Developing a Framework for City Brand-Image Promotion via Social Media Communication

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Abstract: This paper introduces a framework for utilizing social media in the development of city branding and image enhancement. Amidst the evolving digital landscape, the study emphasizes the transformative potential of social media in reinforcing societal, cultural, and economic attributes vital to city branding. It combines advanced Information and Communication Technology (ICT) with traditional marketing tactics to propose a groundbreaking approach to advertising and brand promotion. The paper highlights the application of innovative methods like social listening, netnography, and machine learning to analyze intricate patterns in consumer communication and behavior. These techniques aim to provide deeper insights into consumer dynamics, crucial for fostering sustainable urban development and enhancing city branding strategies. This work contributes significantly to the understanding of digital tools in city marketing, highlighting their potential in shaping the future of urban development.

1 INTRODUCTION

Over recent years, the synergy of social media technologies and urban development has revolutionized the domain of city branding. This phenomenon, gaining traction among scholars and practitioners alike, stands at the intersection of advertising, brand promotion, and sustainable urban development. The concept of city branding, central to local governance and policy-making, leverages a city's image as a strategic asset, potentially catalyzing economic growth through tourism and foreign investments, (Lynch, 1996; Braun, 2008; Zenker and Beckmann, 2013; Bhupesh, Berg and Björner, 2015; Nguyen et al., 2023).

Studies in tourism management, urbanization, and marketing have broadly examined city branding, yet a critical gap persists: the integration of Information and Communication Technology (ICT) and social media advancements in this context. Lynch's seminal work "The Image of the City" (Lynch, 1996) laid the

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groundwork for understanding city branding as a modern construct, extensively explored in urban planning and social sciences (Banai and Rapino, 2009; Morello and Ratti, 2009). Tracing its roots to the 19th century, city branding and marketing have evolved, with recent developments underscoring the role of digital society in reshaping public perception and engagement (Avraham, 2004; Liu and Chen, 2007; Larsen, 2018).

Central to the development of the city's image is the collaborative efforts of local governments, businesses, and residents. Their unified aim: is to sculpt a city's identity that reflects both official aspirations and the lived experiences of its populace (Avraham, 2004; Zhang and Zhao, 2009). Herein lies the crux of modern city branding - the effective use of Electronic Word of Mouth (EWOM) in social media as a transformative tool for image crafting and brand dissemination. An Integrated Brand Promotion (IBP) strategy, centered on digital communication channels, is therefore imperative. This strategy

should encompass content and mobile marketing techniques, pivoting on authentic citizen perspectives to forge effective city image development strategies (Avraham, 2004; Larsen, 2018).

Globally, cities are increasingly mobilizing digital platforms to reimagine their branding narratives. Regional leaders and urban planners are recognizing the power of social media in sculpting city images that attract investments and tourism (Wang and Feng, 2023). Despite the burgeoning interest and application in this field, a comprehensive understanding of the mechanisms by which social media influences city branding remains elusive. Previous research has explored city image development through various lenses – urbanization (Millington, 2016), educational institutions(Kotler and Fox, 1995), events (Beriatos and Gospodini, 2004), and heritage (Porras-Bernardez *et al.*, 2019) yet the specific dynamics of social media in this process are not fully elucidated.

This paper aims to bridge this gap, offering a holistic investigation into the development of city image-branding, with a special emphasis on digital marketing tools and social media strategies. Furthermore, this paper leverages insights from recent research, such as the study by Maricchiolo et al. (2021), which illuminates the pivotal role of place attachment in city branding. Their investigation underscores the transformative potential of social media in fostering deeper connections between residents and their urban environments. By enhancing place attachment through strategic social media use, cities can cultivate a brand image that resonates with both locals and visitors, thereby driving sustainable urban development. In an era where the digital economy and society are inextricably linked, understanding the nuances of social media's role in city branding is not just academic but a practical imperative for sustainable urban development.

2 LITERATURE REVIEW

The conceptualization of the city as a dynamic entity has evolved significantly, from Mumford's (1970) portrayal of the city as a "theater of social action" to contemporary views that consider the impact of digital media on urban identities. While Mumford and subsequent urban theorists like Jacobs and Appleyard (1987), and Jacobs (1992) underscored the vibrancy and theatricality of city life, their perspectives primarily reflected physical interactions within urban spaces. This traditional lens on urbanism, as articulated by Wirth (1938) in his exploration of

"urbanism as a way of life," laid the groundwork for understanding urban personality but did not anticipate the digital transformation of city branding.

