

Seven Ways How In-Store QR Codes Negatively Contribute to Customer Experience: A Study of Fashion Store Customers

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Abstract

In brick-and-mortar (B&M) fashion stores, in-store QR codes are emerging in-store technologies that can integrate online channels into physical stores. However, in-store QR codes are not extensively used by customers, and their presence may negatively contribute to Customer eXperience (CX). In this qualitative study, we implemented three sets of QR codes in a Finnish fashion B&M store: online store, social media, and online survey QR codes. Then, we interviewed 16 customers who had visited the store about these in-store QR codes and their CXs. The study identifies seven ways how in-store QR codes negatively contribute to the cognitive and affective dimensions of CX. The negative contributions to the cognitive dimension include distracted focus, risk assessment, and negative evaluations. The negative contributions to the affective dimension include pressure, anxiety, insecurity, and annoyance.

Keywords: QR codes, customer experience, brick-and-mortar store, omnichannel, fashion retail.

1. Introduction

Today's brick-and-mortar (B&M) store retailers are introducing cyber-physical in-store technologies to provide seamless and distinctive customer experiences (CXs) (Zimmermann et al., 2023; Parise et al., 2016). These technologies can, for instance, provide additional information on products and enhance the channel integration between the offline and online channels, which is suggested to enhance CX both cognitively and affectively (Gao et al., 2021). A case example of an informative and cyber-physical in-store technology is the Quick Response (QR) code. There has been a significant growth in the use of QR codes in almost every industry. According to statistics of QR Tiger QR Code Generator (Ricson, 2024), there was a 433% surge in the amount of generated QR codes between 2021 and 2024, and an average of eight QR codes are generated per minute. QR

codes have been utilized in, for example, product packaging (Rotsios et al., 2022), online retailing (Hossain et al., 2018), and as a contactless payment method (Le, 2022). In B&M store retailing, QR codes have been utilized to offer, for instance, additional information (Albăstroiu & Felea, 2015) and dynamic pricing for expiring products (Lau et al., 2022). In fashion B&M stores, in-store QR codes are an emerging phenomenon. For instance, Lacoste, Revolve, and Decathlon have utilized in-store QR codes (Taylor, 2022; Joshi, 2024). With QR codes, additional information and inspiration can be provided for fashion store customers (Paananen et al., 2023). Also, coupons, vouchers, and information on retailer's events, promotional campaigns, contests, and mobile applications can be offered (Albăstroiu & Felea, 2015). Despite the usability of in-store QR codes (Holkkola et al., 2023a), Lau et al. (2022) found that customers do not extensively use in-store QR codes. According to Paananen et al. (2023), fashion B&M store customers have shown ignorance and even resistance toward them. Consumers have also perceived QR codes as unattractive (Gao et al., 2015) and prone to information security issues (Yong et al., 2019). Thus, in-store QR codes in fashion stores may have negative contributions to CX and require further research from a critical perspective. It becomes important to study whether these in-store technologies divide consumers' opinions and contribute negatively to their CXs. Therefore, in this qualitative study, our aim is to study how the presence of in-store QR codes can negatively contribute to CX in a B&M fashion store.

Based on prior research, there is a research gap in how in-store QR codes can negatively contribute to CX in fashion B&M stores. Firstly, on a more general level, Souiden et al. (2019) have called for research on CX and its dimensions in the omnichannel context. Also, Gereá et al. (2021) have identified consumer interaction with in-store technology and adapting new technologies as important omnichannel research streams. Secondly, researchers have specifically called for more research on consumer perspectives on QR codes (Kim & Yoon,

2014). According to Albăstroi and Felea (2015), there is only a little research on in-store QR codes providing additional information, product reviews, and social media content for B&M store customers. Also, Holkkola et al. (2023a) call for research on how the presence of in-store QR codes, whether they are used or not, can contribute to CX. This is important because the introduction of new technologies may cause stress to customers (Kumar et al., 2022). Thirdly, the critical perspective toward QR codes is called for, as Holkkola et al. (2023a) call for research on the in-store QR codes' negative contributions to CX. In the fashion store context, only the positive contributions of QR codes to CX have been studied (Holkkola et al., 2023a). Studying QR codes' negative contributions to CX is relevant because also other in-store technologies, such as a shopping assistive mobile application, have been found irritative for customers (Zimmermann et al., 2023).

