

On the edge: bank customers' upcoming resistance to the full-adoption of digital payment methods

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Abstract

Purpose – Based on the dialogue, access, risk and transparency (DART) model and bank customers' experiences of financial service failure, this study aims to propose a research model as part of a conceptual framework. The framework includes a barrier, co-destruction and resistance, and the study identifies the attributes mediating barriers and resistance to full-adoption of digital payment methods (DPMs).

Design/methodology/approach – This study applied a traditional netnographic approach by collecting and analysing approximately 1,000 comments about service failure on the social media posts of a major Swedish and a major German retail bank. The data were parallel coded, manually and by ChatGPT (versions 3.5 and 4o mini), in an attempt to validate the findings.

Findings – Based on the DART model, the four linked attributes (i.e. monologue, uncertainty, restriction and ambiguity) created the MURA model as part of the barrier, co-destruction and resistance framework. The MURA model may mediate the access barrier and resistance to the potential full adoption of DPMs. Despite different digital payment contexts, both the Swedish and German bank customers have experienced all four attributes related to value co-destruction, indicating their temporary vulnerability.

Originality/value – This study breaks new ground regarding applied method and theory, being among the few using a traditional netnographic approach in the digital banking context. It also identifies new attributes, develops a reversed DART model and proposes a conceptual framework of value co-destruction related to DPM full-adoption.

Keywords Full-adoption, Value co-destruction, DART model, MURA model, Netnography, Bank customers

Paper type Research paper

Introduction

Financial digitalization, together with the COVID-19 pandemic, has forced bank customers worldwide to replace cash with digital payment methods (DPMs) such as bank cards, internet banking and mobile banking (Flavián *et al.*, 2020; Mele *et al.*, 2021). The development of digital banking has decreased the number of brick-and-mortar bank offices and shifted communication from face-to-face to digital channels (Díaz Andrade and Techatassanasoontorn, 2021). The rapid replacement of cash has directed attention to DPM full-adoption, defined as the lack of non-digital payment alternatives (Dimitrova *et al.*, 2022).

In this digital landscape, where DPMs are considered as monetary service interactions (Alkire *et al.*, 2023), bank customers can be forced to contact their banks in case of major issues. In a worst-case scenario, bank customers categorized as adopters-accepters, i.e. “individuals who have already adopted and are willing to continue to use DPMs” (Dimitrova *et al.*, 2022, p. 17), may experience vulnerability due to the lack of access to their own money during a service failure (Amine and

Gatfaoui, 2019). When these customers experience DPM failures, there is a potential risk that they may become adopters-resisters, i.e. individuals who have started using an innovation but hesitate to increase its use (cf. Ram, 1987). This risk holds for bank customers in countries that have gone far along the digital payment road, such as Sweden (Sveriges Riksbank, 2025), as well as for bank customers in countries that have gone less far, such as Germany (Deutsche Bundesbank, 2022). In the financial service ecosystem, bank customers at the micro-level merit further attention due to their potential to experience monetary service interaction vulnerability (Kabadayi *et al.*, 2020), and due to the changed balance of customer financial inclusion (Raciti *et al.*, 2024).

At the same time, existing social media allow banks around the world to meet their customers online. Social media are more than just a communication channel (Seldal and Nyhus, 2022)

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because they also allow bank customers to be involved in the process of developing new products and services, resulting in value co-creation (Dootson *et al.*, 2016). For example, good communication between customers and service providers may help improve the services and, in turn, the reputation of the service provider (Femenia-Serra *et al.*, 2022). With increased service value, the service providers can better retain their customers and attract new ones. To investigate value co-creation in the banking sector, Malik and Ahsan (2019) used the dialogue, access, risk and transparency (DART) model developed by Prahalad and Ramaswamy (2004).

Nowadays, retail banks inform their customers of ongoing technical failures mostly via their social media pages, where bank customers can express how they experience these issues (Agnihotri *et al.*, 2022). Bank customers may thus also cause value co-destruction depending on their previous experiences when using DPMs. Value co-destruction is described as an interactional process in which at least one of the parties involved may experience poorer well-being (Plé and Chumpitaz Cáceres, 2010), and organizations such as banks may become part of this process if their services are interrupted. For example, if gas station customers are hindered from paying for fuel or customers in shops are forced to leave without food due to technical failures, they may share their negative experiences on social media. This may encourage other disappointed customers to post similar comments, eventually damaging the reputation of the service provider. With decreased service value, the service providers may have difficulties retaining their customers.

Value co-destruction seems to be a relatively unexplored issue in the banking context (Echeverri and Skälén, 2021). A few exceptions are studies by Castillo *et al.* (2021), Kashif and Zarkada (2015), van Klyton *et al.* (2022) and Worthington and Durkin (2012). None of these studies, however, has used the DART model, although it can be related to resistance behaviour (Anshu *et al.*, 2022) such as unwillingness to use DPMs. In the tourism context, Assiouras *et al.* (2023) highlighted the importance of the DART model in investigating both the co-creation and co-destruction of value.

The underlying idea of this study is that barriers can trigger value co-destruction, and that this will likely affect the resistance to using DPMs. The DART model is used as a baseline, but its four attributes, i.e. dialogue, access, risk and transparency, could be adapted to value co-destruction. The focus on barriers and resistance to the adoption of DPMs further justifies the inclusion of innovation resistance theory (IRT) developed by Ram and Sheth (1989).

Addressing Silva *et al.*'s (2021) call for studies of value co-destruction, this study proposes a research model as part of a conceptual framework including a barrier, co-destruction and resistance, and identifies the attributes mediating barriers and resistance to the full-adoption of DPMs based on bank customers' experiences (i.e. the micro-level of the financial service ecosystem). In doing so, this study addresses the lack of conceptual frameworks and research models in the digital banking context. The research question (RQ) related to the aim is as follows:

RQ1. How do bank customers experience service failure, and how does this affect value co-destruction and their view of DPMs?