In the digital era, Sassen (2011) and Castells (2015) introduced the notion that cities are now constructed in both physical and electronic spaces, bridging the "space of flows" with the "space of places." This dual existence challenges previous notions of urban identity by incorporating the global reach and immediacy of digital communication networks into the fabric of city branding. The introduction of "Smart Cities" and the "Communicative City" concept (McQuire and Wei, 2020) further expands the scope of urban development to include digital infrastructure and interactive media as essential components of city branding strategies.

The transformation towards "Smart Cities" represents an ambitious vision for urban development, aiming to integrate creativity, sustainability, and technological innovation to improve the quality of life and economic prospects (Lee, Hancock, and Hu, 2014). Yet, this vision necessitates a critical appraisal of how such aspirations align with the practical realities of urban living and the potential risks associated with digital divides and privacy invasions. The "Communicative City" concept, as proposed by McQuire and Wei (2020), further emphasizes the centrality of communication in city development. While the application of large screens and media art offers novel avenues for cultural expression and public engagement, it prompts critical reflections on the accessibility of such technologies and their implications for urban inclusivity.

The adaptation of cities in response to global challenges, such as the COVID-19 pandemic, underscores a pivotal moment of urban rethinking. Milan's adoption of the "15-minute city" concept (Pinto and Akhavan, 2022) illustrates a strategic shift towards localized living that promises enhanced life quality. However, the replicability of such models across diverse urban contexts demands a critical examination of their sustainability and adaptability post-pandemic.

In the intricate digital landscape, the dynamics between city branding and resident satisfaction present a compelling complexity. The investigation by Priporas, Stylos, and Kamenidou (2020) into the confluence of city image, brand personality, and social media engagement reveals a poignant dichotomy. On one hand, there's a visible enhancement in brand engagement among Generation Z during economic downturns, propelled

by adept utilization of social media. Conversely, this increased engagement contrasts sharply with a broader sentiment of resident dissatisfaction, highlighting a paradox within digital city branding efforts. This paradox underscores the nuanced, sometimes contradictory, impact of digital strategies on city branding, suggesting an urgent need for comprehensive understanding beyond surface-level engagement metrics.

Expanding upon Kotler, Haider, and Irving's (1993) seminal concept of place image—a complex amalgam of beliefs, ideals, and impressions—recent empirical work out of Thessaloniki, Greece, adds a critical dimension to our understanding. This study not only corroborates the multifaceted nature of city image in the context of social media engagement but also elucidates the specific impacts on Generation Z. The positive reception of a city's brand personality and image among young residents on social media, juxtaposed against an overarching negative correlation with resident satisfaction, paints a vivid picture of the intricate interactions at play. These findings not only affirm but also challenge the traditional frameworks of city branding, urging a reevaluation of how digital and demographic-specific behaviors intertwine and influence overall satisfaction.

This nuanced landscape prompts several critical reflections. First, the observed dichotomy raises questions about the effectiveness of current digital branding strategies in genuinely enhancing resident satisfaction and place attachment. It suggests that while social media can significantly amplify engagement with younger demographics, this does not necessarily translate into a positive perception of the city's brand among the wider population. Hence, there exists a critical gap between digital engagement and holistic urban satisfaction, indicating that enhanced social media interaction does not automatically equate to improved brand perception.

Moreover, the insights from Thessaloniki offer invaluable guidance for future city branding initiatives, especially in the digital age where Generation Z's perceptions increasingly influence urban narratives. However, they also caution against a one-size-fits-all approach, highlighting the importance of tailoring city branding strategies to address the diverse needs and expectations of different demographic segments.

In light of these observations, it becomes imperative for city branding practitioners to delve deeper into the socioeconomic divides that digital platforms may bridge or exacerbate. A critical approach to leveraging social media in city branding should consider not only the potential for enhanced engagement but also the broader implications for resident satisfaction and urban identity. Future strategies must navigate the delicate balance between leveraging digital innovations for brand promotion and ensuring these efforts resonate meaningfully with the community's fabric, fostering genuine satisfaction and attachment.

