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Structural Equation Model of Driving Low-Sugar Dessert Consumption in Generation Y

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Abstract

Low-sugar desserts are a crucial option for Generation Y in their pursuit of wellness and health. This study seeks to shed light on the factors that influence Generation Y's preference for low-sugar options. The research involved analyzing data from 633 individuals who have experience consuming low-sugar desserts in ten major cities across China. This data was gathered through an online questionnaire. The descriptive analysis, reliability, validity, Confirmatory factor analysis, structural equation model are proposed. The results uncover that knowledge sharing and social media marketing significantly influence consumption attitudes, social identity, and brand image, which in turn affect consumption intentions towards low-sugar desserts. Brand image serves as a key mediator, amplifying the impacts of knowledge sharing and social media marketing. Both cognitive and social factors are integral in shaping consumer behavior, highlighting the multifaceted nature of decision-making in healthier food choices. These findings underscore the importance of strategic communication and branding in the food industry, especially for promoting healthier options. The findings are crucial for health policymakers and the food and beverage industry, guiding the development of targeted health campaigns and product innovations that resonate with Generation Y's evolving preferences.

Keywords: *health awareness, consumer behavior, sugar intake, generation Y, China, public health, dietary trends.*

1. Introduction

The global food landscape is profoundly transformed and shaped by technological advancements and globalization (Cheng et al., 2023). Low-sugar desserts are undoubtedly the choice for healthy living and eating habits (Bogaard, 2023). However, this abundance comes with significant public health implication (Cheng et al., 2023)s. The widespread availability and consumption of processed foods, rich in sugar, have contributed to a burgeoning public health crisis characterized by rising rates of obesity, diabetes, and cardiovascular diseases (Elechi et al., 2022). This crisis is particularly pronounced among younger generations, including Generation Y, who are increasingly exposed to unhealthy dietary choices from a young age (Mirghafoori et al, 2020;Cook et al., 2021).

After experiencing moderate growth between 2018 and 2019, the Low-sugar desserts market faced a downturn in 2020, likely influenced by the economic uncertainties brought on by the

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global pandemic (Shah et al., 2023). However, it rebounded in 2021 and continued to grow into 2022, albeit at a slower pace. This fluctuating trend suggests that while there is a stable interest in low-sugar options, China's economy has continued its downward spiral since the epidemic, and macroeconomic factors can considerably impact market dynamics (Mazwi & Chambati, 2023). There has been a steady increase in the market size of sugar substitutes from 2015 to the projected year 2027. There is a growing demand for sugar alternatives, which aligns with a broader movement toward healthier eating options (Garg et al., 2023). It is evident that consumer interest in low-sugar and sugar-free products is not a fleeting trend but a sustained shift. Hence, the growing market provides a rich context for your study on low-sugar dessert consumption among Generation Y. On the other hand, the sales experienced a slight dip in 2020 but showed resilience by rising again in subsequent years, implies that the demand for low-sugar products has a level of inelasticity, possibly due to increased consumer awareness or dietary needs (Ramanathan et al., 2022).

While there is ample research on general dietary habits and their health implications, focused studies on specific product consumption, like low-sugar desserts, remain sparse (Cengiz & Rojas, 2022). These desserts, a unique blend of indulgence and health-consciousness, merit distinct attention. Furthermore, most existing research adopts a broad approach, encompassing a wide age range. However, Generation Y presents a distinct demographic with unique societal influences, technological exposure, and economic challenges. Their choices, shaped by traditional values and modern forces, may not align with other age groups. The intersection of health consciousness and actual consumption behavior remains underexplored, particularly the 'Sweet Paradox'—the coexistence of health awareness and indulgent consumption among Millennials.

Therefore, this research aims to explore and understand the factors affecting the consumption intention towards low-sugar desserts among Generation Y in China. This includes examining the roles of knowledge sharing for low-sugar desserts and social media marketing in predicting consumption intentions and exploring the parts of brand image, consumption attitudes, and social identity that influence these consumption trends.

The next section of this study comprehensively reviews relevant literature, establishing the research's context and theoretical foundations. Subsequently, the research paradigm is elaborated, encompassing the study's design, methodologies for data collection and analysis, along with ethical considerations. Following this, the penultimate section articulates the quantitative results and their pertinence to the research questions posed. The last section concludes the study, deliberating on its implications and contributions to both theoretical and practical domains, while recognizing its limitations and proposing avenues for future research in this area.

2. Literature Review

2.1 Theoretical Foundations

The Theory of Planned Behavior (TPB) posits that behavior is directly influenced by the intention to perform that behavior, which is affected by attitudes, subjective norms, and perceived behavioral control (Su et al., 2021). In the context of low-sugar dessert consumption, TPB suggests that Generation Y's eating habits result from their attitudes towards health and indulgence, the social norms around healthy eating, and their perceived control over making health-conscious food choices (Marmaya et al., 2019). Adopting low-sugar desserts as a behavioral response to these factors, where the individuals' health consciousness, influenced by knowledge sharing and social media platforms, shapes their attitudes and consumption intentions.

Consumer Socialization Theory (CST) explores how individuals acquire consumption-related skills, knowledge, and attitudes, primarily through social interactions and cultural transmissions (Chang et al., 2022). For Generation Y, digital platforms play a crucial role in this socialization process (Jiang et al., 2022). Their preferences and behaviors regarding low-sugar desserts are influenced by interactions on social media, brand communications, and shared experiences within their digital communities. These platforms serve as information sources and shape the norms and expectations around healthy eating and lifestyle choices.

The Theory of Social Influence delves into how social forces, such as conformity to social norms, authority, and peer pressure, mold individual behavior (Malik & Jamshed, 2023). Generation Y's preference for low-sugar desserts can be partly attributed to the influence of these social forces. The health-conscious trends propagated through social media, the authority of health experts and influencers endorsing low-sugar options, and the desire to conform to peer groups who value health and wellness all shape their dietary choices (Li et al., 2023).

Integrating these theories provides a holistic view of the factors driving Generation Y towards low-sugar desserts (Savelli et al., 2023). The TPB framework helps understand the role of individual attitudes and perceived control in shaping consumption intentions (Kang et al., 2023). CST offers insights into how socialization through digital media influences these attitudes and norms. Finally, the Theory of Social Influence highlights the impact of broader social dynamics on individual behavior.