After this introductory section, the paper presents the literature background, followed by the methodology and findings and discussion sections. The paper ends by presenting the conclusion, implications, limitations and future research directions.

Literature background

Digital payment method adoption and resistance

Innovations and new technologies lead customers to undergo various adoption phases. The launch of an innovation is associated with the so-called initial adoption phase, which is related to adoption or rejection decisions. In the post-adoption phase, customers decide to continue or discontinue further use (Montazemi and Qahri-Saremi, 2015). Market development and the adoption trajectory of particular innovations may, however, leave customers without the possibility of choosing alternatives to the innovations. In the banking context, the state of a lack of non-digital payment alternatives refers to the DPM full-adoption phase (Dimitrova *et al.*, 2022).

In relation to the adoption, previous studies have investigated resistance to new technologies, including digital banking (Shankar *et al.*, 2023). This resistance is often related to functional (e.g. usage, value and risk) and socio-psychological barriers (e.g. tradition and image) based on IRT (Ram and Sheth, 1989) and is defined as “the resistance offered by consumers to the changes imposed by innovations” (Matsuo *et al.*, 2018, p. 43). Barriers seem particularly important in a financial context in which negative experiences of DPMs may be crucial for bank customers, making resistance possible even when a technology is already being adopted and used. Accordingly, adoption and resistance may co-exist (Ram, 1987). Thus, the resistance continues to be a significant challenge not only in the developing markets but also the developed markets struggle with this issue (Hussain *et al.*, 2024). The barriers may, however, vary across these markets requiring specific solutions (Ghosh, 2024).

Departing from the initial set of barriers proposed by Ram and Sheth (1989), the rapid digitalization has led to various existing and emerging barriers. Number of studies (e.g. Anshu *et al.*, 2022; Ghosh, 2024; Laukkanen, 2016) investigated a similar set of barriers while some studies suggested new barriers relevant to the market. For example, Dimitrova *et al.* (2022) investigated privacy, security, access, impersonalization and trust barriers. The authors further found that only privacy and access barriers are significantly perceived by adopters-accepters. Considering the focus of the current study on system breakdowns and service failures, the access barrier seems to be of relevance to the current investigation.

Access barrier and vulnerability

Service failures of various forms extend from regular service disruptions at a micro-level to mega disruptions of the entire service ecosystem (Assiouras *et al.*, 2023). This study relates service failures to system breakdowns, including technical errors. Dimitrova *et al.* (2022) described such breakdowns as an access barrier, which appears to be related to both IRT and the theory of perceived risk, potentially decreasing the adoption intention and increasing the adoption resistance, respectively.

Such limited access to resources is often related to vulnerability as a state of harm that customers experience, hindering them from functioning throughout the service ecosystem (Hill and Sharma, 2020). Vulnerability is defined as a state of powerlessness due to an imbalance between marketplace interaction and full dependence on external factors and actors (Baker *et al.*, 2005; Riedel *et al.*, 2022). Occasional system breakdowns could be related to temporary vulnerability experienced for a short period of time (Riedel *et al.*, 2022).

The access barrier has an essential role in the financial services context. Money is defined as a common good (Meyer and Hudon, 2019), meaning that everybody in a society should have access to it. Mainardes *et al.* (2017) highlighted that the main purpose of self-service digital banking is to be available 24/7, benefitting bank customers more than traditional physical banking does. A lack of ability to pay for goods and services may exclude bank customers from the payment system, making them experience temporary vulnerability in their everyday activities. Such vulnerability can affect not only low-income bank customers, who have limited payment choices such as no or only one bank account, but rather all digital bank customers (Kabakova and Plaksenkov, 2018). In particular, adopters-accepters, as digitally oriented bank customers, are more likely to be concerned about such service failures than are other bank customers due to their DPM dependence.

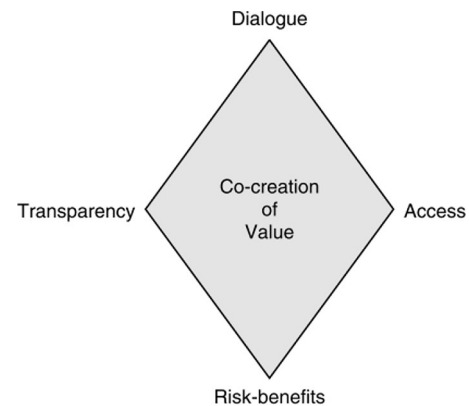
Co-creation of value and DART model

Previous studies in the digital banking context have mostly used attributes of the technology acceptance model (TAM), the unified theory of acceptance and use of technology (UTAUT) and the innovation diffusion theory (IDT). Zineldin (2005) emphasized that banks develop financial products and services with a focus on customers' needs. Prahalad and Ramaswamy (2004) identified the concept of value co-creation, in which customers actively collaborate with companies in this process. Many current digital banking services appear to have been developed based on customers' demands, confirming the importance of value co-creation (Carranza *et al.*, 2021). Ranjan and Read (2016) also discussed the significance of the content provided by online communities to the value co-creation process, independent of time and place.

Customers are not only involved in content creation but also have impacts on companies, products, services and related innovations (Femenia-Serra *et al.*, 2022). Customers are "indeed no longer the end of the chain but the beginning" (Cova and Dalli, 2009, p. 322). This is especially important in social media communication and rapidly digitalized services, where bank customers are empowered to share their service experience with others (Heinonen *et al.*, 2018). The type of customer experience, i.e. positive or negative, may define the future of services and innovations.

The DART model of value co-creation was formulated by Prahalad and Ramaswamy (2004) with the assumption that the market is a place for a co-creation experience rather than just the targeted buying and selling of products and services (Schiafone *et al.*, 2014). The suitability of such a model in blended human-technology services was highlighted by Dodds *et al.* (2022). The DART model (Figure 1) proposes four dimensions (i.e. attributes) of interaction between customers

Figure 1 DART model



Source: Original by Prahalad and Ramaswamy, (2004)

and service providers, namely, dialogue, access, risk and transparency, as discussed below.