Many different factors influence a city's image or perception among potential visitors and tourists. These include the city's demographic characteristics, status or political power, population size, crime rate, socioeconomic status and employment, number and characteristics of state institutions located within the city, geographic location and historical context, movies and TV shows set within the city, media coverage, ambiance, entertainment options, tourism or cultural values, and physical appearance (Avraham, 2000). Lynch (1996) approached the city's image from the perspective of its overall development, emphasizing the importance of the five elements of node, landmark, edge, path, and district for people to recognize. Focus was placed on the personal perceptions of residents' observation and perception of the urban environment and other forms.

While this view illuminates the physical elements of people's perceptions of the city, some scholars argue that it exaggerates the static properties. Later, in his book 'Good City Form', Lynch (1984) shifted focus from the identifiability of urban form to the more abstract concept of 'individual feels', making it the central element of urban meaning. Based on Lynch's ideas, some Chinese scholars (Li et al., 2011) expanded and extended the concept of city image in terms of city culture and city spirit, and consider city image as a synthesis of social forms, values, and behaviors. In this approach, the emphasis is placed on the 'individual feeling' described by Lynch, reflecting the overall biased perception of the public towards a specific city.

Adding to these perspectives, Nguyen et al. (2023) explored the role of social media communication, tourist satisfaction, and destination brand equity components in enhancing destination brand equity. Their study, based on the Stimulus-Organism-Response (S-O-R) theory, underscored the significant impact of user-generated content on social media in shaping public perceptions of a city. This highlights the evolving landscape of city branding, where social media platforms serve not just as tools for promotion but as critical environments where city images are dynamically constructed and negotiated. The findings from Nguyen et al. (2023) contribute to this complex matrix of factors affecting city image,

demonstrating the increasing importance of digital engagement and the content generated by both destination marketing organizations (DMOs) and tourists themselves. This integration of digital communication strategies with traditional elements of city branding presents a more nuanced understanding of how cities can manage and enhance their image in the digital age.

In today's era of digital media, urban identities and city impressions are increasingly shaped by the intricate dynamics of online communities. These virtual spaces foster diverse identities and emotionally rich dialogues, expanding personal networks and redefining traditional boundaries of urban identity (Rheingold, 1993). This shift is marked by a transition to 'electronic identity marks' (e-ID), signifying a profound change in how urban identities are constructed and perceived (Pennebaker *et al.*, 2015). The 'Sponge City Program' in China is a prime example of this digital transformation, utilizing social media platforms like Weibo and WeChat for effective public engagement and positive city brand image development (Thadani, Li and Chan, 2020).

Following this digital trend, the 'Augmented Reality (AR) in Advertising and Marketing Digital Communications' study (Papageorgiou and You, 2023) further illuminates how emerging technologies like AR are revolutionizing city branding. By blending digital and physical experiences, AR enhances user engagement and provides innovative ways to convey city branding elements, showcasing the potential of digital technologies in creating dynamic and engaging city brand images that resonate with modern urban residents and visitors.

The 'Sponge City Program' in China exemplifies the impact of this digital transformation on city branding. Aimed at tackling urban water management issues, the program harnesses social media platforms like Weibo and WeChat, effectively engaging the public and fostering a positive city brand image. This approach highlights the strategic role of social media in city branding, demonstrating its ability to engage communities and shape public perception (Thadani, Li and Chan, 2020). In reinforcing the dynamic landscape of city branding, the study by Zhang & Ghing (2023) exemplifies the profound influence of social network sites on shaping the communicative strategies of urban brands, with a focus on Xian City. This research underlines how platforms such as Weibo not only serve as tools for promotion but fundamentally alter the engagement between cities and their constituents, fostering a richer, more participatory brand dialogue. Complementarily, Wan & Li (2024) delve into the broader shifts underpinning city branding in the digital era, advocating for an adaptive strategy that integrates social media and digital innovations to engage contemporary audiences effectively. Their analysis suggests a move beyond traditional branding approaches towards methodologies that embrace the dynamism of social media, underscoring the critical role of digital engagement in establishing resonant urban identities. Together, these studies provide compelling evidence of the shifting paradigms in city branding, marked by the increasing centrality of digital platforms in crafting and communicating city brands that resonate with modern stakeholders.

