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Proxy Voicing and Demand Misalignment: A Review of Demand Mining Research on Children's Book Consumption in the Intergenerational Context

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Abstract

In children's book consumption, buyers and users are separated, and parental proxy voice may obscure children's actual reading experience. Using literature review and conceptual analysis, this paper moves from "role separation" to "proxy consumer," distinguishes "gatekeeping" from "proxy voice," and closes the conceptual chain with "demand misalignment." It examines existing methods along the chain of "role identification–attribute extraction–need classification and fine-grained extraction" and finds that most methods assume homogeneous users and fail to make "perspective" a dimension running through all stages, allowing parent-mentioned transactional attributes to dominate results and marginalizing children's experiential attributes. Accordingly, the paper proposes a framework of "perspective identification–perspective-specific attribute extraction–perspective-specific Kano classification–fine-grained need groups–dual-perspective comparison–decision output," and specifies perspective labels, mixed-sentence splitting rules, an age-specific attribute lexicon, and triangulation. The gap lies not in any single technique but in the failure to integrate "perspective" throughout the method chain; the framework is exploratory and requires empirical testing, but offers methodological reference for children's book publishing to return from buyer willingness to actual user experience.

Keywords

Proxy Consumer; Purchaser–User Separation; Children's Book Reviews; Demand Mining; Dual-Perspective Analysis; Kano Model

1. Introduction

Online reviews are a key data source for demand mining, yet studies often assume review posters and product users are identical, neglecting perspective differences from their separation. Huang Shengqing et al. note that existing literature "lacks

screening of consumer behavior involving user role separation," and that buyer–user separation interrupts user feedback [1]. Children's book consumption is a typical case. Tan Xudong and Meng Zhenzhen observe that "creators and readers, actual consumers and readers, are not unified"; planners may prioritize parents as decision-makers while neglecting children's interests, and parental online traces may cover children's real needs [2]. The "speaker" and "experiencer" in reviews are thus not identical: parental reviews mix purchasing logic with proxy relay of children's experience. If mined together, parental preferences may obscure children's actual reading experience, producing a mismatch where "parents pay, but children do not read."

Existing studies note parents' proxy role but have not treated it as an independent problem or proposed methods to distinguish perspectives in reviews. The core question is: in parent-voiced reviews, how can parental purchasing judgments be distinguished from children's reading experience, and how can need differences be compared within the method chain? This paper undertakes three tasks: conceptual clarification from "role separation" to "proxy consumer," distinguishing "gatekeeping" from "proxy voice," and closing with "demand misalignment"; a method-chain review along "role identification–attribute extraction–need classification and fine-grained extraction"; and a dual-perspective demand analysis framework. This narrative review's framework is exploratory and requires empirical testing.

2. Theoretical Basis and Conceptual Evolution

2.1. From "Role Separation" to "Proxy Consumer"

Review posters in children's book consumption are not neutral transmitters of user experience but proxy agents embedded in purchasing logic and educational judgment. Yu Baojun et al. note that young children cannot effectively express their wishes, so parental reviews are needed to analyze their reading needs; parents thus play a "proxy user" role [3]. Yet parents are also purchasing decision-makers, and the "child reactions" in their reviews are filtered through adult observation and expressive habits. This paper therefore defines the role as "proxy consumer": reviews carry both purchasing judgments and proxy relay of children's experience. Unlike "proxy user," the term emphasizes this dual identity; unlike the general "gatekeeper," it highlights the relay function at the review-posting stage.

2.2. Parental Gatekeeping and Proxy Voice

The "proxy consumer" concept leads to parental gatekeeping and proxy voice. Wang Zhigang et al. note that parents are important "gatekeepers," dominating parent–child reading and determining book evaluations, which produces a parent-centered tendency in publishing; they propose that parents become "connectors" in children's reading networks [4]. Wang Bowei also observes that

teachers and elders often judge picture books on children's behalf, and works with a "teacher/elder value orientation" show intergenerational alienation in theme, character, and story structure [5].