The concept of *dialogue* is related to "interaction, deep engagement and the ability and willingness to act on both sides" (Prahalad and Ramaswamy, 2004, p. 9). Dialogue itself requires both actors to show deep engagement, empathy, understanding and willingness to personally resolve issues by means of knowledge exchange (Assiouras *et al.*, 2023). In the banking context, banks need to maintain communication via various channels to reach their customers. It is important to consider customer feedback (Dootson *et al.*, 2016) rather than have just one-way communication, which may negatively influence customer behaviour (Wu *et al.*, 2019). If the communication between service providers and customers is superficial, customers may lose their trust and experience negative outcomes (Assiouras *et al.*, 2023). Lack of communication (e.g. the impossibility of contacting service support) may further destroy the value of services (Galdolage, 2021).

In the traditional DART model, *access* is related to the resources that customers need to contribute to the value co-creation process (Prahalad and Ramaswamy, 2004). Access to resources could be crucial in unexpected and crisis situations (Assiouras *et al.*, 2023). Service providers can improve their relationships with customers by giving them access to service systems and associated resources as well as to service alternatives (Banik and Rabbane, 2023). Lack of access may affect bank customers' ability to positively participate in value co-creation. Dimitrova *et al.* (2022) related the lack of access to functional usage and value barriers. For example, bank customers who cannot buy goods and services due to system breakdowns may have a negative experience of DPM use. When sharing this negative experience with others, this may cause value co-destruction instead of value co-creation.

Customers should be able to evaluate the potential risks and benefits related to certain products and services (Prahalad and Ramaswamy, 2004). This *risk assessment* can reduce the uncertainties in otherwise difficult financial choices among various DPMs (Malik and Ahsan, 2019). In particular, customers equipped with personalized tools could resolve

issues instead of depending entirely on the bank (Prahalad and Ramaswamy, 2004). This appears to be important during the payment process, consuming resources such as time and money. If companies fail to give customers the opportunity to assess potential risks, this may lead to negative outcomes and lower customer expectations (Banik and Rabbane, 2023). The lack of appropriate risk assessment could further increase levels of customer uncertainty and confusion (Assiouras *et al.*, 2023; Banik and Rabbane, 2023).

In the value co-creation process, sufficient *transparency* in the bank–customer relationship is important, while DPMs are considered less transparent than cash (Seldal and Nyhus, 2022). Transparency is related to information sharing and lack of information asymmetry between parties (Prahalad and Ramaswamy, 2004). Assiouras *et al.* (2023) highlighted the importance of service providers disclosing any relevant information to their customers regarding the services used. Transparency appears to be highly essential during service failures, possibly affecting customers' behavioural intentions (Assiouras *et al.*, 2023). The reasons for system breakdowns could, for example, be hacking attacks or weak infrastructure. Furthermore, financial services require considerable credibility, which can be connected to transparency. For example, a lack of transparent information regarding service failures may distort the value of DPMs.

Co-destruction of value

At a general level, Plé and Chumpitaz Cáceres (2010) argued that the interaction within service systems may co-create and co-destruct value, and Assiouras *et al.* (2023) applied the DART model to both the co-creation and co-destruction of value. Guan *et al.* (2022) further suggested that misuse of customer resources by service providers and their employees, on one hand, and negative customer behaviour such as complaints, on the other hand, may lead to value co-destruction. Castillo *et al.* (2021) emphasized that value co-destruction may reduce customer well-being in terms of loss of resources. Thus, customers are triggered to take actions such as refusing to reuse a service (i.e. avoidance), spreading negative word-of-mouth messages and switching to competitors to cope with such situations. In the digital banking context, resources such as customers' own money might not be available due to technical issues; for example, a customer could be a millionaire but nevertheless be unable to pay for a single cup of coffee due to system breakdowns.

Customers tend to be part of value co-destruction when the service provider is perceived to be responsible for service failures, which in turn may drive customers to decrease their intention to use self-service systems (Hsu *et al.*, 2021). Lumivalo *et al.* (2023) further suggested that value co-destruction situations may trigger additional negative outcomes; this could be of importance for bank customers experiencing vulnerability. Service providers need to pay attention to such issues and offer immediate solutions to their customers (Assiouras *et al.*, 2023).

Methodology

Netnographic approach and guidelines

To identify whether various negative attributes related to the DART model affect value co-destruction in the digital banking

context, this study applies a qualitative method. Specifically, traditional netnography (Kozinets, 2019) in the form of virtual passive observations was considered suitable for achieving deeper knowledge of this relatively unexplored issue and for developing a new research model. Notably, the most common type of netnography, called “traditional”, should be differentiated from immersive netnography, which is an emerging type of netnography applied in immersive contexts such as the Metaverse (Kozinets, 2023). Furthermore, netnography is recognized as a valuable source of information about customers' experiences shared in their own contexts and from their lived realities (Kozinets, 1999; Medberg and Heinonen, 2014). Similarly, the respondents are not limited to responding to preselected questions or items, as they are in interviews, focus groups or surveys. The netnographic method collects naturalistic data, avoiding any researcher influence during the data collection process (Kozinets, 2021). This method has mostly been used as a secondary or complementary method in previous research (e.g. Conti and Lexhagen, 2020; Dimitrova and Öhman, 2024; Dimitrova *et al.*, 2022). However, Medberg and Heinonen (2014) and Clemente-Ricolfé (2017) in the banking context and Terziyska and Damyanova (2020) in the tourism context have used netnography as a single main method of data collection and analysis. Similarly, Chauhan *et al.* (2022) suggested that future research should use methods such as netnography instead of surveys.