To conduct the study, we displayed QR codes that provided customers with additional information and inspiration within a Finnish fashion B&M store. Then, we conducted interviews with real customers who had visited the store while the QR codes had been on display. We chose to focus on the concept of CX because, due to its experimental and multi-dimensional nature, it enables us to gain a holistic perspective of customers' views on QR codes. We focused on the two main dimensions of CX: cognitive and affective (Rose et al., 2011). Unlike the behavioral dimension, cognitive and affective dimensions are not dependent on customers' QR code usage. These dimensions can be influenced by the mere presence of in-store technologies, which is important because not every customer will approach these in-store technologies. Thus, also those customers who do not scan the QR codes may be influenced by their presence (Holkkola et al., 2023a). Therefore, our research question is how the presence of in-store QR codes can negatively contribute to the (1) cognitive and (2) affective dimensions of CX.

In the second section, we provide a literature review of CX and QR codes. In the third section, we present our case B&M store, case QR codes, and the methodology of the study. The findings are presented in the fourth section. Lastly, in the fifth section, the implications of the study are discussed and directions for future studies presented.

2. Literature review

2.1. Customer experience

Customer eXperience (CX) is a widely used concept in Information Systems (IS), service research, and marketing. It is a holistic concept that refers to customers' subjective feelings, interpretations, and responses

throughout their entire customer journey and all their interactions with the firm and other customers (Gentile et al., 2007). Also, more specific forms of CX, such as in-store customer experience (Bustamante & Rubio, 2017) and omnichannel customer experience (Gerea et al., 2021) have been used in the literature. According to Alnawas and Aburub (2016), positive CXs enhance customer satisfaction and generate purchase intentions. Also, positive in-store CX increases both B&M and online store visit intentions (Makkonen et al., 2023). Therefore, retailers try to give their customers positive, distinctive, and memorable CXs (Parise et al., 2016). CX is often conceptualized as a multi-dimensional concept, even though its dimensions are often overlapping (Holkkola et al., 2022a). Rose et al. (2011) identified the cognitive and affective dimensions as the main components of CX. Also, Bustamante and Rubio (2017) identify cognitive, affective, social, and physical dimensions as the dimensions of in-store CX. In this study, we are focusing on the main dimensions of CX: cognitive and affective (Rose et al., 2011).

The cognitive dimension consists of customers' cognitive actions during the CX, which include mental processes, such as thinking, assessing, and reasoning, as well as problem-solving and using one's creativity (Gentile et al., 2007). For instance, being able to evaluate products with sufficient information (Dennis et al., 2014) contributes to customers' cognitive CXs. Also, experiencing flow, defined as a cognitive state of challenge, arousal, and focused attention, enhances the CX (Novak et al., 2000). On the other hand, distracted concentration contributes negatively to cognitive CX. For instance, information overload can distract one's concentration (Salo et al., 2019).

The affective dimension of CX, in turn, consists of customers' emotions, feelings, and moods during the CX (Rose et al., 2011). For instance, emotions and feelings that arise from the store stimuli or customers' actions contribute to affective CX (Kemppainen et al., 2019). One example is the feeling of stress, which can be useful in shopping but is usually considered to negatively contribute to CX (Manthiou et al., 2020).

2.2. QR codes

QR (Quick Response) codes are two-dimensional barcodes that can hold more information than traditional one-dimensional barcodes. For instance, QR codes can hold text, images, 3D images, and videos (Shim & Go, 2012). QR codes were first developed in the automobile industry in the 1990s in Toyota's subsidiary factory (Denso Wave, 2022). QR codes are machine-readable and can be scanned with a device that holds a camera, scanning application, and Internet connection (Crompton et al., 2012). For instance, many current

