

A CONCEPTUAL ANALYSIS OF CUSTOMER NEEDS IN THE E-COMMERCE ENVIRONMENT USING THE EMPATHY MAP TOOL

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Abstract: In an era of rapid e-commerce development and growing market competition, the ability to empathetically identify customer needs has become a crucial factor in building a competitive advantage - especially in sensitive industries such as children's products. The aim of this article is to conduct a conceptual analysis of customer needs in the e-commerce environment using the empathy map tool. The analysis is based on real customer opinions from a Polish online store specializing in children's products. A total of 120 customer statements were collected from opinion-forming platforms (Google Reviews, Ceneo.pl) and social media comments (Facebook) and subjected to qualitative content analysis. Based on this data, a customer profile (persona) and an empathy map were developed to capture key needs, concerns, frustrations, and positive experiences associated with online shopping. The findings revealed recurring issues in areas such as delivery time, quality of customer service, clarity of return procedures, and discrepancies between marketing communication and the actual offer. The developed empathy map served as a starting point for formulating practical recommendations for online stores, aimed at improving service quality and building customer trust and loyalty. The article highlights the value of the empathy map as a tool for supporting customer experience (CX) management, particularly in the context of micro and small enterprises that lack advanced analytical systems.

Keywords: e-service, empathy map, quality of e-services, e-store

1. INTORUDCTION

The dynamic growth of e-commerce has made online service quality one of the key factors determining customer satisfaction and loyalty. In an environment where interactions between sellers and buyers are limited to digital channels, understanding customer expectations and needs becomes particularly important. Analytical tools such as the empathy map enable a deeper insight into the customer's perspective, forming a foundation for improving service quality (Ingaldi, 2022; Ingaldi, 2018). This approach not only supports the identification of explicit service deficiencies but also captures the subtle emotional and cognitive experiences that shape customer perceptions, which are critical for sustaining competitive advantage in digital markets.

Service quality does not have a single universal definition, as it depends on individual customer perceptions and expectations. It is commonly assessed through dimensions



such as tangibility, reliability, responsiveness, assurance, and empathy. High service quality occurs when customer needs are met at a level that not only satisfies but often exceeds their expectations, ensuring long-term loyalty and organizational competitiveness. According to many authors, service quality is a fundamental determinant of consumer behaviour, shaping the overall customer experience and directly influencing purchase decisions, brand loyalty, and long-term engagement with a company (Phuong et al., 2020; Ali et al., 2023). High service quality ensures that potential buyers receive accurate and transparent information, benefit from smooth and efficient transactions, and gain comprehensive after-sales support, all of which contribute to building trust and fostering long-term customer relationships (Sitinjak and Ober, 2025; Knop, 2020; Pilarczyk and Ulewicz, 2024; Kryнке and Mazur, 2024; Siwiec and Pacana, 2025).

Identifying solutions to challenges in assessing service quality is possible only when the inherent complexity of services is thoroughly understood. By nature, services exhibit distinctive characteristics that set them apart from tangible goods, making their evaluation more intricate and multidimensional. In the literature, numerous authors define services from various perspectives, highlighting their multifaceted essence. A widely accepted classical definition describes a service as an intangible activity or benefit exchanged between parties, which does not entail the transfer of ownership. This absence of physical possession constitutes a core feature distinguishing services from products and underlines the unique difficulties involved in their evaluation (Cieřła, 2024).

A wide range of specialized methods exist for assessing service quality, each offering structured and measurable criteria. However, in practice, organizations often overlook direct customer opinions, which, despite their subjective nature, contain valuable insights into service gaps, unmet expectations, and opportunities for improvement. Incorporating these perspectives can significantly enhance the accuracy and relevance of service quality evaluations, supporting more customer-centric decision-making processes (Commentary: Recognizing the subjective dimension of service evaluation aligns with modern quality management approaches, which increasingly value experiential data alongside traditional metrics).

In today's highly competitive e-commerce environment, understanding not only what customers buy but also how they feel and think during their purchasing journey has become essential. Empathy mapping is a valuable tool that enables companies to step into the customers' shoes, uncovering emotional and contextual insights that traditional quantitative research methods might overlook. It provides a structured way to visualize and synthesize customer perceptions, behaviors, and emotions, thereby facilitating informed strategic interventions in service design.

It is important to emphasize that an empathy map is not a one-time exercise but should be treated as a living document, regularly updated to reflect evolving customer needs and market dynamics. Continuous iteration ensures that strategies remain aligned with real customer experiences and supports proactive improvements in service quality (Commentary: This iterative approach mirrors adaptive learning principles in service management, enhancing responsiveness to changing consumer expectations).

The aim of this article is to conduct a conceptual analysis of customer needs in the e-commerce environment using the empathy map tool. The analysis was carried out for a selected online store offering children's products. Based on a review of consumer opinions collected from online reviews, a customer profile was developed, identifying key elements of experiences, expectations, frustrations, and emotions accompanying online purchases.

The article aims to demonstrate the potential of the empathy map as a simple yet effective tool for supporting customer experience design and diagnosing service quality in digital sales environments.

While current management trends strongly emphasize the transformative role of AI in digital leadership and competency development (Ingaldi & Ulewicz, 2025), the novelty of this study lies in the systematic application of the empathy map tool for analyzing customer opinions explicitly without relying on advanced artificial intelligence tools. This qualitative approach, based on real consumer data, allows for an in-depth understanding of the needs and emotions of online shopping platform users. The proposed methodology may serve as a valuable complement to traditional customer satisfaction research tools, particularly for small and medium-sized enterprises that lack advanced analytical infrastructure. Furthermore, by providing actionable insights into customer behavior and sentiment, this approach supports the development of more tailored and effective service strategies, bridging the gap between customer expectations and business offerings.

