

Customer Experience (CX) for Optimizing Human-Centered Design in Education and Training Program Services at BKPSDM Pandeglang Regency

^a Pryo Handoko; ^b Nina Kurnia; ^c Ihin Solihin; ^d Reni Tania

^{a b c d} Sekolah Tinggi Ilmu Administrasi Banten, Pandeglang Regency, Banten, West Java, Indonesia

ABSTRAK

Penelitian ini bertujuan untuk mengeksplorasi bagaimana integrasi prinsip Customer Experience (CX) dan Human-Centered Design (HCD) dapat mengoptimalkan layanan pendidikan dan pelatihan di BKPSDM Kabupaten Pandeglang. Penelitian ini menggunakan pendekatan kualitatif untuk menyelidiki pengalaman peserta dan mengidentifikasi faktor-faktor utama yang memengaruhi kepuasan, keterlibatan, dan efektivitas layanan. Data dikumpulkan dari 11 informan melalui wawancara mendalam, analisis dokumen, dan observasi, diikuti oleh analisis tematik untuk mengekstrak tema-tema utama. Temuan penelitian menyoroti tantangan signifikan dalam komunikasi, akses ke fasilitas, dan inovasi dalam metodologi pembelajaran, sekaligus menunjukkan dampak positif dari teknik pengajaran modern dan keterlibatan peserta aktif terhadap tingkat kepuasan. Wawasan unik mengungkapkan bahwa komunikasi yang tidak efektif dan evaluasi yang dianggap sebagai formalitas merusak kepercayaan peserta, meskipun layanan yang diberikan memuaskan. Penelitian ini menggarisbawahi pentingnya mengintegrasikan inovasi yang berpusat pada pengguna dan saluran komunikasi yang responsif untuk menciptakan layanan yang tidak hanya memenuhi standar prosedural tetapi juga menginspirasi dan memotivasi. Penelitian ini berkontribusi pada diskusi teoritis tentang CX dan HCD dalam layanan publik dan menawarkan rekomendasi praktis untuk mengembangkan program yang adaptif dan berfokus pada peserta. Studi masa depan didorong untuk memvalidasi secara empiris model yang diusulkan dalam konteks layanan publik yang lebih luas.

ABSTRACT

This study aims to explore how the integration of Customer Experience (CX) and Human-Centered Design (HCD) principles can optimize education and training services at BKPSDM Pandeglang Regency. The research adopts a qualitative approach to investigate participant experiences and identify key factors that influence satisfaction, engagement, and service effectiveness. Data were collected from 15 informants through in-depth interviews, document analysis, and observations, followed by thematic analysis to extract key themes. The findings highlight significant challenges in communication, access to facilities, and innovation in learning methodologies, while also showcasing the positive impact of modern teaching techniques and active participant involvement on satisfaction levels. Unique insights reveal that ineffective communication and evaluations perceived as formalities undermine participant trust, despite otherwise satisfactory service delivery. The study underscores the importance of integrating user-centered innovations and responsive communication channels to create services that not only meet procedural standards but also inspire and motivate. This research contributes to theoretical discussions on CX and HCD in public services and offers practical recommendations for developing adaptive, participant-focused programs. Future studies are encouraged to empirically validate the proposed model in broader public service contexts.

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INTRODUCTION

User experience, or often known as Customer Experience (CX), is a key element in creating quality public services. In today's digital life, people no longer just expect services that follow procedures. They want something more—services that are efficient, satisfying, and leave a positive impression every time they interact with government institutions. A well-designed CX not only results in satisfaction, but also fosters deep trust and, in many cases, loyalty to public institutions (Roth & Jornet, 2014). In an effort to meet these expectations, the Human-Centered Design (HCD) approach has emerged as a promising solution. By placing humans—service users—at the core of the design process, HCD seeks to address real challenges that are often overlooked. Unfortunately, this ideal expectation often clashes with the reality on the ground. In many institutions, including the Pandeglang Regency Human Resources Development and Personnel Agency (BKPSDM), the implementation of CX and HCD still faces a steep road full of obstacles.

