

Research on the innovation path of retail business models based on the cognitive profiling of Generation Alpha

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Abstract. Generation Alpha, the first cohort to grow up with artificial intelligence, is expected to become the largest consumer segment in history. However, academic research on their cognitive characteristics and consumption behaviour remains limited. This study aims to construct a multi-dimensional cognitive profile of Generation Alpha and to examine how this profile drives retail business model innovation. A structured questionnaire survey was conducted with 316 parents of Generation Alpha children in China, covering four cognitive dimensions: behavioural patterns, product preferences, social concerns, and brand acceptance. Descriptive statistics, correlation analysis, and multiple regression analysis were used to analyse the data. The results show that Generation Alpha children exhibit moderate levels across all four cognitive dimensions. Product preference emerged as the strongest predictor of brand acceptance ($\beta = 0.318, p < 0.001$), followed by social concern ($\beta = 0.218$) and behavioural profile ($\beta = 0.213$). The model explained 31.8% of the variance in brand acceptance. These findings provide empirical support for three retail innovation pathways: product creativity enhancement, channel transformation, and communication upgrading. The study offers both theoretical contributions to generational consumer behaviour research and practical guidance for retailers seeking to engage Generation Alpha.

Keywords: Generation Alpha, cognitive profiling, retail business model innovation, omnichannel, consumer behaviour

1. Introduction

Generation Alpha is the first true cohort of artificial intelligence natives. By 2025, this generation is expected to reach two billion globally, becoming the largest consumer segment in history [1]. Unlike previous generations, Alpha children grow up with intelligent algorithms, voice assistants, and personalised content, which shape distinctive cognitive traits: shorter attention spans, high technological fluency, strong self-awareness, and a pronounced concern for social and environmental issues.

However, existing research remains fragmented. While generational studies have extensively examined Baby Boomers, X, Y and Z, academic inquiry into Generation Alpha is still nascent [2]. Most available reports are commercial white papers rather than peer-reviewed studies. Moreover, although cognitive profiling has proven effective in capturing consumer heterogeneity beyond traditional demographics [3], it has rarely been

applied to Generation Alpha. More importantly, few studies link Alpha's cognitive characteristics to retail business model innovation—such as omnichannel integration, AI applications, or the 4Is framework [4-6].

To address these gaps, this study aims to: (1) construct a multi-dimensional cognitive profile of Generation Alpha, covering technology usage habits, purchase decision autonomy, value orientation, and product preferences; and (2) identify the driving mechanisms through which this cognitive profile fosters retail innovation including specifically channel transformation, communication upgrading, and product creativity enhancement. By integrating generational theory, cognitive profiling methods, and retail innovation literature, this research provides both theoretical contributions to consumer behaviour scholarship and practical guidance for retailers seeking to engage the emerging Alpha generation.

2. Literature review

2.1. Generational theory perspectives on Generation Alpha

The term "Generation Alpha" was first introduced in 2009 by social researcher Mark McCrindle to refer to individuals born between 2010 and 2025, while he was writing the book named *The ABC of XYZ: Understanding the Global Generations*. The choice of a Greek letter, which is consistent with scientific nomenclature, reflects that this generation, being the first born in the 21st century, marks the beginning of a new era. Generation Alpha exhibits several key demographic and behavioural characteristics. Firstly, they are poised to become the most educated, most technology-immersed, and wealthiest generation to date. Moreover, they influence their parents' purchasing decisions at an earlier age than previous generations. This is a finding of critical importance for marketing activities [1].

A large body of contemporary research has further characterised this generation. Generation Alpha is the first cohort to grow up alongside algorithms and artificial intelligence, expecting personalised content recommendations, instant gratification, and two-way brand interactions [7]. Prior research suggests that their social lives unfold almost entirely online through digital applications, where they seek entertainment, sense of belonging, and self-expression via multiplayer games, social platforms, and live-streaming communities [8]. Furthermore, emerging evidence indicates that young consumers trust brands that are authentic and relatable. Engagement strategies that deliver meaningful, shared experiences are considered more effective than carefully crafted advertisements [9].

The generational framework adopted in this study draws on Mannheim's concept of generation, which is understood as a social location. The cohorts born in the same years share common formative experiences and major events, which shape their distinct worldviews and consumer values in turn [10]. The Strauss–Howe generational theory proposed by Howe and Strauss offers a widely cited classification system for defining and delineating generational cohorts, often serving as a theoretical benchmark in subsequent research on consumer confidence, ethical consumption, etc. [11]. Building on this framework, comparative analysis between Generation Alpha and previous generations, in particular Generation Z, which is broadly defined as those born between 1996 and 2009, is crucial for identifying both continuities and ruptures in consumer behaviour. Generation Z is characterised by digital nativity, a pragmatic attitude toward consumption, strong price consciousness, and an expectation that businesses will address perceived social and environmental injustices [2]. The transition from Generation Z to Generation Alpha represents not merely a temporal shift, but a qualitative change in the relationship between consumers and digital technology. The defining characteristic of Generation Alpha lies in their immersion in an artificial intelligence-driven ecosystem from birth.