In conducting netnography, it is important for researchers to follow the guidelines developed by Kozinets (2023), who proposed four main steps and six movements may increase the quality and validity of the collected and analysed data. Dimitrova and Öhman (2022) summarized the key steps of traditional netnography in the digital banking context as follows:

- Preparation for conducting netnographic research (i.e. formulating a research question and familiarizing oneself with the target community): In the current study, the initiation and immersion movements started in 2019; since then, a number of social media posts regarding system breakdowns were identified and observed, and screenshots were subsequently collected.
- Data collection (i.e. direct copying of text such as comments and/or inscribed data such as meanings and interactions): In relation to the first and second steps, the researcher must immerse in and sift through the data carefully, focusing only on comments related to the research question and topic. In this case, a large number of screenshots were collected related to a crucial system breakdown in a major Swedish bank in 2021 and two crucial system breakdowns in a major German bank in 2022 and 2023.
- Analysis and interpretation of the collected data: This step is often conducted in parallel with the data collection process and includes data contextualizing, classification and coding, followed by interpretation. In this case, the above process was followed by immersing and engaging in the data as researcher-as-instrument (Kozinets, 2023).
- Consideration of ethical issues concerning, for example, the type of social media platforms (i.e. public or private): This step includes concerns such as the researcher's

responsibility not to disclose any sensitive information (please see below for how ethical issues were treated in the current study).

Sample

This study focused on two European countries located near each other in order not to rely solely on the comments of bank customers in a single country. Although similar in economic conditions and infrastructure, Sweden and Germany differ in the use of cash and DPMs (Ng *et al.*, 2021). In Sweden, under 10% of all transactions are made with cash (Sveriges Riksbank, 2025), whereas in Germany, cash still dominates, being used in 58% of transactions (Deutsche Bundesbank, 2022). Although this is not a cross-cultural comparative study, it is worthy to acknowledge relevant cultural factors such as uncertainty avoidance that may be linked to this difference. According to Müller *et al.* (2009), Germans prefer cash as a more secure payment method because they are more likely to avoid uncertainty than Swedes. There are also contextual factors such as regulatory and infrastructural limitations that should be noted. Bank customers reported the difference in acceptance levels of cash between German and Swedish merchants and retail banks, where Germans have more freedom in their choice of payment method (Deutsche Bundesbank, 2025; Sveriges Riksbank, 2025). Based on posts related to major system breakdowns in two of the largest retail banks in the countries, two samples were used: Swedish and German bank customers. The system breakdowns have topic relevance and are related to the access barrier, and the “traffic” of the posts (i.e. hundreds of comments, reactions and shares) provided rich data.

The bank customers making these comments were characterized as adopters-accepters due to their experience and acceptance of DPMs. Adopters-accepters are often young adults but do not exclude members of other age groups (Dimitrova *et al.*, 2022). They appear to rely on DPMs in their everyday life, which is evident from their comments posted on social media. Bank customers/followers who clearly stated, on social media, that they favoured cash (e.g. “cash is king”) and those who fought the emergence of a cashless society were considered adopters-resisters in line with Dimitrova *et al.* (2022). These bank customers are outside the scope of this study and their comments were excluded from further analysis to avoid potential response bias. Altogether, the Swedish sample of adopters-accepters wrote 827 comments and the German sample 231 comments.

Data collection and analysis

For two weeks in late 2021, Swedish social media pages were observed, focusing on self-reported comments by bank customers/followers. A German bank’s social media page was observed for two weeks in 2023. The selected posts concerned two major system breakdowns in the bank. In total, 1,058 comments (excluding adopters-resisters’ comments) were gathered by virtual passive observation. Notably, a single comment by a respondent could include more than one finding, leading to a higher number of findings than the total number of comments. The comments were extracted as PDF files and saved in offline storage, resulting in 90 pages of Swedish data and 43 pages of German data. The data were

analysed using two strategies. Firstly, the data were systematically and carefully read, analysed and coded manually by the researcher, searching for new attributes related to the DART model as a baseline to develop a conceptual framework including value co-destruction. After the first and second coding cycles, the number of identified nodes was reduced by categorizing them into four themes (i.e. attributes).

Parallel to the manual netnographic analysis, a generative artificial intelligence (AI) (ChatGPT, versions 3.5 and 4o mini) was used (cf. Kozinets and Aksit, 2024). Categorizing nodes and themes in two different ways was an attempt at two-way validation of the findings. Both ChatGPT versions were trained via a detailed description of the tasks by improving the prompts wording using a history of the conversations while analysing the original data. This type of Large language model (LLM) appears to be reliable for descriptive nodes and themes and more suitable for user-based queries than previous qualitative analysis software (Morgan, 2023). Gill and Kaur (2023) highlighted the advanced features of ChatGPT, version 3.5, such as text categorization and interpretation, considering it suitable for research analysis. Furthermore, Dermata *et al.* (2025) and Nejjar *et al.* (2025) compared empirically various LLMs where ChatGPT 4 indicated best performance in accuracy. Note that this application (i.e. LLM) is still evolving, and it may have limitations, such as potential inconsistency in responses and the risk of being influenced/convinced of various outcomes by the researcher. Therefore, a reanalysis using the updated ChatGPT version 4o mini was further conducted due to its development and improvement. In addition, the specific prompts used and how ChatGPT is trained to minimize such issues and avoid potential bias are crucial (Ray, 2023). The initial prompts provided to the AI and used for Swedish and German data were:

Act as a researcher. Code all the users’ comments (excluding comments from the banks and all replies) into the following several nodes [then the nodes were briefly described based on the manual human coding]. Please do the previous task, but in more detail with a list of categories and percentages with exact numbers of comments regarding every node and respective theme. Please provide a list of categories also including concrete examples of comments.

Several prompts were used to check and train the AI for improved output, for example: “The text is about healthcare”. In this case, the AI response was:

I apologize for any confusion, but [...], the provided text does not appear to be about healthcare. It seems to be a collection of user comments discussing issues related to X bank’s services, as mentioned earlier.