The Pandeglang Regency BKPSDM is an interesting example to explore further. Their challenges are not just administrative; it's about how their services are perceived by humans—employees who want to grow, but are often trapped in a system that lacks adaptability. An internal survey in 2023 revealed a concerning fact, only 30% of training alumni actively provide feedback, while the other 70% choose to remain silent. This low engagement has serious consequences. Without adequate feedback, training planning often deviates from the real needs of participants, with 45% of respondents stating that the programs they follow feel less relevant to supporting their competency development. Not only that, the conventional training approach is another major obstacle. The 2022 BKPSDM report noted that 60% of participants considered the one-way learning method uninteresting and tended to be boring. In an atmosphere like this, it is natural that active participation only reaches 65%. In fact, participation is the pulse of meaningful learning. This obstacle is exacerbated by the lack of critical evaluation of previous training. Without solid organizational learning, innovation is difficult to develop, and new training designs are often just repetitions of old, less effective methods. More deeply, overly hierarchical organizational structures and slow decision-making processes make change difficult to implement. When flexibility is the key to success, rigid systems are often the enemy of innovation. In fact, the use of digital technology to improve interaction and evaluation of training programs has not been maximized, leaving great potential neglected.

Previous research has given hope that the HCD approach can be the answer to this dilemma. Giacomini, (2014) describes how HCD is able to bring user needs directly into the public service design process, creating more relevant and effective solutions. Ellis et al., (2019) also emphasized that well-designed CX can encourage greater participation in various government programs. However, the application of HCD in a bureaucratic environment full of internal challenges—such as rigid organizational structures and hierarchical work patterns—is still a field that requires further exploration.

Furthermore, there is a glaring gap that is rarely discussed: how HCD can bridge the gap between the administrative needs of institutions and the expectations of service users. This study attempts to propose a conceptual model to optimize CX through HCD. However, this model still requires further empirical validation. In the context of BKPSDM, the big question is: how can HCD be implemented in a truly humane way, creating services that not only fulfill procedures but also inspire and motivate?

Literature Review

Customer experience (CX) in public services is a concept that refers to the experience of citizens including perceptions, emotions, and user satisfaction after interacting with government agencies. Ellis et al., (2019) showed that the interaction includes various touchpoints starting from the emergence of communication channels to the service transaction process. Positive experiences obtained from each touchpoint accumulate in public memory and turn into increased public trust in the government and ultimately increase support for government programs (Bolton et al., 2022; Ieva & Ziliani, 2018). Osborne et al., (2013) summarized several research results from various parts of the world and ensured that the increase in customer experience (CX) runs exponentially with citizen satisfaction and loyalty to the government.

Various components that influence customer satisfaction (CX) include transparency, responsiveness, and accessibility of the services provided (Waqas et al., 2021). Rika et al., (2022) showed that increasing user-focused service design is consistent with increasing customer satisfaction. Bolton et al., (2022) revealed that poor understanding of user needs and lack of effective communication are two things that contribute greatly to poor service design. Suriansha, (2023) in the context of policies that require collective participation concluded that customer experience (CX) in public services increases voluntary public participation due to satisfaction from government attention to urgent needs. With the same results, Shi et al., (2021) showed that positive public experiences in interacting with government institutions contribute to increasing their trust in other government institutions (Barann et al., 2022).

The four main principles of Human Centered Design (HCD) are focusing on the people who will use the design, looking for real problems, considering the whole system, and always testing the design. HCD emphasizes the importance of using real users as the main guideline in the design process (Benn et al., 2014). The "*Job to be Done*" (JTBD) framework is a way to understand the user journey, which helps identify the user's situation and their motivation to address the problem. In addition, HCD encourages designers to concentrate on the main problem, not just the symptoms, to produce novelty (Gkatzidou et al., 2021). It is impossible to optimize the overall user experience by fixing one element. Instead, each element must be considered in the context of the system. Ultimately, design simulation becomes a crucial factor in getting feedback that contributes to design improvement. Although both are often considered equivalent, HCD and User-Centered Design (UCD) are different, because UCD focuses more on human nature as a whole, while HCD focuses more on the specific nature of users in a particular context, such as social and environmental factors (Saeed & Reddick, 2013).