2.2 Hypothesis Statement

Knowledge sharing plays a pivotal role in shaping consumer behavior towards low-sugar desserts, as evidenced by various theoretical models. The Theory of Planned Behavior posits that attitudes, subjective norms, and perceived behavioral control, influenced by knowledge sharing, are key determinants of behavioral intentions (Ajzen, 1991). Knowledge sharing impacts perceptions of severity, susceptibility, benefits, and barriers, encouraging health-oriented behaviors (Jami Pour & Taheri, 2019). Perceived information usefulness and credibility, enhanced through knowledge sharing, guide consumer intentions (Luo et al., 2021). Furthermore, knowledge sharing facilitates the consumer journey from awareness to consumption (Rajabion et al., 2019). Hence, this study posits:

H1: *Knowledge sharing positively influences consumption attitudes towards low-sugar desserts.*

Under the framework of social identity theory, individuals define themselves through various social groups, a process wherein knowledge sharing can establish a 'health-conscious' or 'wellness-oriented' group, valuing low-sugar desserts (Rajabion et al., 2019). This identification with a specific group often leads to the adoption of its norms and values, positioning low-sugar desserts as key to the social identity of health-conscious individuals (Pinho & Gomes, 2023). Consequently, knowledge sharing transforms low-sugar desserts from mere dietary options to lifestyle elements, integrating them into consumers' social identities. Brands leverage this phenomenon, using knowledge sharing to foster communities, encouraging individuals to assimilate these products into their identity constructs (Elia et al., 2020). Hence, this study posits:

H2: *Knowledge sharing positively affects consumption intentions towards low-sugar desserts.*

Brand image as a pivotal element influencing customer loyalty, premium pricing willingness, and positive word-of-mouth, driving brand equity. Concurrently, the Theory of Planned Behavior suggests that behavioral intentions, such as purchasing low-sugar desserts, are shaped

by attitudes, subjective norms, and perceived behavioral control (Chen et al., 2020). The Information Adoption Model further indicates that the perceived usefulness and credibility of information positively impacts consumers' attitudes, potentially enhancing brand image. Considering the health risks associated with sugar, such as obesity and diabetes (Malik & Hu, 2022), brands promoting healthier alternatives could secure a market advantage. Consumers' brand perceptions are largely influenced by information from marketing and word-of-mouth (Cheung & To, 2021). Therefore, disseminating credible information about the health benefits and taste of low-sugar desserts through marketing and social media can alter negative stereotypes (Savelli et al., 2023), fostering associations of health-consciousness, innovation, and transparency with the brand. Hence, this study posits:

H3: *Knowledge sharing influences the social identity associated with low-sugar desserts.*

The Theory of Planned Behavior elucidates how attitudes, subjective norms, and perceived behavioral control collectively influence consumption intentions, with social media marketing playing a pivotal role in shaping consumer attitudes towards low-sugar desserts (Ellis & Helaire, 2023). The Uses and Gratifications Theory suggests that media usage for information and social identity can influence consumption attitudes. Concurrently, the Elaboration Likelihood Model of Persuasion provides insight into how persuasive social media messages affect attitudes towards low-sugar desserts via central or peripheral persuasion routes. Given the link between high sugar consumption and health issues, social media emerges as a crucial tool in molding consumer attitudes and behaviors, where the portrayal of 'healthy' labels significantly impacts perception (Vinoi et al., 2024). Social media marketing, by highlighting the taste, texture, and health benefits of low-sugar desserts, can alter negative perceptions. Additionally, user-generated content like reviews and testimonials serves as social proof, further cementing positive attitudes towards these desserts.

H4: *Knowledge sharing enhances the brand image of low-sugar desserts.*

Social media emerges as a potent tool in molding consumer attitudes and intentions towards such products (Vinoi et al., 2024). The way foods are labeled and presented as 'healthy' can significantly sway consumer perceptions and actions (Reddy et al., 2023). Social media marketing's informational role plays a crucial part in educating consumers about the benefits and appeal of low-sugar desserts, influencing consumption intentions (Baker et al., 2022). Additionally, social proof in the form of user reviews, testimonials, and influencer endorsements on social media platforms lends credibility and encourages purchasing and consumption of these desserts (Ekeland & Borenstein, 2020). The ability of social media to facilitate multimedia storytelling can effectively convey emotional messages about healthy eating (Chan et al., 2017), potentially boosting the preference for low-sugar options. Moreover, social media's capacity to foster online communities centered on healthy eating and low-sugar choices can help normalize and bolster the intent to consume these products (Maher et al., 2014).

H5: *Social media marketing positively impacts consumption attitudes towards low-sugar desserts.*

Social media has proven effective in shaping both individual consumer behaviors and collective identities, with literature noting how brands utilize it to cultivate community and product-related identity (Kizgin et al., 2020). Marketing initiatives on these platforms can position low-sugar desserts as a lifestyle choice, appealing to health-focused or diet-restricted individuals, thereby influencing their social identity (Blut et al., 2023). Elements such as user reviews, testimonials, and influencer collaborations provide social validation, strengthening this identity. Social media's interactive nature facilitates community engagement and identity reinforcement

through dialogues, challenges, polls, and user-generated content (Lovejoy & Saxton, 2012). Consistent branding and messaging across these platforms further solidify the connection between the brand or product and specific social identities, like health consciousness or environmental awareness (Hayes et al., 2022).

H6: *Social media marketing positively influences consumption intentions towards low-sugar desserts.*

Brand image, a crucial facet of brand equity, significantly impacts customer loyalty, willingness to pay premium prices, and overall brand value. Social Influence Theory delves into how social interactions shape conformity to social norms and behaviors, with social media acting as a pivotal platform for establishing or reinforcing these norms (Sammut & Bauer, 2021). Given the health risks associated with high sugar consumption, low-sugar desserts emerge as a favorable alternative (Stanhope, 2016). Social media marketing plays a key role in molding consumer perceptions and attitudes, thereby influencing brand image. Brands associated with health consciousness or sustainability, as noted in studies, are increasingly garnering positive attention (Alamsyah et al., 2020). Through educational content, videos, and endorsements, social media marketing can highlight the benefits of low-sugar desserts, enhancing brand image (Sina et al., 2022). User-generated content, including reviews and influencer endorsements, adds credibility, while storytelling and interactive content build emotional connections, further bolstering the brand's image (Bruckauf & Walsh, 2018). Engaging consumers through online communities and challenges around low-sugar offerings enhances interaction and community feeling, positively affecting the brand's image, and reinforcing its value in the marketplace (Malarvizhi et al., 2022).

H7: *Social media marketing strengthens the social identity related to low-sugar desserts.*

Brand equity encompasses elements like brand awareness, associations, perceived quality, and loyalty, with a positive brand image potentially impacting these facets and thereby influencing consumer attitudes (Shariq, 2019). A positive brand image could reinforce favorable beliefs about a product (Malarvizhi et al., 2022). There is a shift in consumer preferences towards low-sugar alternatives due to heightened health awareness (Rodda et al., 2020). This shift emphasizes that brand image significantly affects consumer choices, especially in health-related products (Chrysochou & Grunert, 2014). Brand strategies focusing on quality, health benefits, and consumer well-being are more effective in fostering positive consumer attitudes (Kemp et al., 2020). A brand with a positive image, particularly one associated with low-sugar desserts, is often linked to quality and credibility, influencing consumers to try their products with expectations of high quality and taste (Ballco & Gracia, 2022). This image can evoke positive emotions or associations, further influencing consumption attitudes. Moreover, the social communities around a brand significantly shape individual attitudes towards its offerings, including low-sugar desserts (Keller & Guyt, 2023).