2. LITERATURE REVIEW

2.1. Online consumer reviews and their impact on service quality

Online consumer reviews represent a significant source of information for both enterprises and customers in search of services or products. Such reviews may address various aspects, including service quality, product performance, customer support, or the overall reputation of the company. In this sense, they can function as a form of promotion, while negative reviews may act as a form of counter-advertising. Previous studies have demonstrated a strong link between online reviews and sales performance (Chevalier and Mayzlin, 2003; Godes, Mayzlin, 2004). It is further estimated that approximately 47% of consumers consult reviews prior to making an online purchase, and 63% are more inclined to finalize transactions on websites that provide such feedback (Gogoi, 2007).

Online reviews constitute a novel and increasingly significant channel of communication, enabling companies to obtain insights into customer satisfaction levels while allowing consumers to share their experiences and recommendations (Ambler and Bui, 2011). An expanding number of e-service platforms support the publication of descriptive feedback, numerical ratings, as well as the addition of photos and videos. Such contributions foster the emergence of online communities, so-called “web tribes” (Pigla, 2012), which collectively influence purchasing decisions.

The motivations driving consumers to publish reviews include the intention to support or harm a service provider, altruism, the satisfaction of sharing personal experiences, the possibility of receiving rewards, and the desire to influence corporate practices (Bernatowicz and Małyszko, 2014). Reviews are commonly shared across diverse platforms, including online stores, auction sites, price comparison portals, discussion forums, social media platforms, and blogs.

Systematic monitoring of online feedback (e.g., through tools such as brand24.pl) facilitates rapid responses to negative signals, the identification of areas requiring improvement, and the verification of whether companies deliver on their promises to customers (Nieżurawski et al., 2010; Grönroos, 2015). At the same time, it is necessary to recognize the risks associated with review manipulation, for example through artificially inflated ratings (Dellarocas, 2006; Li and Hitt, 2008).

Research indicates that higher customer ratings can significantly increase both sales volumes and prices, particularly in the hospitality sector (Öğüt and Taş, 2012).

The main advantages of online reviews include:

- free promotion of the company,
- enhanced customer trust,
- improved visibility in search engine results,
- a reduction in complaints owing to better-informed customers,
- identification of areas requiring improvement.

However, several disadvantages have also been noted, such as:

- the absence of negative reviews, which may reduce perceived credibility,
- the disproportionate influence of a single negative review on customer decisions,
- costs associated with using external review platforms,
- the risk of harmful reviews originating from competitors,
- the necessity of maintaining up-to-date content.

From a scientific perspective, online reviews serve not only an informational but also a regulatory function within the e-commerce ecosystem. By analyzing patterns in customer feedback and their influence on consumer behavior, companies can better anticipate market reactions and optimize customer service processes. The literature suggests that the aggregation of reviews, sentiment analysis, and the identification of recurring issues can lead to significant service quality improvements, thereby enhancing a firm's competitiveness (Chevalier and Mayzlin, 2003; Amblee and Bui, 2011).

Furthermore, the systematic study of customer opinions enables the development of predictive models of consumer behavior, which constitutes a valuable contribution to the advancement of digital marketing and quality management. In the context of e-commerce research, it has been emphasized that negative reviews, when strategically utilized, can become a source of innovation and process improvements, for example in customer service, logistics, or offer personalization (Öğüt and Taş, 2012; Dellarocas, 2006).

Online reviews thus influence not only the perception of service quality but also provide insights into customers' real experiences, thereby supporting quality management strategies and decision-making processes in e-commerce enterprises.

2.2. Empathy mapping as a tool for analyzing user experience

User-centered design (UCD) can be viewed as a philosophy, a process, or an approach aimed at embedding user needs into the design process. Within this framework, the empathy map serves as a method for defining user profiles and identifying user needs. Campese et al. (Campese et al., 2018) praise the usefulness of the empathy map, emphasizing its role in facilitating data organization and enhancing the understanding of the user. Huang et al. (2025) indicate that the empathy map is a visual tool designed to make knowledge about the user or research subject explicit, thereby supporting a shared understanding of needs and facilitating decision-making.

Empathy mapping is considered one of the key tools in the "Discover" phase of the Design Thinking process. The insights gathered through empathy mapping serve as a foundation for creating personas. Personas are reference models that represent subgroups of users. From a technical perspective, they can be understood as behavioural archetypes, focusing on distinct patterns of behaviour (e.g., "the conscious chooser") rather than on fixed personalities or socio-demographic attributes (Peng, 2022).

An empathy map is a tool designed to support the understanding of users' perspectives. Traditionally applied in design thinking courses and less frequently in medical education, it functions as a collaborative visualization that captures and organizes knowledge about

a specific type of user. Its purpose is twofold: to build a shared understanding of user needs and to inform decision-making. A standard empathy map is divided into four quadrants, Says, Thinks, Does, and Feels, with the user or persona placed at the center. Unlike chronological or sequential tools, empathy maps offer a holistic snapshot of who the user is (Huang et al., 2025).

An empathy map typically comprises six key elements used to assess patients' feelings and behaviors: what they think and feel, hear, see, say, and do. These dimensions are further synthesized into pain points and gains, reflecting users' goals and expectations. The elements are interconnected in a rational and logical manner, enabling the synthesis of existing knowledge derived from observing what users say, do, see, and hear (Cairns et al., 2021).