Design theory and practice have traditionally been customer-centered or user-centered design. Design thinking has shifted the focus of private sector businesses from users to customers or consumers. Similarly, the term citizen-centered public service design—also known as citizen-centered public service design—has recently emerged in the public sector (Komatsu et al., 2021). However, to ensure that design proposals can be implemented and used in public sector organizations, we must consider more than just the people who receive or use the solution (Junginger, 2018). Many stakeholders involved in complex social problems are involved in the problem and may have a role in solving it (Tualaulelei et al., (2022). All stakeholders must be considered about their needs and desires as part of the problem and solution so that they can develop solutions that are acceptable and applicable to them. For example, meeting the needs of service

providers motivates them to provide high-quality services (Hounmenou, (2023). In terms of public sector innovation, the fact that target groups cannot be selected intentionally is a second challenge related to the concept of “target group”. The public sector is responsible for providing public value to all citizens, and if something is “missed”, it is not publicly acceptable. This is a big difference from innovation in the private sector. In the private sector, target groups can be strategically selected to find innovation opportunities that fit the company's strategy (Lim & Lee, 2021).

Customer Experience (CX)-based models and Human-Centered Design (HCD) principles require an approach that is not only technical, but also empathetic. One of the main inspirations comes from IDEO's HCD framework, which describes design as a journey of deep human understanding, from exploration to implementation and refinement. This approach puts the user at the center, reminding us that good solutions are those that “live” with their users (Buell & Otazo, 2016). Meanwhile, Stickdorn et al., (2018) Service Design Thinking model reinforces this idea by emphasizing the importance of collaboration and a holistic view of service. Not only about solving problems, this model teaches how to build meaningful experiences in every service interaction, making users not just beneficiaries, but also partners in design. Then, the Design Council's Double Diamond Model brings a systematic yet flexible touch, guiding us through the cycle of problem exploration, solution testing, and realization that is relevant to real needs (Phillip Dyrberg, 2019). Bate & Robert, (2006) Experience-Based Co-Design approach goes further by inviting users into the solution creation process, a bold move that puts direct experience at the foundation of design. On the other hand, Customer Journey Mapping provides a visual lens to understand service touchpoints that need to be optimized, helping organizations see hidden gaps in the user journey (Micheaux & Bosio, 2019). In the digital world, Shneiderman's HC-AI framework brings a fresh perspective on how technology can be designed with transparency and accountability at its core, making it not just intelligent, but human (Ozmen Garibay et al., 2023). All of these models share the same message: great design is design that speaks, adapts, and grows with its users.

Human-centered design (HCD) is a methodology designed to create products or services that not only consider their usability but also meaningfully provide humane services. In 2 decades, HCD has evolved from a methodology focused on ergonomics to a more expansive approach to meeting physical, cognitive, and emotional needs (Wankhade & Murphy, 2023). Currently, HCD is widely adopted outside of traditional discourses, such as innovation in the business sector to achieve a competitive advantage in more contemporary discourses on public issues to answer the needs of increasingly complex social problems (Junginger, 2018). This is what then triggered many new transdisciplinary practices needed to overcome the challenges of identifying aspects of humanization in the public sector and articulating the value of HCD methods (Marreiros et al., 2023).

By emphasizing services on competency improvement programs where the State Civil Apparatus as users of Education and Training Services at the Human Resources Development and Personnel Agency (BKPSDM) of Pandeglang Regency. This study examines how CX becomes the main source of HCD design to cover the lack of research that specifically links CX, HCD, and the effectiveness of education and training programs in local government environments. Different from many studies that generally examine CX and HCD in the private sector and public services to citizens. Ultimately, this study contributes to the development of policies and practices at BKPSDM. And adds to the literature on how CX and HCD theories are applied in the context of organizational services.

RESEARCH METHODS

This study uses a qualitative approach to explore in depth the dynamics related to education and training programs at BKPSDM Pandeglang Regency. The qualitative approach was chosen because it is in accordance with the objectives of the study, namely to explore individual experiences and gain an in-depth understanding of complex phenomena. The selection of this approach is based on the view of Creswell, (2009), who emphasized that qualitative research is suitable for revealing the subjective perspectives of informants in certain social contexts.