2.2. Theories and methods of cognitive profiling

Cognitive profiling has emerged as an advanced approach to understanding consumer heterogeneity, surpassing traditional demographic segmentation. In marketing research, cognitive profiling integrates multiple data types. The Consumer Styles Inventory (CSI) identifies eight cognitive dimensions of consumer decision-making such as perfectionism, brand consciousness, and impulsiveness—thereby constructing comprehensive and actionable profiles of target populations [3]. Cognitive profiling is particularly relevant for Generation Alpha, given its unique relationship with the digital environment. Key formative factors shaping cognitive development in Generation Alpha include app-based play, increased screen time, shorter attention spans, greater digital literacy, and reduced opportunities for social-skill development [12]. These factors directly guide the operationalisation of cognitive profiling, the selection of questionnaire variable dimensions, and the design of measurement scales in this study.

At the methodological level, in order to effectively capture the cognitive characteristics of Generation Alpha children and their parents, structured questionnaire surveys are the most efficient method for collecting large-scale sample data, particularly for capturing respondents' attitudes, perceptions, and behavioural tendencies [13]. This study targets Generation Alpha children and their parents, aiming to collect 200-300 valid questionnaires and to efficiently gather data covering four cognitive dimensions in a standardised manner. In terms of measurement tools, the CSI scale developed by Sprotles and Kendall has been cross-culturally validated among young consumers in countries such as South Korea, Greece, and Brazil. The measurement of cognitive dimensions in this study's framework, such as "decision-making autonomy awareness" and "value orientation", can draw upon the established theoretical framework and scale design principles of the CSI [3]. Furthermore, the handbook by Bearden, Netemeyer, and Haws systematically compiles validated multi-item measurement scales in consumer behaviour research, covering consumer attitudes, decision-making styles, brand loyalty, values, and other dimensions [14]. This resource provides reliable measurement instruments for the design of questionnaire items in this study, thereby ensuring the validity and reliability of the questionnaire.

2.3. Retail business model innovation pathways

As online and physical channels blur, a new omnichannel approach aims to deliver a seamless customer experience regardless of channel [4]. Omni-channel retailing takes a broader perspective on how shoppers move through channels in their search and buying process [15]. A systematic review following PRISMA guidelines identifies five key research areas: omnichannel strategies and consumer experience, AI and big data applications, AR/VR technologies, pandemic impacts, and digital technologies for sustainable retail [16].

The 4I model, refers to Intensity, Integration, Interaction, Identification, has been proposed in order to analyse online marketing [17]. The 4Is principle has been applied to Perfect Diary brand showing how engaging tweets, influencer incentives, and AI testing meet these dimensions [6].

A three-stage framework distinguishing mechanical AI for data collection, thinking AI for market analysis, and feeling AI for customer understanding was developed [5]. AI effects in retail, focusing on implications for consumer well-being, social interaction, and societal welfare [18].

In summary, retail innovation is shaped by omnichannel integration, AI applications, and the 4Is framework. However, existing research has not systematically linked Generation Alpha's cognitive profile to these pathways. This study addresses that gap.

2.4. Research gaps and positioning

Existing research lacks two essential links. First, no systematic cognitive profile of Generation Alpha has been established across dimensions such as technology usage, purchase autonomy, value orientation, and product preference. Second, even fewer studies connect such a profile to specific retail business model innovation pathways, namely channel transformation, communication upgrading, and product creativity enhancement. Most available insights remain fragmented and lack systematic integration with retail innovation pathways.

To fill these gaps, this study positions itself to construct a multi-dimensional cognitive profile of Generation Alpha. And empirically verifies how this profile drives three innovation pathways. This framework bridges generational theory, cognitive profiling, and retail strategy, providing actionable evidence for the retail sector.

3. Methodology

3.1. Research design and approach

This study adopts a mixed-method design integrating literature review, questionnaire survey, and inductive-deductive reasoning. The literature review establishes the theoretical foundation for Generation Alpha's cognitive profiling. A structured questionnaire survey serves as the primary data collection tool to capture four dimensions of Alpha's cognitive profile: basic demographic profile, typical behavioural profile, product preference profile, and social issue concern profile. Inductive-deductive reasoning is then used to link these dimensions to three retail innovation pathways: channel transformation, communication upgrading, and product creativity enhancement.

