

The Moment of Delivery in Online Retailing: How Courier Types and Inoculation Messages Affect Reactions to the Last-Mile Experience

Journal of Service Research

1–21

© The Author(s) 2026



Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/10946705261464334

journals.sagepub.com/home/jsr



Christopher Funke¹ , Gianfranco Walsh¹ , and Tobias Schaefer^{2,3}

Abstract

Online customers' journeys span several touchpoints, which typically do not involve any interpersonal interactions with online retailers—except at the moment of delivery (MoD). When retailers use third-party courier services to fulfill orders, they relinquish control over this critical, last-mile touchpoint, possibly to their detriment. An analysis of over 35,000 reviews shows that a negative MoD experience can trigger ripple effects through detrimental word of mouth (WOM). To regain control, retailers might adopt vertical integration or inoculation. Across four experimental studies, the current research examines how courier type (proprietary vs. third-party) affects consumers' WOM in response to positive and negative MoD experiences and how inoculation messages can reduce customers' susceptibility to adverse effects of negative MoD experiences. A single-paper meta-analysis affirms that third-party couriers buffer the detrimental effects of negative MoD experiences, but positive MoD experiences benefit only established retailers handling last-mile delivery themselves. Inoculation messages can also increase customer resilience to last-mile failures by mitigating the adverse effects of negative MoD experiences on WOM. This research highlights couriers' crucial role as key actors in the MoD and clarifies the effects of MoD experiences for online retailers, emphasizing the need to consider both couriers and preemptive measures.

Keywords

online retailing, delivery experience, positive word of mouth, vertical integration, courier type, inoculation

“The chair is OK, but never again DPD!!!! The delivery—a nightmare. An extremely rude delivery courier put a huge parcel at the front door of the building, made a couple of strange remarks, and walked away without signing. I was alone and couldn't move it until a friendly neighbor helped me after a few hours! never again DPD!!!!” *Rating: 3/5 stars*

—Customer review on wayfair.de

For online shoppers, the various touchpoints in their customer journey rarely involve any interpersonal or face-to-face interaction with online retailers (Bolton et al. 2018; Vakulenko et al. 2019a), with the notable exception of the moment of delivery (MoD). It concludes the last mile, which refers to the final stretch that a package travels from a distribution center to the customer. The MoD can be a critical moment in the customer journey, as the above review makes clear. The product might have met the customer's expectations, but the sixty-word review is dominated by expressions of deep dissatisfaction with the courier and includes only four words about the product. Yet this mediocre, three-star review appears on the retailer's page, not the courier's. This phenomenon, where online retailers are blamed for service problems beyond their immediate control, is widespread and problematic. Bhattacharjya et al. (2016) analysis of social media posts directed at online retailers shows that

one quarter contain delivery-related customer feedback, both positive and negative. We corroborate the importance of the MoD as a critical touchpoint in the customer journey with a pre-study, with notable effects on word-of-mouth outcomes. An analysis of more than 35,000 customer reviews of twenty-eight online retailers shows that almost 60 percent of the reviews take the delivery process into account when assessing an online retailer. Moreover, whether the MoD experience is positive or negative affects customers' evaluations of the retailer, highlighting the MoD as a key determinant of customer reactions. Thus, both anecdotal and scientific evidence suggests that customers' evaluations of retailers reflect not only the quality of the products but also their interaction with the delivery provider.

¹Institute of Marketing and Management, Leibniz University Hannover, Hannover, Germany

²Bielefeld School of Business, HSBI – Bielefeld University of Applied Sciences and Arts, Bielefeld, Germany

³Department of Marketing, Copenhagen Business School, Frederiksberg, Denmark

Corresponding Author:

Gianfranco Walsh, Institute of Marketing and Management, Leibniz University Hannover, Hannover 30167, Germany.

Email: walsh@m2.uni-hannover.de

Given that by 2027, global delivery volume is expected to reach 256 billion parcels (an increase of 95 percent since 2020) and that 71 percent of European customers receive parcels by home delivery (Geopost 2025; Statista 2025), the MoD will continue to be an important customer touchpoint. Interestingly though, many retailers relinquish control over this touchpoint by outsourcing deliveries to third-party services, often due to high investments and cost considerations (Yurt et al. 2023). If customers view the couriers as extensions of the retailer (Vakulenko et al. 2019b), MoD experiences still likely affect the online retailer. Therefore, retailers might need to regain control, which could mean establishing proprietary delivery services, a form of vertical integration (Watson et al. 2015). Recently, large online retailers and meal kit companies such as Amazon, Wayfair, and HelloFresh have built or strengthened their proprietary delivery capacities and control all visible aspects of the e-customer journey (Amazon 2025; Kapalschinski 2021; Target 2017), yet negative MoD experiences could offset these benefits (Masorgo et al. 2023; Wu et al. 2024), highlighting the need to understand the implications of proprietary versus non-proprietary deliveries for customer reactions.

However, surprisingly little research pertains to the dynamics and consequences of interpersonal interactions between customers and different service providers (e.g., proprietary vs. non-proprietary couriers) who handle the critical MoD (Walsh and Linzmajer 2021). Research recognizes that customers value high-quality, timely deliveries (e.g., Cui et al. 2021; Harter et al. 2025) and that courier reliability, customer–courier interactions, and customer preferences shape service outcomes (e.g., Amat-Lefort and Barnes 2026; Uzir et al. 2021). Other research finds that proprietary couriers can increase customer monthly spending and city-level sales (Wu et al. 2024), but it does not consider the MoD experience. Moreover, these studies do not tend to distinguish between proprietary versus non-proprietary couriers, leaving online retailers with a critical question: Is gaining control over the MoD through the use of proprietary couriers beneficial in terms of shaping key customer outcomes? In other words, online retailers lack insights regarding how they might design or exert control over the MoD to support key outcomes.

Because not all retailers can feasibly control the MoD through proprietary couriers, another lever lies in shaping customer expectations in advance. One promising approach involves pre-delivery inoculation messages, which can help retailers mitigate negative MoD effects even when using third-party couriers (Becker et al. 2020; Mikolon et al. 2015). Despite investigations into preemptive strategies among online supermarket customers (Ma and Sun 2024), research into the MoD, which results from using touchpoints that are predominantly digital, remains scarce, leaving a gap in understanding how negative MoD experiences can be mitigated. Table 1 summarizes existing research on MoD experiences and courier types, as well as on pre-interaction mitigations, highlighting current gaps in understanding.

Accordingly, we address the following two research questions relevant to e-commerce service management:

RQ1: How do customers respond to positive versus negative MoD experiences in e-commerce when deliveries are made by different courier types (proprietary vs. third-party), and how do these experiences influence key service outcomes such as positive word of mouth and retailer choice?

RQ2: Can pre-delivery inoculation messages mitigate the negative effects of unfavorable MoD experiences when deliveries are made by different courier types (proprietary vs. third-party)?

To address these research questions, we examine how consumers respond to positive versus negative MoD experiences, depending on courier type (proprietary vs. third-party) and the inoculation messages they receive. We investigate their effects on a key service outcome, positive word of mouth (PWOM), defined as customers' noncommercial, interpersonal communication about products or services (Paley et al. 2019), and analyze retailer choice. In line with inoculation theory, we examine whether pre-delivery messages reduce customers' susceptibility to the adverse effects of negative MoD experiences. These considerations advance service theory and offer managerial guidance, highlighting the importance of incorporating courier management and pre-delivery communication into strategic service planning.

Thus, our research contributes to the services literature by examining how the MoD, whether carried out by direct employees or by employees of outsourced service providers, affects downstream outcomes in the context of online retailing. In addition, this research offers critical guidance to service practitioners, particularly online retailers, on how to mitigate the effects of negative employee–customer interactions through inoculation strategies aimed at improving key service outcomes.

Moment of Delivery Experience

According to Bauer et al. (2006), online shopping processes consist of four phases: information, agreement, fulfillment, and after-sales. The series of touchpoints that occur between customers and service providers (or their representatives) is diverse, in terms of their duration, intensity, and level of interaction, but they all can shape customers' experiences (De Keyser et al. 2020). For most customers, the core shopping process ends with fulfillment, or delivery of the order, which entails some form of interaction. This critical touchpoint represents a unique opportunity for online retailers to demonstrate that they provide value. We recognize that not all delivery methods require a personal interaction, such as contactless delivery to a secure drop-off location, parcel lockers, or robotic and drone delivery (Boysen et al. 2021). Yet personal doorstep delivery remains the most popular option, preferred by 64 percent of consumers worldwide and 71 percent in Europe (DHL 2025; Geopost 2025).

Table 1. Research into the Effects of Delivery on Online Retailers.