The empathy map is used to creatively generate products, processes, services and/or educational solution. Using an empathy map seeks to understand the situation in depth and observe the context and behavior of the people involved (Yeung and Ng, 2023).

The empathy map has been applied in health education, where it enabled nursing staff to reflect on patients' needs and expectations. More broadly, it has been employed across various fields as a tool that facilitates a deep understanding of user context and behavior, which is particularly valuable in both design-oriented and educational approaches. Owing to its non-linear structure, the empathy map allows for the capture of a holistic view of the user and stimulates the creation of solutions that hold both emotional and practical value. The empathy map is an important tool because it enables teams to synthesize dispersed user data into a shared, visual representation of needs, emotions, and behaviors. By externalizing this knowledge, it reduces misinterpretations among stakeholders and facilitates user-centered decision-making in both product and service design (Campese et al., 2018). Moreover, its simplicity makes it widely applicable across contexts, from business and technology to healthcare and education, where it strengthens empathy and enhances the relevance of proposed solutions (Huang et al., 2025).

The use of an empathy map in analyzing customer feedback on online services, such as e-commerce platforms, provides a structured approach to understanding the multifaceted experiences of users. By systematically capturing what users say, think, feel, see, and do, the method allows organizations to synthesize diverse qualitative data from reviews, surveys, social media, and direct interactions. This process highlights not only explicit complaints or requests but also implicit needs and emotional responses, revealing pain points, barriers, and areas of delight that may otherwise remain unnoticed. Consequently, empathy mapping supports a user-centered approach to service design, guiding improvements in interface usability, communication strategies, personalization, and overall customer experience. Furthermore, it enables teams across departments, marketing, product development, and customer support, to share a coherent understanding of user perspectives, which enhances alignment in decision-making and fosters innovations that are both functional and emotionally resonant.

From a scientific perspective, the empathy map allows for the integration of diverse qualitative data sources, such as online reviews, surveys, and observations of user behavior. This enables the capture of both emotional and functional aspects of the customer experience, providing added value in the design of digital products and services (Huang et al., 2025; Cairns et al., 2021).

Moreover, the use of empathy mapping in analyzing e-consumer experiences facilitates the identification of so-called "pain points" and areas of satisfaction, which may be difficult

to detect using traditional quantitative methods. Consequently, companies can make decisions based on the actual needs of users rather than solely on statistical data (Yeung and Ng, 2023).

The literature also emphasizes that the empathy map enhances collaboration among interdisciplinary teams, supporting a coherent approach to service innovation and design. This not only allows for better alignment of products with customer expectations but also promotes the creation of solutions with high emotional and practical value, which is crucial in the highly competitive e-commerce environment (Campese et al., 2018).

Empathy mapping bridges the gap between subjective user experiences and actionable business insights, offering a low-cost, flexible methodology particularly useful for SMEs in the digital commerce sector. It operationalizes qualitative data into practical improvements while maintaining a holistic perspective on customer needs and emotions.

3. MATERIALS AND METHODS

The aim of the analysis was to capture the real experiences of customers of an online store offering children's products (e.g., strollers, car seats, accessories, clothing, and toys) in order to create an empathy map reflecting their perception of service quality, emotions associated with the purchasing process, and consumer challenges.

The analysis focused on a medium-sized Polish online store specializing in children's products, which has been operating in the market for several years and features:

- an extensive product catalog (over 3,000 items),
- the ability to shop via a mobile app and website,
- an active presence on social media platforms (Facebook, Instagram),
- hundreds of customer reviews on external platforms (Ceneo, Google).

A total of 120 customer opinions from various platforms were included in the analysis:

- Google Reviews – 30 reviews,
- Ceneo.pl – 40 reviews,
- Facebook (comments under posts) – 50 reviews.

All statements were collected over the past 12 months and referred to various aspects of the shopping experience: product quality, customer service, return process, order fulfillment time, and overall satisfaction or dissatisfaction.

The selection of opinions was based on purposive sampling, including only those statements that contained emotional and descriptive content and directly referred to the customer's shopping experience (e.g., delivery, customer service interaction, product quality, return process). One-sentence reviews lacking context and duplicated entries were excluded.

The data for analysis were selected based on their relevance and emotional content. The included statements referred to shopping experiences, service quality, store functionality, and overall customer satisfaction or dissatisfaction. The criteria for selecting opinions were as follows:

- statements containing descriptions of emotions, experiences, expectations, or critical comments,
- sufficiently detailed statements (at least 2–3 sentences),
- statements from verified customers or accompanied by comments from other users.

The analysis process consisted of four main stages:

- selection of customer reviews containing emotional elements or referring to shopping experiences,

- categorization of statements according to the empathy map framework (what the customer says/does, sees, hears, thinks/feels, pains, and gains),
- synthesis – identifying the most frequently recurring emotional themes and developing a customer persona representing a typical shopper of the analyzed online store (“Anna” – a mother purchasing children's products online),
- visualization – creating a graphical version of the empathy map to present the collected insights in a clear and accessible format.

This approach enabled the development of a realistic and in-depth profile of a typical customer of an online children's products store. The applied method is exploratory in nature and does not aim for full representativeness but allows for a deeper understanding of the customer's perspective.

4. RESULTS

The analyzed reviews came from actual customers of an online store specializing in children's products, who made purchases within the past 12 months. Although the reviews were anonymous, the writing style, cultural references, and types of products purchased allowed for the identification of a general respondent profile (Table 1).