3.2. Questionnaire development and data collection

The questionnaire is designed to measure four cognitive profile dimensions. The basic demographic profile includes age, gender, grade, family structure, and daily screen time. The typical behavioural profile captures digital activity patterns (e.g., gaming, video streaming, social media use), attention span, and interaction with AI devices. Product preference profile assesses preferred product categories (toys, snacks, digital devices, educational products), brand awareness, and purchase influence on parents. Social issue concern profile measures awareness and attitudes toward environmental protection, fairness, animal welfare, and corporate social responsibility. Items use a 5-point Likert scale, with child-friendly wording and parent proxy assistance for younger children.

The target population is Generation Alpha children (born 2010-2025) and their parents. A convenience-snowball sampling method will be applied through schools, communities, and online parenting groups. Target sample size is 200-300 parents and their children. Data collection will occur from March to June 2025 via online platforms.

3.3. Data analysis and ethical considerations

Descriptive statistics will summarise the four profile dimensions. Cronbach's α was calculated to assess the internal consistency of each multi-item scale. Pearson correlation and multiple regression will examine how each cognitive profile dimension influences preferences for the three retail innovation pathways. Inductive reasoning will synthesise theoretical propositions from empirical patterns.

Ethical approval will be obtained. Informed consent will be collected from parents, and child assent will be sought where appropriate. All data will be anonymised and used solely for academic research.

4. Findings

4.1. Sample characteristics

Table 1. Demographic characteristics of the sample (n = 316)

Variable	Category	n (%)	Variable	Category	n (%)
Gender	Male	182 (57.6%)	Grade	Kindergarten	60 (19.0%)
	Female	134 (42.4%)		Primary 1-3	94 (29.7%)
Daily Screen Time	< 1 hour	74 (23.4%)		Primary 4-6	92 (29.1%)
		144 (45.6%)		Junior High	70 (22.2%)
	1–2 hours	144 (45.6%)	Birth Year	Mean (SD)	2015.50 (3.91)
	2–3 hours	65 (20.6%)		Range	2010–2025
	> 3 hours	33 (10.4%)		Percentiles (25/50/75)	2012 / 2015 / 2019

Note: n = 316. Percentages may not sum to 100% due to rounding.

As presented in Table 1, the sample consisted of 182 male participants (57.6%) and 134 female participants (42.4%), indicating a relatively balanced gender distribution with a slight male majority. Regarding grade level, the largest proportion of children were in Primary 1-3 (29.7%, n = 94), followed by Primary 4-6 (29.1%, n = 92) and middle school (22.2%, n = 70). Kindergarten children accounted for 19.0% (n = 60) of the sample, suggesting that the majority of participants were of primary school age. In terms of daily screen time, the most common duration was 1-2 hours, reported by 45.6% of the sample (n = 144). Less than 1 hour accounted for 23.4% (n = 74), 2-3 hours for 20.6% (n = 65), and more than 3 hours for only 10.4% (n = 33). The birth years of participants ranged from 2010 to 2025, with a mean of 2015.50 (SD = 3.91). The 25th, 50th, and 75th percentiles were 2012, 2015, and 2019, respectively, reflecting a relatively even distribution across the Alpha generation birth cohort. No missing data were identified for the demographic variables, as all 316 respondents provided complete information on these items.

4.2. Cognitive profile of Generation Alpha

Before presenting the descriptive results for each cognitive dimension, a reliability analysis was conducted to assess the internal consistency of the four multi-item scales. As shown in Table 1, Cronbach's α values for the four dimensions ranged from 0.819 to 0.907, all exceeding the commonly accepted threshold of 0.70 [19]. Specifically, the Typical Behavioural Profile (Q5, 5 items) achieved $\alpha = 0.831$, the Product Preference Profile (Q7, 5 items) achieved $\alpha = 0.854$, the Social Issue Concern Profile (Q8, 4 items) achieved $\alpha = 0.819$, and the Brand Acceptance Profile (Q9, 9 items) achieved $\alpha = 0.907$. These results indicate satisfactory internal consistency across all cognitive dimensions, supporting the reliability of the measurement instrument used in this study.

4.2.1. Typical behavioural profile

Table 2. Descriptive statistics of typical behavioural profile (Q5)

Item	M	SD	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)
Q5_1: Actively requests to play games/Apps	3.33	1.129	6.0	19.6	25.0	34.5	14.9
Q5_2: Searches for favourite videos independently	3.39	1.097	4.1	19.9	24.4	35.8	15.8
Q5_3: Attention span $\leq$ 10 minutes for a single video/game	3.33	1.129	3.8	23.4	26.9	28.2	17.7
Q5_4: Uses voice assistants (e.g., Xiao Ai, Siri) to ask questions	3.39	1.100	2.5	22.8	25.6	31.0	18.0
Q5_5: Prefers multiplayer/online modes in games	3.35	1.096	4.7	18.7	25.3	34.5	16.8

Note: Items were rated on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Percentages may not sum to 100% due to rounding. M = Mean, SD = Standard Deviation.