Author(s)	Sample	Method	Brand			Customer Interactions		Moderators	Pre-Interaction Mitigation Studied	Key Findings
			Experience	Retailer	Courier	Direct	Indirect			
Murfield et al. (2017)	N = 184 + 323 U.S. customers	Retrospective approach	—	Real	Real (NS)	—	—	Channel type	No	Depending on the channel type (store pickup or doorstep delivery), condition, availability, and timeliness dimensions exhibit different effects on customer outcomes. For doorstep delivery, punctuality and availability have positive impacts on customer outcomes.
Ta et al. (2018)	N = 761 U.S. customers	Experiments: written scenario	—	Fictitious	Real (CD)	—	Digital, selecting a driver based on a photo	Intercultural disposition, relational identity orientation	No	Crowdsourced delivery concepts that disclose drivers' identities enhance customer outcomes and intentions when customers perceive drivers as similar to themselves, particularly in ethnicity.
Furunes and Mkonzo (2019)	N = 330 customer reviews	Qualitative	—	Real	Real (CD)	—	—	—	No	Customer reviews reveal that a single unpleasant encounter with a courier can overshadow an otherwise pleasant experience with a crowdsourcing platform.
Vakulenko et al. (2019b)	N = 252 Swedish consumers	Retrospective approach	—	Real	Real (NS)	—	Overall assessment of delivery experience	—	No	The last-mile delivery experience mediates positive links between the online experience and customer satisfaction.
Ta et al. (2023)	N = 98,134 U.S. customer reviews	Quasi-experiment: real customer ratings	—	Real	Real (CD vs. 3PL)	—	—	Product type	No	Compared with traditional delivery services, crowdsourced delivery leads to higher ratings of timeliness, price, and reliability, which positively affect satisfaction and loyalty toward the retailer.
Masorgo et al. (2023)	N = 479 U.S. customers	Experiment: written scenario	Negative	Fictitious	Fictitious (P vs. 3PL vs. CD)	Face-to-face interaction	—	Courier type	No	Product type moderates the relationship between delivery type and retailer-related outcomes. The behavior of the delivery person influences retailer-related outcomes, mediated by customer emotions. The driver's affiliation moderates the effect of sadness on these outcomes if the driver's behavior is also inflexible.
Wu et al. (2024)	N = 250,055 Chinese customers	Field study	—	Real	Real (P vs. 3PL)	—	—	Purchase experience, product price, own seller	No	An owned delivery service leads to higher customer monthly spending, sales, delivery quality, and customer trust.
Ta et al. (2025)	N = 6,499 U.S. customer reviews	Qualitative	—	Real	Real (3PL vs. CD)	Face-to-face interaction	—	—	No	Relational dimensions of e-logistics service quality, such as driver friendliness and communication, are mentioned in 36 percent of reviews of crowdsourced delivery services.
Amat-Lefort and Barnes (2026)	N = 222,371 U.S. customer reviews	Qualitative	—	Real	Real (CD)	Face-to-face interaction	—	Stability, responsibility	No	Driver interaction issues relate negatively to satisfaction with a food delivery provider. Stability and responsibility attributions strengthen the negative relationship between interaction issues and satisfaction.
This Study	N _{pre-study} = 35,822 German customer reviews N _{1a} = 289, N _{1b} = 188, and written scenario N _{1c} = 247, N ₂ = 276 German customers	Qualitative & Experiments: video, dialog and written scenario	Positive and negative	Fictitious and real	Fictitious and real (P vs. 3PL)	Face-to-face interaction	—	Courier type, inoculation message	Yes (inoculation message)	Using a proprietary (vs. third-party) logistics provider evokes lower PWOM intentions after a negative MoD experience and for established online retailers, as well as stronger PWOM intentions after a positive MoD experience. Inoculation messages successfully mitigate the negative impacts of negative MoD experiences on PWOM.

Note. CD = Crowdsourced Delivery Service (e.g., Uber, Amazon Flex, Deliveroo); MoD = moment of delivery; NS = Logistics provider not specified; P = Proprietary logistics provider; PWOM = positive word of mouth; 3PL = Third-party logistics provider.

Many consumers even prefer in-person deliveries, including signature requirements (chosen by 70 percent of online shoppers in Spain, 55 percent in the United Kingdom, 52 percent in Germany, 47 percent in Italy, and 45 percent in France), which inherently demands face-to-face contact (PostNord 2021).

Home delivery represents the only face-to-face interaction in the entire e-customer journey. Considering that frontline employee–customer interactions are critical in shaping customers' experience and evaluations (e.g., Subramony et al. 2021; Wilder et al. 2014), the MoD experience should also be pivotal in determining the customer service outcomes of online deliveries. Customers who experience a high-quality MoD are likely to be satisfied overall, but negative experiences may be attributed to the online retailer, even when the courier is responsible (Vakulenko et al. 2019b). Because customers' MoD experiences (positive or negative) likely determine the outcomes for online retailers, including PWOM (Koufteros et al. 2014), we adopt the baseline assumption that the MoD experience can be diagnostic of how customers evaluate online retailers and decide to share their experience with others.

Pre-Study: Moment of Delivery Diagnosticity

Sample and Method

To assess this baseline assumption, we extracted 59,179 customer reviews for twenty-eight randomly selected online retailers from thirteen industries (e.g., clothing, consumer electronics, food, online pharmacy, books, bicycles) from Trusted Shops (<https://www.trustedshops.de>), an independent German online review platform. Each review consists of a star rating, ranging from one to five stars, and an optional review text. We employed two complementary approaches to content analyze the 35,822 (60.5 percent) reviews that included written text (Villarroel Ordenes et al. 2025). First, we used a customized dictionary of sixteen delivery-related terms (e.g., “delivery,” “shipped,” “transport,” “parcel carrier,” “DHL,” “UPS”) to categorize every review automatically. Second, we relied on recent advances in generative artificial intelligence (AI) and large language models (LLMs) to conduct in-depth, automated content analyses of the review texts (Arlinghaus et al. 2024). The LLM-based categorization can account for more contextual cues, reduces the risk of false negative classification due to missing dictionary terms, and exhibits “greater accuracy in measuring emotional states than dictionary methods” (Villarroel Ordenes et al. 2025, p. 386). Details on the sample, method, and results are provided in Web Appendix A.

Results

In a first step, we compared star ratings between written reviews that contain at least one of the keywords (59.0 percent) with those that contain none. At this highly aggregated level, the two groups show only minor differences in the distribution across

star rating categories. Examining the individual keywords separately, however, uncovers some stark differences. Reviews that contain the German keyword *liefer* (“deliver”) exhibit significantly better star ratings than reviews that contain any of the other fifteen keywords (e.g., “shipped,” “transport,” “parcel carrier,” “DHL,” “UPS”). Compared with reviews without any delivery-related keywords, those with such words display significantly higher ratings. As a second step, the comparison of reviews based on their LLM categorizations provides support for our baseline assumption. In reviews that refer to the delivery, ratings are significantly higher than in reviews without any such mentions ($p < .001$). When we compare ratings across different categorizations (i.e., positive, neutral, negative, or mixed delivery experience), a Kruskal–Wallis test indicates significant differences ($\chi^2 = 15,523.0$, $df = 5$, $p < .001$), and all pairwise contrasts exhibit p -values $< .001$. Reviews that mention the delivery in a positive way exhibit the highest star ratings, followed by reviews without any text and those without any mention of the delivery, while reviews with negative delivery experiences are associated with the lowest ratings.¹

Discussion

Using field data involving more than 35,000 reviews of customers' experiences with online retailers, which they share with others, we find that the MoD represents a key factor in the customers' overall service evaluation and WOM activities. Our analyses thus offer a clear indication that the delivery experience is diagnostic of how customers evaluate an online retailer. We next propose hypotheses regarding the effect of the MoD on important downstream variables.

Hypotheses

Moment of Delivery Attributions

Many online retailers use branded third-party logistics providers (e.g., UPS, DHL, FedEx) to get products to customers. The largest retailers, however, instead appear determined to establish their own proprietary delivery services, while still using third-party couriers in some cases. Both third-party and proprietary delivery services are identifiable, on the basis of courier drivers' uniforms or branding on delivery vehicles, so customers should be able to attribute MoD experiences accurately to each service provider.