smartphones have a built-in scanner application. Today, QR codes have been introduced to many fields. They have been used as a contactless payment method (Le, 2022), in user authentication (Eminagaoglu et al., 2014), in QR code-based virtual stores (Kim & Lee, 2013), and in product packages (Rotsios et al., 2022). In the smart shopping context, the perceived technological attributes of QR codes include mobile accessibility, location-based information, instant interactivity, the scanning/reading system, data storage, ubiquity, wireless infrastructure, and digital signage (Kim & Yoon, 2014). In the B&M store context, QR codes can hold information, such as the product expiration date and dynamic pricing (Lau et al., 2022). Also, QR codes can be linked directly to the firm's other channels, such as the online store and social media channels (Paananen et al., 2023). This kind of channel integration makes QR codes omnichannel elements that integrate online channels into a B&M store. Linked and interconnected information throughout the channels is one dimension of omnichannel CX (Shi et al., 2020). Indeed, QR codes as in-store omnichannel elements have raised interest in practitioners and researchers in recent years. From the retailer's perspective, QR codes are an affordable solution to integrate online channels into the B&M store, providing customers with omnichannel possibilities in B&M stores.

From the customer's perspective, however, QR codes seem to divide opinions and raise different kinds of responses. On one hand, QR codes have been found to enhance some consumers' customer experiences. For instance, Holkkola et al. (2023a) identified in-store QR codes' positive contributions to CX, which included interestingness, informativeness, usability, attractiveness, interaction, and innovativeness. Similarly, Kang and Johnson (2013) identified interactivity as an advantage of QR codes. Also, Shin et al. (2012) identified QR codes' responsiveness (i.e., their ability to immediately respond to user requests) as a particularly important advantage. Additionally, the content of QR codes was found enriching and entertaining for customers (Rotsios et al., 2022). On the other hand, QR codes in B&M stores are not extensively used (Lau et al., 2022), and some consumers have expressed dislike toward QR codes (Paananen et al., 2023). The negative customer perceptions of QR codes include many concerns, such as usage barriers (Paananen et al., 2023), unattractiveness (Gao et al., 2015), and information security issues (Yong et al., 2019). Consumers face different kinds of usage barriers in fashion B&M stores including customer-related barriers: lack of interest, usage issues, a desire for a device-free store, and dislike toward QR codes (Paananen et al., 2023). Also, company-related barriers, which included the unnoticeable layout of QR

codes, user-related technical problems, and the sufficient availability of service personnel, were found (Paananen et al., 2023).

3. Methodology

This study has a qualitative approach since our research interest is creating a holistic in-depth understanding of how in-store QR codes negatively contribute to CX. The qualitative approach suits well studying new phenomena with the goal of in-depth findings on consumers' experiences (Myers, 2019). The study's philosophical background is in interpretive research where individuals' own perspectives, meaning-makings, and experiences are at the core (Myers, 2019). In our empirical case study, we created QR codes providing additional information and inspiration for fashion B&M store customers. We selected a fashion brand as our case since research on implementing QR codes in fashion stores is still scarce (Holkkola et al., 2023a). The selected brand is a well-known Finnish fashion brand with a loyal customer base. The chosen B&M store is the brand's factory store.

To provide the B&M store customers with multiple integrated online channels, we created three sets of QR codes which were printed on paper with appropriate text and illustrations, laminated, and displayed inside a Finnish fashion B&M store. The in-store QR codes were available to customers in the case store from May 2022 to September 2022. The first set of QR codes (Figure 1) led to the products' information pages on the brand's online store. There customers were able to check, for instance, product information, product availability in other stores, and how the products look on a model. These QR codes were made for five different products: three anorak jackets and two anorak pants. We selected these anorak products because of their popularity and because they are sold throughout the year in the store.



Figure 1. In-store QR codes with product information pages as landing pages.