Table 1
Respondent Characteristics

Feature	Estimated Characteristics
Gender	The majority of reviews were written by women (approx. 80%)
Age group	Mainly individuals aged 25–40
Family status	Parents (most often mothers) of young children
Level of digital competence	Medium to high – mobile shopping, awareness of comparison platforms, use of social media
Expectations towards the store	Fast order processing, accessible customer service, simple return procedures, honesty and transparency

Source: own study

Based on the respondent characteristics, a persona named Anna was developed, representing a typical customer of the analyzed online store specializing in children's products. Her key characteristics are as follows:

- Age: 34 years old.
- Residence: medium-sized city.
- Occupation: marketing specialist, works remotely.
- Family: two children – an infant and a preschooler.
- Lifestyle: active, rational consumer, uses price comparison websites, reads reviews before purchasing.
- Online shopping habits: regularly buys children's products (diapers, cosmetics, toys, clothing) as well as books and household items.
- Devices used: mainly shops via smartphone, occasionally uses a laptop.

A detailed analysis of selected reviews was conducted. The main themes emerging from the reviews were identified first (Table 2).

The themes presented in the table provide a concise summary of recurring motifs found in customer reviews of the analyzed online store. Their nature allows the identification of key areas impacting the customer experience in the context of e-commerce. These conclusions are consistent with the empathy map framework and enhance its diagnostic value.

Table 2

Most Frequently Occurring Themes

Theme	Content/Observation
Delivery time	Customers expect very fast fulfillment, and delays cause irritation.
Customer service contact	Lack of response to messages or template answers are sources of frustration.
Returns and complaints	Lack of a clear return procedure makes customers feel lost or ignored.
Product quality	Customers are sensitive to consistency with descriptions and photos – any discrepancies cause distrust.
Transaction security	Concerns about honesty and transparency, especially regarding more expensive products (e.g., strollers).

Source: own study

Delivery time: The order fulfillment time proved to be one of the most sensitive points of the entire shopping process. Customers not only expect fast delivery but often attach strong emotions to it - especially when the product is needed "right away" (e.g., for a child). Delays cause frustration and reduce trust in the store, regardless of the product's quality.

Customer service contact: The second critical area was access to and quality of communication with the store's customer service. Reviews indicate that customers feel a lack of personalized approach, and a lack of response or automated replies increase feelings of uncertainty and helplessness. This shows that customer contact is not just a "support channel" but also a component of building relationships and trust.

Returns and complaints: Some customers reported difficulties with returns, unclear policies, and overly complicated procedures. This area can significantly influence decisions about first or repeat purchases. In the children's products industry - where sizes, preferences, and needs change quickly - flexibility in return policies is especially important.

Product quality vs. description: Although physical product quality was less frequently rated negatively, many customers pointed out discrepancies between photos and descriptions and the actual product. This phenomenon breeds distrust and can reduce conversion rates. Customers expect product presentations in online stores to be not only attractive but also reliable.

Transaction security: The statements also reveal strong emotions related to concerns about transaction honesty - especially for more expensive products. Lack of prompt post-purchase responses or delayed shipping may be interpreted as warning signs. For customers, transparency, email confirmations, package tracking, and clear return policies are key.

The discussed themes not only reflect customer pain points but also provide valuable strategic insights for companies operating in the e-commerce sector. Their common denominator is the need for trust, accessibility, and transparency. Incorporating these areas into service design can significantly enhance customer satisfaction, and thus their loyalty and willingness to recommend.

Customer statements show that beyond the product aspect, the following are crucial:

- communication,
- ease and clarity of procedures,
- sense of security,
- emotional involvement (especially when purchasing for a child).

These elements formed the basis for constructing a realistic empathy map of the customer - a young mother shopping online for her child.

Table 3 presents a compilation of quotes corresponding to the individual elements of the empathy map.

Table 3
Assignment of Customer Quotes to Empathy Map Areas

Empathy Map Area	Sample Quote from Reviews	Source
What they say and do	"I don't buy blindly – I always read reviews and compare offers."	Ceneo
	"If I don't get a response within 24 hours, I cancel the purchase."	Facebook
What they see	"The website looks nice, but the return information is hidden somewhere in the footer."	Ceneo
	"Instagram ads are great, but then the product is missing on the site."	Ceneo
What they hear	"A friend said she waited a long time for a stroller and couldn't get through by phone."	Ceneo
	"In a moms' group, someone warned that they don't refund returns."	Ceneo
What they think and feel	"I was afraid I'd be scammed. Almost 1000 PLN and no contact for two days."	Google Reviews
	"I was happy the package arrived earlier than expected."	Ceneo
Pains	"The site froze when choosing delivery method – I had to start over."	Ceneo
	"Filing a complaint took two weeks. Nobody knew anything."	Facebook
Gains	"Nice that I received an SMS notification about the order status."	Google Reviews
	"It was nice they added a freebie and a thank-you note to the package – it made an impression."	Ceneo

Source: own study

The table assigning customer statements to specific areas of the empathy map allows for a visual and logical organization of the customer's voice across key aspects of the consumer experience. Each quote relates to a different aspect of the customer's interaction with the online store, and together they create a coherent picture of their way of thinking, perceiving, and responding.

What does she say and do?: This category is dominated by statements reflecting consumer awareness and shopping activity. Customers declare that they compare offers, read reviews, and make decisions based on specific signals (e.g., response time to inquiries). These statements show that the online shopping process is not accidental but planned and conditioned by previous experiences or the opinions of others.

What does she see?: Quotes in this section highlight discrepancies between marketing and reality. Customers notice differences between visual promises (e.g., social media ads) and the actual availability or usability of the website. This demonstrates how significant consistency between visual messaging and the real offer is, especially in the e-commerce environment.