A total of 11 informants were selected to participate in this study. The selection of informants was carried out with certain considerations (purposive sampling), namely based on their experience of participating in education and training programs at BKPSDM Pandeglang Regency. The number of 11 informants was considered sufficient because it had reached data saturation, where no new information emerged from additional interviews. According to Patton, (2015), the sample size in qualitative research prioritizes data depth over quantity.

Data were collected through several sources, including in-depth interviews, document analysis, and observation. Interviews lasted for 60 to 90 minutes, using semi-structured interview guidelines to maintain discussion flexibility. Relevant documents, such as training program reports and organizational policies, were also analyzed to support the interview results. The use of multiple data sources aims to achieve triangulation, increasing the validity of the findings (Denzin & Lincoln, 2018). Data analysis was carried out using thematic analysis, following the steps described by Clarke, (2019). Which includes; Transcribing interview data verbatim, Rereading transcripts to understand the overall context, Identifying initial themes, based on patterns that emerge from the data, Conducting open coding to mark important information, Developing and grouping main themes and subthemes. And finally, Creating a network diagram of relationships between themes to illustrate the relationship between key concepts to visualize the reciprocal relationships between emerging themes. Data coding was carried out referring to Saldana, (2013) guide on qualitative coding. This technique is used to ensure that key patterns and categories can be identified systematically. The results of the theme analysis are arranged in a matrix that shows the relationship between themes and subthemes, and are described by linking them to the research objectives..

RESULTS AND DISCUSSIONS

Interviews were conducted with 15 key informants consisting of civil servants who have experience in participating in Education and training at BKPSDM Pandeglang Regency. The results of the interviews were then subjected to a data coding process. Data coding was done by dividing the data into several categories based on the themes and issues that emerged; which was conducted by identifying the main theme of the statements given to. The results show that there are 12 codes presented in the following table.

Table 1.
Matrix coding

Code	Informant Code Involved
Service Satisfaction	1, 2, 3, 4, 7, 9, 11
Dissatisfaction with communication	1, 2, 10, 11
Access to Facilities	2, 4, 6, 9
Technical issues	3, 5, 10
Innovation	1, 4, 7, 10
Lack of innovation in methods	3, 5, 8, 10

Code	Informant Code Involved
Participant Engagement	1, 2, 6, 9
Lack of follow-up	3, 5, 10
Quality of Materials	1, 2, 4, 9, 11
Quality of teaching that needs improvement	3, 8, 10
Internet connection	1, 4, 6, 10
Availability of devices	5, 10, 11

Source: Research Results (2024)

Based on the analysis results, it was found that the majority of informants, namely informants 1, 2, 3, 4, 7, 9, and 11, were satisfied with the services provided. However, several informants, such as 1, 2, 10, and 11, expressed dissatisfaction regarding communication that was considered ineffective. In addition, informants 2, 4, 6, and 9 highlighted challenges in accessing facilities, while informants 3, 5, and 10 faced technical obstacles during the activity. The innovation implemented in the program was appreciated by informants 1, 4, 7, and 10, but on the other hand, informants 3, 5, 8, and 10 felt that the methods used were still not innovative enough. Participant involvement was also considered quite good by informants 1, 2, 6, and 9, although there was criticism from informants 3, 5, and 10 regarding the lack of follow-up after the activity. In terms of material, informants 1, 2, 4, 9, and 11 praised the quality of the material delivered, but the quality of teaching was considered to need improvement by informants 3, 8, and 10. In addition, the problem of internet connection was raised by informants 1, 4, 6, and 10, and the availability of inadequate devices was a concern for informants 5, 10, and 11. These results reflect the diverse experiences and input from informants, who can be used as a reference for improving the quality of service, innovation, and follow-up in future programs.

The coding results are then subjected to a code categorization process, by conducting a thematic analysis through an in-depth study of each category to conclude the data obtained. The results are presented in the following table.