The second set of QR codes integrated the brand's social media channels in the B&M store. Every month,

a new Instagram post of the brand ambassador was linked via the second QR code. The brand ambassador is a social media influencer who collaborated with the brand, showing how she combined the brand's clothes into outfits. These social media QR codes were placed with a special clothes rack where the brand ambassador's favorite products had been put on display. Thus, customers were provided with inspiration from the physical clothes rack and the social media channel integrated with the QR codes. The third set of QR codes, in turn, led to our online survey in which we collected more research data for the research project. Participating was possible via QR codes and pen-and-paper questionnaires. In this study, the survey data was used only for participant recruitment for interviews. Via purposive sampling, we recruited our interview participants among customers aged at least 18 who visited the B&M store while the QR codes were on display. We chose not to focus on any specific age group, such as young people (Wilksa et al., 2023), as we wanted to retain a wider perspective. The participants volunteered for interviews via our QR code and pen-and-paper questionnaires as it would have been challenging to be present in the store recruiting potential participants during the whole period. The self-registration of participants helped us get motivated participants with good recollections and reflections from their store visit. To minimize self-selection bias, our interest in the negative contributions of QR codes was not mentioned. In total, we interviewed 16 participants who consisted of 13 females and 3 males. They were aged between 23 and 59, with a mean age of 32.9. The participants' age, gender, employment status, and interview duration are presented in Table 1.

Table 1. Interview participant information.

	Age	Gender	Status	Duration (min)
P1	37	Female	Employee	43
P2	30	Female	Student, employee	53
P3	23	Female	Student	64
P4	40	Female	Employee	84
P5	29	Female	Employee	47
P6	29	Male	Student, employee	65
P7	24	Male	Student, employee	52
P8	33	Female	Employee	58
P9	42	Female	Employee	49
P10	25	Female	Student	40
P11	38	Male	Employee	69
P12	33	Female	Employee	70
P13	59	Female	Employee	69
P14	24	Female	Student	51
P15	32	Female	Employee	65
P16	29	Female	Employee	64

The representativeness of our participants was quite good since the whole population of questionnaire respondents ($n = 101$) was also mostly female (74,3 %) and the mean age was 39.9.

The interviews were conducted during September 2022. Before the interviews, we conducted a trial interview to assess the quality of our interview script. As our interviewing method, we used individual semi-structural thematic interviews. The semi-structural interviewing technique allows the interviewer to ask additional questions and to ask the planned questions in a different order if the participant already brings forth the upcoming questions or themes (Myers & Newman, 2007). The interview guide created for this study included themes of participants' omnichannel behavior, experiences with QR codes generally, and experiences with the QR codes in our case B&M store. Due to multiple themes and long interviews (mean duration 59 minutes), we conducted the interviews afterward and not on the spot. Many participants lived in different parts of Finland and, thus, the interviews were conducted remotely via Microsoft Teams. Some participants had visited the B&M store recently and some three to four months before the interview, because it took time for us to gather enough participants and organize suitable interview times for everyone. To enhance the participants' ability to reflect the in-store QR codes in detail, when moving to the last interview theme, we shared our computer screen to show the participants example pictures of each QR code type displayed in the store. While the focus was on participants' CXs, the pictures facilitated the participants' ability to reference specific types of QR codes during the interviews, given the variety in sizes and illustrations. With the consent of participants, all interviews were recorded. Eventually, saturation seemed to be reached as no more new information seemed to be gained through additional interviews (Fusch & Ness, 2015), and participants received a canvas bag as a reward.

In the analysis, the interview recordings were transcribed and the transcriptions were analyzed using the qualitative data analysis software ATLAS.ti and Microsoft Word. A hybrid approach of inductive and deductive coding and theme development was used, where the coding is done inductively and the following theme development deductively (Fereday & Muir-Cochrane, 2006). Starting with the inductive approach suited to the experimental nature of our case study and our goal to gain a deep understanding of customers' perceptions. The inductive coding process included initial coding rounds and then combining similar codes. This was done by the first author who was in charge of the analysis. Based on the combined codes, the initial themes were formed and named deductively, informed by the cognitive and affective dimensions of CX together with the second author in order to achieve triangulation. After that, the ultimate seven themes presented in the next section were formed and named.

4. Findings

As a result of our analysis, we found that QR codes can negatively contribute to CX by causing negative cognitive and affective responses. The analysis identified three ways in which in-store QR codes negatively contributed to the cognitive CX and four ways in which they negatively contributed to the affective CX. QR codes can negatively contribute to cognitive CX (CCX) by distracting customers' focus, prompting risk assessment, and prompting negative evaluations of their purpose. QR codes can also negatively contribute to affective CX (ACX) by creating external pressure to use QR codes, anxiety about missing out on valuable information, insecurity about abandonment from the brand's target group, and annoyance at marketing strategy. The quotations in this section have been translated from Finnish to English.