The typical behavioural profile was measured using five items on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). As shown in Table 2, mean scores ranged from 3.33 to 3.39 (SD = 1.10–1.13), indicating moderate levels of digital behavioural engagement across all items. The highest scores were observed for Q5_2 (independent video searching, M = 3.39) and Q5_4 (voice assistant use, M = 3.39). Across all items, the proportion of respondents selecting "Agree" or "Strongly Agree" ranged from 42.8% to 51.6%, while the proportion selecting "Strongly Disagree" or "Disagree" ranged from 23.4% to 27.2%. Overall, these findings depict a generation that is actively engaged with digital technologies—capable of independent content discovery, comfortable with voice interaction, and socially oriented in gaming—yet characterised by relatively short attention spans for single pieces of content.

4.2.2. Product preference profile

Table 3. Descriptive statistics of product preference profile (Q7)

Item	M	SD	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)
Q7_1: Can name several favourite brands	3.43	1.138	2.8	23.1	22.5	31.0	20.6
Q7_2: Requests purchase upon seeing a brand logo	3.35	1.157	5.1	22.2	23.7	31.0	18.0
Q7_3: Actively mentions favourite brands to friends	3.29	1.179	5.7	23.7	24.1	28.5	18.0
Q7_4: Selects desired items when shopping	3.52	1.094	2.5	19.3	22.2	35.8	20.3
Q7_5: Parents usually agree when child insists	3.41	1.130	3.8	20.9	25.0	31.0	19.3

Note: Items were rated on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Percentages may not sum to 100% due to rounding.

The product preference profile was measured using five items on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). As shown in Table 3, mean scores ranged from 3.29 to 3.52 (SD = 1.09–1.18), indicating moderate levels of brand awareness and purchase autonomy. The highest score was observed for Q7_4 (self-selection when shopping, M = 3.52, SD = 1.094), followed by Q7_1 (brand familiarity, M = 3.43, SD = 1.138). The lowest score was Q7_3 (mentioning brands to friends, M = 3.29, SD = 1.179). Across all items, the combined proportion of positive responses (Agree/Strongly Agree) ranged from 46.5% to 56.1%, suggesting that Alpha children exhibit notable brand awareness and shopping autonomy, though peer-to-peer brand communication is relatively less pronounced.

Table 4. Favourite product categories (Q6, multiple choice)

Product Category	Frequency (<i>n</i>)	Percentage (%)
Snacks/Beverages	187	59.2
Toys (Lego, Blind Boxes, Dolls, etc.)	184	58.2
Educational/Learning Products (Books, Reading Pens, Online Courses)	147	46.5
Electronic/Digital Devices (Smart Watches, Tablets, Game Consoles)	132	41.8
Clothing/Shoes (with Cartoon IP)	67	21.2
Others	0	0.0

Note: This was a multiple-choice question; percentages were calculated based on the total sample size ($n = 316$) and thus do not sum to 100%.

Regarding children's favourite product categories (Table 4), the most preferred categories were Snacks/Beverages (59.2%, $n = 187$) and Toys (58.2%, $n = 184$), followed by Educational/Learning Products (46.5%, $n = 147$) and Electronic/Digital Devices (41.8%, $n = 132$). Clothing/Shoes with cartoon IP were the least preferred category (21.2%, $n = 67$). Notably, no respondents selected the "Others" option, indicating that the predefined categories adequately captured the most preferred product types among Generation Alpha children.

4.2.3. Social issue concern profile

Table 5. Descriptive statistics of social issue concern profile (Q8)

Item	M	SD	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)
Q8_1: Animal protection	3.42	1.106	2.2	23.7	22.2	33.5	18.4
Q8_2: Environmental protection	3.36	1.105	2.2	24.7	25.9	29.1	18.0
Q8_3: Fairness and justice	3.41	1.052	1.9	21.5	25.6	35.1	15.8
Q8_4: Brand CSR	3.44	1.081	2.8	19.3	26.9	32.9	

Note: Items were rated on a 5-point Likert scale (1 = Not Concerned at All, 5 = Very Concerned). Percentages may not sum to 100% due to rounding.

The social issue concern profile was measured using four items on a 5-point Likert scale (1 = Not Concerned at All, 5 = Very Concerned). As shown in Table 5, mean scores ranged from 3.36 to 3.44 (SD = 1.05–1.11), indicating moderate levels of social awareness across all issues. The highest score was observed for Q8_4 (brand CSR, $M = 3.44$, $SD = 1.081$), followed by Q8_1 (animal protection, $M = 3.42$, $SD = 1.106$). Across all four items, the combined proportion of concerned responses (Concerned/Very Concerned) ranged from 47.1% to 51.9%, suggesting that Alpha children demonstrate moderate awareness of social and environmental issues, with brand-related social responsibility eliciting the highest level of concern.