In the current digital landscape, urban identity is increasingly shaped by digital platforms, as illustrated by initiatives like China's 'Sponge City Program', which utilize social media for enhancing brand image. Concurrently, emerging technologies such as Augmented Reality (AR) redefine city branding strategies by offering immersive experiences that elevate user engagement. This shift towards a digital-centric approach in urban branding accentuates the importance of interactive and participatory communication channels in cultivating a positive perception of the city. Nevertheless, the essence of effective city branding extends beyond mere technological innovation. As explored by Maricchiolo et al. (2021), the crux of city branding lies in the ability to foster profound connections between individuals and urban spaces. Through strategic use of social media, cities can significantly strengthen these connections by developing place identity and reinforcing social bonds among residents and visitors. This complex interplay between digital innovations and the intrinsic human need for connection underscores the multifaceted nature of urban branding, suggesting that while technological tools offer new avenues for engagement, the heart of city branding fundamentally resides in nurturing meaningful relationships within the urban ecosystem.

Most of the previous studies on urban identity have been conducted with/in offline urban entities, pointing to the psychological attachment, cultural affiliation, and lifestyle identity of inner-city members, and emphasizing the influence of mass media on urban communication. However, we argue that the ponderous citizens dissolve the city boundaries, and that identity relies more on the citizens' vague feelings. This internalization and diffusion of city identity may be considered from the perspective of citizens' identity and expression. Therefore, the concept of the city image is what is being perceived by the citizens and visitors. It is an impression triggered by emotions about the city felt

by Internet social media users through various ways of understanding the city. It could be considered as the sum of the cognitive effect of the city on the public with its natural and social elements, and from the perspective of the citizens, visitors and tourists. It is the general impression and the sum of public opinions about the city.

3 A FRAMEWORK MODEL FOR EVALUATING CITY BRAND-IMAGE IN AN ERA OF DIGITAL COMMUNICATIONS

The overall aim is to bridge the gaps found in the literature by proposing a holistic model based on the critical factors that contribute towards the development of positive city brand-image focusing on the use of digital communication and social media platforms. For operationalization purposes

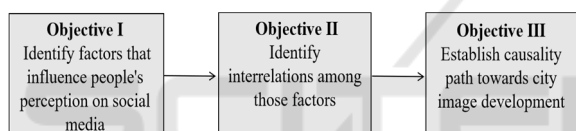such a framework would serve three objectives as shown on the flowchart of Fig.1.

Figure 1: Proposed Framework Model Objectives.

First, objective is to identify the main factors influencing people's perceptions of city image through social listening or netnography of social media networking platforms. Second, to explore the interrelations of those factors that contribute to the development of positive city brand-image. Finally, to establish a path based on those factors that marketers and policy makers can follow to develop a city brand via digital communications and social media.

By applying this framework model, the following research questions can be answered:

(i)   What brand/image of cities can we extract from public discussion based on people's perceptions on social media?

(ii) What are the main factors that influence city branding via social media?

(iii) How are those factors interconnected and related to building a city brand on social media?

This framework acknowledges the significant role of social media in city branding while recognizing the nuanced challenges posed by the dynamic nature of digital communication. The synthesis of digital and

traditional branding methods offers a comprehensive pathway toward developing a resonant city brand image, balancing innovative engagement strategies with foundational branding principles. The necessity of an integrated approach underlines the evolving landscape of city branding, where digital strategies extend beyond mere promotional tools to become central components of the branding process. This shift demands an acute understanding of digital platforms' capabilities and limitations, advocating for strategic engagements that harness the full potential of social media while acknowledging the importance of traditional branding elements.

In the context of digital communications, the integration of digital strategies, such as social media engagement and augmented reality (AR), offers a transformative avenue for city branding efforts. These strategies not only facilitate direct and interactive communication with target audiences but also enable cities to present their unique attributes in engaging and innovative ways. For instance, augmented reality (AR) applications can create immersive experiences that highlight a city's landmarks and cultural events, thus enhancing user engagement and contributing to a more dynamic city brand image. Moreover, social media platforms like Weibo and WeChat have proven effective in engaging the public and fostering a positive city brand image, as demonstrated by initiatives like China's 'Sponge City Program.'

To maximize the impact of digital strategies on city branding and resident satisfaction, it is crucial to ensure that digital representations accurately reflect the city's real-world attributes and address the needs and preferences of its residents. Engagement should be inclusive, bridging digital divides to ensure that all segments of the population can participate in the digital discourse. By adopting a balanced approach that leverages the potential of digital tools while grounding efforts in the city's genuine character and community aspirations, cities can develop branding strategies that resonate deeply with both residents and visitors.