According to attribution theory, people have an intrinsic urge to understand and attribute causes of an event (Weiner 1985). Such attributions include three main dimensions: locus of causality, stability, and controllability (Weiner 2000). The *locus of causality* pertains to perceptions of whether the event results from external (i.e., environmental factors) or internal (i.e., factors within the person or organization) causes. *Stability* refers to whether the event is perceived as constant (i.e., persistent over time) or volatile (i.e., singular incident). Finally, *controllability* is the extent to which an individual or organization

appears able to control the event. If the delivery is handled by a proprietary delivery service, customers should perceive the locus of causality as internal and the stability and controllability as high. The service is part of the retailer's core operations, so it fully governs and controls the logistics of the service provision, and it seems likely to perform future deliveries. If instead the delivery involves a third-party courier, customers likely perceive an external locus of causality, because the provider operates independently. The stability of a specific MoD experience also becomes less certain, in that future deliveries may involve different third-party providers. Similarly, perceived controllability should decrease because the retailer has limited power over the actions and business practices of the third-party courier. Accordingly, we argue that attributions of responsibility for a MoD experience to the retailer depend on whether a third-party (weaker attribution) or a proprietary (stronger attribution) provider handles the delivery.

Attribution literature also suggests that these dimensions affect key service outcomes (e.g., loyalty, WOM). People tend to invest more cognitive effort in seeking attributions for negative than for positive events, which can trigger strong blame attribution for negative outcomes (van Vaerenbergh et al. 2014; Weiner 1985; Wong and Weiner 1981). After a negative MoD experience, customers are motivated to identify the entity to assign responsibility for the negative outcome. This effort should result in stronger negative attributions toward the online retailer if the delivery has been handled by a proprietary logistics provider, which in turn should undermine PWOM about the online retailer. Therefore,

H1: After a negative MoD experience, a third-party courier leads to higher PWOM than a proprietary courier.

However, marketing literature suggests that the effects of negative and positive attributions are asymmetrical; negative attributions exert a stronger and more robust influence on consumer reactions, while positive attributions have a comparatively weaker and more fragile effect (Mittal et al. 1998). For example, following a positive experience, customers have less motivation to identify the responsible entity (Weiner 1985; Wong and Weiner 1981). Thus, in the absence of salient attributional information, customers are unlikely to undertake additional information searches to determine responsibility for a positive event (Higgins 1996). This reduces the likelihood that positive outcomes will be accurately attributed to the responsible entity. Therefore, when attributional cues are limited or absent, we hypothesize:

H2: After a positive MoD experience, a third-party courier leads to no differences in PWOM compared to a proprietary courier.

Consequently, the baseline expectation formulated in H2 (i.e., no differences between courier types after positive MoD

experience) may not always hold and could vary across contextual contingencies. The extent to which a positive MoD experience is attributed may therefore depend on additional attributional cues. Specifically, prior research highlights the importance of brand strength, suggesting that strong brands are more easily identified and attract greater attention than weak brands (Hoeffler and Keller 2003; Roskos-Ewoldsen and Fazio 1992). Although outside the main focus of this paper and therefore not formally hypothesized, we assume that brand strength may represent an important contingency factor for the attribution of positive MoD experience. When customers are unfamiliar with the online retailer and its proprietary services (i.e., low brand strength), they are unlikely to devote additional effort to identifying the responsible entity. As a result, their perceptions may remain undifferentiated across courier types, as hypothesized in H2. By contrast, this indifference may disappear when customers are familiar with the online retailer and its proprietary services. Delivery by a proprietary service associated with a strong online retailer brand facilitates identification of the responsible entity, making it more likely that positive attributions arising from a positive MoD experience accrue to the retailer. Accordingly, the effect of a positive MoD experience should be influenced by the extent to which the online retailer can claim attribution for a successful delivery.

Consequently, we expect attribution of a positive MoD experience to be fragile and likely to differ by courier type only under specific contextual contingencies, such as a strong retailer brand that facilitates consumers' ability to assign responsibility to the appropriate entity. We will additionally examine this assumed contingency to the hypothesized focal effects.

Inoculation Messages

Building a delivery supply chain is complex and costly, which may be why, so far, relatively few, primarily large, e-commerce companies maintain proprietary logistics services. The last mile is also an especially error-prone stage in the e-commerce fulfillment process, regardless of courier type, such that all online retailers face pressing concerns about negative courier–customer interactions. In response, Mikolon et al. (2015) suggest proactive recovery strategies for service failures, such as sensitizing customers to the possibility of a non-optimal service experience before it occurs. If online retailers transmit preemptive messages designed to mitigate the detrimental effects of last-mile errors, logistics providers might influence perceptions of the MoD experience. Such a strategy resonates with inoculation theory, which uses an analogy with biological inoculations to predict that people who receive weak indications (i.e., inoculations) before a negative event (e.g., viral infection) become more resilient to its negative consequences (McGuire 1961; Papageorgis and McGuire 1961).

Inoculation messages explicitly communicate a potential threat, typically with a forewarning and preemptive refutation (Compton 2025). The forewarning creates awareness of a

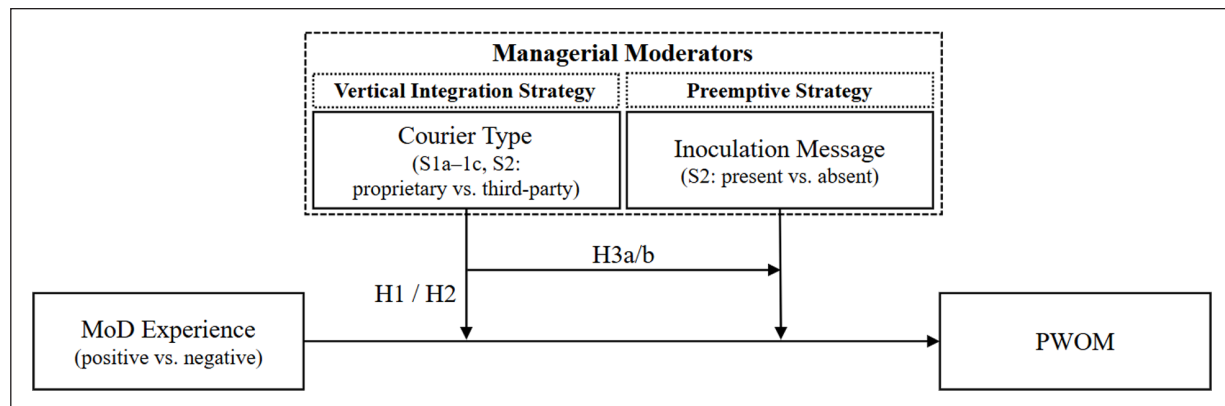


Figure 1. Conceptual model.

situation that might contradict people’s expectations or beliefs (e.g., “Not all delivery errors can be avoided”); the preemptive refutation addresses the potential threat by offering rationales to mitigate concern (e.g., “With millions of parcel deliveries every day, not all delivery errors can be avoided, but we are in close contact with the delivery staff and optimize processes to minimize potential errors”). The goal of the message is to motivate recipients to generate defensive awareness and refutations independently, thereby protecting their attitudes and beliefs against change (Compton 2025; Papageorgis and McGuire 1961). Recipients’ strengthened perceptual defenses help prepare them for the prospect of a challenge to their beliefs or attitudes (Ivanov et al. 2016). Because the goal of an inoculation message is to protect customers’ existing attitudes, rather than change them, it should be weak enough to avoid disrupting customers’ attitudes (i.e., it cannot make the customer “ill”) but strong enough to evoke a response, in the form of defensive arguments.

Inoculation messages have been deployed in political (Pfau and Burgoon 1988) and health information (Richards and Banas 2015) campaigns; service research affirms they enhance the positive effects of recovery measures on customer satisfaction (Ma and Qian 2022). Mikolon et al. (2015) also offer evidence that inoculation messages, sent in advance of a service failure, do not undermine satisfaction among customers who never experience a failure. This finding is relevant and in line with inoculation theory, which states that if a negative event does not occur, the inoculation should not “harm” the customer.

In e-commerce settings, retailers have various opportunities to inoculate customers, particularly during their post-order communications. Given that previous service research established the effectiveness of inoculation messages (e.g., Ma and Qian 2022; Mikolon et al. 2015), a delivery-related inoculation message from a retailer should serve as a protective mechanism when a negative MoD experience (i.e., “virus”) occurs, such that it mitigates detrimental effects. However, we expect that if the source of the inoculation message also is responsible for the outcome (i.e., dissatisfactory or satisfactory delivery by the

retailer’s own delivery service), customers arguably experience more effective inoculation, because they attribute the message to the online retailer, not a third-party provider. As Lawler (2001) highlights, direct business relationships lead to stronger attributions than indirect or distal relationships. Therefore, an inoculation message from the retailer should reduce customers’ susceptibility to adverse effects of negative MoD experiences attributable to the retailer’s delivery service (vs. third-party courier), because the alignment between the message source and locus of attribution prepares them for potential challenges to their attitudes (Ivanov et al. 2016). However, if a positive MoD experience arises instead, we anticipate no attitudinal change, PWOM should remain unaffected, and there should be no difference between the courier types. We hypothesize:

H3: The effect of the MoD experience on PWOM is moderated by inoculation message, depending on the courier type, such that (a) after a negative MoD experience, the positive effect of an inoculation message is greater for a proprietary (vs. third-party) courier, whereas (b) after a positive MoD experience, no such moderation arises.