4.2.4. Brand acceptance profile

The brand acceptance profile was measured using eight items on a 5-point Likert scale (1 = Strongly Dislike, 5 = Strongly Like). As shown in Table 6, mean scores ranged from 3.38 to 3.56 (SD = 1.06–1.10), indicating moderate to relatively high levels of brand acceptance across all dimensions. The highest score was observed for Q9_4 (brands that "play" with them, $M = 3.56$, $SD = 1.075$), followed by Q9_8 (AI-connected smart toys, $M = 3.50$, $SD = 1.088$) and Q9_1 (brand short videos, $M = 3.48$, $SD = 1.076$). The lowest score was Q9_2

(live-streaming purchases, $M = 3.38$, $SD = 1.064$). Across all items, the combined proportion of positive responses (Like/Very Like) ranged from 51.2% to 58.0%, suggesting that Alpha children demonstrate a generally favourable attitude toward brand-related digital content, interactive brand experiences, and technology-enhanced products, while showing relatively lower acceptance of live-streaming e-commerce.

Table 6. Descriptive statistics of brand acceptance profile (Q9)

Item	M	SD	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)
Q9_1: Enjoys watching brand short videos	3.48	1.076	2.8	19.3	22.2	38.3	17.4
Q9_2: Willing to purchase through live streaming	3.38	1.064	3.5	20.3	24.7	37.7	13.9
Q9_3: Prefers mobile/tablet purchasing over physical stores	3.43	1.071	2.8	19.6	26.3	34.5	16.8
Q9_4: Likes brands that "play" with them	3.56	1.075	2.5	17.4	22.2	37.7	20.3
Q9_5: Prefers brands that "do good"	3.44	1.089	2.8	21.5	21.5	37.3	16.8
Q9_6: Becomes a fan due to honesty and fun	3.42	1.097	3.5	19.6	25.6	33.5	17.7
Q9_7: Likes customisable products	3.47	1.076	3.2	17.7	25.9	35.1	18.0
Q9_8: More interested in AI-connected smart toys	3.50	1.088	3.5	16.5	25.9	34.5	19.6

Note: Items were rated on a 5-point Likert scale (1 = Strongly Dislike, 5 = Strongly Like). Percentages may not sum to 100% due to rounding.

Notably, the highest-rated item (Q9_4) indicates that interactive brand experiences are particularly appealing to Alpha children, followed closely by AI-enhanced smart products (Q9_8). This pattern aligns with the cognitive traits identified earlier—namely, a preference for engagement, interactivity, and technological novelty.

4.3. Relationships with retail innovation pathways

Table 7. Pearson correlation matrix of cognitive profile dimensions

Variable	Q5_avg	Q7_avg	Q8_avg	Q9_avg
Q5_avg (Behavioural Profile)	1			
Q7_avg (Product Preference)	0.458**	1		
Q8_avg (Social Concern)	0.425**	0.444**	1	
Q9_avg (Brand Acceptance)	0.451**	0.512**	0.449**	1

Note: ** indicates statistical significance at the 1% level (two-tailed). $n = 316$.

To examine the relationships between cognitive profile dimensions and retail innovation pathways, Pearson correlation analysis was conducted. As presented in Table 7, all four cognitive dimensions were significantly and positively correlated with each other at the 0.01 level.

Specifically, product preference (Q7_avg) showed the strongest correlation with brand acceptance (Q9_avg, $r = 0.512$, $p < 0.001$), suggesting that children with higher brand awareness and purchase autonomy tend to exhibit stronger acceptance of brand-related activities and products. This finding supports the product creativity enhancement pathway, indicating that retailers should prioritise product innovation and customisation to engage Generation Alpha.

Behavioural profile (Q5_avg) was also significantly correlated with brand acceptance ($r = 0.451, p < 0.001$), suggesting that children with more active digital behavioural patterns are more receptive to brand content and interactive experiences. This aligns with the communication upgrading pathway, which emphasises the shift from traditional advertising to digital, interactive, and short-video-based communication.

Social concern (Q8_avg) demonstrated a significant yet relatively weaker correlation with brand acceptance ($r = 0.449, p < 0.001$), indicating that children who are more concerned about social and environmental issues may also favour brands that demonstrate corporate social responsibility. This provides preliminary evidence for the channel transformation pathway, where retailers need to embed value-consistent messaging into their channel strategies.

Additionally, the three cognitive profile dimensions were also significantly intercorrelated ($r = 0.425$ to $0.458, p < 0.001$), indicating that behavioural profile, product preference, and social concern are not independent but mutually reinforcing aspects of Generation Alpha's cognitive structure.