Gatekeeping and proxy voice must be distinguished: gatekeeping is "choosing what children read," occurring at purchase and recommendation stages; proxy voice is "saying on children's behalf whether a book is good," occurring at review and evaluation stages. The former can be alleviated through diverse supply; the latter directly determines whether children's needs enter the data source for demand mining. If children's experience in parental reviews is proxy expression filtered through adult perspectives, children's voices may be systematically obscured—not through intentional concealment but as a structural result of proxy relay: parents relay child reactions according to their own observation and expressive habits, and children's subtle experiences are easily simplified or omitted.

2.3. Demand Misalignment under Proxy Voice

The consequence of obscured child voice is a structural demand misalignment between parents and children. Chang Qing stresses that children's books must fit children's age, psychology, and language [6]; Peng Yu notes an identity mismatch between adult authors and child readers [7]; Wang Zhuang et al. argue that "childness" requires asking what children read and where their pleasure lies [8]. Children do have needs, but these cannot fully enter the evaluative field through adult proxy voice.

In publishing practice, Fan Siwen et al. find many original picture books are adult-oriented and didactic [9]; Wang Yanyan observes poor alignment with young children's life experience and psychological needs [10]; Wang Huan et al. point out that children's books are "sold to parents and guided by teachers" [11]; Zhai Xuping notes adult-oriented, homogenized themes and insufficient age targeting [12]. Channel evidence further shows divergent concerns: online consumers are mainly young parents emphasizing educational orientation and quality, while offline consumers are children preferring entertaining books [13]. Attributes can thus be divided into parental transactional and quality attributes (price, authenticity, logistics, binding, publisher brand) and children's content and experiential attributes (story interest, illustration style, text difficulty, reading rhythm, age appropriateness). Without differentiation, parental transactional attributes may dominate, marginalizing children's experiential attributes. Wang Lei's work on leveled reading standards [25] supports age-specific refinement of these attributes.

3. Data Characteristics and Mining Challenges in Purchaser–User Separation Contexts

3.1. Mixed Perspectives and Proxy Relay within Reviews

Children's book online reviews are mixed-perspective texts generated by "proxy

consumers." Tan Xudong et al. note that content e-commerce platforms have become the largest sales channel, operating under "traffic logic" with low discounts and interest-based push [2]. Online reviews are thus parent-dominated and shaped by platform mechanisms, making content naturally biased toward transactional attributes. Reviews also interweave first-person purchasing logic with third-person child relay. Yu Baojun et al. find that parental reviews often contain young children's reading methods, reading time, and parents' affective evaluations of picture-book features [3]. Wang Bowei notes that the diversity of review-poster identities further intensifies perspective mixing [5].

More importantly, proxy relay is selective recording, not neutral transmission. Parents tend to note what children "learned" or "whether they liked it," simplifying subtle experiences such as story pacing, visual appeal, and reading duration. Wang Huan and Zhang Guolong observe that many teachers or parents assign reading tasks by duration or page numbers; this substitution of quantifiable indicators for experiential judgment may also permeate parental relay of children's reactions [11]. "Children's needs" in reviews are therefore proxy expressions filtered through adult perspectives, not direct mappings of children's experience.

3.2. Online–Offline Channel Divergence

Channel differences further amplify perspective divergence. Li Jiayu et al. find that online consumers are young parents emphasizing educational orientation and quality assurance, while offline consumers are children preferring entertaining books [13]. The online "bestseller logic" amplifies parental educational choices and quality judgments; the offline "classic logic" better reflects children's autonomous preferences. Using only online reviews may therefore systematically underestimate children's perspective needs. Offline borrowing records, physical-store purchases, and parent–child reading observations, though not textual, provide indirect evidence of children's autonomous choices and immediate reactions.

3.3. Three Challenges in Demand Mining

Channel divergence and mixed perspectives jointly produce three challenges. First, perspective separation is difficult: existing role identification relies on explicit proxy words, whereas children's book proxy relay often appears as implicit expressions such as "the child likes it," lacking explicit markers for rule matching. Second, need mapping is difficult: parental transactional attributes such as price, logistics, and authenticity are relatively easy to identify, but children's experiential attributes such as story interest, illustration style, and reading difficulty are vague, semantically dispersed, and may mean opposite things for children of different ages. Third, weight allocation is difficult: parental reviews naturally dominate in number, while children's voices enter texts only through parental relay. Ming Junren et al.'s parent–child reading study, though situated in parent–child scenarios, still has

mainly parent respondents, with children's needs expressed through parents [14]. How to identify, preserve, and reasonably weight the two perspectives is therefore a core challenge.