The conceptual model in Figure 1 summarizes these hypothesized relationships.

Experimental Studies

We conducted four studies to test the hypotheses and assess the robustness of our findings across possible contingencies. Because studies that involve both real and fictitious companies can establish more robust results and avoid brand effects (e.g., Peinkofer and Jin 2023; Whang and Im 2021), in the first three studies, we include both a fictitious online retailer (“shoezone” in Study 1a and “Hiking-World” in Study 1b) and a real retailer (Amazon in Study 1c), as well as a fictitious (“QuickShip” in Study 1a) and real (DHL in Studies 1b and 1c) third-party logistics provider. We manipulate the courier type and the MoD experience (positive or negative). In Study 2, to broaden the

Table 2. Overview of Studies.

Study	N	Design	Retailer/3PL	MoD Experience	Inoculation	DV	Analytical Method(s)	Hypothesis Tested
Pre-study	35,822 customer reviews	Field data	Real/real	Positive vs. mixed vs. neutral vs. negative	—	PWOM	Keyword analysis, LLM-categorization	Baseline assumption ✓
Study 1a	289 German customers	2 (MoD Experience) × 2 (Courier Type)	Fictitious/fictitious	Positive vs. negative	—	PWOM, retailer choice	ANCOVA, logistic moderation	H1 ✓ H2 ✓
Study 1b	188 German customers	2 (MoD Experience) × 2 (Courier Type)	Fictitious/real	Positive vs. negative	—	PWOM	ANCOVA	H1 ✓ H2 ✓
Study 1c	247 German customers	2 (MoD Experience) × 2 (Courier Type)	Real/real	Positive vs. negative	—	PWOM	ANCOVA	H1 ✓ H2 ✗
Study 2	276 German customers	2 (MoD Experience) × 2 (Courier Type) × 2 (Inoculation Message)	Fictitious/real	Positive vs. negative	Present vs. absent	PWOM	ANCOVA	H1 ✓ H2 ✓ H3a ✗ H3b ✓

Note. ANCOVA=analysis of covariance; DV=dependent variable; LLM=large language model; MoD=moment of delivery; PWOM=positive word of mouth; 3PL=Third-party logistics provider.

research scope, we add inoculation messages to the shipping confirmation and investigate whether these messages make customers less susceptible to the adverse effects of negative interactions (arising from a proprietary or third-party provider), while also testing for the risk of biased perceptions of positive interactions (likewise caused by proprietary or third-party couriers). Table 2 outlines all of these studies.

Study 1a

Video Experiment. Video-based experiments establish high levels of realism (e.g., Blut et al. 2020; Linzmayer et al. 2020) and yield responses similar to those obtained with real-world experiments (Bateson and Hui 1992), along with strong ecological validity. Therefore, we present the MoD in four videos, depicting two positive and two negative MoD experiences, with either a fictitious proprietary courier or a fictitious third-party provider. The videos reflect a customer's perspective. An actor played a delivery driver who, depending on the condition, acted friendly, open, and motivated (positive MoD experience) or unfriendly, taciturn, and demotivated (negative MoD experience). The actor wore a uniform, with a cap and polo shirt, both of which prominently featured the logo of either the fictitious retailer (shoezone) or the fictitious third-party courier (QuickShip). In all videos, the opening shot featured the sound of a doorbell ringing, followed by a door being opened to reveal the delivery driver; they ended after twenty-five to thirty seconds, when the driver departed. The stimulus material and links to the videos are available in Web Appendix B.

Design and Procedure. For Study 1a, we employ a 2 (MoD Experience: Positive vs. Negative) × 2 (Courier Type: Proprietary vs. Third-Party) between-subjects experimental design.

The experimental scenario (see Web Appendix B) refers to a fictitious retailer, shoezone.de. After providing their personal information (age, gender, monthly general online spending), participants read a scenario that indicated they had bought a pair of shoes on shoezone.de. Next, a shipping confirmation appeared, with which we manipulated the courier type (i.e., “The shipment is carried out by QuickShip/our own logistics service provider shoezone delivery”). After they viewed one of the four videos depicting the MoD experience, featuring either a fictitious third-party provider (QuickShip) or proprietary delivery service (shoezone delivery), participants were invited to review and rate the retailer on a fictitious independent online rating platform, on a one- to five-star scale, and leave a written comment. Finally, they were asked to indicate their PWOM intentions and complete two manipulation checks.

Customers can develop attitudes toward fictitious brands quickly (e.g., Cian et al. 2014; Gupta et al. 2025). Because we introduced the fictitious online retailer by name, with a logo, and in a mock-up shipping confirmation email, we anticipated that participants formed initial attitudes toward the retailer even before the manipulation. To prevent potential bias in our retailer-related outcome variable (PWOM), we controlled for initial attitudes toward the retailer by measuring participants' attitudes toward shoezone.de immediately after presenting the shipping confirmation, but before the video depicting the MoD experience.

To capture a behavioral measure of retailer choice, we informed participants that, upon completing the survey, they could win a €25 shopping voucher for an online retailer. They could choose between two fictitious retailers, the one that appeared in the experimental stimuli (“shoezone”) or one that had not been mentioned before (“dreamshoes”). Participants received mock-ups of each retailer's homepage, to enhance

realism (see Web Appendix C), and the maximum response time was limited to thirty seconds, to prevent online searches.²

Participants and Manipulation Checks. An a priori power analysis using G*Power (Faul et al. 2007) determined the required sample size. For a medium effect size ($f=.25$) and a power of .80 ($\alpha=.05$), we needed at least 211 participants. We recruited 349 participants through the Clickworker.de crowdsourcing platform. To ensure participants' attention and that the manipulations were effective, we conducted three checks. First, participants had to pass an attention check (i.e., "Answer with 'strongly disagree' to this item"); twenty-four participants failed and were removed from the sample. Second, participants had to indicate which supplier delivered the parcel; thirty-six answered this question incorrectly and were excluded, leaving an analyzable sample of 289 participants (women=46.7%, $M_{\text{age}}=32.99$ years, $SD=12.71$; cell sizes=70–77). Third, participants indicated how they perceived the MoD experience on a seven-point semantic differential scale, anchored at "negative" (1) and "positive" (7). An independent t -test ($t[262.57]=-13.65, p<.001$) affirmed the expected differences between the positive ($M=5.92, SD=1.10$) and negative ($M=3.75, SD=1.57$) MoD experience groups, indicating the effectiveness of the manipulation. In addition, we asked participants to rate the realism of the scenario on a seven-point Likert scale, using two items adopted from Gelbrich et al. (2015): "I believe that such incidents are likely to happen in real life" and "I think the description of the situation is very realistic" (1="strongly disagree," 7="strongly agree"). In a one-sample t -test, the mean value of the aggregated items is 5.93 ($SD_{\text{realism}}=1.07$), which differs from the scale midpoint ($t[288]=30.58, p<.001$), confirming its ecological validity.

Measures. To minimize participant fatigue, we opted for a parsimonious, single-item measure of PWOM intentions (i.e., "I would say positive things about shoezone to other people.") from Zeithaml et al. (1996), rated on a seven-point Likert scale, anchored by one ("strongly disagree") and seven ("strongly agree"). A single-item measure is appropriate because the study includes other behavior-based measures (i.e., online ratings, retailer choice) and because single-item scales can capture the essence of concrete constructs while exhibiting sufficient predictive validity (Bergkvist and Rossiter 2007). For participants' online ratings, we used a five-star scale, adapted from Warren et al. (2021). Attitudes toward the retailer were gauged using three items ($\alpha=.88$) from Spears and Singh (2004) on a seven-point semantic differential scale. For the behavioral measure, we captured participants' choice of a voucher option, similar to Dagogo-Jack (2024). Web Appendix D contains the items and reliability measures.

Results. To test the direct and interaction effects of the MoD experience and courier type on PWOM, we performed a two-way analysis of covariance (ANCOVA) and applied a post hoc

Bonferroni correction for multiple comparisons to check statistically significant main and interaction effects. We included age, gender, initial attitude toward the retailer, and monthly general online spending as control variables; prior research shows that online shopping behaviors and PWOM intentions vary by gender, age, and spending (Yang et al. 2012; Zhang et al. 2014, 2022) and that brand attitudes can influence consumption (Wolter et al. 2023).