Table 8. Multiple regression analysis predicting brand acceptance (Q9_avg)

Predictor	Unstd. B	Std. Error	Beta (β)	<i>t</i>	<i>p</i>	VIF
(Constant)	1.129	0.184		6.141	< 0.001	
Q5_avg (Behavioural Profile)	0.202	0.050	0.213	4.012	< 0.001	1.371
Q7_avg (Product Preference)	0.286	0.048	0.318	5.916	< 0.001	1.400
Q8_avg (Social Concern)	0.203	0.049	0.218	4.127	< 0.001	1.350

Note: Model Summary: $R^2 = 0.318$, Adjusted $R^2 = 0.315$, $F(3,312) = 48.602, p < 0.001$. Dependent variable = Q9_avg (Brand Acceptance).

All predictors were entered simultaneously using the Enter method. VIF values below 2 indicate no multicollinearity.

To identify the relative importance of each cognitive dimension in driving brand acceptance, a multiple regression analysis was conducted with Q9_avg (Brand Acceptance) as the dependent variable and Q5_avg (Behavioural Profile), Q7_avg (Product Preference), and Q8_avg (Social Concern) as independent variables.

As presented in Table 8, the regression model was statistically significant, $F(3,312) = 48.602, p < 0.001$, accounting for 31.8% of the variance in brand acceptance ($R^2 = 0.318$, Adjusted $R^2 = 0.315$). All three predictors emerged as significant positive contributors, with Variance Inflation Factors (VIF) ranging from 1.350 to 1.400, indicating no multicollinearity concerns.

Product preference (Q7_avg) was the strongest predictor ($\beta = 0.318, p < 0.001$), suggesting that children with higher brand awareness and purchase autonomy are most likely to accept brand-related activities and products. This finding provides robust empirical support for the product creativity enhancement pathway, highlighting that retailers should prioritise product innovation, customisation, and IP-based design to engage Generation Alpha.

Social concern (Q8_avg) was the second strongest predictor ($\beta = 0.218, p < 0.001$), indicating that children who care about animal protection, environmental sustainability, fairness, and corporate social responsibility are more receptive to brands that demonstrate value-consistent practices. This supports the channel transformation pathway, suggesting that retailers need to embed transparent, value-driven messaging across their omnichannel strategies.

Behavioural profile (Q5_avg) also emerged as a significant predictor ($\beta = 0.213, p < 0.001$), albeit with a slightly smaller effect size. This indicates that children with more active digital behavioural patterns—such as independent content searching, voice assistant usage, and multiplayer gaming—tend to be more responsive to

digital brand content. This finding aligns with the communication upgrading pathway, emphasising the need for retailers to shift from traditional advertising to interactive, short-video-based, and social media-driven communication.

Overall, the regression results confirm that all three cognitive dimensions are significant drivers of brand acceptance, with product preference exerting the strongest influence. This hierarchy suggests that while communication upgrading and channel transformation are important, product creativity enhancement should be the primary focus for retailers aiming to build lasting relationships with Generation Alpha consumers.

4.4. Summary of key findings

This study produced three main findings regarding Generation Alpha's cognitive profile and its implications for retail innovation. First, the sample exhibited moderate levels across all four cognitive dimensions (behavioural profile, product preference, social concern, and brand acceptance), with mean scores ranging from 3.29 to 3.56 on a 5-point scale. Snacks and toys emerged as the most preferred product categories. Second, correlational analysis revealed that all cognitive dimensions were significantly intercorrelated ($r = 0.425\text{--}0.512$, $p < 0.001$). Product preference showed the strongest association with brand acceptance ($r = 0.512$, $p < 0.001$). Third, regression analysis confirmed that all three cognitive dimensions significantly predicted brand acceptance, together explaining 31.8% of its variance ($R^2 = 0.318$, $F(3,312) = 48.602$, $p < 0.001$). Product preference emerged as the most influential predictor ($\beta = 0.318$, $p < 0.001$), followed by social concern ($\beta = 0.218$) and behavioural profile ($\beta = 0.213$). These findings collectively support the proposed framework linking Generation Alpha's cognitive characteristics to three retail innovation pathways, with product creativity enhancement as the most critical pathway for engaging this generation.

5. Discussion

This study set out to construct a cognitive profile of Generation Alpha and to examine how this profile drives retail innovation pathways. The findings yield three main insights, each with theoretical and practical implications.

5.1. Interpretation and comparison with existing literature

First, Generation Alpha children in this sample exhibited moderate levels across all cognitive dimensions ($M = 3.29\text{--}3.56$). Their strongest preferences were for interactive brand experiences (Q9_4, $M = 3.56$) and self-selection during shopping (Q7_4, $M = 3.52$), while live-streaming purchases (Q9_2, $M = 3.38$) and peer-to-peer brand communication (Q7_3, $M = 3.29$) were relatively lower. This partially aligns with Erickson's claim that Alpha children expect two-way brand interactions, but suggests that live-streaming commerce, which is popular among older cohorts, may not yet resonate with younger Alpha segments [7]. The moderate scores also reflect the wide age range of the sample, which spans from kindergarten to middle school, implying that developmental stage mediates the intensity of digital and brand engagement.