What does she hear?: Statements in this section refer to the so-called social proof - customers are strongly influenced by the opinions of others, especially friends or members

of online communities (e.g., parenting groups). This is particularly important in the children's products sector - purchases are often consulted and carry responsibility. The voice of the community affects the level of trust but also generates concerns.

What does she think and feel?: This category is dominated by the emotional layer of experience - fears, joy, uncertainty, relief. Quotes show that even short delays or lack of contact cause strong stress, especially with larger orders. This confirms that customer service also involves managing emotions, not just information flow.

Pains: The collected quotes highlight specific friction points such as technical problems, unclear procedures, or unavailable customer service. These statements serve as clear warning signals that the company can treat as a priority list for improvements. It is worth noting that some pains are secondary - resulting from frustration accumulated through other process imperfections.

Gains: Quotes in this section show that even small positive elements (freebies, SMS notifications, thank-you notes) can build loyalty and evoke positive emotions. This confirms the importance of so-called "moments of delight" in the customer-brand relationship - often small but memorable moments.

The compilation of quotes within the empathy map not only illustrates specific customer experiences but also enables practical translation of the findings into business decisions. Each area of the map points to domains that require:

- improvement (e.g., communication, logistics),
- greater transparency (e.g., returns, product availability),
- enhancement of positive experiences (e.g., customer appreciation, personalization).

Thanks to this structure, the company can not only "listen to the customer" but also act effectively based on their voice - empathetically, systematically, and efficiently.

The developed empathy map for the selected persona is presented next (Figure 1).

Based on the developed empathy map of the online children's products store customer, a set of practical recommendations was formulated. Table 4 presents proposed actions corresponding to specific areas of the customer experience identified during the analysis of consumer reviews.

WHAT DOES SHE THINK AND FEEL?		
She wants the shopping process to be hassle-free - without having to worry about being deceived. She feels pressured - she cannot afford to make a mistake because the products are for her child. She feels satisfied when the package arrives earlier than expected. She gets frustrated when she has to send multiple emails with questions. She dislikes feeling treated as just "another customer" or part of a mass.		
WHAT DOES SHE HEAR? From friends: "Be careful with that store, they don't accept returns!" Opinions on social media: "Fast, nicely packaged, but they don't reply to emails." Parenting podcasts recommend specific brands and online stores. Husband: "Something expensive arrived again..."	EMPTHY MAP OF ANNA - A CUSTOMER SHOPPING IN AN ONLINE CHILDREN'S PRODUCTS STORE 	WHAT DOES SHE SEE? Many offers and promotions, but often unclear. Unclear return policies. Other moms recommend trusted stores on forums. Instagram ads often look nice but lead to questionable sites. Many positive reviews about fast delivery are encouraging.

WHAT DOES SHE SAY AND DO?	
"I look for good quality items, but also at a reasonable price." "I don't have time to wait a week for delivery." She writes reviews only when something really delights or frustrates her. Shares promotions with other moms in Facebook groups. Cancels purchases if the website is slow or complicated. Compares products across several stores at the same time.	
PAINS	GAINS
Fear of being scammed (e.g., product unavailable after payment). Lack of contact with customer service or very generic responses. Overly complicated return policies. Advertisements that do not match reality. The store's app is slow or freezes.	Clear, simple messages – "24h delivery" really means 24 hours. Possibility to contact customer service via chat or phone. Product information tailored to her child (e.g., age, allergies). Discounts for loyal customers or for writing reviews. A feeling that the store cares about the relationship, not just the sale.

Fig. 1. Empathy map for Anna

Source: own study

Table 4

Recommendations for Empathy Map Areas

Empathy Map Area	Recommendations for the Online Store
What does she say and do?	• Display visible customer reviews. • Simple and visible contact options (chat, hotline). • Clear presentation of purchase and return conditions.
What does she see?	• Consistency between advertising and actual offer. • Responsive, fast mobile version. • Visible product availability status.
What does she hear?	• Monitoring reputation on social media. • Active moderation and responses to reviews. • Incentives for recommendations (e.g., discount for a review).
What does she think and feel?	• Automated and personalized messages after purchase. • Small gestures (freebies, thank-you cards). • Transparent information about order status.
Pains	• Simplify complaint procedures. • Shorten customer service response times. • Regular UX testing of the website.
Gains	• Strengthen activities that build positive emotions. • Option to personalize orders. • Loyalty program with rewards for engagement.

Source: own study

Analyzing the empathy map for the persona Anna, the following conclusions can be drawn from its individual elements:

What does she say and do?

Statements: The customer compares offers, reads reviews, seeks confirmation before making a purchase, and takes action when something concerns her.

Recommendations:

- Display customer reviews directly on the product page (with a visible date and filtering options).
- Ensure transparency of information on delivery, returns, and warranty – preferably in a graphical format or Q&A section.
- Provide quick contact through various channels (chat, Messenger, helpline) – the customer expects a prompt response.

What does she see?

Statements: She sees attractive ads on social media, but the products are not available. The website is visually appealing but not very functional.

Recommendations:

- Ensure consistency between advertising and the actual offer – promoted products must actually be available.
- Clearly inform about limited availability or estimated delivery time for each product.
- Optimize the website for mobile devices – many customers shop via smartphone.

What does she hear?

Statements: She hears from friends about delays and issues with returns. Other people's opinions influence her decisions.

Recommendations:

- Strengthen your reputation on social media and review platforms – respond to comments and reviews publicly and constructively.
- Encourage loyal customers to share positive experiences (e.g., through discounts for reviews).
- Create a “Customers about us” or “Customer stories” section with authentic testimonials.