The results reveal a main effect of the MoD manipulation ($M_{\text{negative}}=4.46$; $M_{\text{positive}}=5.28$; $F(1, 281)=39.29, p<.001, \eta^2=.123$) but no main effect of courier type ($M_{\text{third-party}}=4.92$; $M_{\text{proprietary}}=4.82$; $F(1, 281)=.64, p=.43$). They also indicate a significant MoD Experience $\times$ Courier Type interaction ($F(1, 281)=4.77, p=.03, \eta^2=.017$; see Table 3).

According to planned contrasts, a positive MoD experience is associated with higher PWOM toward the retailer than a negative one, for both the third-party provider ($p=.004$) and the proprietary provider ($p<.001$). As we predicted in H1, a negative MoD experience is associated with higher PWOM for a delivery handled by a third-party courier compared to a proprietary courier ($M_{\text{third-party negative}}=4.66$; $M_{\text{proprietary negative}}=4.27, p=.03$). In addition, and in support of H2, we find no difference following a positive MoD experience ($M_{\text{third-party positive}}=5.19$; $M_{\text{proprietary positive}}=5.37, p=.33$; see Figure 2). Of the control variables, only attitude toward the fictitious retailer has a significant effect ($F(1, 281)=59.09, p<.001, \eta^2=.174$). Gender ($F(1, 281)=1.76, p=.19$), age ($F(1, 281)=2.79, p=.10$), and general online spending ($F(1, 281)=.03, p=.86$) are not significant.

The analysis of participants' online star ratings, as a behavioral PWOM measure, yields similar results (see Table 3). Specifically, the main effect of the MoD experience ($M_{\text{negative}}=3.81$; $M_{\text{positive}}=4.59$; $F(1, 281)=74.59, p<.001, \eta^2=.210$) and the MoD Experience $\times$ Courier Type interaction ($F(1, 281)=9.49, p=.002, \eta^2=.033$) are both significant, but the main effect of courier type is not ($M_{\text{third-party}}=4.24$; $M_{\text{proprietary}}=4.16$; $F(1, 281)=.68, p=.41$). A negative (vs. positive) MoD experience leads to significantly lower online ratings for both courier types ($p_{\text{third-party}}<.001, p_{\text{proprietary}}<.001$). Planned contrasts show higher online ratings for a third-party provider when the MoD experience is negative ($M_{\text{third-party negative}}=3.99$; $M_{\text{proprietary negative}}=3.63, p=.005$) but no differences between courier types for a positive MoD experience ($M_{\text{third-party positive}}=4.49$; $M_{\text{proprietary positive}}=4.70, p=.12$; see Figure 3). Again, only attitude toward the fictitious retailer reveals a significant effect ($F(1, 281)=30.89, p<.001, \eta^2=.099$), while the other control variables are not significant (gender $F(1, 281)=.21, p=.65$; age $F(1, 281)=.49, p=.49$; general online spending $F(1, 281)=.01, p=.93$). The results for both PWOM and online star ratings thus provide robust support for H1 and H2.

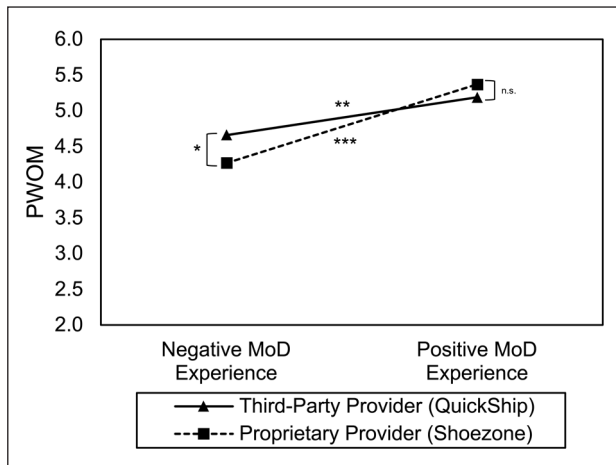
Finally, we aim to examine whether the observed effect also directly influences retailer choice. To test this, we conduct a moderation analysis in Hayes' (2022) PROCESS macro (model 1). As the binary dependent variable, we use the behavioral variable retailer choice, coded 0 if the participant chooses

Table 3. Results of Two-Way ANCOVAs (Studies Ia–Ic).

Predictors	Study Ia				Study Ib		Study Ic	
	(Fictitious Retailer; Fictitious Courier)				(Fictitious Retailer; Real Courier)		(Real Retailer; Real Courier)	
	DV: PWOM Intention		DV: PWOM Behavior (i.e., Online Rating)		DV: PWOM Intention		DV: PWOM Intention	
	$F_{(1, 281)}$	p	$F_{(1, 281)}$	p	$F_{(1, 180)}$	p	$F_{(1, 239)}$	p
Main effects								
MoD experience	39.291***	< .001	74.587***	< .001	57.252***	< .001	75.64***	< .001
Courier type	.636	.426	.681	.410	13.413***	< .001	.006	.940
Interaction effects								
MoD Experience $\times$ Courier Type	4.774*	.030	9.486**	.002	19.521***	< .001	9.112**	.003
Controls								
Gender	1.756	.186	.212	.645	1.231	.269	.944	.332
Age	2.792	.096	.489	.485	1.356	.246	1.776	.184
General online spending	.031	.860	.007	.934	1.434	.233	.001	.979
Attitude toward the online retailer	59.085***	< .001	30.886***	< .001	29.043***	< .001	203.418***	< .001

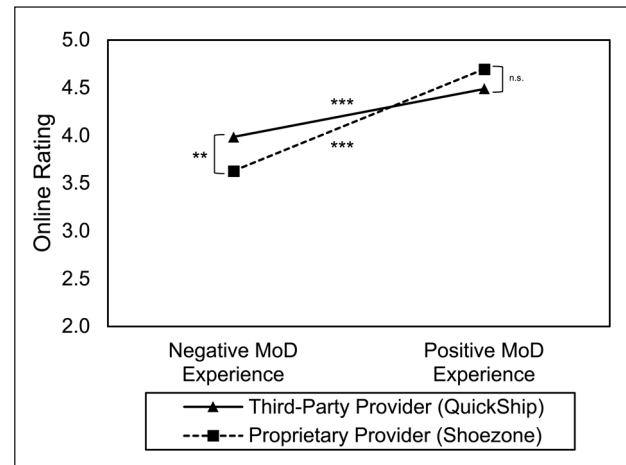
Note. ANCOVA=analysis of covariance; DV=dependent variable; MoD=moment of delivery; PWOM=positive word of mouth.

* $p < .05$. ** $p < .01$. *** $p < .001$.

**Figure 2.** Study Ia: PWOM intention toward fictitious online retailer (shoezone) by MoD experience and courier type.

Note. The covariates are gender, age, general online spending (monthly), and initial attitude toward the fictitious online retailer. MoD=moment of delivery; PWOM=positive word of mouth.

^{n.s.} $p \geq .05$. * $p < .05$. ** $p < .01$. *** $p < .001$.

**Figure 3.** Study Ia: Online rating toward fictitious online retailer (shoezone) by MoD experience and courier type.

Note. The covariates are gender, age, general online spending (monthly), and initial attitude toward the fictitious online retailer. MoD=moment of delivery; PWOM=positive word of mouth.

^{n.s.} $p \geq .05$. * $p < .05$. ** $p < .01$. *** $p < .001$.

a dreamshoes voucher (non-focal retailer) and 1 for the shoezone voucher (focal retailer). The independent variable is the MoD experience (0=positive; 1=negative), while the moderator is courier type (0=proprietary; 1=third-party). We include the same control variables as in previous analyses. The conditional effects reveal a significant negative effect of the MoD experience on retailer choice for deliveries handled by a proprietary courier ($b = -.93$, $SE = .42$, $p = .03$). This indicates that a negative (vs. positive) MoD experience caused by a proprietary

logistics provider decreases the odds of choosing a voucher from the focal retailer (i.e., shoezone) by 60.57 percent ($\text{Exp}(b) = .3946$). Put differently, when accounting for the covariates, the estimated probability of choosing the focal retailer decreases from 83 percent for a positive MoD experience to 65 percent when the MoD experience is negative (see Figure 4).

However, the conditional effect for a third-party courier ($b = -.23$, $SE = .38$, $p = .54$) and the MoD Experience $\times$ Courier

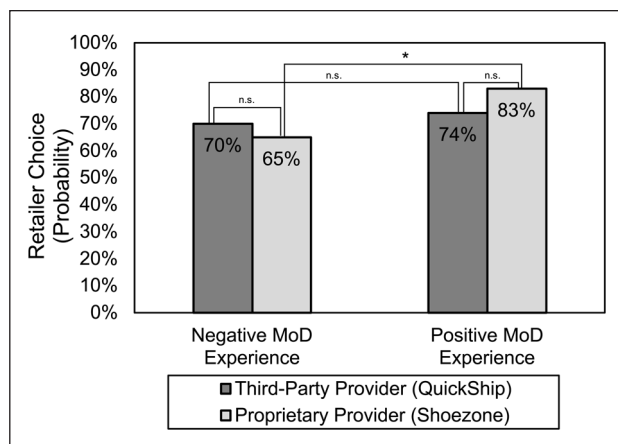


Figure 4. Study 1a: Estimated probabilities of retailer choice by MoD experience and courier type.