The updated prompt for reanalysis using ChatGPT 4o mini was similar to the initial one, while omitting the description of the nodes. Worthy to note that a new chat with a clear history was used and the AI was retrained to increase task performance. This allowed an open coding to be conducted avoiding potential influence by the researcher. This LLM version identified similar patterns as the previous one supporting the manual coding and analysis. Particularly, the content and the meaning were the same with small differences in wording and phrasing of nodes and themes. Due to repetition of some nodes and themes, it was instructed to categorize similar ones into a single category.

The final interpretations were made by the human researcher (cf. Kozinets and Aksit, 2024), comparing the manual with the ChatGPT coding. For more rigorous interpretations, an

independent external researcher coded roughly 10% of the data after the AI comparison (cf. [Zainuddin and Gordon, 2020](#)) following pre-determined coding criteria and category descriptions. The inter-rater reliability index was 77% for the Swedish sample and 78% for the German sample. This indicates a substantial level of agreement ([Banerjee et al., 1999](#); [Landis and Koch, 1977](#); [Liu et al., 2022](#); [Zwick, 1988](#)), and the two researchers further discussed the assessments that differed until reaching an agreement.

Personal information was not disclosed. If needed, such information (i.e. avatars and usernames) was blurred to be unreadable. Information posted on social media is publicly available to all members of the platform, eliminating the risk of any ethical issues in data collection ([Langer and Beckman, 2005](#)). Furthermore, the comments in German were automatically translated by a social media feature, while both Swedish and German comments were presented in English, avoiding any potential risk of respondent identification. Swedish and German speakers validated the quality and accuracy of the translation from Swedish and German, respectively, to English.

Findings and discussion

MURA model

Unlike [Assiouras et al.'s \(2023\)](#) study, which related all four attributes of the DART model (i.e. dialogue, access, risk assessment and transparency) to value co-destruction, this study proposes a research model called MURA, including negative attributes (i.e. monologue, uncertainty, restriction and ambiguity) related to the value co-destruction concept. The relationship between the MURA model proposed here and the DART model is illustrated in [Table 1](#).

Several nodes were found, i.e. communication/contact issues, information issues, payment issues, login issues, bank-switching desire, repeated service failure, usefulness of having cash, widespread bank service failure and reasons for the service failure. These nodes were further categorized into four main themes as

follows: communication/contact issues were associated to monologue (i.e. linked to dialogue) due to impossibility of bank customers to contact their banks leading to one-way communication; repeated service failure, widespread bank service failure and bank-switching desire were associated to uncertainty (i.e. linked to risk assessment) due to the impossibility to plan and predict the otherwise everyday routines like payments, impossibility of bank customers to use neither current nor alternative banks as a solution and impossibility to use current bank services; payment and login issues were associated to restriction (i.e. linked to access) due to impossibility to do everyday activities; and information issues and reasons for the service failure were associated to ambiguity (i.e. linked to transparency) due to the impossibility to understand what, when, how and why happens. Despite the differences in cash and DPM use between Sweden and Germany, all four attributes of the MURA model were found in both countries. Restriction and ambiguity concerned most of the Swedish bank customers, who prefer to be able to use their own money whenever they want and to know the reasons for service failures ([Dimitrova et al., 2022](#)). The German bank customers mostly experienced restriction but also uncertainty, which can be explained by their high level of uncertainty avoidance ([Müller et al., 2009](#)). A summary of the findings is presented in [Table 2](#).

In comparison with the dialogue attribute of the DART model, one-way communication may decrease customer willingness to interact with the service provider, due to the less warm and less friendly impression created ([Wu et al., 2019](#)). Although *monologue* is usually preferred in crisis communication from service providers to customers on social media ([Argyris et al., 2021](#)), communication between customers and service providers in such situations should be reciprocal and interactive to seek relevant personalized solutions ([Assiouras et al., 2023](#); [Femenia-Serra et al., 2022](#)). In this study, the concept of monologue is defined as a lack of dialogue, with only one-way communication existing due to unreachable communication partners. The present findings show that although banks may inform their

Table 1 DART and MURA models

DART model	Description	Source	MURA model	Description	Source
Dialogue	Interaction, engagement and willingness in knowledge exchange	Assiouras et al. (2023) ; Pralhad and Ramaswamy (2004)	Monologue	Contact and communication issues	
This study's data					
Risk assessment	Evaluation of the potential risks related to certain products and services	Pralhad and Ramaswamy (2004)	Uncertainty	Repeated issues and alternative solutions	This study's data
Access	Resources that customers need to contribute to the value co-creation process	Pralhad and Ramaswamy (2004)	Restriction		Unavailability of payment means
This study's data					
Transparency	Sharing of information and lack of information asymmetry between parties	Pralhad and Ramaswamy (2004)	Ambiguity	Concealing all or part of the information	This study's data
Source(s): Author's own work					

Table 2 Netnographic result frequencies

Theme	No. of findings	Swedish bank*	No. of findings	German bank** Share of total number of comments (%)
Monologue	30	3.2	21	9.1
Uncertainty	159	17.1	54	23.4
Restriction	214	23.0	55	23.8
Ambiguity	234	25.2	27	11.7

Note(s): **n* = 827 Swedish bank customer comments; ***n* = 231 German bank customer comments; irrelevant comments were excluded from the samples

Source(s): Author's own work

customers of system breakdowns, bank customers/followers cannot contact or communicate with the bank. In other words, bank customers can only share their negative experiences and opinions regarding service failure via one-way communication, i.e. monologue, and banks either ignore these attempts of their customers to obtain more relevant information or use standardized bot-like responses. The latter is in line with the study of [Zhong et al. \(2021\)](#), who highlighted that supposedly mutual conversation on social media is actually one-way conversation due to heavily scripted and/or automated responses by the companies. Both the Swedish and German bank customers (3.2% and 9.1%, respectively, of the comments focused on this attribute) indicated that they could not contact the bank even though the bank redirected them to telephone service support. The following are some examples of relevant Swedish comments:

You can't even call support.