4. Evolution and Adaptability of Demand Mining Methods

4.1. Perspective Classification and Role Identification

The first step is to separate parental and child perspectives from mixed reviews. Rule matching, represented by Huang Shengqing et al.'s role-separation candidate lexicon, uses "verb + appellation noun" structures to screen buyer-described user experience [1]. It works for explicit proxy behavior such as gifting or buying on behalf of others, but depends on co-occurrence of appellation nouns and proxy verbs. Children's book relay often appears as "the child likes it," without explicit verbs; in "the book is good, and the child also likes it," the first half is parental judgment and the second half proxy relay, which whole-sentence rules cannot split. Rule methods target explicit "who buys for whom" relations in industrial products, whereas children's book reviews involve implicit "parents speaking for children" relay.

Deep classification builds on short-text classification. Gan Yating et al. note that CNN, RNN, and GCN models can extract local features and contextual information [15]; reviews can be split into clauses, labeled as parental purchasing judgment, parental relay of child experience, child direct expression, or mixed/unidentifiable, and classified by fine-tuned models. TextCNN–TextRNN fusion can balance local semantics and temporal features [26], and attention mechanisms can strengthen key clauses [27]. However, general short-text classification does not address intergenerational perspectives; migration requires a new annotation scheme. Whether "the child likes it" is labeled "parent-inferred child emotion" or "child perspective" directly affects conclusions.

In adaptability terms, rule methods cover implicit proxy forms insufficiently; deep classification relies on large annotated corpora, and no public dataset exists for children's book review perspective annotation. The gap is therefore not "no classification technology" but "no annotation scheme and classification target for children's book intergenerational contexts."

4.2. Topic Modeling and Attribute Extraction

After perspective classification, extracting attributes from each perspective and mapping them to need elements is key. Li He et al. use LDA to identify topics and product features from online reviews [16]; Jiang Yu et al. use BTM to alleviate short-text sparsity, though BTM excels at discovering rather than ranking needs [17]; Li Yupeng et al. introduce BERTopic, which outperforms LDA and BTM on synonyms and short texts [18]. Qiang Wei et al. also apply BERTopic to need evolution and function mapping [19]. Miao Hong et al. caution that locating functional needs solely

through high-frequency negative-review keywords is one-sided; structural topic models can incorporate sentiment orientation as covariates [20].

These methods are mature at attribute extraction but share a limitation under buyer–user separation: they assume homogeneous users and do not distinguish perspectives before topic modeling. LDA, BTM, and BERTopic all assume documents come from the same user group. If the two types of reviews are modeled together, parental transactional attributes may dominate the topic space, while children's experiential attributes may fall into long-tail topics and be merged or discarded when the number of topics is limited. Topic modeling therefore cannot replace perspective classification; it can only follow it.

4.3. Need Classification and Fine-Grained Extraction

After attribute extraction, the Kano model judges must-be, expected, and attractive attributes and sets supply priorities. Kano questionnaires [14], LDA–Kano [16], BTM–Kano [17], and A-Kano [18] represent the shift from questionnaires to a computational paradigm.

However, Kano classification is single-user and assumes respondents are both decision-makers and experiencers. In children's books, parents answer as buyers and children experience as readers; mixed calculation obscures children's attractive needs and overestimates parents' transactional needs.

Fine-grained extraction follows: need networks [21], combined models [22], sentiment triples [23], and topic–sentiment analysis [24]. Two gaps remain: filtering is not integrated with perspective classification, and sentiment analysis does not distinguish whether "the child likes it" reflects the child's emotion or parental inference. Perspective classification must therefore precede filtering and sentiment analysis.

5. Review and Existing Limitations

Existing studies treat buyer–user separation as background rather than an independent research context: Huang Shengqing et al. propose "user role separation" [1], Yu Baojun et al. use parents as "proxy users" [3], and Tan Xudong et al. note that parental preferences may obscure children's real needs [2]; none explains how proxy bias forms or engages with online-review demand mining methodology.

At the method-chain level, single techniques are mature, but perspective classification, topic modeling, Kano classification, and fine-grained sentiment analysis each retain single-user or homogeneous-user assumptions; the chain of perspective identification, attribute mapping, Kano classification, and fine-grained extraction has not closed for buyer–user separation.