H8: *Social media marketing enhances the brand image of low-sugar desserts.*

The role of culture and social processes in consumer behavior, where a positive brand image can symbolize status and lifestyle choices, influencing social identity (Han et al., 2021). Research on the adverse health effects of high sugar intake underscores the rise of social identities around healthier, low-sugar alternatives (Drewnowski et al., 2019). Brands with favorable images often foster communities united by shared values or aspirations, such as health-conscious or sustainable living, in the context of low-sugar desserts (Shah et al., 2024). A positive brand image typically carries associated values like health consciousness and sustainability (Kumar et al., 2021), and consumers who identify with these values often embrace the brand as part of

their social identity (Sihvonen, 2019; Wang et al., 2019). When opinion leaders or influencers within an individual's social network endorse such brands, it further cements the brand's position within their identity structure.

H9: *A positive brand image of low-sugar desserts leads to favorable consumption attitudes.*

The Theory of Planned Behavior (TPB) suggests that attitudes, alongside subjective norms, and perceived behavioral control, influence an individual's intention to perform a behavior, such as consuming low-sugar desserts (Savelli et al., 2023). There is a robust link between attitudes and consequent behavior, indicating that favorable attitudes toward low-sugar desserts are likely to foster consumption intentions (Tang et al., 2021). Increasing awareness of the health risks of high sugar intake provides a context for understanding attitudes and intentions regarding low-sugar alternatives (Baker et al., 2022). Such attitudes, influenced by broader social norms about healthy eating, subjective experiences, marketing, or social networks, play a critical role in shaping purchase intentions (Sun & Wang, 2020). These attitudes encompass not only cognitive elements but also emotional aspects; a positive emotional connection to low-sugar desserts, in line with an individual's self-concept or objectives, can amplify the inclination to consume them.

H10: *Brand image influences the social identity associated with low-sugar desserts.*

With rising awareness about sugar's health risks, there is a trend towards forming social identities centered on healthier eating practices, such as low-sugar diets (Davis et al., 2019). Such social identities influence consumer behavior, including purchase intentions (Chu & Chen, 2019). In health-conscious communities, where strong social identities prevail, these identities significantly shape individual behaviors (Prentice et al., 2019). Within groups valuing low-sugar consumption, this practice becomes a normative behavior, thereby impacting intentions to consume low-sugar desserts. Individuals tend to participate in activities that resonate with their social identity values, such as health-consciousness or sustainable living, thereby increasing the likelihood of consuming low-sugar desserts (Baker et al., 2022). Peer influence or endorsements by group opinion leaders can further intensify this intention. Moreover, a deep emotional connection to a social identity often results in behaviors that affirm this identity, including specific consumption patterns (Charness & Chen, 2020).

H11: *Positive consumption attitudes towards low-sugar desserts lead to higher consumption intentions.*

Individual learning is influenced by observing others in social contexts and media, implying that knowledge sharing can impact brand image and consumption attitudes (Meoli et al., 2020). The changes in attitude can arise through central routes, focused on logic and information, or peripheral routes, influenced by cues like brand image (Chan et al., 2017). The TPB also notes that attitudes, subjective norms, and perceived behavioral control shape behavioral intentions, where attitudes towards consumption can be affected by brand image and knowledge dissemination. Knowledge sharing about low-sugar desserts can shape consumer perceptions and potentially enhance brand image, positively influencing consumption attitudes if the shared information aligns with consumer values such as health consciousness or sustainability (Pinto et al., 2021). Thus, effective knowledge sharing that builds a strong, positive brand image can lead to favorable consumption attitudes.

H12: *Social identity related to low-sugar desserts positively influences consumption intentions.*

The brand image profoundly influences consumer behavior, fostering social identities linked to lifestyles or values like health-consciousness or sustainability. Studies on knowledge sharing, especially via social media, show its effect on brand image, consumer attitudes, and social identities (Tajvidi et

al., 2020). Explorations into social identity have highlighted how brand loyalty and identification integrate into an individual's social self-concept (Holmes & Howard, 2023). Disseminating information about low-sugar desserts, emphasizing their health benefits and ethical sourcing, can positively shape brand image (Schoffers, 2019). A favorable brand image, enhanced through knowledge sharing, can prompt consumers to assimilate these products into their social identity, particularly if the brand reflects their values or self-concept. This alignment can bolster social identification with the brand and its represented lifestyle (Flight & Coker, 2021). As individuals identify with a brand, their personal narratives and reviews can create a reinforcing feedback loop, further solidifying the brand's image and its role in their social identity (Zhou et al., 2021).

H13: *Brand image mediates knowledge sharing and consumption attitudes towards low-sugar desserts.*

The literature consistently highlights the influential role of social media marketing (SMM) in shaping consumer attitudes, especially in niche markets like low-sugar desserts. Brand image, characterized by associations linked to the brand, significantly affects consumer perceptions and responses. It is particularly true for health-driven choices, such as low-sugar products, where the brand image is a critical factor (Pretorius et al., 2021). While SMM initiatives can influence attitudes, the brand image of low-sugar desserts plays a pivotal role in mediating this relationship, shaping the consumption attitudes of the target audience.

H14: *Brand image mediates the relationship between knowledge sharing and social identity for low-sugar desserts.*

Social media marketing (SMM) significantly impacts consumer behavior and brand image, with a distinct positive correlation between a robust brand image and favorable consumer attitudes, especially in health-conscious markets like low-sugar desserts (Ibrahim et al., 2020). SMM strategies, encompassing influencer endorsements, testimonials, and informative content, play a crucial role in cultivating a strong brand image for low-sugar desserts (Ibrahim et al., 2020). These strategies effectively engage both cognitive (information and facts) and emotional (visual appeal, social proof) elements, integral in shaping the brand image. A strong and positive brand image can effectively mediate the relationship between SMM and consumption attitudes, serving as a cognitive cue that influences consumer attitudes towards low-sugar desserts and potentially increasing their likelihood to purchase or remain loyal to the product (Zollo et al., 2020).