When you have a problem [...] and you choose to communicate it on social media [...] you also should be available to respond [...]

Not even the phone bank can be reached.

They are completely silent, burying their heads in the sand.

Been trying to call them for an hour and the call keeps getting cut off.

Can't get into the internet bank, the app, or reach contact via phone. Writing via FB doesn't feel serious.

Does anyone know if their customer service is down too? Tried calling them for an hour and the call got disconnected.

Some examples of German comments.

Online banking access blocked and for 3 h no one is reachable at the hotline, which is actually always reachable 24 h.

[...] I have not been able to reach you by letter or phone for a week [...]

4 hours trying to get someone at the 069-800 number and live during my stream with viewers.

It's really unbelievable that there is zero communication here [...]

[...] And the hotline is unavailable [...]

[...] No one is available for 5 hours [...]

[...] I just talked to your telephone robot for ten minutes to inform you that unfortunately you can't receive the call personally after all. customer service, eh? [...]

This result is in line with [Okazaki et al. \(2020\)](#), who highlighted the negative effect of no or inadequate service provider response in terms of limiting value creation. Moreover, customers usually require a timely response from the service provider. The lack of dialogue between customers and the service provider may lead to complaints and brand damage ([Okazaki et al., 2020](#)) and even to customer resistance to the services ([Anshu et al., 2022](#)).

Moving to the second attribute in the MURA model, [Müller et al. \(2009\)](#) highlighted that Germany is higher on the *uncertainty* avoidance scale than Sweden. Moreover, German bank customers experience higher acceptance levels of cash ([Deutsche Bundesbank, 2025](#)), whereas Swedish bank customers had a limited cash acceptance by merchants and retail banks until recently ([Dimitrova and Öhman, 2024](#); [Sveriges Riksbank, 2025](#)). However, bank customers in both countries seem to experience similar uncertainties, although they differ in how they avoid them. In line with [Assiouras et al. \(2023\)](#) and [Banik and Rabbaneh \(2023\)](#), the levels of customer uncertainty and confusion could be increased by lack of appropriate risk assessment. In the present study, the concept of uncertainty is defined as a state in which persistent and unpredictable issues repeatedly disrupts decision-making leading to the impossibility of assessing and resolving potential and existing risks. The findings reveal that 17.1% of the Swedish and 23.4% of the German bank customers perceived uncertainty due to the access barrier and related service failure. The following are some examples of Swedish comments regarding uncertainty:

Happens Too Often. What do you do about this?

Time to switch banks!!! During the last year there has always been a problem!

You may need to take care of your IT systems considering how much trouble it is for you. I don't use this bank because of this recurring mess.

This is not the first time.

Different services need to become more autonomous. Right now, everything seems to go down because of a bottleneck.

This shouldn't happen so often.

I heard that [name of other bank] is having issues too.

Banks today really don't have control over the situation. I wouldn't be surprised if all your money disappeared from your account during something like this.

Some examples of German comments regarding uncertainty:

And since this morning another disturbance. When using the X service, there is always a message that there is a malfunction [...]

X bank has some problems at least 6–8 times a month [...] always when it comes to cash flow [...]

Yet [...] another technical error [...]

Currently [irony emoji] already this morning, I feel like every month [...]

How many more times? [angry emoji]

It's just ridiculous: every 4 weeks the same game [...]

There is always something about you guys [...]

It's not even the end of the month [...]. you're giving up hard, really now [...].

Yang *et al.* (2015) and Chang *et al.* (2022) further confirmed that the DPM transaction uncertainty perceived by bank customers may increase their concerns, particularly when they experience system breakdowns. Considering the DART model, uncertainty could be linked to risk assessment in the MURA model in which bank customers (i.e. adopters-accepters) cannot evaluate potential and existing risks and benefits when encountering the access barrier during DPM usage. If uncertainty exists, bank customers need to evaluate various risks (Prahallad and Ramaswamy, 2004).

Technology can make customers more dependent and restricted rather than independent and free, in what is known as the technology paradox (Johnson *et al.*, 2008). In this study, the concept of *restriction*, i.e. the third theme identified during the manual analysis of the netnographic data, is defined as the impossibility of using one's own resources in digitalized everyday activities. This statement is confirmed by the present findings, with 23.0% of the Swedish and 23.8% of the German bank customers appearing to be restricted by experiencing the access barrier.

In Sweden, bank customers perceived restriction as follows:

I'm standing at the checkout and want to pay and can't do it [...]

Can't refuel the car, hope there's enough juice in the tank so I can get there and home.

I cannot refuel the car, I cannot go to work.

How can I take the bus to my internship?

Will not come down to the health centre.

Couldn't pay or withdraw cash. Hope this gets resolved soon – otherwise, I'll be going hungry today!

Please fix this issue as soon as possible! I have several errands to take care of and I need to log in to my bank. I'm seriously asking you – fix this, or it's going to be chaos!

My daughter is on her way to a course and will take the ferry, so I messaged her that it's not possible to pay with the card.

This made it so that when I was going to pay for a purchase at the local kiosk/post office and he had entered all the items into the checkout, it was not possible to pay.

The German bank customers shared their restriction experiences:

And today I was standing at the gas station and couldn't pay. You can imagine how uncomfortable this was and at the same time how embarrassing this was!

Stuck in the middle of moving and can't get my money [...]

I've been trying to make a transfer for 1 hour. Well, it works zero.

[...] of course – on vacation!!! They are causing technical problems for a week now and customers are supposed to act. Very good plan!! [...]

[...] the disruption has been around for a while today and for people who are currently shopping and now can't pay or fill up, it's really bad that card payment is not possible.

[...] But ever since my branch closed down, whatever y'all come up with the idea of closing branches. I don't have a bank on my side anymore! [...]

I was also at the checkout at [name of the supermarket] today and my card didn't work [...].