In application, buyer–user separation research concentrates on industrial products, smart devices, and consumer electronics, whose functional and performance attributes are difficult to transfer to children's books as content-experience cultural

products. Children's book research remains largely theoretical or experiential, rarely quantifying dual-perspective need differences from online reviews. Transferring the framework therefore requires rebuilding the attribute system, resetting perspective classification targets, and redefining need satisfaction.

6. Dual-Perspective Demand Analysis Framework for Intergenerational Contexts

6.1. Framework Overview and Perspective Identification

To address the gap that perspective does not run through the method chain, this paper proposes a dual-perspective demand analysis framework: data collection → perspective identification → perspective-specific attribute extraction → perspective-specific Kano classification → fine-grained need groups → dual-perspective comparison → decision output. Perspective identification is added before attribute extraction and retained throughout.

Perspective identification labels clauses into four categories: parental purchasing decision perspective, parental proxy relay of child experience, child direct expression, and mixed/unidentifiable. "The child likes it" belongs to the second category—parent-inferred child emotion, not child direct expression—and should be assigned different credibility. Mixed sentences are split at semantic pauses; unsplittable ones are labeled "mixed" rather than forced into binary categories. Deep short-text classification methods can be borrowed [15]; TextCNN–TextRNN fusion balances local semantics and temporal features [26], and attention mechanisms strengthen key clauses [27]. A self-built annotation set with double annotation and Kappa consistency is needed, especially recall for proxy relay and child direct expression. This label system is exploratory and has not been empirically tested at scale.

6.2. Perspective-Specific Attribute Extraction and Kano Weight Design

Attributes should be modeled separately within each perspective to avoid mixing parental transactional and children's experiential attributes. BERTopic is preferred for short texts [18]; BTM suits small review volumes [17]. Topic structures are then compared: parental perspective versus price, logistics, and authenticity; child perspective versus story, illustration, and text difficulty.

The lexicon has two layers: purchasing decision and reading experience attributes. Following age segmentation [8] and leveled reading standards [25], experiential attributes are refined for ages 0–3, 4–6, 7–9, and 10–15. Kano classification is perspective-specific: parental perspective via questionnaires [14][16]; child perspective via reading observation, interviews, or app records. For young children, a parent item ("How would your child evaluate it?") is cross-validated with observation to estimate proxy-response bias. Weights use within-perspective standardization plus adjustable between-perspective weights, with sensitivity

analysis for equal and unequal weights.

6.3. Fine-Grained Need Groups, Validation Design, and Decision Output

Need groups retain perspective and age labels. Need-sentence filtering follows Hui Tiaoyan et al. [22], but perspective annotation precedes filtering. Clustering can use CNN features with SOM [28], which discovers latent topics without presetting topic numbers; Sentence-BERT with hierarchical clustering can trace groups to source reviews. Sentiment attribution distinguishes child direct expression, parent-inferred child emotion, and parent's own purchasing emotion. "The child likes it" is output as proxy relay to be verified, not directly counted as child emotion, and weighted up only when cross-validation is consistent; the sentiment subject thus extends from the poster to the relayed third party [21][23].

Validation includes internal checks of classification consistency, model recall, and topic-structure differences between perspective-specific and mixed modeling; external triangulation uses offline borrowing, physical-store purchases, and parent–child reading observations, compared with a no-perspective baseline. This paper proposes validation ideas only. Decision output covers parental purchasing priorities, children's reading experience priorities, conflicting attributes, and age-specific differences, making child-centeredness a testable attribute list.

7. Conclusion

Buyer–user separation in children's book consumption is structural: parental reviews interweave purchasing judgment with relayed child experience, making reviews mixed-perspective texts and exposing demand mining to perspective conflation. This paper moves from role separation to proxy consumer, distinguishes gatekeeping from proxy voice, closes with demand misalignment, reviews the method chain, and proposes a dual-perspective framework with perspective labels, age-specific lexicons, proxy-bias estimation, and triangulation. The framework is exploratory and requires empirical testing. Future work should refine perspective identification, combine perspective-specific modeling with multimodal reviews, and extend the framework to other buyer–user separation contexts.

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