H15: *Brand image mediates the relationship between social media marketing and consumption attitudes towards low-sugar desserts.*

The likelihood of undertaking health-related actions increases if individuals believe they can effectively counteract health threats (Li et al., 2022). Knowledge sharing can play a crucial role in shaping these beliefs (Ahmad & Karim, 2019). Information impacts attitudes and behaviors (Patil et al., 2021), relevant in understanding how knowledge sharing influences attitudes towards consumption intentions. In the digital age, knowledge sharing significantly molds consumer attitudes, as highlighted by health awareness campaigns and nutritional studies promoting low-sugar diets (Baker et al., 2022). Dissemination of information via marketing, social media, or educational efforts can change consumer perceptions about the taste and health benefits of low-sugar desserts. Positive shaping of attitudes can encourage consumption intentions (Tang et al., 2021; Modarres et al., 2022), especially when consumers perceive low-sugar desserts as equally satisfying as traditional options. Effective knowledge sharing enables consumers to make well-informed choices, potentially heightening their intention to choose low-sugar desserts (Frikha et al., 2023; Adimi et al., 2022).

H16: *Brand image mediates the relationship between social media marketing and social identity for low-sugar desserts.*

Brand image markedly influences consumer attitudes and behaviors, with product perceptions directly affecting purchase intentions. In the context of growing health and wellness awareness, low-sugar dessert alternatives are gaining traction. A carefully developed brand image that emphasizes the favorable qualities of low-sugar desserts, such as taste, health benefits, or sustainability, can positively shape consumer attitudes (Tang et al., 2021). These positive attitudes, nurtured by a compelling brand image, may function as a key mediator, elevating consumption intentions (Savelli et al., 2023). A strong brand image fosters trust and can be decisive in consumers' choices to try low-sugar desserts, influencing their consumption decisions (Ahmad & Karim, 2019). Furthermore, if the brand image aligns with prevailing societal and cultural norms regarding health and well-being, its impact on consumer attitudes and subsequent intentions (Flurry et al., 2021).

H17: *Consumption attitudes mediate the relationship between knowledge sharing and consumption intentions towards low-sugar desserts.*

There is a considerable influence of social media marketing on consumer attitudes and behaviors, with attitudes playing a crucial role in determining purchase intentions (Chu & Chen, 2019). In the context of rising health consciousness, low-sugar and healthier dessert options are becoming increasingly preferred. Social media platforms provide an effective medium for brands to communicate and engage with consumers, potentially fostering more favorable attitudes towards low-sugar desserts (Sina et al., 2022). Positive attitudes shaped by social media marketing can mediate the relationship between marketing efforts and consumption intentions (Wang et al., 2022). Social media also serves as a venue for social proof through reviews, testimonials, and shared experiences, which can bolster positive attitudes and, in turn, amplify consumption intentions (Sun & Wang, 2020). High-quality content and credible endorsements on these platforms enhance the perceived reliability of low-sugar desserts, thereby impacting consumer attitudes and influencing their intention to consume these products (Sun & Wang, 2020).

H18: *Consumption attitudes mediate the relationship between brand image and consumption intentions towards low-sugar desserts.*

Knowledge sharing across various platforms positively impacts social identity and consumer behavior (Ahmad & Karim, 2019). Social identity, as An et al. (2019) suggest, plays a crucial role in shaping consumer choices and intentions, particularly when it resonates with personal or collective values. This is evident in the context of growing health concerns regarding sugar intake, leading to an increased consumer inclination towards low-sugar alternatives. Educational initiatives and social media dissemination can enhance the social identity associated with low-sugar desserts. Bergh et al. (2022) highlight that a robust social identity linked to low-sugar options mediates the relationship between knowledge sharing and consumption intentions. Social identity often entails normative behavioral expectations, implying that belonging to a group favoring low-sugar desserts may exert normative pressures towards their consumption (Holmes & Howard, 2023).

H19: *Consumption attitudes mediate the relationship between social media marketing and consumption intentions towards low-sugar desserts.*

Social identity, particularly in the context of health-conscious trends, plays a crucial role in consumer decision-making, influencing the burgeoning market for low-sugar desserts (Spears, 2021). A strong brand image fosters pride and belonging among consumers, integrating these feelings into their social identity. Ballco and Gracia (2022) note that when consumers strongly identify with a brand or product (like low-sugar desserts), it intensifies their purchase or

consumption intentions. Social identity could function as a mediator between brand image and consumption intention, as being part of a group valuing low-sugar desserts might enforce norms and expectations that shape individual behavior, bolstering consumption intentions (Blanke, 2021). Furthermore, a strong brand image confers trust and credibility, reinforcing the social identity associated with a brand or product category, thereby enhancing consumption intention.

H20: *Social identity mediates the relationship between knowledge sharing and consumption intentions towards low-sugar desserts.*

Individuals' behaviors align with their social identities, which are influenced by factors including media exposure. Schivinski et al. (2019) demonstrate the effectiveness of social media marketing in molding consumer attitudes and behaviors. Social identity crucially influences consumption intentions, particularly in the context of the growing market for low-sugar desserts due to increased health consciousness and sugar-related health concerns (Holmes & Howard, 2023). Social media strategies, such as "Healthy Indulgence" campaigns, enhance brand image and consumer perceptions, thereby influencing social identity (Lunardo & Gross, 2023). de Visser-Amundson et al. (2021) note that a strong social identity associated with low-sugar desserts mediates the impact of social media marketing on consumption intentions. Social media marketing also fosters community around brands, translating into social identities aligned with them, enhancing consumption intentions. Effective social media marketing increases brand credibility, reinforcing the social identity associated with low-sugar products and influencing consumption intentions, as highlighted by (Huang et al., 2023).

H21: *Social identity mediates the relationship between brand image and consumption intentions towards low-sugar desserts.*

H22: *Social identity mediates the relationship between social media marketing and consumption intentions towards low-sugar desserts.*

3. Research Method

This study adheres to a quantitative research methodology. A purposive sampling strategy was employed to select 633 participants, who are all Generation Y (25-44) consumers with experience in consuming low-sugar desserts. The selected samples are from China's top ten low-sugar dessert consumption cities: Beijing, Shanghai, Chengdu, Chongqing, Shenzhen, Guangzhou, Hangzhou, Changsha, Wuhan, and Xi'an. And then, we use the 5-point Likert scale to measure the variables. Variable measurements are following:

Knowledge sharing for low-sugar dessert, a concept explored by Behnam et al. (2021). Brand image of low-sugar dessert, as conceptualized by Dam and Dam (2021). The impact of social media on low-sugar dessert consumption, as investigated by Dam and Dam (2021), involves evaluating consumers' responses to social media marketing. Consumption attitudes towards low-sugar dessert, as defined by Li et al. (2022), are evaluated through respondents' agreement with specific statements. Social identity in the context of low-sugar desserts, as studied by Jiang et al. (2022), is measured to assess participants' sense of belonging and alignment with the values of the low-sugar dessert community. Consumption intention towards low-sugar desserts, as conceptualized by Li et al. (2022), involves assessing the likelihood of future purchase and consumption of low-sugar desserts.