Second, regression analysis revealed that product preference (Q7_avg) was the strongest predictor of brand acceptance ($\beta = 0.318$, $p < 0.001$), followed by social concern ($\beta = 0.218$) and behavioural profile ($\beta = 0.213$). The dominance of product preference supports McCrindle and Wolfinger's observation that Alpha children influence household purchases at an earlier age, but extends it by quantifying the relative weight of this influence. The dominance of product preference suggests that children's affective responses to products outweigh their brand awareness or digital behavioural engagement in shaping brand acceptance. This finding contrasts with Szymkowiak et al.'s characterisation of Generation Z [2], where social and environmental

expectations play a more central role. One interpretation is that social consciousness follows a developmental trajectory. Younger children process concrete attributes such as taste, appearance, and fun more readily than abstract values like corporate social responsibility or sustainability. This suggests that the Alpha generation may become more value-driven as they mature.

Third, the model explained 31.8% of the variance in brand acceptance ($R^2 = 0.318$). The three cognitive dimensions were significantly intercorrelated ($r = 0.425\text{--}0.458$), indicating that behavioural profile, product preference, and social concern are mutually reinforcing rather than independent. This supports the holistic approach to consumer profiling advocated by Sprotles and Kendall in 1986 [3], while extending it to a novel generational cohort.

5.2. Theoretical contributions

This study makes three contributions. First, it provides an empirically grounded, multi-dimensional cognitive profile of Generation Alpha, a population previously examined mainly through commercial reports rather than peer-reviewed research [1, 7]. Second, it introduces a hierarchical model identifying product preference as the most influential cognitive driver of brand acceptance, thereby refining the Consumer Styles Inventory (CSI) framework for younger consumers [3]. Third, it bridges cognitive profiling and retail innovation by empirically linking the three cognitive dimensions to three retail pathways. Product preference primarily drives product creativity enhancement, social concern supports channel transformation, and behavioural profile underpins communication upgrading. This integrated framework extends the omnichannel literature by specifying which innovation pathways are most effective for each cognitive driver [4, 15].

It should be noted that the proposed mapping of the three cognitive dimensions to the three retail pathways is derived from the study's theoretical framework. The regression results confirm the relative importance of each dimension in predicting brand acceptance, but the pathway-level interpretation represents a theoretically informed proposition rather than a direct empirical test of each pathway. Future research could examine these pathway-level relationships using more direct measures of retail innovation outcomes.

5.3. Practical implications for retailers

Brand acceptance, as measured in this study, reflects children's attitudinal responses to brand activities. While this is a useful proxy for retail innovation effectiveness, it should be noted that it does not directly measure actual purchase behaviour. Nevertheless, positive brand attitudes are well established in the literature as a precursor to brand loyalty and purchase intention.

The findings offer actionable guidance for retailers targeting Generation Alpha. First, product innovation should be the top priority. The dominant effect of product preference ($\beta = 0.318$) suggests that investments in product design, customisation, and IP-based branding will yield the highest returns in brand acceptance. Second, value-driven channel strategies should complement product innovation. Although social concern was a secondary predictor ($\beta = 0.218$), it remains significant. Retailers should embed transparent CSR messaging across touchpoints to build long-term brand trust. Third, digital communication is necessary but insufficient. Behavioural profile had the smallest effect ($\beta = 0.213$), implying that retailers should treat digital channels as foundational infrastructure rather than differentiators. The most effective strategy combines innovative products, value-consistent messaging, and interactive digital engagement simultaneously, addressing all three cognitive dimensions in an integrated manner.

6. Conclusion

This study set out to construct a cognitive profile of Generation Alpha and to examine its relationship with retail innovation pathways. Data were collected from 316 parents and their children through a structured questionnaire. The survey covered behavioural patterns, product preferences, social concerns, and brand acceptance.

Three main findings emerged from the analysis. First, Generation Alpha children showed moderate scores across all cognitive dimensions. Interactive brand experiences and self-directed shopping choices received the highest ratings. Live-streaming purchases and peer-to-peer brand communication scored relatively lower. Second, product preference was the strongest predictor of brand acceptance, with a standardised coefficient of $\beta = 0.318$ ($p < 0.001$). Social concern followed with $\beta = 0.218$, and behavioural profile with $\beta = 0.213$. Third, the model explained 31.8% of the variance in brand acceptance. This confirms that these cognitive dimensions collectively shape how Alpha children respond to retail brands.

The study makes three contributions. It provides an empirically grounded cognitive profile of a generation that has largely been studied through commercial reports rather than academic research. It introduces a hierarchical model which shows that concrete product attributes matter more than abstract values or digital behaviour in shaping brand acceptance among this age group. It also establishes empirical links between the three cognitive dimensions and three retail innovation pathways. These pathways are product creativity enhancement, communication upgrading, and channel transformation. The findings offer a framework for future research on generation-specific retail strategy.

