic. It is an innovative practice of youth private space construction in the digital era, and also echoes the research conclusion of Wang Qin and Cong Ying (2024) that "male-avoidance tags are algorithmic resistance".

4.3.2 Cognition Level: Privacy Protection and Boundary Cognition, Concentrated Embodiment of Youth Spatial Subjectivity

Privacy protection demand and clear public-private boundary cognition together constitute the conceptual basis for youth to construct private spheres. 80% of interviewees (16 mentions) regarded the space under the tag as a "private safe zone in a public platform", and 70% of interviewees (14 mentions) clearly distinguished the public attribute of the platform and the private attribute under the tag. Interviewee C, a 20-year-old college student, said: "There are some topics I don't want boys to

see, such as girls' physical troubles. Posting under this tag feels like talking in 'my own small room'." Interviewee E, a 23-year-old college student, pointed out: "Xiaohongshu is a public platform, but under the 'baby food supplement' tag it's like a 'private small circle'. What I say here won't 'go viral'."

Youth clearly recognize the adjustability of public-private boundaries in digital space, actively define the #Baby Food Supplement tag as an exclusive field for private expression, and refuse to passively accept the preset public-private division of the platform, fully demonstrating user subjectivity in digital space.

This cognitive practice extends Goffman's "front stage-back stage" theory to digital scenarios. The space under the tag becomes a "back stage" for role-free expression, while the public tag space is a "front stage" in line with social expectations. Youth realize flexible conversion of public and private spheres through tag switching, completing identity and expression adjustment in digital space.

4.3.3 Behavioral Level: Privacy Protection and Community Connection, Practical Strategies for Private Sphere Construction

Community connection is the core behavior for youth to stabilize private sphere boundaries. 60% of interviewees (12 mentions) gained a sense of female community belonging under the tag. Interviewee H, a 21-year-old college student, mentioned: "Seeing 'those who know understand' in the comments, I know I met 'my own people'. I don't need to explain why to avoid men here, everyone understands." Interviewee Q, a 25-year-old working woman, also said: "Commenting under this tag, someone will respond to my troubles. I don't feel alone, like a small community."

Youth spontaneously form an implicit community norm of "refusing male participation and focusing on female intimate topics" in interaction, which can form a self-protection mechanism of private space without external rules.

This community connection based on emotional resonance transforms the private sphere from an isolated individual space to a collectively shared space, which not only strengthens boundary toughness but also provides emotional support for intimate expression, becoming a non-institutional guarantee for the stable existence of the private sphere.

In summary, the interview results clearly present the complete logic of "motivation—cognition—behavior" for youth to construct private spheres: taking algorithmic resistance and safe expression as core motivations to define the goal of private sphere construction; taking privacy protection and boundary cognition as conceptual basis to define private space attributes; taking community connection as practical behavior to stabilize private sphere boundaries. Finally, youth complete the independent construction of private spheres in public platforms, and on this basis shape a female sub-public sphere, enriching the digital form of Habermas's public sphere theory, and providing empirical support for understanding the fluid characteristics of public-private boundaries in the digital era.

5. Conclusion

Taking the Xiaohongshu #Baby Food Supplement tag as the research object, this study systematically analyzes the dissolution and reconstruction practices of private spheres among young women aged 18–28 in online public space by adopting LDA topic modeling and semi-structured interview methods. The results show that young women complete the active construction of private spheres through tag alienation, digital public-private boundaries present new characteristics, and this practice also provides localized empirical evidence for the digital extension of classic theories.

The #Baby Food Supplement tag has undergone significant functional alienation, completely transforming from an original maternal content classification identifier into a digital barrier for young women to resist male gaze, avoid online harassment and construct intimate expression spaces. LDA topic analysis shows that the two core topics of female intimate topic discussion and algorithmic

resistance against male gaze under the tag account for more than 60%, far higher than the original maternal baby food supplement content; interview data also confirm that 85% of users take "filtering male users" as the core purpose. This alienation is not an accidental user behavior deviation, but an active adaptive practice of young women to cope with the imbalance of gender power and the intrusion of male gaze in online public space. It is a concrete manifestation of the social relations of women seeking the right to safe expression in digital space, confirming Lefebvre's core assertion that "space is a product of social relations"[24].

Young women rely on the complete logic of "algorithmic resistance—privacy protection—community connection" to actively reconstruct private spheres in online public space. At the motivation level, young women reversely utilize platform recommendation mechanisms through algorithmic resistance to achieve implicit exclusion of non-target audiences; at the cognitive level, they form a clear cognition of digital public-private boundaries, define the tag space as a "safe zone" for intimate expression, demonstrating spatial subjectivity; at the behavioral level, they delineate expression scope through privacy protection, and consolidate boundaries through community connection to form implicit norms. Compared with the fixed physical public-private boundaries of traditional physical space, digital public-private boundaries present fluid characteristics of being designable and adjustable. Youth have shifted from passive recipients of public-private boundaries to active designers, fully demonstrating subjective initiative in digital space.

Youth's private sphere reconstruction practice further expands the digital interpretive dimensions of classic public-private theories and spatial theories. This practice transforms Yan Fu's "theory of the boundary between group and self" from right definition at the legal level to a behavioral strategy of "balancing private autonomy and public order" in digital space; extends Goffman's "front stage-back stage" theory from physical scenarios to digital symbolic scenarios, realizing flexible switching of public and private expressions on the same platform; at the same time, constructs a female sub-public sphere to make up for the gender blind spot of Habermas's traditional public sphere, enriching the application connotation of public sphere theory in digital gender scenarios.

In summary, this study clearly reveals the logic and characteristics of private sphere construction among young women in the digital era, not only providing new empirical evidence for understanding youth online spatial practices but also offering practical reference for youth online privacy protection and social media platform spatial governance. Limited by the research scope and sample constraints, future research can further expand research platforms and groups to deeply explore the long-term evolution trend of digital public-private boundary restructuring.

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