This study, considering the diverse aspects of the examined variables such as knowledge sharing, brand image, social media's impact, consumption attitudes, social identity, and consumption

intentions, employs a multi-faceted analytical approach. This analysis tool comprises descriptive statistical analysis, reliability testing, confirmatory factor analysis, and structural equation modeling (SEM). Implementing these techniques allows for an in-depth exploration of the interrelations among the variables, thereby effectively meeting the objectives of the research.

4. Results

4.1 Descriptive Analysis

Table 1 in presents a comprehensive demographic profile of the participants, revealing insightful trends in gender, regional distribution, education level, and annual family income. The gender distribution is balanced, with females marginally outnumbering males (50.2% vs. 49.8%). This parity indicates a gender-neutral participation in the surveyed context, suggesting that the results may be broadly representative across gender lines. The participants are diversified across ten major Chinese cities, with Beijing (11.5%), Chongqing (10.4%), and Shenzhen (11.4%) having the highest representation. This wide regional spread ensures a varied urban demographic, essential for understanding regional differences or similarities in the study context. In terms of education, there is an even distribution across various levels, with a slight inclination towards higher education: bachelor's (26.4%), master's (22.6%), and doctorate (25.9%). This indicates that the respondents are well-educated, which may influence their perspectives and responses in ways that need to be accounted for in the analysis. Lastly, there is a broad spread across different income levels, with the highest concentration in the '250,000 - 300,000 RMB' (19.3%) and 'More than 300,000 RMB' (18.5%) ranges.

This distribution highlights the inclusion of participants from varied economic backgrounds, which is essential for examining the influence of economic factors in the study.

Table 1. Essential Information.

		Frequency Per cent	
Gender	Male	315	49.8
	Female	318	50.2
Region	Beijing	73	11.5
	Shanghai	54	8.5
	Chengdu	62	9.8
	Chongqing	66	10.4
	Shenzhen	72	11.4
	Guangzhou	58	9.2
	Hangzhou	57	9.0
	Changsha	70	11.1
	Wuhan	59	9.3
	Xi'an	62	9.8
Education Level	High school diploma	159	25.1
	Bachelor's degree	167	26.4
	Master's degree	143	22.6
	Doctorate	164	25.9
Annual Family Income (in RMB)	Less than 100,000	103	16.3
	100,000 - 150,000	78	12.3
	150,000 - 200,000	118	18.6
	200,000 - 250,000	95	15.0
	250,000 - 300,000	122	19.3
	More than 300,000	117	18.5

4.2 Reliability and Validity Analysis

Table 2 uncovers the reliability of each construct is measured using Cronbach's alpha. The constructs range from "Knowledge Sharing for Low-Sugar Dessert" to "Consumption Intention Towards Low-Sugar Dessert", with Cronbach's alpha values ranging from 0.767 to 0.887. These values, all exceeding the commonly accepted threshold of 0.7, suggest an elevated level of reliability in the responses, indicating that the questions within each construct consistently measure the intended concept. The highest reliability is observed in "Social Identity for Low-Sugar Dessert" ($\alpha = 0.887$), implying a solid internal consistency in this dimension.

Table 2. Demographic Information.

Study variables	Number of questions	Cronbach's α
Knowledge Sharing for Low-Sugar Dessert	4	0.835
Brand Image of Low-Sugar Dessert	4	0.822
Social Media Market	3	0.786
Consumption Attitudes Towards Low-Sugar Dessert	3	0.795
Social Identity for Low-Sugar Dessert	6	0.887
Consumption Intention Towards Low-Sugar Dessert	3	0.767

Table 3 provides results from the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity, which are essential for assessing the appropriateness of factor analysis. A KMO value of 0.945, significantly above the acceptable threshold of 0.6, indicates that the sample size is adequate, and the patterns of correlations are suitable for factor analysis. Bartlett's Test of Sphericity further supports this, with a significant Chi-square value (6916.905) and a significance level of .000, firmly rejecting the null hypothesis of the identity matrix and confirming that the variables are sufficiently correlated for factor analysis.

Table 3. KMO and Bartlett's Test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.945	
	Approx. Chi-Square	6916.905
Bartlett's Test of Sphericity	df	253
	Sig.	.000

Together, table 2 and table 3 demonstrate the statistical rigour applied in the study. The reliability statistics confirm that the constructs are measured with internal consistency, and the KMO and Bartlett's tests validate the appropriateness of using factor analysis, laying a robust foundation for the subsequent analysis of the data related to low-sugar desserts.

4.3 Confirmatory Factor Analysis

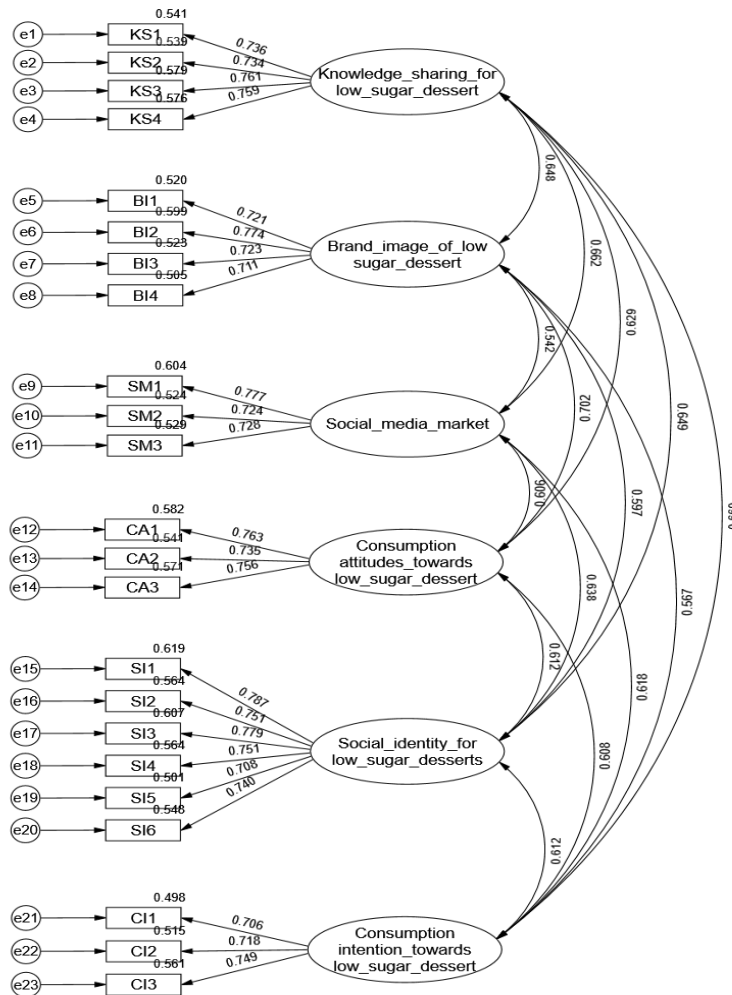


Figure 1 The Measurement Model for the Confirmatory Factor Analysis.