4.1. Distracted focus (CCX)

Concentration and the state of flow (Novak et al., 2000) are important parts of the CCX. However, for certain participants, QR codes were not perceived as immersive technologies but rather as distracting elements. Participants also described that too many in-store QR codes would seem "messy", "confusing" (P5), and "congested" (P3). When discussing the in-store QR codes at our case store, some participants thought that the QR codes were taking up space from the clothes and distracting their focus from the main thing, the clothes. A very tangible example of this was P4's notion that one of the QR code placards was blocking the view of the clothes. P2 and P16 describe how a large number of in-store QR codes could distract their focus:

If the QR codes were everywhere here, it would cause like an overload. That's why I think that simplicity can be really cool. (P2)

If all the information were behind the QR code, it could become unapproachable. Because it would take your attention away from what is essential, the clothes, if there were these 'read more here' and 'look here' texts everywhere. (P16)

In other words, seeing the QR codes around was perceived as an interruption from their main task. Even if the QR codes held relevant information, inspiration, and the possibility to take part in the study and earn gifts from it, participants perceived them as unnecessary. Therefore, the customers' cognitively arousing states of mind, such as flow, were interrupted by these in-store QR codes requiring a conscious choice of scanning or passing them. Therefore, the QR codes seemed to negatively contribute to some participants' CCX.

4.2. Risk assessment (CCX)

Assessing and evaluation are cognitive functions, and in-store QR codes made participants assess the social risks and information security risks of scanning them. The perceived social risks of scanning the QR codes included causing congestion and noise in the store. P8 describes a congestion scenario that the QR codes evoked in her mind:

When I was in that crowded store, I thought that if I had started to answer the [QR code] survey on top of everything else, just standing with the phone in my hand, it would have been disturbing for myself and for others to stand there as a roadblock. (P8)

Thus, QR codes seemed to force some participants to think and assess whether they wanted to scan them and what could be the consequences of it. In addition to blocking other customers' way, P9 did not want to make noise in the store, for example, by opening a loud video with her phone. In these ways, the QR codes negatively sparked the participants' imagination and made them consciously evaluate and assess these social risks. These findings are also related to the social dimension of CX as the dimensions are often overlapping.

Another theme that troubled the participants' imagination and required conscious risk assessment was information security. The QR codes evoked participants' concerns about "viruses", "malware", "malicious websites", "collection of metadata", and "monitoring of their data traffic" (P9). However, for P15, in-store QR codes appeared more secure than QR codes in outdoor spaces, of which she mentioned QR codes on electric scooters as an example. Still, in-store QR codes made some participants assess the social and information security risks, which may negatively contribute to the CCX.

4.3. Negative evaluations (CCX)

The in-store QR codes negatively contributed to some participants' CCX by causing additional evaluation of the purpose of in-store QR codes. Some participants thought that the in-store QR codes and their potential additional information were irrelevant because the participants already were at the store physically examining the clothes. The QR codes were also evaluated as 'too technological' and inferior to non-digital ways of providing information. Also, the dependency on a scanning device and the perceived irrelevancy of the QR codes' content evoked negative evaluations. For instance, P11 preferred reading information on paper compared to device screens and P2 wished for a device-free shopping experience:

I wonder what the use of these QR codes is. I begin inevitably to think that it might be more convenient to

just print the same product information on that placard than for the customer to start digging for their device to read them. (P11)

I wonder if it's really necessary to bring digital content [to store] as digital content is already everywhere. Sometimes it's nice to just go to a store and walk around without having to use your phone in there, too. (P2)

Also, some participants thought that the content of QR codes was poorly targeted or did not add value. The evaluation of poorly targeted content was justified by the customers already being in the store physically examining the clothes and within the reach of the personnel. The content was perceived as not adding value because of the good reputation of products that do not need additional digital information. Thus, some participants evaluated the whole purpose of in-store QR codes as needless, which negatively contributed to their CCX.