Note. Process model 1. Nagelkerke's $R^2 = .14$. The covariates are gender, age, general online spending (monthly), and initial attitude toward the fictitious online retailer. MoD = moment of delivery; PWOM = positive word of mouth. $n.s. p \geq .05$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Type interaction ($b = .70$, $SE = .56$, $p = .21$) are not significant. Among the controls, only attitude toward the fictitious retailer shows a significant effect ($b = .51$, $SE = .12$, $p < .001$). The results suggest that courier type does not moderate the effect of MoD experience on a downstream behavioral variable such as retailer choice.

However, the ANCOVA results and the finding that the MoD experience influences online retailer choice only when delivery is handled by the retailer's proprietary provider underscore the value of a more nuanced analysis of the interplay between MoD, courier type and PWOM in shaping retailer choice. Therefore, to examine potential moderated indirect effects, we conduct a follow-up moderated mediation analysis with PWOM as mediator and retailer choice as dependent variable (see details and results in Web Appendix E). The results reveal a significant moderated mediation via PWOM on retailer choice, indicating that the negative indirect effect on retailer choice is attenuated when the delivery is handled by a third-party rather than a proprietary provider.

Discussion. Study 1a helps reveal, reasonably, that when customers experience a positive MoD, they engage in more PWOM toward the retailer than when they suffer a negative MoD. In line with our pre-study results, this finding confirms the baseline effect: The MoD experience offers a diagnostic cue of how customers evaluate the retailer and how they share those evaluations with others. In addition, the participants indicate lower PWOM for a negative MoD experience performed by a proprietary versus a third-party courier, in support of H1. This finding suggests that the third-party logistics provider acts like a buffer between the customer and the online retailer, such that the customer does not attribute the negative MoD experience to the retailer. Moreover, consistent with H2,

PWOM does not differ between courier types after a positive MoD experience. The results can be substantiated whether we measure the latent PWOM construct or online ratings. Because we examine the impact of the MoD experience on actual retailer choice, we can also investigate the moderating role of courier type on a key downstream variable. Although we find a significant conditional effect indicating that the MoD experience caused by a proprietary courier influences retailer choice, no moderation by courier type was observed. However, follow-up analyses reveal a significant indirect effect on retailer choice through PWOM. In addition, this indirect effect is moderated by courier type; a third-party (vs. proprietary) provider buffers the negative consequences of a negative MoD experience on retailer choice. The findings indicate that the MoD Experience $\times$ Courier Type interaction affects core service responses (e.g., PWOM) directly, while its influence on downstream variables (e.g., retailer choice) is only indirect. However, the scenario involved two fictitious brands, a fictitious online retailer, and a fictitious third-party logistics service provider though, so further analyses are needed to determine the generalizability of the findings.

Study 1b

Design and Procedure. Study 1b features the same 2 (MoD Experience: Positive vs. Negative) $\times$ 2 (Courier Type: Proprietary vs. Third-Party) between-subjects design as Study 1a. In contrast, Study 1b focuses on a more common setting: an unfamiliar (i.e., fictitious) retailer ("Hiking-World") partnered with a familiar (i.e., real) third-party logistics provider (DHL). Similar to Study 1a, participants provided personal information (age, gender, monthly general online spending), then read that they had purchased a product from an online retailer (see Web Appendix B). We provided a shipping confirmation that contained information about the courier type (i.e., DHL vs. Hiking-World Delivery), and participants indicated their attitude toward the fictitious retailer. Next, participants read a dialogue that summarized the service episode that occurred at their door. Finally, participants stated their PWOM intentions and completed two manipulation checks.

Participants and Manipulation Checks. We recruited 212 participants from Clickworker.de who had not participated in Study 1a. We again removed any responses that failed the attention check (nine participants) or were extremely slow or fast (eleven participants). With the manipulation checks from Study 1a, we confirmed that the participants recognized the courier type and MoD experience. Four participants reported an incorrect courier type and were removed, resulting in an analyzable sample of 188 participants (women = 35.1 percent, $M_{age} = 32.79$ years, $SD = 11.26$; cell sizes = 44–52).³

The independent t -test ($t[129,73] = -21.87$, $p < .001$) confirms the difference between the MoD conditions: Participants in the negative MoD experience conditions ($M = 3.25$, $SD = 1.33$)

scored lower than those in the positive MoD experience conditions ($M=6.60$, $SD=.64$). The realism assessment also indicates that participants in all groups perceived the scenario as realistic, as reflected by the high mean value and one-sample t -test comparison with the scale midpoint of four ($M_{\text{realism}}=5.81$, $SD=1.24$, $t[187]=19.97$, $p<.001$).

Measures. To measure PWOM intentions toward the fictitious online retailer ($\alpha=.95$), we used three items from Zeithaml et al. (1996), rated on seven-point Likert scales, anchored by 1 (“strongly disagree”) and 7 (“strongly agree”). Attitude toward the retailer was measured with the same items as in Study 1a ($\alpha=.93$). Web Appendix D contains the items and reliability measures.

Results. As shown in Table 3, the ANCOVA results indicate a main effect of the MoD experience manipulation ($M_{\text{negative}}=4.13$; $M_{\text{positive}}=5.48$; $F(1, 180)=57.25$, $p<.001$, $\eta^2=.241$), as well as, in contrast with Study 1a, a main effect of courier type ($M_{\text{third-party}}=5.08$; $M_{\text{proprietary}}=4.52$; $F(1, 180)=13.41$, $p<.001$, $\eta^2=.069$). The MoD Experience $\times$ Courier Type interaction is significant ($F(1, 180)=19.52$, $p<.001$, $\eta^2=.098$). As in Study 1a, a positive MoD experience leads to higher PWOM than a negative one for both courier types ($p_{\text{third-party}}=.003$, $p_{\text{proprietary}}<.001$). Figure 5 illustrates that the planned contrasts for each MoD experience condition also affirm that, in the negative case, PWOM is lower for the proprietary delivery service ($M_{\text{third-party negative}}=4.74$; $M_{\text{proprietary negative}}=3.51$, $p<.001$). Among participants who experienced a positive MoD, we find no difference in PWOM between the third-party ($M_{\text{third-party positive}}=5.42$) and proprietary ($M_{\text{proprietary positive}}=5.54$, $p=.58$) couriers. The results of the planned contrasts are consistent with Study 1a. With regard to the control variables, gender ($F(1, 180)=1.23$, $p=.27$), age ($F(1, 180)=1.36$, $p=.25$), and general online spending ($F(1, 180)=1.43$, $p=.23$) have no discernible effect, but we find an influence of attitude toward the fictitious retailer ($F(1, 180)=29.04$, $p<.001$, $\eta^2=.139$).

Discussion. In replicating the study scenario with a fictitious online retailer, we obtain a consistent main effect of the MoD experience on PWOM intentions toward the online retailer, strongly supporting the notion that customers’ overall evaluations of an online retailer, which they share with others, are shaped by their perceptions of the MoD experience. In support of H1, we again find that a negative MoD experience is associated with lower PWOM when the retailer performs the delivery. As predicted in H2, we find no PWOM differences between the proprietary service of an unfamiliar online retailer and the third-party provider when the MoD experience is positive. Next, to further replicate and validate our findings and to examine the potential contingency of a retailer’s brand strength, we examine the combination of a real retailer and a real third-party logistics provider.

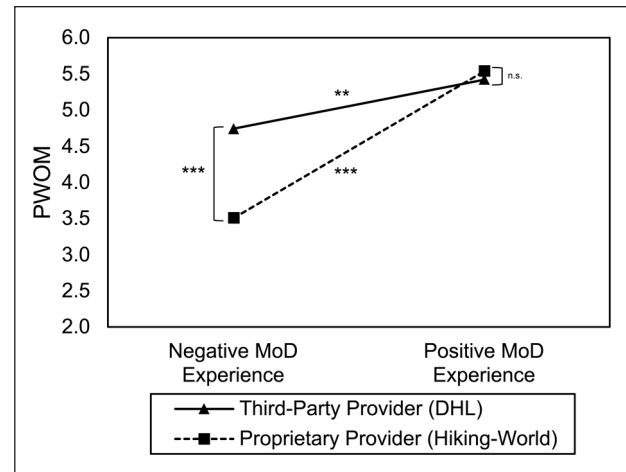


Figure 5. Study 1b: PWOM intention toward fictitious online retailer (Hiking-World) by MoD experience and courier type. Note. The covariates are gender, age, general online spending (monthly), and initial attitude toward the fictitious online retailer. MoD = moment of delivery; PWOM = positive word of mouth. $n.s. p \geq .05$. $*p < .05$. $**p < .01$. $***p < .001$.