Table 2.
Results of data categorization in themes

Category	Aspect	Informant Code Involved
Service Satisfaction	Meeting needs	1, 2, 3, 4, 7, 9, 11
	Dissatisfaction with communication and information	1, 2, 10, 11
Access to Facilities	Ease of access	2, 4, 6, 9
	Technical issues	3, 5, 10
Innovation	Use of technology	1, 4, 7, 10
	Lack of innovation in learning methods	3, 5, 8, 10
Participant Engagement	Opportunity to provide feedback	1, 2, 6, 9
	Lack of follow-up on feedback	3, 5, 10
Material Quality	Good quality of materials	1, 2, 4, 9, 11
	Quality of teaching that needs improvement	3, 8, 10
Technical Problem	Internet connection	1, 4, 6, 10
	Availability of devices	5, 10, 11

Source: Research Results (2024)

In this study, service satisfaction is one of the fairly good aspects, where most informants (1, 2, 3, 4, 7, 9, 11) feel that their needs have been met. However, there are several informants (1, 2, 10, 11) who expressed dissatisfaction regarding communication and information that is

considered unclear. In terms of facility access, informants 2, 4, 6, and 9 appreciate the ease of access provided, but there are also informants (3, 5, 10) who face technical problems during the process. Innovation in the use of technology received a positive response from informants 1, 4, 7, and 10. However, innovation in learning methods is still considered lacking by several informants (3, 5, 8, 10), who feel that the methods used need to be updated. In terms of participant engagement, informants 1, 2, 6, and 9 acknowledged the opportunity to provide input during the activity, but informants 3, 5, and 10 highlighted the lack of follow-up on the input they had provided.

Meanwhile, the quality of the material was considered good by most informants (1, 2, 4, 9, 11), but there were some criticisms regarding the quality of teaching, which according to informants 3, 8, and 10 still needed improvement. Technical problems such as internet connection were also an obstacle experienced by informants 1, 4, 6, and 10, while limited availability of devices was a concern for informants 5, 10, and 11. These findings indicate appreciation for some aspects of the program but also reveal challenges that need to be addressed immediately to improve overall quality.

From the coding, emerging themes can be identified. The following are the main themes identified from the data:

1. Satisfaction with Services where many informants expressed satisfaction with the services provided, although several areas needed to be improved.
2. Obstacles in Access to Facilities and Internet Connections. Several informants reported obstacles in accessing facilities and unstable internet connections, affecting learning comfort.
3. Innovation in Methodology and Use of Technology. Existing innovations focus more on technology, but several informants felt that there was a lack of innovation in interactive teaching methods.
4. Level of Participant Involvement in the Process. Although there was an opportunity to provide input, several informants felt that their input was not followed up with clear follow-up.
5. Ineffective Communication and Information. Many complaints related to unclear communication and information, especially when sudden changes occur.

After categorizing the themes, the themes are then distributed into a matrix to see the relationships between the themes presented in the following matrix.

Table 3.
Inter-Theme Relationship Matrix

Theme	Satisfaction with Service	Access Facility Barriers	Innovation in Methodology	Level of Participant Engagement	Communication and Information
Satisfaction with Service	-	Negative (access affects satisfaction)	Positive (good service improves satisfaction)	Positive (engagement can increase satisfaction)	Negative (poor communication can decrease satisfaction)
Access Facility Barriers	Negative (affects participant experience)	-	Negative (innovation requires adequate)	Negative (difficult access reduces)	Negative (lack of information hinders access)

Theme	Satisfaction with Service	Access Facility Barriers	Innovation in Methodology	Level of Participant Engagement	Communication and Information
			facilities)	engagement)	
Innovation in Methodology	Positive (new methodology improves service)	Negative (innovation is hindered by facilities)	-	Positive (interactive methodology increases engagement)	Negative (information about innovation needs to be clearer)
Level of Participant Engagement	Positive (engagement improves satisfaction)	Negative (engagement is limited by access)	Positive (participation in innovative methodology)	-	Negative (unclear information reduces participation)
Communication and Information	Negative (poor communication decreases satisfaction)	Negative (lack of information hinders access)	Negative (unclear information on innovation)	Negative (lack of information affects engagement)	-

Source: Research Results (2024)

The table above shows the relationship between themes in the context of service satisfaction, access to facilities, methodological innovation, participant involvement, and communication and information. Each relationship indicates whether these factors have a positive or negative impact on each other. The interpretation is presented in the following discussion.