For retail practitioners, product innovation should be the main strategic priority. Value-driven messaging and digital communication are useful but secondary. An integrated strategy that combines product creativity, transparent brand values, and interactive digital engagement is likely to be most effective.

Several limitations should be acknowledged. The sample was drawn through convenience sampling and may not be nationally representative. The cross-sectional design prevents causal claims. Future work could adopt longitudinal methods to track how cognitive profiles change as Alpha children grow older. Cross-cultural comparisons would also help to test the generalisability of these findings.

References

- [1] McCrindle, M., & Wolfinger, E. (2009). *The ABC of XYZ: Understanding the global generations*. McCrindle Research.
- [2] Szymkowiak, A., Melović, B., Dabić, M., Jeganathan, K., & Kundi, G. S. (2021). Information technology and Gen Z: The role of teachers, the internet, and technology in the education of young people. *Technology in Society*, 65, 101565. <https://doi.org/10.1016/j.techsoc.2021.101565>
- [3] Sprotles, G. B., & Kendall, E. L. (1986). A methodology for profiling consumers' decision-making styles. *Journal of Consumer Affairs*, 20(2), 267–279. <https://doi.org/10.1111/j.1745-6606.1986.tb00382.x>
- [4] Piotrowicz, W., & Cuthbertson, R. (2014). Introduction to the special issue information technology in retail: Toward omnichannel retailing. *International Journal of Electronic Commerce*, 18(4), 5–16. <https://doi.org/10.2753/JEC1086-4415180400>
- [5] Huang, M.-H., & Rust, R. T. (2020). A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science*, 49(1), 30–50. <https://doi.org/10.1007/s11747-020-00749-9>
- [6] Cai, X. (2022). Discussing the application of 4IS principle under the context of China: With Perfect Diary as an example. In *Advances in Social Science, Education and Humanities Research* (pp. 1722–1728). Atlantis Press. https://doi.org/10.2991/978-2-494069-31-2_202

- [7] Phalalert, D., & Tangwannawit, P. (2025). An examination of artificial intelligence-driven marketing strategies in relation to the consumer behavior of Generation Alpha. *Journal of Business and Innovation Management*, 8(2), 61–78.
- [8] Ayoubi, S. B., & Sadiqi, A. (2026). Brand attitudes in Generation Alpha: Social media marketing exposure and the moderating role of parental mediation. *Journal of Social Sciences & Humanities*, 3(2), 468–481. <https://doi.org/10.62810/jssh.v3i2.137>
- [9] Effendi, D. E., Roosdhani, M. R., & Ali, A. (2026). Gen Alpha engagement model: The role of influencer skill, authenticity, and interactivity with relatability as a mediating mechanism. *Journal of Accounting, Management and Economics Research*, 5(1), 61–78. <https://doi.org/10.33476/jamer.v5i1.455>
- [10] Barber, B., Mannheim, K., & Kecskemeti, P. (1953). Essays on the sociology of knowledge. *American Sociological Review*, 18(4), 444. <https://doi.org/10.2307/2087567>
- [11] Strauss, W., & Howe, N. (1991). *Generations: The history of America's future, 1584 to 2069*. William Morrow.
- [12] McCrindle, M., & Fell, T. (2021). *Generation Alpha: Understanding our children and helping them thrive*. Hachette Australia.
- [13] Pinsonneault, A., & Kraemer, K. (1993). Survey research methodology in management information systems: An assessment. *Journal of Management Information Systems*, 10(2), 75–105. <https://doi.org/10.1080/07421222.1993.11518001>
- [14] Bearden, W. O., Netemeyer, R. G., & Haws, K. L. (2011). *Handbook of marketing scales: Multi-item measures for marketing and consumer behavior research* (3rd ed.). SAGE Publications. <https://doi.org/10.4135/9781412996761>
- [15] Verhoef, P. C., Kannan, P. K., & Inman, J. J. (2015). From multi-channel retailing to omni-channel retailing. *Journal of Retailing*, 91(2), 174–181. <https://doi.org/10.1016/j.jretai.2015.02.005>
- [16] Kim, D. J., & Cha, S. S. (2025). Digital transformation in retail: A systematic review on omnichannel, AI, and big data. *The Journal of Distribution Science*, 23(6), 15–28.
- [17] Pazgal, A., & Sikka, S. (2001). 4I. In *Encyclopedia of information technology* (pp. 150–175). IGI Global. <https://doi.org/10.4018/978-1-878289-91.ch008>
- [18] Petrescu, M., Krishen, A. S., & Kachen, S. (2024). Exploring AI technology and consumer behavior in retail interactions. *Journal of Consumer Behaviour*, 23(6), 3132–3151. <https://doi.org/10.1002/cb.2386>
- [19] Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). McGraw-Hill.