The call for future research to delve into the evolving digital landscape's implications for city branding is critical, especially as emerging technologies and shifting user behaviors continue to redefine the parameters of effective brand development. This exploration should aim to uncover the long-term impacts of digital city branding strategies on place attachment and urban identity, considering the digital behaviors of various demographic groups. The integration of traditional and digital city branding methods to achieve a holistic and sustainable brand development approach

represents a fertile ground for investigation. Such research could provide invaluable insights for urban planners, policymakers, and marketers striving to foster vibrant, connected, and resilient urban communities in the digital age.

The implementation of this framework aims to enrich the theoretical and practical understanding of city branding, offering a nuanced perspective that blends digital innovations with traditional branding tenets. By highlighting the potential of social media to enhance place attachment and community well-being, the framework sets a new standard for developing city branding strategies that are responsive, inclusive, and adaptable to the demands of the digital era.

3.1 The Proposed Model

Evaluating a city's brand image among specific target populations can utilize various methods, including attitude surveys via questionnaires, focus groups, and in-depth interviews. The framework adopts an exploratory sequential mixed-method design, as detailed by Creswell and Poth (2018). Building on the insights of Maricchiolo et al. (2021), this framework highlights the strategic role of social media in enhancing place identity and social bonds, essential for fostering local social identity and improving community well-being.

Adding depth, the study by Ramadhani and Indradjati (2023), provides a crucial conceptual framework for understanding social media's role in the acceptability and effectiveness of city branding efforts. This research underscores how social media engagement and participation lead to the creation of a city brand that gains wide acceptance among diverse stakeholders. Integrating these insights, the framework aims at developing city branding strategies that deeply connect with both residents and visitors, aiding sustainable urban growth. Highlighting the significance of digital communication and the role of place attachment in enhancing the city's brand image, this model serves as a guide for devising effective city branding strategies that resonate on a broad scale, initiating with an exploratory phase followed by statistical analysis of the outcomes. This methodology unfolds in two main phases, as illustrated in Fig. 2, ensuring a robust application of social media's potential in city branding.
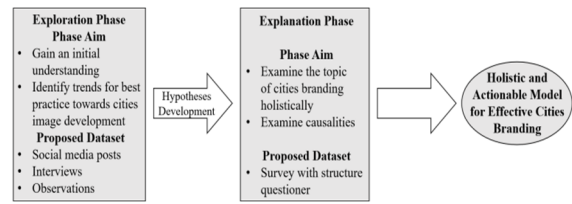

Figure 2: The proposed Framework Model.

First Phase

This phase aims to explore the phenomenon of developing city image through social media. To achieve that, content analysis on three major cities may be contacted. Specifically, by investigating the users' reactions posted on Weibo and Twitter via text analysis techniques, the researcher could identify the major factors that influence the development of a city image via social media. Additionally, this study focuses on the cities of New York, Hong Kong, and Shenzhen.

According to (Sassen, 2001), New York and Hong Kong have emerged as "Global Cities", interconnected centers of finance and specialized producer services for the world economy. Being direct neighbors, Shenzhen has always shared similarities with Hong Kong, their relationship and relative positions vis-à-vis each other and in the broader political economy have changed over time (Leung and Waters, 2022). Both Shenzhen and Hong Kong are reframed in 2016-2017 as the 'Guangdong-Hong Kong-Macao Greater Bay Area', a megalopolis that should become ever more integrated economically and physically through intensifying flows of people, capital, goods, and services (Leung and Waters, 2022). As a result, these cities are considered as successful in projecting a city image that derives from social media and are the most appropriate to study this phenomenon. Furthermore, both Weibo and Twitter are widely used and accepted by the international literature(Roberts and Koliska, 2017; Xie et al., 2021). The combination of those two platforms also helps the researcher to avoid data accessibility problems when analyzing Chinese regulations on Twitter (Gao et al., 2012; Liu et al., 2014).

Text analysis could be performed with the usage of the Term Frequency-Inverse Document Frequency TF-IDF, Latent Dirichlet Allocation LDA, and Linguistic Inquiry and Word Count LIWC. These methods allow researchers to measure keywords, key topics, and sentiments of the posts about city image. Additionally, they provide a comprehensive analysis of the features of city image on social networking platforms such as Twitter and Weibo and are ideal for

deep data mining of users' general perceptions of a city image.