First, Service satisfaction has a complex relationship with various other factors in the program. Poor access to facilities tends to reduce the level of satisfaction because participants cannot get optimal services without adequate facilities. On the other hand, innovation in methodology has a positive impact, because new, more effective, and attractive approaches make participants feel more satisfied with the services provided. In addition, more active participant involvement also contributes to increased satisfaction, because they feel more involved in the learning process or program. However, poor communication and information can significantly reduce the level of satisfaction. If participants feel that the information provided is unclear or the communication that occurs is less responsive, this will cause dissatisfaction, even though other aspects are going well.

Second, Obstacles in accessing facilities have a significant negative impact on several other aspects of the program. First, difficult access can reduce the overall participant experience, thereby reducing their satisfaction with the services provided. Adequate facilities are also needed to support the implementation of innovation in methodology. Without appropriate facilities, the innovation will not be implemented effectively. Participant engagement is also greatly influenced by access to facilities. When facilities are not easily accessible, participant participation in the program will decrease.

Third, increasing the value of program benefits can arise from methodological innovations such as interactive methods through the use of technology that can increase the level of acceptance and understanding of participants. Because participant understanding is a strong indicator that influences participant satisfaction. However, the reach of facility access hinders

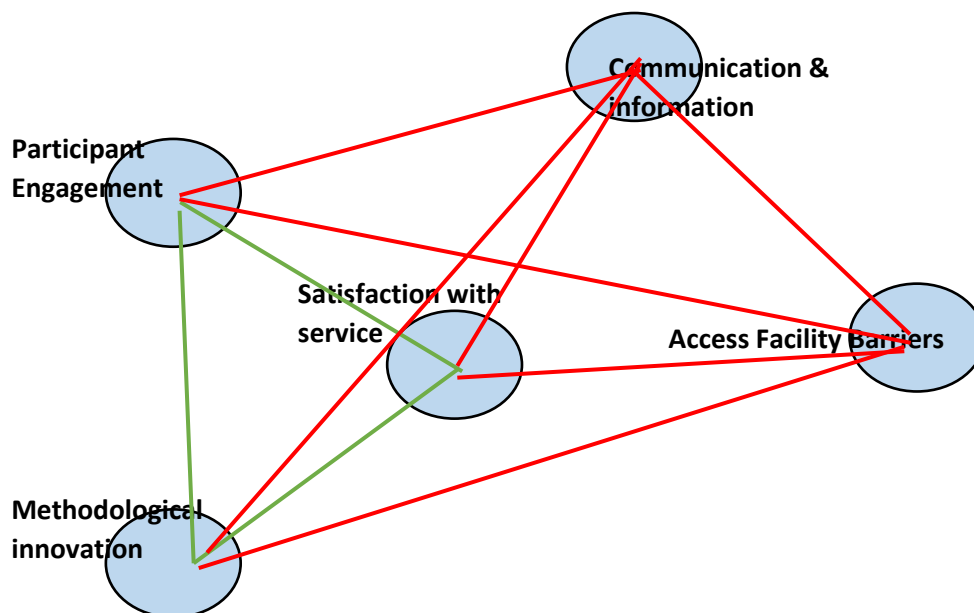
the implementation of HCD. On the other hand, interesting methods can increase participant motivation to get involved, but several variables can affect its effectiveness.

Fourth, participant satisfaction moves exponentially with involvement. Just as before, the reach of access has the potential to reduce participation. Innovation in learning practices encourages involvement, although unclear or inadequate information delivery can reduce motivation to participate.

Clear and effective communication plays a crucial role in maintaining participant satisfaction. Poor communication or poorly conveyed information can lead to dissatisfaction, even if other components of the program are running well. Barriers to accessing facilities often arise from inadequate information, preventing participants from participating optimally. Unclearness about methodological innovations also has the potential to hinder participants' acceptance and use of innovations. Lack of proper communication also reduces their engagement, as information about the program or participation is not conveyed properly.

To further simplify the research results, the results of the thematic analysis visualization between themes are shown in the following figure.