Table 4 presents a comparative analysis between the reference standards and actual results for various fit indices used in structural equation modelling. The indices include χ^2/df , RMSEA, GFI, AGFI, NFI, TLI, and CFI. $\chi^2/df = 1.533 (<3)$, RMSEA=0.029 (<0.08), and GFI, AGFI, NFI, TLI, and CFI all surpass their respective reference criteria of 0.9, indicating a robust and well-fitting model. These metrics collectively affirm the model's appropriateness and accuracy in representing the data.

Table Error! No text of specified style in document.. Measure Model Fit Metrics.

Fit index	χ^2/df	RMSEA	GFI	AGFI	NFI	TAG	CFI
Reference standards	<3	<0.08	>0.9	>0.85	>0.9	>0.9	>0.9
Result	1.533	0.029	0.956	0.944	0.953	0.980	0.983

Table 5, assesses the degree to which multiple items measuring the same concept agree, using latent variables relevant to the study of low-sugar desserts.

The factor loadings range from 0.706 to 0.787 and are substantial for each observation indicator. These loadings reflect the extent to which each indicator correlates with its respective latent variable, and the strong loadings across the board suggest that each item is a good measure of its corresponding construct. The Composite Reliability (CR) scores, exceeding the threshold of 0.7 (ranging from 0.768 to 0.887), indicate high reliability. This means that the constructs consistently represent the underlying concept they are intended to measure.

Table 5. Convergence Validity.

Latent variables	Observation indicators	Factor loading	CR	AVE
Knowledge Sharing for Low-Sugar Dessert	KS1	0.736	0.835	0.559
	KS2	0.734		
	KS3	0.761		
	KS4	0.759		
Brand Image of Low-Sugar Dessert	BI1	0.721	0.822	0.537
	BI2	0.774		
	BI3	0.723		
	BI4	0.711		
Social Media Market	SM1	0.777	0.787	0.553
	SM2	0.724		
	SM3	0.728		
Consumption Attitudes Towards Low-Sugar Dessert	CA1	0.763	0.796	0.565
	CA2	0.735		
	CA3	0.756		
Social Identity for Low-Sugar Dessert	SI1	0.787	0.887	0.567
	SI2	0.751		
	SI3	0.779		
	SI4	0.751		
	SI5	0.708		
	SI6	0.740		
Consumption Intention Towards Low-Sugar Dessert	CI1	0.706	0.768	0.525
	CI2	0.718		
	CI3	0.749		

Table 6 demonstrates the distinctiveness of six latent variables in a study on low-sugar desserts. Discriminant validity is established when the square root of the Average Variance Extracted (AVE) for each construct (shown on the diagonal) is more significant than its correlations with other constructs (off-diagonal values). In table 6, diagonal values range from 0.725 to 0.753, exceeding the respective off-diagonal correlation values in their rows and columns. For instance, the AVE square root for 'Knowledge Sharing for Low-Sugar Dessert' is 0.748, higher than its correlations with other variables like 'Brand Image' (0.648) or 'Social Media Market' (0.662). These findings, significant at $p < 0.001$, confirm that each latent variable is distinct and captures unique aspects of the phenomena under study, ensuring the constructs' discriminant validity in the context of consumer behavior towards low-sugar desserts.

Table 6. Discriminant Validity Test.

Latent variables	1	2	3	4	5	6
Knowledge Sharing for Low-Sugar Dessert	0.748					
Brand Image of Low-Sugar Dessert	0.648 ***	0.733				
Social Media Market	0.662 ***	0.542 ***	0.744			
Consumption Attitudes Towards Low-Sugar Dessert	0.629 ***	0.702 ***	0.606 ***	0.752		
Social Identity for Low-Sugar Dessert	0.649 ***	0.597 ***	0.638 ***	0.612 ***	0.753	
Consumption Intention Towards Low-Sugar Dessert	0.669 ***	0.567 ***	0.618 ***	0.608 ***	0.612 ***	0.725

Note: The diagonal is the square root of the corresponding dimension AVE ***: $p < 0.001$

4.4 Structural Equation Model

Table 7 presents a succinct evaluation of the fit of a structural equation model used in a study using various indices. $\chi^2/df=1.553$, RMSEA = 0.030, and all other indices (GFI, AGFI, NFI, TLI, and CFI) exceed their respective reference standards, indicating that the model provides an excellent representation of the observed data in the context of the study.

Table 7. Model Fit Metrics.

Fit index	χ^2/df	RMSEA	GFI	AGFI	NFI	TAG	CFI
Reference standards	<3	<0.08	>0.9	>0.85	>0.9	>0.9	>0.9
Result	1.553	0.030	0.956	0.944	0.952	0.979	0.982

Table 8 provides a detailed academic analysis of the relationships between various constructs for studying low-sugar desserts. The table systematically tests twelve hypotheses (H1-H12), examining the paths between constructs such as Knowledge Sharing (KS), Consumption Attitudes (CA), Consumption Intention (CI), Social Identity (SI), Brand Image (BI), and Social Media Market (SM).

Each path is evaluated using several statistical measures: the path estimate, standardised coefficient (β), standard error (S.E.), critical ratio (C.R.), and p-value (P). For instance, H1 evaluates the path from KS to CA, showing a β of 0.163, S.E. of 0.069, C.R. of 2.456, and a significant p-value of 0.014, leading to the support of this hypothesis. Similarly, all other H2 to H12 hypotheses demonstrate significant relationships with p-values ranging from less than 0.001 to 0.014 and C.R. values indicating vital statistical significance (***) for $p < 0.001$.

The higher β values in specific paths, such as $KS \rightarrow BI$ ($\beta = 0.516$) and $BI \rightarrow CA$ ($\beta = 0.465$), suggest a strong influence of knowledge sharing on brand image and brand image on consumption attitudes, respectively. Lower β values, such as in H6 ($SM \rightarrow CI$, $\beta = 0.175$), indicate a weaker, yet meaningful relationship. Hence, H1-H12 are supported by the statistics.

Table 8. Structural Equation Model Path Test.