Although the infrastructure in Sweden is among the best in the world, some infrastructure limitations can cause restricted access to the internet (Akhter, 2015). Such restrictions may occur due to the lack of alternative payment solutions. For example, bank customers may be forced to leave purchases in the store during system breakdowns in Sweden if cash is not

accepted. Lundberg *et al.* (2014) found that payment restrictions may increase bank customer dissatisfaction, with the risk that providers may lose customers. These restrictions may also cause negative reactions, such as resistance to undertaking certain actions (Manchanda and Deb, 2021). Thus, adopters-accepters who are restricted by the access barrier (e.g. system breakdowns) may start resisting DPM full-adoption.

Contrary to transparency in the DART model, this study identified the *ambiguity* concept. Yang *et al.* (2015) discussed ambiguity as a type of technological uncertainty, specifically, the lack of clear information or any information in the event of a service failure. In this study, ambiguity is defined as the lack of information or the concealing of partly or entirely relevant information, engendering confusion, doubt and suspicion in service users. The findings reveal that 25.2% of the Swedish and 11.7% of the German adopters-accepters experienced some type of ambiguity in relation to the access barrier. The lack of transparent communication between the service provider and customers may trigger value co-destruction actions (Lumivalo *et al.*, 2023).

The Swedish bank customers revealed this ambiguity and their need for more transparency as follows:

I suspect this is hacking. Are the internal systems working? Anyone able to check if you know someone at the bank?

A bit strange actually that you don't have any info on your website. Only on social media. Why?

Inform us via your website!

Some customers, rather all customers I should say.

Problem logging in, why, would love to know.

Have you been hacked.

Write something under your Customer Service heading so people know what's going on.

You should probably update your digital assistant a bit too: "Information about technical disruptions affecting our systems and services can be found on our homepage and our Facebook page." There's not much about the current disruptions on your website right now.

The German bank customers also revealed this ambiguity and their need for more transparency:

Dear bank, what problems are there this time??

Just say you got hacked. This is bitter, but you can do something about it and then at least you know where you stand [...]

The board should really make a statement on the website. It's time [...]!

[...] what problems are there this time??

[...] What glitch do you have fixed???

[...] Pretty much everything you can hide was hidden. Congrats.

[...] some banks say there is a malfunction some don't

[...] In Frankfurt, everyone tells you something different [...].

Van Klyton *et al.* (2022) stated that the disappearance of a systematic service may cause ambiguity. On the contrary, increased familiarity and knowledge exchange may reduce ambiguity for bank customers. The importance of relevant information was also confirmed by Adil *et al.* (2022). They referred to Mustafa *et al.* (2020, p. 3) who emphasized that service failure was aggravated by "inaccurate, incorrect, incomplete, untimely and irrelevant information". The lack of

relevant information could be crucial during the disruption of routine everyday activities, such as accessing financial services.

Worthy to note is that the abovementioned MURA attributes may interact with each other due to their close relationships. For example, monologue, restriction and ambiguity may lead to uncertainty because the lack of communication, limited resources and the lack of information hinder decision-making. Furthermore, monologue may lead to ambiguity because the lack of communication may lead to lack of information.

Conceptual framework

In addition to the MURA model, this study proposes a conceptual framework. The access barrier may intensify the MURA attributes, possibly leading to value co-destruction and, in turn, to resistance to full DPM adoption. The MURA model is part of the proposed framework called the *barrier, co-destruction and resistance framework*, linking IRT to value co-destruction. This framework is illustrated in Figure 2.

In line with previous studies (e.g. Lumivalo *et al.*, 2023), negative experiences may cause value co-destruction, which in turn may lead to additional negative outcomes such as resistance to using a service. Specifically, the access barrier experienced by adopters-accepters may decrease their intention to fully adopt DPMs (Dimitrova *et al.*, 2022), potentially leading to resistance. The framework suggests that the relationship between the access barrier and resistance to the full-adoption of DPMs is mediated by emerging attributes such as monologue, uncertainty, restriction and ambiguity (i.e. MURA attributes), and by value co-destruction.

Conclusion

Despite the rapid development of FinTech, this study highlighted the continuing importance of service failures such as system breakdowns that occur occasionally and are announced mostly via social media as communication fora. Bank customers' followers' comments on these problems appear to be important, registering the existence of value co-destruction. In response to Silva *et al.* (2021) and based on netnographic empirical data and supported by ChatGPT, this study proposed a research model, the MURA model, with four attributes: monologue, uncertainty, restriction and ambiguity. This model was further proposed to mediate the access barrier, value co-destruction and DPM full-adoption, i.e. the *barrier, co-destruction and resistance framework*. Although Sweden and Germany are on different roads to DPM adoption, the present

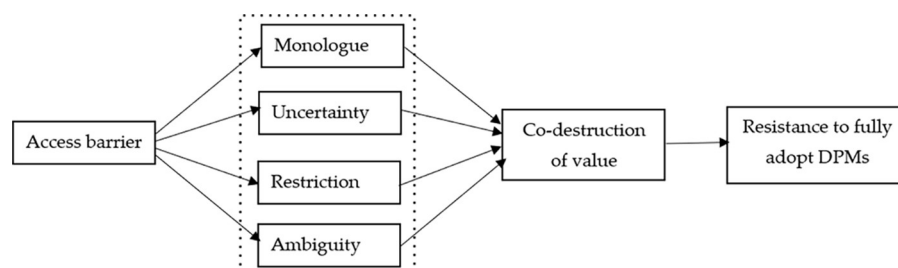
findings indicate similar value co-destruction attributes between Swedish and German adopters-accepters. These findings highlight the temporary vulnerability of bank customers who are at risk of becoming adopters-resisters in the future. In turn, those customers may potentially be excluded from the financial service ecosystem, which requires timely prevention in line with Horne and Collins (2023) and Russell-Bennett *et al.* (2024).