What does she think and feel?

Statements: She feels anxious, and the lack of contact deepens her worries, but she can also appreciate small gestures (a freebie, fast delivery).

Recommendations:

- Automate post-purchase communication: confirmation, estimated delivery date, order status.
- Send a personal email with thanks or recommendations for similar products (important: non-automated tone).
- Add small surprises to orders – they increase positive emotions.

Pains

Statements: Issues with the complaint/return procedure, unavailable customer service, a lagging website, lack of clear information.

Recommendations:

- Redesign the return/complaint procedure – shorten it and present it graphically step by step.
- Ensure that the response time to inquiries does not exceed 24 hours.
- Regularly test the website's functionality on different devices and browsers.

Gains

Statements: She appreciates SMS updates on parcel status, freebies, fast delivery, pleasant surprises.

Recommendations:

- Continue and expand actions that create the “wow” effect: thank-you notes, discounts for future purchases, samples.

- Allow the customer to personalize the order (e.g., choice of freebie, packaging style).
- Communicate the ethical and quality aspects of products – mothers often value the principles behind the brand.

Each recommendation stems directly from the authentic voice of the customer and her experiences. Implementing even a portion of them can:

- increase trust in the store,
- reduce the number of abandoned carts,
- strengthen loyalty and positive word-of-mouth marketing.

The analysis of the results made it possible to identify the key needs and frustrations of online store customers, which often remain hidden in quantitative research. The empathy map reveals the emotional and contextual dimension of the shopping experience, indicating that customers value not only the product itself but also the clarity of information, the quality of customer service, the speed of order processing, and the sense of transactional security.

The most important observations resulting from the analysis of opinions and the development of the empathy map include the following:

- Customers are becoming increasingly aware and demanding, expecting quick responses and full alignment of marketing communication with reality.
- A common source of frustration is the difficulty in contacting customer service, complicated return processes, and the low quality of mobile applications.
- What matters is not only the transaction itself but also the relationship and trust - customers value companies that foster a sense of care and an individual approach.

5. DISCUSSION

The developed empathy map serves as a starting point for understanding the hidden needs and emotions of customers, which are not always visible in traditional quantitative research (e.g., NPS or CSAT surveys). Its application can bring tangible benefits in business practice:

1. Improving Customer Experience (CX):
 - Better alignment of marketing messages with the customer's language and mindset (e.g., avoiding overly technical terminology).
 - Streamlining the purchasing process, such as simplifying navigation, providing clear information about returns, and shortening delivery times.
2. Enhancing customer service processes:
 - Introducing quick contact channels (chat, helpline).
 - Personalizing service (recommendations tailored to the child's age, allergies, or interests).
3. Designing new features/services:
 - Implementing loyalty programs for parents.
 - Sending automated notifications about the availability of frequently purchased products.
4. Building a competitive advantage:
 - Demonstrating that the company "listens" to its customers - publishing feedback reports and addressing issues.
 - Increasing customer trust and engagement through actions aligned with their values and concerns.

The customer opinion analysis and the development of an empathy map for a persona representing the main target group constitute an important starting point for further understanding of consumer experiences in the e-commerce environment. Despite the limited quantitative scope, the applied qualitative approach made it possible to capture deep, contextual, and emotional aspects of the customer's interaction with the online service.

Both the structure of the empathy map and the diversity of data sources (opinions from multiple independent platforms) ensure credibility and a variety of perspectives, giving the analysis diagnostic value. The presented customer quotes represent authentic "voices of the users," reflecting real problems, needs, and expectations.

The results of the analysis highlight key elements of the customer experience in e-commerce that have a direct impact on satisfaction and loyalty levels. Particularly important were: order fulfillment time, the quality and availability of customer service contact, clarity of return procedures, and consistency between marketing offers and reality. These elements are both emotional and operational in nature - the customer not only expects the basic promises (product, delivery, communication) to be met but also seeks a shopping experience free from frustration and uncertainty.

The identified problem areas are consistent with previous research on consumer behavior in e-commerce, which has emphasized the importance of transparency in purchasing and communication processes (Saxborn et al. 2024; Prashar 2023). Similarly to the findings of Mofokeng and Tan (2023) and Kumar, Reinartz, (2016), customers of the analyzed store reacted emotionally to delays and lack of contact, which significantly affected their overall perception of the brand.

From a methodological perspective, the use of the empathy map as a tool for analyzing actual consumer data should be regarded as both original and valuable. While the empathy map is widely applied in service and product design (Gibbons 2018; Shaw 2024), its use as an analytical instrument in qualitative research on customer opinions remains rare. The presented approach makes it possible to capture not only facts but also the emotions, needs, and concerns of customers - factors that constitute an essential component of quality management in customer service and customer experience management (CEM).

The developed results can be utilized in the following ways:

- as a basis for an internal Customer Experience Audit,
- as material for Design Thinking workshops, enabling e-commerce teams to develop new solutions,
- to identify areas requiring optimization, such as return policies, communication, or website information architecture,
- as an initial component of a broader Voice of Customer (VoC) system within the company.

The insights derived from the empathy map can also be leveraged for internal training programs, helping frontline teams, from customer service to logistics, better understand customer pain points and expectations, thereby fostering a more customer-centric organizational culture. Moreover, the empathy map, as a universal and visual tool, can be easily communicated within the organization, supporting an empathetic approach to service design and enhancing internal understanding of the customer across marketing, sales, and logistics departments.