How is it beneficial to lead me to that [social media] influencer's page, if I'm already there in the store? (P2)

I think that the value of the anorak jacket is in the product itself and not necessarily in the additional information you can see on the internet. If people bought these already in the 70s, the product itself is the important thing. (P12)

4.4. Pressure (ACX)

For some participants, the in-store QR codes caused external pressure about whether they should scan the QR codes even when they were not truly interested in them. The participants described that too many in-store QR codes would seem “obtrusive” (P4), “pushy” (P2), and “forcing” (P8) for them. Thus, their internal feeling and the perceived environmental cues were unbalanced, causing external pressure. Thus, in short, the unbalance between participants’ internal feelings and external cues caused stress and perceived external pressure to scan the QR codes, which negatively contributed to participants’ ACX.

In more detail, P8 described the “pressured feeling one may experience” and that “you might get the feeling that you must try out the QR codes”. Also, P2 perceived the social media QR code as pressuring customers to start to follow the brand ambassador’s Instagram account. P12 had experienced external pressure and described her feelings about the QR codes in the case store. The in-store QR codes evoked a pressured feeling and many questions in her mind:

I also felt a bit like pressured, thinking like what is the idea of this, what is the store aiming for with these, and why are these things here? Should I open them, is it necessary? Can I ignore them or is there something there that is essential to know? (P12)

Also, P16 describes that she would have experienced external pressure if there had been more QR codes in the store. Thus, for some participants, the number of QR codes was already too big, and for some a greater number would have caused pressure:

If there is a garment and a QR code and a garment and a QR code, then I would probably feel like help, do I have to use these as they are everywhere? (P16)

4.5. Anxiety (ACX)

The in-store QR codes evoked anxiety and fear of missing out in participants. They described the emotions of anxiety, concern, and uncertainty from seeing the QR codes and thinking about whether they could bypass them without consequences. In the following quotation, P12 describes these feelings and demonstrates how the QR codes may put customers in an unequal position depending on whether they have a smartphone or other device with them.

They [QR codes] made me think if I am missing out on something if I don't scan them. Like if I don't want to scan them at that moment or if I don't have my phone with me, is there something I'm missing out on? I mean, QR codes are a bit mysterious because you don't always know what they contain. (P12)

If participants did not want to scan the QR codes or, for instance, had left their smartphones in the car (P12), QR codes still caused anxiety and the fear of missing out on valuable content. The opportunity to gain something hypothetically valuable, be it information or a customer benefit, seemed hard to bypass without a negative impact on ACX.

The QR codes gave me the feeling that whatever they contain, hopefully, there is nothing necessary information hidden here --- For example, if I would miss some important information about product features that the staff couldn't tell me. (P12)

Personally speaking, the store environment would be more peaceful to me without QR codes as these mysteries that are causing the fear of missing out on something. (P12)

4.6. Insecurity (ACX)

The QR codes also evoked insecurity and the fear of abandonment in participants. These emotions concerned both the local store and the whole brand. In general, the participants were worried that personnel would be reduced (P11), the store would change (P13), and online and B&M stores being merged (P11).

I inevitably started to think whether the intention [with the QR codes] is to reduce the number of employees and kind of combine the online store and the B&M store. So, you would go to the B&M store but still must

use the online store. A bit confusing for a simple person like me. Why can't you ask things from the staff if you're in a B&M store? (P11)

In some participants, the introduction of in-store QR codes even created a feeling that they, as consumers, might no longer belong to the brand's target group. This was due to the assumptions of which kind of customers the QR codes were targeted for. This kind of insecurity, self-comparison, and the fear of one's abandonment negatively contributed to ACX.