Hypothesis	Path	Estimate	β	S.E.	C.R.	P	Results
H1	KS \rightarrow CA	0.170	0.163	0.069	2.456	0.014	Supported
H2	KS \rightarrow CI	0.302	0.315	0.068	4.455	***	Supported
H3	KS \rightarrow SI	0.289	0.270	0.067	4.288	***	Supported
H4	KS \rightarrow BI	0.511	0.516	0.066	7.744	***	Supported
H5	SM \rightarrow CA	0.241	0.255	0.057	4.232	***	Supported
H6	SM \rightarrow CI	0.152	0.175	0.061	2.506	0.012	Supported
H7	SM \rightarrow SI	0.319	0.328	0.056	5.703	***	Supported
H8	SM \rightarrow BI	0.181	0.201	0.057	3.197	0.001	Supported
H9	BI \rightarrow CA	0.489	0.465	0.064	7.627	***	Supported
H10	BI \rightarrow SI	0.275	0.254	0.058	4.722	***	Supported
H11	CA \rightarrow CI	0.183	0.199	0.057	3.195	0.001	Supported
H12	SI \rightarrow CI	0.159	0.178	0.054	2.949	0.003	Supported

Note: KS: Knowledge Sharing for Low-Sugar Dessert; BI: Brand Image of Low-Sugar Dessert; SM: Social Media Market; CA: Consumption Attitudes Towards Low-Sugar Dessert; SI: Social Identity for Low-Sugar Dessert; CI: Consumption Intention Towards Low-Sugar Dessert.***: $p < 0.001$

Table 9 evaluates the mediation effects in the context of low-sugar dessert consumption, utilizing a bootstrap methodology. Table 9 explores indirect paths between various latent variables, such as Knowledge Sharing (KS), Brand Image (BI), Social Media Market (SM), Consumption Attitudes (CA), Social Identity (SI), and Consumption Intention (CI). Each hypothesis (H13 to H22) evaluates a specific mediation path (e.g., KS→BI→CA), providing effect size, standard error (SE), and bias-corrected 95% confidence intervals (CI).

The results show that all proposed mediation effects are supported. H13 (KS→BI→CA) has an effect size of 0.250, with a 95% confidence interval ranging from 0.155 to 0.388, indicating a significant indirect effect of Knowledge Sharing on Consumption Attitudes through Brand Image. Similarly, other hypotheses assess the indirect effects of the Social Media Market and Brand Image on Consumption Intention and Social Identity, among other paths. The bootstrap method, known for its accuracy in estimating indirect effects, confirms the presence of significant mediation in all tested paths, as evidenced by the 95% confidence intervals not containing zero. This suggests that the relationships between these latent variables are not direct but are mediated through other constructs. For example, the influence of Knowledge Sharing on Consumption Intention is partially mediated through Consumption Attitudes and Social Identity. Hence, H13-H22 are supported, which identify the mediation role of identity, brand image and attitude.

Table 9 Mediation Effect Bootstrap Test.

Hypothesis	Mediation path	Effect size	SE	Bias-Corrected 95%CI		Results
H13	KS→BI→CA	0.250	0.058	0.155	0.388	Supported
H14	KS→BI→SI	0.140	0.049	0.058	0.243	Supported
H15	SM→BI→CA	0.088	0.040	0.018	0.178	Supported
H16	SM→BI→SI	0.050	0.027	0.010	0.121	Supported
H17	KS→CA→CI	0.031	0.024	0.001	0.095	Supported
H18	BI→CA→CI	0.090	0.041	0.019	0.180	Supported
H19	SM→CA→CI	0.044	0.024	0.010	0.105	Supported
H20	KS→SI→CI	0.046	0.028	0.006	0.119	Supported
H21	BI→SI→CI	0.044	0.025	0.006	0.109	Supported
H22	SM→SI→CI	0.051	0.028	0.011	0.133	Supported

Note: KS: Knowledge Sharing for Low-Sugar Dessert; BI: Brand Image of Low-Sugar Dessert; SM: Social Media Market; CA: Consumption Attitudes Towards Low-Sugar Dessert; SI: Social Identity for Low-Sugar Dessert; CI: Consumption Intention Towards Low-Sugar Dessert.

Figure 2 uncovers the structural equation model diagram. It explains the relationship between knowledge sharing for LSD, the brand image of LSD, the social media market, consumption attitudes towards LSD, social identity for LSD, and consumption intention towards LSD. In this way, this model identifies the mediation roles of brand image, attitude, and identity.

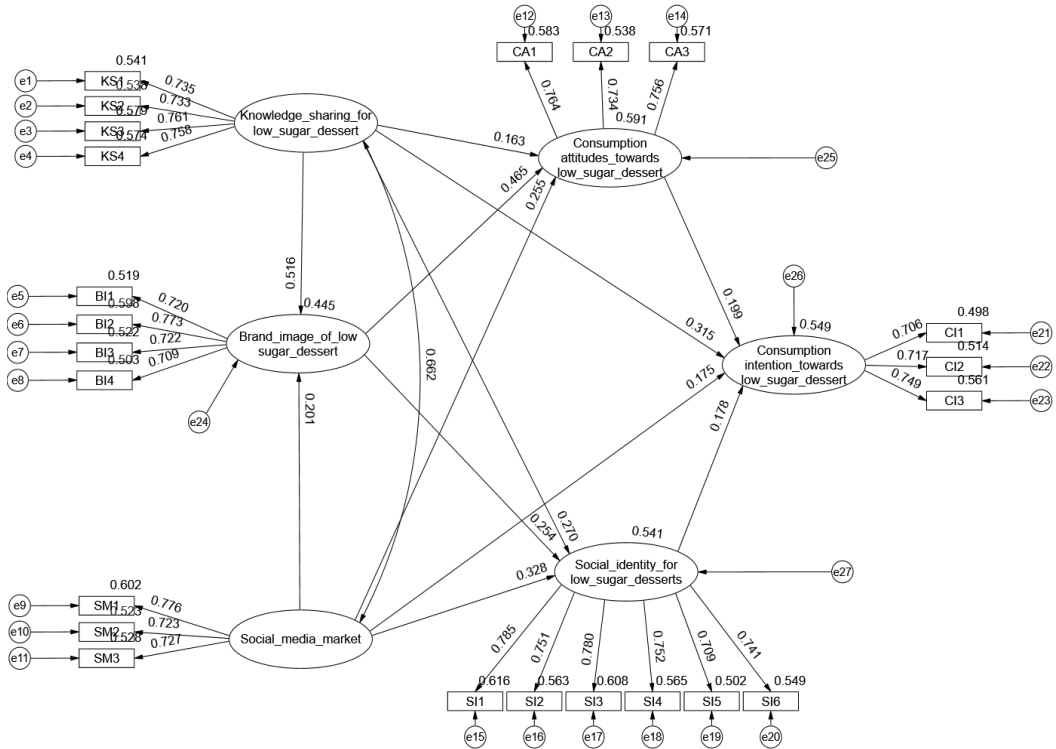


Figure 2 Structural Equation Model Diagram.