It is worth emphasizing the adaptive potential of the method. The adopted analytical framework can be successfully implemented in other e-commerce sectors such as fashion, consumer electronics, or cosmetics. It may also find applications in B2B environments and in analyzing user experiences of mobile applications and digital platforms. The presented findings can also be interpreted within the broader framework of socio-technical systems, where customer trust and perceived digital security form integral components of sustainable e-commerce interactions. The empathy-based approach proposed in this study contributes to enhancing user safety and confidence by addressing both technological and emotional aspects of online service design. Developing an empathy map based directly on customer data allows organizations to better understand the end-user perspective and design solutions in a more empathetic and effective manner. And the most important, embedding empathy into customer experience management is not only about enhancing satisfaction but also about building sustainable competitive advantage in a rapidly evolving digital marketplace.

6. CONCLUSIONS

The conducted customer needs analysis using the empathy map tool confirmed that the e-commerce shopping experience goes beyond the mere act of purchase and encompasses many elements related to emotions, trust, communication, and the intuitiveness of processes. The obtained results show that customers expect not only high-quality products but also clear information, fast service, and personalized interactions.

The use of the empathy map enabled a deeper understanding of the customer's perspective, which can add value for companies striving to improve service quality and build customer loyalty. This tool - despite its simplicity - allows for better comprehension of factors influencing customer satisfaction and the identification of so-called "moments of truth" throughout the purchasing process.

Importantly, developing an empathy map does not require advanced technological solutions or large financial resources, making it especially useful for small and medium-sized enterprises operating in the e-commerce sector.

The discussed study is preliminary and exploratory in nature, which entails certain limitations. Primarily, the analysis was based on a limited number of customer reviews (120) obtained from publicly available online sources. These reviews may have been subjective, incomplete, or not fully representative of the overall customer experience. Additionally, the content analysis method relied on manual data interpretation, which - despite consistent criteria - carries the risk of interpretive errors and limited reproducibility of results.

Due to the lack of segmentation by customer age, technological proficiency, or purchase frequency, the empathy map presents an averaged persona that may not reflect the full diversity of the target group. Finally, the study focused exclusively on one industry (children's products), which limits the generalizability of the results to other e-commerce market segments.

In the future, it would be worthwhile to consider expanding the sample size, applying more advanced analytical tools (e.g., sentiment analysis, thematic classification), and comparing results across different customer segments or types of online stores. Additionally, integrating this approach with quantitative analysis methods (e.g., NPS, CSAT) or automated sentiment analysis could provide a more comprehensive picture of customer behaviors and attitudes. The proposed methodology can also be successfully applied in other digital industries, such as educational, medical, or tourism services.

Future research could also explore integration with artificial intelligence technologies, such as natural language processing (NLP), to automate and scale the analysis of customer feedback, thereby enriching empathy maps with real-time, data-driven insights. Such a direction is consistent with recent frameworks for diagnosing organisational gaps in AI implementation, which stress the need to align technological, data and human capabilities before deploying advanced analytics (Sira, 2025). In this context, empathy-map-based analyses can serve as a low-cost precursor to more sophisticated AI-driven customer-experience systems

REFERENCES

- Ali, H.M., Simic, V.I., Charli S., Hassim, J.Z., Said, M.H. Md, Khalid, R. Md, Kaka, G. E., Ismail, R., 2023. *Exploring public perceptions and disposal procedures in the development of a comprehensive end-of-life vehicle regulation in Malaysia: A pilot study*, Sustainability, 15 (6), 4786. DOI: 10.3390/su15064786.
- Amblee, N., Bui, T., 2011. *Harnessing the influence of social proof in online shopping: The effect of electronic word of mouth on sales of digital microproducts*, International Journal of Electronic Commerce, 16 (2), 91-114. DOI: 10.2307/23106395.
- Bernatowicz, A., Małyszko, J., 2014. *Recenzje konsumenckie w Internecie. Społeczny kontekst publikowania opinii i analiza spójności różnych sposobów ich wyrażania*," In D. Appenzeller (Ed.), *Matematyka i informatyka na usługach ekonomii. Teoria i zastosowania*, Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań, 158-168.
- Cairns, P., Pinker, I., Ward, A., Watson, E., Laidlaw, A., 2021. *Empathy maps in communication skills training*, Clinical Teacher, 18 (2), 142-146. DOI: 10.1111/tct.13270.
- Campese, C., Vanegas, C.A.L., da Costa, J.M.H., 2018. *Benefits of the empathy map method and the satisfaction of a company with the conducted experiment*, Product: Management & Development, 16 (2), 104-113. DOI: 10.4322/pmd.2018.008.
- Chevalier, J., Mayzlin, D., 2003. *The effect of word of mouth on sales: Online book reviews*. Working Paper, Yale School of Management.
- Cieśla, J., 2024. *Evaluating service quality in automotive outsourcing: Gaps between standards and practice*, System Safety: Human - Technical Facility – Environment, 6 (1), 99-109. DOI: 10.2478/czoto-2024-0012.
- Dellarocas, C., 2006. *Strategic manipulation of internet opinion forums: Implications for consumers and firms*, Management Science, 52 (10), 1577-1593. DOI: 10.1287/mnsc.1060.0567.
- Gibbons, S., 2018. *Empathy mapping: The first step in design thinking*, Nielsen Norman Group. <https://www.nngroup.com/articles/empathy-mapping/> (Access 10.04.2025).
- Godes, D., Mayzlin, D., 2004. *Using online conversations to measure word of mouth communication*, Marketing Science, 23 (4), 545-560. DOI: 10.2139/ssrn.327841.
- Gogoi, P., 2007. *Retailers take a tip from Myspace*, http://www.businessweek.com/bwdaily/dnflash/content/feb2007/db20070213_626293_page_2.htm (Access 10.11.2021).
- Grönroos, C., 2015. *Service management and marketing*, John Wiley & Sons Ltd., West Sussex.
- Huang, H.-P., Tien, Y., Lin, Y.-C., Yu I.-C., N.-H., 2025. *Effects of empathy mapping and mini-simulation on second-year nursing students' empathy and communication self-confidence: A quasi-experimental study*, BMC Medical Education, 25 (1), 109. DOI: 10.1186/s12909-025-06686-x.
- Ingaldi, M., 2022. *E-service quality assessment according to hierarchical service quality models*, Management Systems in Production Engineering, 30 (4), 311-318. DOI: 10.2478/mspe-2022-0040.
- Ingaldi, M., 2018. *Overview of the main methods of service quality analysis*, Production Engineering Archives, 18, 54-59, DOI:10.30657/pea.2018.18.10