The QR codes are not natural for me, so it felt like they were suddenly everywhere in the store. It also felt like I was no longer the right target group for this store. Like I would have been too old and not belong to the target group that the brand wanted to have. (P4)

It seemed that in-store QR codes also represented a larger technological shift within the brand and its local factory store. Participants complained also more generally about the technological changes in the B&M store context. Some said that they "do not understand the modern age" (P13) and that they would not buy so easily if they began to feel like they did not belong to the target group anymore (P4). Thus, the feeling of abandonment could have very direct consequences on the success of the B&M store. Below, P4 and P13 describe how in-store QR codes negatively contributed to their CX:

Too many QR codes would somehow change the experience into too technology-oriented. Then I as a not-so-technology-oriented person would no longer feel like the target group of the store. (P4)

This [introduction of QR codes] strongly signals to me that the store is in some kind of transition. In my opinion, the store has not gone in the right direction when it has become so technology-oriented. (P13)

4.7. Annoyance (ACX)

In some participants, the in-store QR codes evoked annoyance at the assumption that the QR codes would have been a mere marketing ploy aiming to enhance the image of the store or brand. Indeed, some participants perceived the QR codes as trendy technologies that were introduced only for the sake of their trendiness. This assumption seemed to be based on the participants' experiences of the QR codes being useless in a fashion store. These marketing ploy assumptions caused negative emotions in the participants, such as annoyance, chagrin, and dissatisfaction. For instance, the store was perceived as "trying too hard" and "trying a little bit of everything" (P2). Below, P4 describes the annoyance of the perceived trend:

My experience was that the QR codes were pointless in the clothing store and they were like forcibly brought there. I feel that they were like 'glued on', or

that they were there because it's somehow fashionable now. (P4)

In addition to the fashion store context in which QR codes were perceived as unnecessary, their history was mentioned in the interviews. Although QR codes symbolized modernity and development for many, P7 recalled how the utilization of them had often felt unjustified for him when QR codes were first introduced to a wider public. Thus, introducing QR codes into a fashion B&M store also resembled the participants of other cases where QR codes might have been utilized just because of their novelty.

The QR codes symbolize the technology of the new era and buzzy vibes. That association is a bit negative because when QR codes started dropping, their usage wasn't so justified all the time and maybe they weren't as beautiful and subtle as they can be today. (P7)

5. Discussion and conclusion

5.1. Research implications

In this qualitative study, we studied how in-store QR codes can negatively contribute to fashion B&M store customers' CX. The study addresses the research gap of how in-store QR codes can negatively contribute to CX, especially in the fashion store context. We focused on the two main dimensions of CX, cognitive and affective dimensions (Rose et al., 2011). The study has seven main findings summarized in Figure 2 and discussed below.

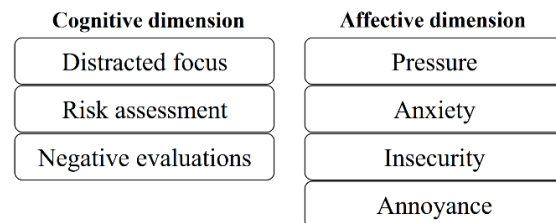


Figure 2. Seven ways how in-store QR codes negatively contribute to customer experience.

These seven main findings regarding in-store QR codes are novel in the context of CX in fashion B&M stores. Also, to our knowledge, this study makes three novel in-store QR code findings also in a wider context. Firstly, customers can perceive social risks when using QR codes in stores. These risks include concerns about disrupting others with external content, such as sounds, that is introduced through scanning, as well as fears of being judged for their actions. Secondly, QR codes can trigger anxiety and fear of missing out. Customers worry about missing valuable information or offers if they choose not to scan the codes, leading to a heightened

sense of uncertainty. Thirdly, QR codes can evoke feelings of insecurity, exclusion, and abandonment. Customers draw conclusions about the brand and its operations based on the QR codes. They may perceive that the QR codes are aimed at different (i.e. “technology-savvy” and young) target groups, creating a disconnect between themselves and the brand.

Next, we discuss our findings with prior literature. Based on our findings, customers’ focus can be distracted by the in-store QR codes because they require customers to consciously or unconsciously decide whether to scan them. We find that some customers consider in-store QR codes purposeless and do not want to scan and utilize them in B&M stores, in line with Paananen et al. (2023) and Lau et al. (2022). This also resonates with Holkkola et al.’s (2022b) finding that customers are not so eager to use mobile devices for information search simultaneously while being in-store.