TF-IDF (Term Frequency-Inverse Document Frequency) is a commonly used weighting technique in information retrieval and data mining to evaluate the importance of words in a set of documents. Words with high frequency and low IDF are considered more important in a document and can be used as representative keywords. Therefore, this study will extract keywords regarding a city to describe the place, or the events/activities related to the place (Luhn, 1958). LDA (Latent Dirichlet Allocation) is a dominant method widely used for topic extraction and classification. As a non-directed learning model, LDA is capable of extracting lists of words by topic and identifying topics based on joint probability (Blei, Ng and Jordan, 2001). Thus, LDA can be adopted to identify potential trending topics and the popularity of each topic regarding different attributes of city image. LIWC (Linguistic Inquiry and Word Count), which is a method commonly used for sentiment analysis (Pennebaker *et al.*, 2015), will be employed to measure the emotions in posts about the city on social networking platforms such as Twitter and Weibo. The LIWC method will be used to obtain users' general sentimental feelings about different parts of a city. After the content analysis, key themes will emerge from the empirical investigation of this phase. Those themes will be connected in a structural pathway toward the development of the city image. As a result of this analysis, specific hypotheses relevant to city image development will be formulated. Therefore, this phase serves as the foundation of the statistical analysis, which is on the nature of exploratory investigations (Denzin and Lincoln, 2018).

Second Phase

The second phase in the framework aims to test hypotheses derived from the previous stage using Structural Equation Modeling (SEM). SEM is a statistical methodology that employs a confirmatory (i.e., hypothesis-testing) approach to examine a structural theory related to a particular occurrence. Typically, this theory aims to reveal 'causal' processes by analyzing measurable observations on many latent variables (Bentler, 1988; Nguyen et al., 2023)). SEM encompasses two key aspects: (a) representing the causal processes under study with a set of structural equations, and (b) visualizing these structural relations to better conceptualize the theory. The hypothesized model can then be statistically evaluated in a simultaneous study of the full system of variables to assess its fit with the data. Adequate

goodness-of-fit suggests plausibility of the proposed relationships between variables; insufficient fit leads to the rejection of such ties (Byrne, 2016). A tentative model based on the SEM approach is presented in Figure 3.
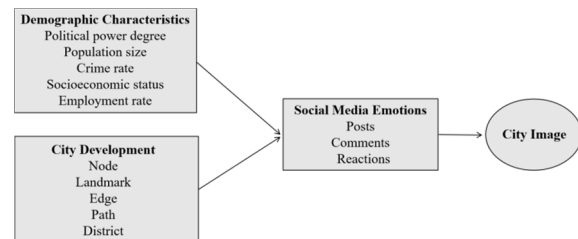

Figure 3: A tentative Model for investigating the multiple effects on City Brand-Image development.

4 CONCLUSIONS

The implementation of the proposed framework offers a valuable contribution to the academic field and practical guidance for city officials and policymakers on Integrated Brand Promotion (IBP) and the development of city images. It introduces an interdisciplinary approach that leverages social media insights for city image and brand development, providing a broader perspective by incorporating public opinion and social media discussions. This methodology allows for an in-depth exploration of city image from the perspective of the community.

Moreover, this research highlights the importance of social media data in urban studies and Information and Communications Technology (ICT) by demonstrating the utility of netnography and text analysis. These methods enable a real-time understanding of social media dynamics, offering deep insights into how citizens and visitors interact with and perceive the city brand.

Additionally, the practical application of this framework has the potential to significantly benefit urban governance. By analyzing data from social media, city officials can gain a clearer understanding of public perceptions and adjust their strategies to meet the needs of the community, enhancing responsiveness in both digital and physical domains.

However, it is crucial to recognize the limitations of the current study, including its scope and the depth of analysis in certain areas. Future research should extend beyond the primary platforms examined here to include a wider range of digital channels and technologies, such as Augmented Reality (AR) and Virtual Reality (VR). It is also important to explore the impact of city branding efforts on factors like

urban development, resident satisfaction, and tourism more comprehensively. Investigating the long-term effects of digital city branding on community engagement and place attachment will provide essential insights for developing more effective and sustainable urban branding strategies. This balanced approach will contribute to a better understanding of the complexities of city branding in the digital age, without overstating the impact of current findings.

Finally, the implementation of this approach paves the way for an effective Integrated Brand Promotion (IBP) marketing strategy that incorporates the influence of social media and digital communications in city brand or image development. In today's digital society, where Information and Communications Technology (ICT) is prevalent worldwide, this framework provides a comprehensive set of factors and robust recommendations on how social media platforms can shape the development of a city's image or brand. The study concludes by emphasizing the vital role of ICT and social media in shaping city images, underscoring its importance in the current digital era.

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