5. Discussion and Conclusion

This study proposed a structural equation model to comprehensively explain the relationships between various constructs related to low-sugar dessert consumption intention. The model demonstrates significant direct effects between Knowledge sharing (KS) and Consumption Attitudes (CA), Consumption Intention (CI), Social Identity (SI), and Brand Image (BI) of low-sugar desserts. Similarly, the influence of the Social Media Market (SM) on these constructs is also significant, indicating that social media plays a crucial role in shaping consumers' perceptions and intentions. On the other hand, there is a positive relationship in the path from Knowledge sharing to brand Image, signifying the profound impact of knowledge sharing on brand image. Moreover, the model reveals significant indirect effects, confirming the mediation roles of brand image, attitude and identity. The influence of Knowledge sharing on attitude and intention is partially mediated through brand image, indicating that the perception of a brand significantly shapes how knowledge sharing affects consumer attitudes and intentions. Additionally, attitude as a mediator in the relationship between brand image and consumption intention highlights the importance of consumer attitudes in the decision-making process. Finally, social identity is also a significant mediator in the model, to connect the knowledge sharing, brand image, social media marketing and the intention to consuming the low-sugar desserts.

5.1 Theoretical Implications

The Theory of Planned Behavior (TPB) postulates that behavioral intentions are shaped by attitudes, subjective norms, and perceived behavioral control (Yusliza et al., 2020). Our study

aligns with this theory, as evidenced by the significant influence of Consumption Attitudes (CA) on Consumption Intention (CI) towards low-sugar desserts. This correlation corroborates the findings of Synodinos et al. (2023), who observed similar patterns in health-conscious food choices. However, unlike Ali et al. (2023), who emphasized perceived behavioral control, our study found a more pronounced effect of brand image, suggesting a possible shift in consumer prioritization in health-related food choices.

Consumer Socialization Theory (CST) suggests that consumer behavior is learned through social interactions (Chang et al., 2022). The substantial impact of Knowledge Sharing (KS) on various constructs like consumer attitude and consumption intention reflects the theory's emphasis on informational influence. This is consistent with the research by Wang et al. (2022), who highlighted the role of social learning in consumer behavior. However, our study extends these findings by underscoring the role of social media, a factor not widely considered in early CST research, suggesting an evolution in the platforms of consumer socialization.

Social Identity Theory (SIT) posits that individuals' behavior is influenced by social relationships (Holmes & Howard, 2023). The significant role of the Social Media Market (SM) in shaping consumer attitude and consumption intention in our study highlights the theory's relevance. This finding resonates with the observations of Spears (2021) regarding normative and informational social influences. However, our study diverges by demonstrating the strength of indirect influences, like the mediation effect of brand image, which suggests a more complex interplay of social influences than traditionally conceptualized in social identity theory.

5.2 Practical Implications

The results on low-sugar dessert consumption have significant managerial implications for various stakeholders, including marketers, health policymakers, and consumer educators. Each result offers distinct insights that can be leveraged to inform strategies and policies.

The strong relationship between knowledge sharing (KS) and consumption attitudes (CA) emphasizes the need for marketers to invest in informative campaigns. Educating consumers about the benefits of low-sugar desserts can positively influence their attitudes and consumption intentions. Strategies could include leveraging social media platforms for sharing health-related information and engaging key opinion leaders, such as the anchors in social media to endorse products. This finding supports the development of public health campaigns that focus on knowledge dissemination. Policymakers can collaborate with nutrition experts and influencers to raise awareness about healthier food choices.

The significant impact of social media indicates that digital marketing campaigns can be highly effective. Marketers should create engaging online content and interactive social media campaigns to influence consumer perceptions and behaviors towards low-sugar desserts. Educators should emphasize the importance of critical thinking when consuming information online. Programs that teach consumers how to evaluate the credibility of health information on social media can be beneficial.

The mediation effect of the brand image suggests that building a strong, positive brand image can significantly influence consumer behavior. Marketers should focus on brand-building activities highlighting low-sugar desserts' health benefits and quality. Policymakers should consider collaborating with brands to promote health eating habit. Endorsements from well-regarded brands can be a powerful tool in changing consumer habits.

Understanding that consumer attitudes directly impact intentions, marketing efforts should be tailored to address consumer beliefs and preferences. This may involve targeted advertising that aligns with consumer values and lifestyle preferences. Education programs that address misconceptions and provide information about low-sugar desserts can help shape positive consumer attitudes.

5.3 Conclusion

The study comprehensively analyses factors influencing consumer behavior towards low-sugar desserts, integrating theoretical frameworks such as the Theory of Planned Behavior, Consumer Socialization Theory, and Social Influence Theory. Key findings include the significant impact of knowledge sharing on consumption attitudes and intentions, the influence of social media in shaping consumer behavior, the mediation effect of brand image on consumption attitudes and intentions, and the direct influence of consumer attitudes on consumption intentions. These results underscore the complex interplay of informational, social, and psychological factors in consumer decision-making.

This research makes several notable contributions to the field. First, it extends the existing literature on health-conscious food consumption by explicitly focusing on low-sugar desserts, a relatively underexplored area. Second, the study integrates various theoretical perspectives, providing a more holistic understanding of consumer behaviors in this context. By highlighting the role of knowledge sharing and social media, the research underscores the importance of information dissemination and digital platforms in influencing consumer choices. Additionally, the study's focus on the mediation role of the brand image offers new insights into how brand perception shapes consumer attitudes and intentions, enriching the existing knowledge on brand management and marketing strategies.

Despite its contributions, However, the sample is geographically limited, which may affect the generalizability of the findings. The cultural and regional context of the study might have influenced consumer perceptions and behavior's, suggesting that the results may not be directly applicable to different demographic or cultural settings. Secondly, the cross-sectional nature of the data collection limits the ability to draw causal inferences. Longitudinal studies could provide deeper insights into how consumer attitudes and behaviors evolve.

In the future, we should focus on diverse geographical and cultural contexts, which would enhance the generalizability of the findings. This could involve comparative studies across countries or regions to understand cultural influences on consumer behavior towards low-sugar desserts. Longitudinal studies would be valuable in examining the stability and change in consumer attitudes and behaviors over time, particularly in response to evolving marketing strategies and public health campaigns. Additionally, future research could explore the impact of other variables, such as environmental concerns or ethical considerations, on consumer choices regarding low-sugar desserts. Investigating these factors could provide a more comprehensive understanding of the motivations behind health-conscious food consumption.

Data Availability Statement

The datasets presented in this article are not readily available because they involve the interests of collaborators, as well as some privacy issues, and some data are confidential. However, further individual scholars or experts are welcome to request these datasets for academic references or other needs; requests to access these datasets should be directed to Jie Ma: ma.jie@rmutr.ac.th.

Author Contributions

M.J, J.D and S.J: conceptualization and writing—original draft preparation.

M.J, J.D and S.J: methodology, formal analysis, and writing—review and editing.

All authors have read and agreed to the published version of the manuscript.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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