Figure 1.
Network diagram of interrelationships between themes



Source: Research Results (2024)

- Nodes: Represent each theme that has been identified.
- Edges: Represent relationships between themes.
- Green lines indicate positive relationships, where one theme supports or enhances another.
- Red lines indicate negative relationships, where one theme may hinder or harm another.

From this visualization, it can be observed that there is a strong correlation between satisfaction with service and methodological innovation and participant engagement. This shows that when participants are satisfied with the service they receive, they are more likely

to actively participate in the process and are more receptive to new ideas. In addition, this visualization shows a negative relationship between many themes of communication and information, indicating that communication problems can hinder other elements. Ambiguity or lack of information can reduce participant satisfaction and engagement and hinder the innovation needed to improve service quality. Consequently, organizers need to improve communication and information dissemination so that they can create a more supportive environment for participants, which in turn will result in higher levels of participant satisfaction.

Discussion

In general, the satisfaction shown by informants is mainly in terms of materials and instructors. In line with the principle of Human-Centered Design (HCD) which emphasizes high responsiveness to user needs and experiences. As shown by Hounmenou, (2023), sustainable solutions to program improvement come from how to involve service users. This opinion is consistent with Ball, (2013) who showed that improving the quality of instructors can have a significant impact on participant perceptions, this means that the quality of materials and instructors must be the main focus in efforts to increase satisfaction.

Although there is a high level of satisfaction with materials and instructors, notes regarding the uneven distribution of satisfaction among service users reflect the important point of Experience (EX) in public services. The EX theory of participant experiences that impact their perceptions. This shows that HCD can only be seen as beneficial when there is satisfaction with user interactions. In this context, understanding the connection of experiences to all participants and ensuring that all aspects of the service, including logistics and flexibility, are well managed and distributed are important keys to HCD.

To achieve even satisfaction, design flexibility plays a vital role. This means that organizers need to consider many things that can affect the ability to adapt to changing trends in participant needs. Therefore, the application of Customer Experience (CX) in the public sector is closely related to the organization's ability to predict new issues that arise from its external environment. From there, public organizations in general can create a more supportive internal environment where everyone feels cared for and has an equal opportunity to access high-quality services (Dzulkifli et al., 2023). Next, innovation in public service technology is already a common positive step forward. However, if the innovation does not bring about major changes in teaching methodology, it will show the fact that creating a broader participant experience is still difficult. For that, organizations must encourage continuous and specific innovation that comes from the integration of internal and external experiences of the organization. So HCD is very dependent on the learning capacity of the service provider organization.

Informants expect more interactive methods, such as simulations or group discussions, that can directly involve participants. This request reflects the basic principle of Experience (EX), which focuses on how users' experiences during interactions with services affect their perceptions and satisfaction. This shows that the use of interactive methods in teaching not only increases participant engagement but also helps them to understand the material better, because collaborative learning methods can improve the quality of the learning experience and participant engagement. Therefore, the implementation of teaching methods that involve interaction can improve the quality of the overall experience and provide added value to participants.

The level of participant involvement in public services is an important factor in creating responsive and positive experiences. As described in HCD theory, effective coordination between training providers and service user participants is a prerequisite in service development. Previous research found that user behavior influences their involvement in services, which is contrary to the results of respondent interviews that the final decision still does not effectively represent the voice of the participants. This perspective means that when participants feel themselves as part of the service decision, they also tend to see the service as having positive prospects.

Lack of communication is another significant challenge in public services. Experience theory emphasizes the interaction between users and services and how it affects user perceptions and satisfaction. Ambiguity in instructions, especially regarding schedule changes, makes participants feel in the dark and causes frustration due to the inability to accelerate the program. Providing details of activities and programs has a great impact on participants to ensure that they feel valued and respected during the process. Likewise, disseminating effective information is useful in building healthy relationships between service providers and users, which in turn increases user satisfaction.

In public service design, communication issues and increasing participant involvement should be top priorities. Organizations must create mechanisms that allow participants to freely provide input for improvement because EX emphasizes the importance of building trust through consistent and clear communication intensity. By improving these two elements, HCD can be enabled to gain adaptability and change at any time and respond to new standards in public services, which means responding to problems before they arise in front of the organization. Pre-problem responsiveness is key for public organizations to formulate services that are always good for participants, ensure their satisfaction, and encourage transactions for improvement.