Study 1c

Design and Procedure. Study 1c follows the design and procedure of Studies 1a and 1b, with a 2 (MoD Experience: Positive vs. Negative) $\times$ 2 (Courier Type: Proprietary vs. Third-Party) between-subjects design. The experimental scenario (see Web Appendix B) refers to Amazon, an established retailer with a strong brand that can provide relevant insights, considering that it uses both external and proprietary couriers. To control for preexisting attitudes, we asked participants to indicate their attitude toward Amazon at the beginning of the study, directly after they provided personal information (age, gender, monthly spending on Amazon). Next, they read a scenario, which asked them to imagine having ordered a book from Amazon and received a shipping confirmation message, with which we again manipulated the courier type. In the next step, participants read about an MoD experience, described as either negative (delayed delivery, unfriendly, poorly dressed delivery person, slow parcel handover) or positive (on-time delivery, friendly, well-dressed delivery person, smooth parcel handover). After reading the scenario, participants indicated their PWOM intentions toward Amazon and completed the same two manipulation checks as in Studies 1a and 1b.

Participants and Manipulation Checks. A total of 336 participants were recruited by distributing a link to the online experiment to management students at a large German university, who were asked to invite peers to participate. As in the previous studies, we excluded participants who failed the attention check (twenty-six participants), responded extremely slowly or quickly (fifty-one participants), or reported an incorrect courier type (twelve participants), resulting in an analyzable sample of

247 participants (women = 52.2%, $M_{\text{age}} = 26.15$ years, $SD = 6.55$; cell sizes = 60–64). The t -test ($t[221,26] = -28.17$, $p < .001$) confirmed a significant difference in perceived MoD experiences between conditions: Participants exposed to the negative MoD experience ($M = 2.03$, $SD = .94$) reported lower scores than those in the positive condition ($M = 6.11$, $SD = 1.31$). Finally, participants rated the scenario's realism significantly above the scale midpoint ($M_{\text{realism}} = 5.64$, $SD = 1.11$; $t[246] = 23.26$, $p < .001$), confirming its ecological validity.

Measures. We measured PWOM toward the online retailer ($\alpha = .93$), with the items from Study 1b. Given that Amazon is a real online retailer, the full five-item scale from Spears and Singh (2004) was employed to assess participants' attitudes toward the online retailer ($\alpha = .91$). Web Appendix D lists all the items and reliability measures.

Results. In an ANCOVA, with PWOM as the dependent variable and the same covariates as in our previous studies, we find results consistent with Study 1a: a significant main effect of the MoD experience ($M_{\text{negative}} = 3.71$; $M_{\text{positive}} = 4.89$; $F(1, 239) = 75.64$, $p < .001$, $\eta^2 = .240$) and a significant MoD Experience $\times$ Courier Type interaction ($F(1, 239) = 9.11$, $p = .003$, $\eta^2 = .037$). The main effect of courier type is not significant ($M_{\text{third-party}} = 4.29$; $M_{\text{proprietary}} = 4.31$; $F(1, 239) = .01$, $p = .94$). A summary of all ANCOVA results can be found in Table 3. A positive MoD experience is associated with higher PWOM than a negative MoD experience, for both courier types ($p_{\text{third-party}} < .001$, $p_{\text{proprietary}} < .001$). Within the negative and positive MoD experience scenarios though, we find differences between courier types. In line with H1, customers who experienced a negative MoD with a third-party provider exhibit higher PWOM ($M_{\text{third-party negative}} = 3.91$) than with a proprietary provider ($M_{\text{proprietary negative}} = 3.51$, $p = .04$). Interestingly, and in contrast to H2, those who experienced a positive MoD show higher PWOM when Amazon handles the delivery ($M_{\text{third-party positive}} = 4.68$; $M_{\text{proprietary positive}} = 5.10$, $p = .03$; see Figure 6). Among the control variables, prior attitudes toward Amazon affect PWOM ($F(1, 239) = 203.42$, $p < .001$, $\eta^2 = .460$); we find no effects of gender ($F(1, 239) = .94$, $p = .33$), age ($F(1, 239) = 1.78$, $p = .18$), or previous spending ($F(1, 239) = .001$, $p = .98$).

Discussion. The Study 1c results again demonstrate a main effect of the MoD experience on PWOM, even when both the retailer and third-party provider are real. They also provide evidence that, following a negative MoD experience caused by a real third-party (vs. proprietary) courier, customers exhibit higher PWOM. These findings reemphasize the advantageous buffer effect a third-party logistics provider can offer when the MoD experience is negative (H1).

In contrast to H2, a positive MoD experience involving the real proprietary delivery service (i.e., Amazon delivery) leads customers to exhibit higher PWOM toward the retailer with a strong brand (i.e., Amazon) than one involving a real third-party provider (i.e., DHL). This finding may result from the use

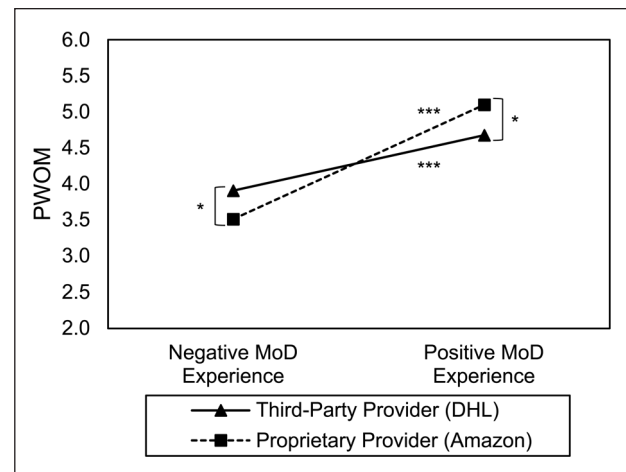


Figure 6. Study 1c: PWOM intentions toward real online retailer (Amazon) by MoD experience and courier type.

Note. The covariates are gender, age, monthly spending on, and initial attitude toward Amazon. MoD = moment of delivery; PWOM = positive word of mouth.

* $p < .05$. ** $p < .01$. *** $p < .001$.

of the world's best-known online retailer (i.e., Amazon) in the scenario. Due to the asymmetry of negative and positive attributions and in line with attribution theory, individuals invest greater cognitive effort in seeking explanations for negative events compared to positive ones, making negative attributions more likely (e.g., van Vaerenbergh et al. 2014). However, Amazon's strong brand enables customers to effortlessly identify both the retailer and its proprietary delivery services, eliminating the need for additional attributional information search and thereby facilitating direct attribution of positive MoD experiences to the retailer. In summary, Studies 1a–1c consistently indicate that the MoD experience and courier type influence PWOM toward an online retailer. Therefore, deciding which courier type to use is strategically relevant for online retailers. After a negative MoD experience, the fallout is more detrimental if the delivery is carried out by the retailer. For a positive MoD experience, the results confirm our assumption that the attribution of positive MoD experiences is less stable than that of negative ones, with brand strength acting as a key contingency, such that only online retailers with a strong brand benefit from deliveries handled by their proprietary service.

Building on these results, in Study 2, we aim to test the efficacy of an inoculation message depending on the MoD Experience $\times$ Courier Type interaction (H3), while also replicating and validating the effects predicted in H1 and H2. Thus, we investigate whether retailers can leverage measures other than vertical integration to gain some control over the MoD.

Study 2

Design and Procedure. With Study 2, we examine the consequences of an inoculation message delivered before the MoD in a 2 (MoD Experience: Positive vs. Negative) $\times$ 2 (Courier

Table 4. Results of Three- and Two-Way ANCOVAs (Study 2).