Theoretical implications

Previous studies have investigated value co-destruction as a process that causes negative outcomes, while others have examined co-destruction as the outcome of negative service interactions (Lumivalo *et al.*, 2023). This study extended the value co-creation/co-destruction literature (e.g. Anshu *et al.*, 2022; Castillo *et al.*, 2021; Kashif and Zarkada, 2015; van Klyton *et al.*, 2022; Worthington and Durkin, 2012) by proposing a MURA model with four attributes, i.e. monologue, uncertainty, restriction and ambiguity, reversing the DART model. The MURA model could be relevant to service interaction vulnerability in the DPM context. In addition, the MURA model is suggested to mediate the existing access barrier, value co-destruction and resistance to full DPM adoption as part of the proposed conceptual framework. Although not presented in the model, a discussion on the potential interaction between the four MURA attributes seems to give new theoretical insights. Particularly, some of the attributes (e.g. monologue, restriction and ambiguity) may affect others (e.g. uncertainty) which can be used as a departure point for new research.

The MURA model is linked to IRT in a single framework. In comparison to previous studies (e.g. Anshu *et al.*, 2022), which linked a value co-creation model to IRT, the current study addresses the call by Silva *et al.* (2021) for more co-destruction studies filling the gap on value co-destruction research models. The introduction of this research model and the conceptual framework extend the value co-destruction and innovation resistance literature, identifying emerging attributes related to both value co-destruction and resistance to digital technologies such as DPMs. This theoretical knowledge allows the application of other barriers to the MURA attributes in various scenarios and contexts. In doing so, these findings could be useful for service scholars in seeking ways to minimize not only occasionally and locally limited service failures but also crisis-related issues that may concern the entire service ecosystem (Gordon and Vink, 2024).

Figure 2 The barrier, co-destruction and resistance framework and the MURA model (within the frame)



Source: Author's own work

From a customer theoretical perspective, this study reveals that adopters-accepters may also have negative experience i.e. MURA attributes which may lead to negative consequences i.e. co-destruction of value and resistance. These empirically based findings extend the understanding of how a novel group of bank customers perceive and respond to service failures. In addition to Dimitrova *et al.* (2022), adopters-accepters appear to not only be affected by barriers but also they may affect the companies and their services. In this vein, service researchers can apply these findings to further investigate on how this group of customers encounter and respond to various barriers in various contexts.

Managerial implications

The findings can help retail banks in Sweden and Germany to better understand their customers in situations such as system breakdowns. This is particularly important in the case of DPM full-adoption (i.e. a cashless society), which appears to be on the retail banks' development list (Horne and Collins, 2023). Despite the ongoing digitalization, digital banking services are still perceived as one-way communication, leading to a monologue between bank customers and their retail banks. For example, bank customers are redirected to telephone queues or receive standardized messages (i.e. bot answers) in response to their problems. This can be resolved by personalized/customized real-time smart AI solutions that display understanding, giving clear solutions to the bank customers' problems. This is a potential alternative to the limited number of human employees and would save time and effort.

Retail banks should also pay attention to bank customers' uncertainty during system breakdowns by reducing their frequency. Occasionally, limited access of the Swedish and German bank customers to their own money leads to restrictions that may degrade their quality of life and cause vulnerability (Amine and Gatfaoui, 2019), which is unexpected in developed countries. Banks may, for example, prevent such issues by offering unlocked Buy-Now-Pay-Later solutions during the period of system breakdowns. Ambiguity of information regarding these issues was identified as a concern for both the Swedish and German bank customers. Retail banks need to be transparent to their customers by disclosing relevant information regarding system breakdowns (Yang *et al.*, 2015). For example, using an omni-channel approach with relevant and real-time information including time prediction posted on all available channels (e.g., bank website, mobile app and social media pages) regarding the service failure. Bank customers have the right to access and use their own money and the right to be properly informed when this is not possible. If these matters are not addressed, retail banks risk damaging their services (e.g. DPMs) and brands, potentially transforming adopters-accepters into adopters-resisters.

Considering that money as a common good must be accessible for everyone in the society (Meyer and Hudon, 2019), this study highlights the importance of the MURA attributes not only for the companies but also for the entire society. System breakdowns, especially long-term and major ones, may stop the entire financial system leading to crucial consequences. For example, Swedish society has encountered a relatively long-term technical error that disrupted normal everyday life such as shopping, travelling and health-care

activities. Worthy to note is that these issues may further lead to societal boycotts, which require an attention of the regulators on how to reduce the negative chain of barrier, co-destruction and resistance and to facilitate the DPM full-adoption. In doing so, the findings of the current study shed light on what is between the access barrier and co-destruction, i.e. the MURA model which could be used as a key to improve the service quality in the financial ecosystem.

Limitations and future research directions

Although this study suggested the MURA model, as part of a proposed *barrier, co-destruction and resistance framework*, there are still some limitations that could be used as departure points for future research. The MURA model could be extended by incorporating other factors that influence value co-destruction in various fields or the interaction between different attributes. Furthermore, demographic factors such as age, gender, income and education may play roles, at least as moderators. Some potential limitations of netnography applied in social media such as selection bias, representativeness and generalizability should be considered. Thus, the MURA model could be statistically validated by a quantitative study using a survey to reach generalizability by means of triangulation (Kozinets, 2021). Future research could also conduct field or online experiments examining whether those bank customers called adopters-accepters may actually become adopters-resisters. Because this study is based on bank customers' perspective and their comments, a suggestion is to further investigate bank–customer communication focusing on banks responses. The present findings mainly concern similarities between Sweden and Germany. Research on specific differences would be beneficial, for example, examining DPM full-adoption, considering the different cash usage in these two countries. Because this study is limited to two developed countries in Northern and Central Europe, it would be useful to compare these results with those from other countries (i.e. developing countries) in the digital inclusion context (Raciti *et al.*, 2024). In this way, various cultural and contextual characteristics could be further developed to enrich our knowledge of various issues, including value co-destruction, in the digital banking context, which is still a relatively unexplored area.

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Further reading

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