Human-Centered Design Model in Education and Training Services

The user journey of the Training service can be divided into several main stages: registration, preparation before training, training implementation, access to facilities and resources, evaluation, and closing/completion of training. At each of these stages, there are key moments that affect the overall user experience.

Table 4.
Human-centered design recommendations based on Customer Experience

Key Moments	Process	Sentiment	Touchpoint
Registration	Initial information on schedule and procedures	Most participants felt that the registration process was quite easy and that the information was conveyed clearly. However, there were some complaints regarding changes to the schedule that were not communicated quickly enough.	Registration website or application WhatsApp group or email for communication
Preparation Before Training	Preparation of technical and logistical facilities	Participants generally felt that the preparations went well, especially in terms of accommodation and materials. However, there were problems with communication between the committees and the sometimes slow internet connection, which affected access to online	Training facilitators and committee Application for accessing materials and schedules Coordination regarding accommodation

Key Moments	Process	Sentiment	Touchpoint
		materials.	and transportation
Training Implementation	Learning and interaction processes during training	Participants were generally satisfied with the materials presented and the role of the facilitators. However, there were complaints regarding the learning method which was considered monotonous by some participants. In addition, the sudden schedule changes often disrupted comfort.	Classrooms and facilitators Materials delivered (offline and online) Application for following training progress
Access to Facilities and Resources	Availability of physical facilities and access to technological resources	Access to facilities is generally quite adequate. However, it requires quality improvement to meet participants' expectations.	Accommodation and classroom facilities Internet access and technology devices (laptops, projectors) Technical support team
Evaluation	Process of providing feedback after training	Most participants felt involved in providing input, but there was doubt whether the suggestions were implemented in the program afterward. There was a perception that the evaluation seemed like a formality rather than a real effort for improvement.	Online evaluation application Feedback form
Closing/Completion of Training	Program closure and administrative completion	The majority of participants felt that the overall service was quite good, but some hoped for continued innovation. Participants also wanted a response regarding the follow-up of the input provided.	Program closure Training certificate and final documentation

Source: Author (2024)

Based on the data in the table, each *touchpoint* in the participants' journey at BKPSDM Kabupaten Pandeglang reflects the importance of applying Customer Experience (CX) and Human-Centered Design (HCD) principles in public services. The relatively easy registration process and clear information demonstrate the success of CX principles in terms of transparency and accessibility (Waqas et al., 2021). However, complaints regarding delayed schedule changes indicate challenges in ensuring service responsiveness, which can impact public perceptions of service reliability (Ellis et al., 2019). The HCD approach can address this by ensuring that communication design is based on users' specific needs, such as automated notifications through more responsive applications or digital media (Stickdorn et al., 2018).

Furthermore, complaints about monotonous learning methods highlight the need for innovations aligned with users' needs, in line with HCD principles that encourage design based on feedback and real-world testing Benn et al., (2014). Dissatisfaction regarding evaluations perceived as formalities reveals a lack of attention to voluntary participation aspects, which are crucial in CX for creating positive experiences and trust in public institutions (Suriانشa, 2023). By strengthening two-way communication and ensuring that input is genuinely implemented in program improvements, BKPSDM can enhance perceptions and encourage

greater community participation in future programs.

CONCLUSIONS

This study shows that the application of Customer Experience (CX) and Human-Centered Design (HCD) principles in education and training services at BKPSDM Pandeglang Regency can increase participant satisfaction, especially through information transparency, innovation in learning methods, and participant involvement. The unique findings of this study are dissatisfaction with communication that is considered less responsive, as well as evaluations that are considered formal, which can be obstacles in building participant trust in the organizer. The theoretical implications suggest that the integration of CX and HCD in public services requires design flexibility to respond to specific user needs dynamically, while practically, improvements in communication and method innovation can encourage greater participation. However, this study has limitations in terms of limited sample coverage and has not tested the model empirically in a broader context. Therefore, further research is recommended to develop a more comprehensive model, integrate CX-based technology, and explore its impact on various other public service contexts.

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