Also, based on our findings, QR codes can cause external pressure to scan them because of one’s anxiety about missing out on valuable content. In short, one’s reluctance to scan the code, because of judging them as purposeless in fashion stores, but the anxiety of missing out from possibly valuable content, leads to the misfit between the person and the environment (Edwards & Cooper, 1990), causing customers external pressure and stress. Thus, if an insufficient description of QR codes’ content is not provided, some customers are anxious about whether there are “hidden treasures” in the QR codes. In this way, in-store QR codes negatively contribute to CX.

In-store QR codes can also offer beneficial information, such as product information, coupons, and campaigns (Albăstroi & Felea, 2015), and, based on our findings, some customers consider using them and do not instinctively perceive them as purposeless. Thus, these customers may be intrinsically motivated to scan them. However, their CCX may be negatively contributed by the additional risk assessment they first do. These risks include, for example, security risks and social risks. The finding of customers’ security risk assessment during their B&M store visits is in line with Yong et al. (2019). Social risk assessments, which are novel findings of this study, may include disturbing other customers by stopping to scan the code and opening its possibly loud-voiced contents. Evaluating the social risks could also negatively contribute to the social dimension of CX.

Although in-store QR codes symbolize development for some customers (Holkkola et al., 2023a), some perceive them as complex. Thus, some may feel insecure about whether they will keep up with QR codes and the following technologies. Similarly, Kumar et al. (2022) have identified technologies as a source of stress for customers. Some customers who encounter in-store

QR codes may also fear that they will be abandoned by the brand because of the anticipated brand renewal toward a more technologically oriented target group. These insecure emotions negatively contribute to customers’ ACX.

Based on our findings, seeing “too many” QR codes in a store annoys some consumers. This demonstrates how even small and motionless in-store technologies like QR codes can negatively contribute to customers’ emotions. Based on our findings, the annoyance is caused by one’s assumption that the main purpose of QR codes would be to give an innovative and trendy impression of the B&M store. Indeed, Holkkola et al., (2023a) found that consumers perceive QR codes as innovative, but based on our findings, consumers hope that they also bring added value with their content. To conclude, in-store QR codes can negatively contribute to customers’ CCX and ACX by the seven negative contributions presented in the paper.

5.2. Practical implications

This study has multiple practical implications that help B&M retailers better plan and implement their channel integration (Holkkola et al., 2023b) with QR codes. Firstly, to avoid customers’ annoyance of QR codes appearing as a mere marketing ploy, we recommend not using in-store QR codes for the sake of introducing a new in-store technology to appear modern. The content and value of the QR codes play a crucial role. If digital content is needed in the store and it adds value for customers, QR codes can be effectively utilized. In that case, we have the following recommendations for retailers. First, if the store has customer segments that are not “technology-savvy”, the number of QR codes should be kept moderate to prevent creating pressure, annoyance, and insecurity about belonging to the target group. Second, it is important to implement QR codes smoothly into the store environment to avoid creating constant distractions or visual obstructions for customers. This means that the QR code placards should not block the view of the products. In fashion stores, in particular, customers want to focus on physically examining the clothes and other products, which is an essential part of many customers’ B&M store shopping. Third, when offering enriching content via in-store QR codes, retailers should ensure that customers know what QR codes contain, by having a written explanation of the content in a placard. This will help customers to decide whether to use these in-store technologies. Otherwise, the customers who want to scan the QR codes must independently weigh the security risks and possible social risks of scanning the QR codes, which will not smooth their CX. Fourth, it is recommended to train staff to as-

sist with QR codes and provide in-store scanning devices. This is because customers may not have devices or the required skills to use QR codes, which may cause anxiety about missing out on possible “hidden treasures”.

5.3. Limitations and future research

This study has some limitations. The study was conducted in a Finnish fashion store and, thus, the findings may not necessarily apply to other cultural contexts or product groups. Also, the time gap between some participants’ B&M store visits and the interviews may affect the findings by emphasizing or de-emphasizing some aspects of their CX. Future research could study in-store QR codes’ positive and negative contributions to CX together. Social and physical dimensions of CX could also be studied. Also, in-store QR codes and technostress could be studied. Future research could also study omnichannel customers’ exploratory shopping (Holkkola et al., 2024) and what types of content they hope from QR codes. Also, in-store technologies’ techno-psychological immersion (Paananen et al., 2024) could be studied.

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