- Ingaldi, M., Ulewicz, R., 2025. *The role of AI in digital leadership – new competencies of leaders*. Polish Journal of Management Studies, 31(2), 106–122. DOI: 10.17512/pjms.2025.31.2.07
- Knop, K. 2020. *Indicating and analysis the interrelation between terms – visual: management, control, inspection and testing*, Production Engineering Archives, 26(3), 110-121, DOI: 10.30657/pea.2020.26.22.
- Krynke, M., Mazur, M., 2024. *Innovative Work Order Planning with Process Optimization Using Computer Simulation in the Automotive Industry, in the Case of Repair Workshops*, Periodica Polytechnica Transportation Engineering, 52(3), 292–300, DOI: 10.3311/PPtr.23546.
- Kumar, V., Reinartz, W., 2016. *Creating enduring customer value*, Journal of Marketing, 80 (6), 36-68. DOI: 10.1509/jm.15.0414.
- Li, X., Hitt, L.M., 2008. *Self-selection and information role of online product reviews*, Information Systems Research, 19 (4), 456-474. DOI: 10.1287/isre.1070.0154.
- Mofokeng, T.E., Tan, A.W.K., 2021. *The impact of online shopping attributes on customer satisfaction and loyalty: Moderating effects of e-commerce experience*, Cogent Business & Management, 8(1), 1968206. DOI: 10.1080/23311975.2021.1968206.
- Nieżurawski, L., Pawłowska, B., Witkowska, J., 2010. *Satysfakcja klienta. Strategia – Pomiar – Zarządzenie. Koncepcja wewnętrznego urynekowania współczesnej organizacji*. Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika, Toruń.
- Öğüt, H., B.K.O. 2012. *The influence of internet customer reviews on the online sales and prices in hotel industry*, The Service Industries Journal, 32 (2), 197–214. DOI: 10.1080/02642069.2010.529436.
- Peng, F., 2022. *Design thinking: From empathy to evaluation*, In Herath, D., St-Onge, D. (Eds.), *Foundations of Robotics*, Springer, Singapur. 63-81. DOI: 10.1007/978-981-19-1983-1_3.
- Phuong, H.L.C., Anh, L.H., Ab Rashid, A.A., 2020. *Factors influencing car purchasing intention: A study among Vietnamese consumers*, Journal of the Society of Automotive Engineers Malaysia, 4(2), 229–252. DOI: 10.56381/jsaem.v4i2.42.
- Pigla, W., 2012. *Webplemię – próba eksplikacji pojęcia*, Kultura i Historia, 21. <http://www.kulturaihistoria.umcs.lublin.pl/en/archives/3837> (Access 10.12.2020).
- Pilarczyk, M., Ulewicz R., 2024. *Sustainable Farm Management: Integrating Safety, Efficiency, and Environmental Practices*, Materials Research Proceedings, 45, 185-194, DOI: 10.21741/9781644903315-22.
- Prashar, P., 2023). *See, believe, trust: Implementing transparency in e-commerce stores*, CueForGood. <https://www.cueforgood.com/blog/transparency-in-ecommerce/> (Access 21.03.2025).
- Saxborn, M., Pan, Y., Said, A., 2024. *Trust through recommendation in e-commerce*, In Proceedings of the 2024 ACM SIGIR Conference on Human Information Interaction and Retrieval, Association for Computing Machinery, New York, 87-96. DOI: 10.1145/3627508.3638294.
- Siwec, D., Pacana, A., 2025. *Improvement of renewable energy products by balancing quality, environmental, societal, and cost aspects*, Energies, 18(18), 4840; Doi: 10.3390/en18184840.
- Shaw, J., 2024. *Empathy maps: A deep dive into visualizing customer experience*, Kadence. <https://kadence.com/en-us/empathy-maps-a-deep-dive-into-visualizing-customer-experience/> (Access 22.04.2025).
- Sitinjak, C., Ober, J., 2025. *Examining the impact of service quality and product innovation on willingness to buy electric vehicles: The mediating role of customer satisfaction*, Production Engineering Archives, 31 (2), 163-172. DOI: 10.30657/pea.2025.31.16.
- Sira, M., 2025. *A gap analysis framework for enterprise AI implementation*. Production Engineering Archives, 31(3), 291–310. DOI:10.30657/pea.2025.31.28
- Yeung W.-L., Ng, O.-L., 2023. *Using empathy maps to support design-thinking enhanced transdisciplinary STEM innovation in K-12 setting*, International Journal of Technology and Design Education, 34, 1325-1350. DOI: 10.1007/s10798-023-09861-7.