Predictors	Three-Way ANCOVA (DV: PWOM)		Two-Way ANCOVA (DV: PWOM)			
	$F_{(1, 264)}$	p	Negative MoD Experience		Positive MoD Experience	
			$F_{(1, 135)}$	p	$F_{(1, 125)}$	p
Main effects						
MoD experience	35.508***	< .001				
Courier type	.005	.945	7.361**	.008	4.013*	.047
Inoculation message	.431	.512	9.730**	.002	4.066*	.046
Interaction effects						
MoD Experience $\times$ Courier Type	12.073***	< .001				
MoD Experience $\times$ Inoculation Message	12.749***	< .001				
Courier Type $\times$ Inoculation Message	.400	.527	.103	.749	.254	.615
MoD Experience $\times$ Courier Type $\times$ Inoculation Message	.051	.822				
Controls						
Gender	.379	.538	.467	.496	2.377	.126
Age	3.404	.066	6.556*	.012	.002	.964
General online spending	14.053***	< .001	6.138*	.014	7.686**	.006
Attitude toward the online retailer	115.828***	< .001	64.821***	< .001	47.404***	< .001

Note. ANCOVA = analysis of covariance; DV = dependent variable; MoD = moment of delivery; PWOM = positive word of mouth.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Type: Proprietary vs. Third-party) $\times$ 2 (Inoculation Message: Present vs. Absent) between-subjects experiment. For this study, we used a fictitious online retailer (shoezone) and a real third-party provider (DHL), allowing us to replicate Study 1b under the conditions without an inoculation message. Thus, the procedure is similar to Studies 1a–c (personal information provided, brief scenario introduction, shipping confirmation, MoD experience), with one key difference: The shipping confirmation from the online retailer either contains an inoculation message or not. Similar to Study 1a, we again pretested and employed a video-based scenario.⁴ For the third-party provider DHL, we produced two new videos (positive and negative MoD experience) that mirror those used in Study 1a, in the same setting and with the same actor. For shoezone delivery, we used the videos from Study 1a. The shipping confirmation messages and links to the videos are available in Web Appendix F.

Participants. An a priori power calculation, using G*Power (Faul et al. 2007), indicated that for a conservative assessment, with a medium effect size ($f = .25$), we needed a sample size of 259 participants to achieve statistical power of .80 ($\alpha = .05$). We recruited participants from Clickworker.de while excluding anyone who had previously participated in our studies or pretests, resulting in 330 participants. We removed incorrect responses to the attention check (twelve participants), identifications of courier type (twelve participants), or inoculation condition (twenty-four participants), as well as extremely slow or fast response times (six participants); 276 participants remained for the analyses (women = 49.6%, $M_{\text{age}} = 38.89$ years, $SD = 11.56$; cell sizes = 31–38).

Measures. We gauged participants' attitude toward the fictitious retailer ($\alpha = .92$) and PWOM intentions ($\alpha = .91$) using the items from Study 1b (see Web Appendix D).

Results. We first conducted a three-way ANCOVA, with PWOM toward the online retailer as the dependent variable; MoD experience, courier type, and inoculation message as independent factors; and gender, age, attitude toward the fictitious retailer, and general online spending as controls. The results indicate a main effect of the MoD experience ($M_{\text{negative}} = 4.37$; $M_{\text{positive}} = 4.97$; $F(1, 264) = 35.51$, $p < .001$, $\eta^2 = .119$) but no main effects of the two other factors ($p_{\text{courier type}} = .95$; $p_{\text{inoc.}} = .51$). The MoD Experience $\times$ Courier Type ($F(1, 264) = 12.07$, $p < .001$, $\eta^2 = .044$) and MoD Experience $\times$ Inoculation ($F(1, 264) = 12.75$, $p < .001$, $\eta^2 = .046$) interactions are significant, whereas the Courier Type $\times$ Inoculation Interaction ($F(1, 264) = .40$, $p = .53$) and the three-way MoD Experience $\times$ Courier Type $\times$ Inoculation Interaction ($F(1, 264) = .05$, $p = .82$) are not. Gender ($p = .54$) and age ($p = .07$) have no discernible effect, but general online spending ($F(1, 264) = 14.05$, $p < .001$, $\eta^2 = .051$) and attitude toward the fictitious retailer ($F(1, 264) = 115.83$, $p < .001$, $\eta^2 = .305$) influence PWOM (see Table 4).

To test H1 and H2, we examine the conditions that are identical to Study 1b, that is, the four conditions without inoculation. The results are consistent and offer robust evidence for the hypothesized effects. Following a negative MoD experience, the third-party courier is associated with higher PWOM than the proprietary courier ($M_{\text{negative, no inoc., third-party}} = 4.36$; $M_{\text{negative, no inoc., proprietary}} = 3.95$, $p = .04$), in line with H1. After a

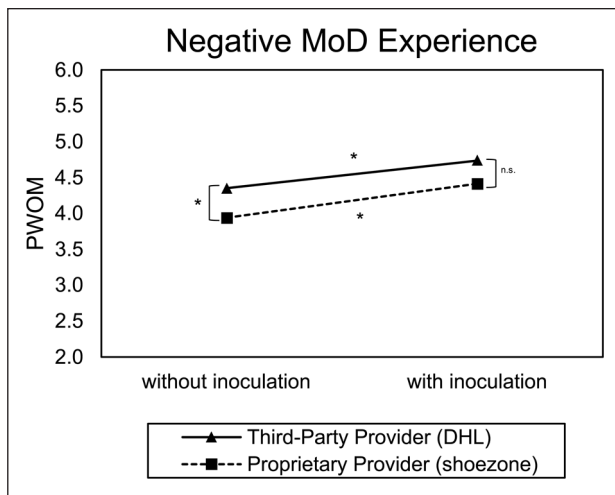


Figure 7. Study 2: PWOM intention toward fictitious online retailer (shoezone) by courier type and inoculation with negative MoD experience.

Note. The covariates are gender, age, general online spending (monthly), and initial attitude toward the fictitious online retailer. MoD = moment of delivery; PWOM = positive word of mouth.

n.s. $p \geq .05$; * $p < .05$; ** $p < .01$; *** $p < .001$.

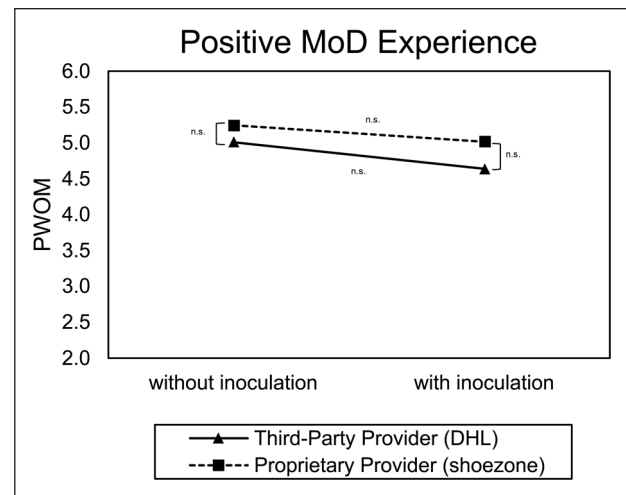


Figure 8. Study 2: PWOM intention toward fictitious online retailer (shoezone) by courier type and inoculation with positive MoD experience.

Note. The covariates are gender, age, general online spending (monthly), and initial attitude toward the fictitious online retailer. MoD = moment of delivery; PWOM = positive word of mouth.

n.s. $p \geq .05$; * $p < .05$; ** $p < .01$; *** $p < .001$.

positive MoD experience, we find no differences across courier types, consistent with H2 ($M_{\text{positive, no inoc., third-party}} = 4.99$; $M_{\text{positive, no inoc., proprietary}} = 5.25$, $p = .22$).

To test the effects of an inoculation message,⁵ we performed planned contrasts by courier type with Bonferroni correction. These results reveal that when the MoD experience is negative, an inoculation message mitigates the negative effects on PWOM for both third-party ($M_{\text{negative, third-party, no inoc.}} = 4.36$; $M_{\text{negative, third-party, inoc.}} = 4.74$, $p = .047$) and proprietary ($M_{\text{negative, proprietary, no inoc.}} = 3.95$; $M_{\text{negative, proprietary, inoc.}} = 4.42$, $p = .02$) couriers, compared with the no inoculation message conditions. In contrast, when the MoD experience is positive, we find no difference in PWOM between the presence and absence of an inoculation message, regardless of courier type ($M_{\text{positive, third-party, no inoc.}} = 4.99$; $M_{\text{positive, third-party, inoc.}} = 4.61$, $p = .07$; $M_{\text{positive, proprietary, no inoc.}} = 5.25$; $M_{\text{positive, proprietary, inoc.}} = 5.04$, $p = .31$).

Finally, we examine whether the effectiveness of inoculation messages differs by courier type for positive and negative MoD experiences (H3). As reported, the three-way interaction is not significant. This indicates that the Courier Type $\times$ Inoculation interactions do not differ between positive and negative MoD experience conditions. Since H3 postulates differences in the strength of the two-way interactions rather than their existence, we conducted two separate post-hoc examinations to obtain an interpretable understanding of the underlying Courier Type $\times$ Inoculation effects in each of the MoD experience conditions (Aiken and West 1991; Cohen et al. 2003). Therefore, we conducted two separate two-way ANCOVAs, one for each MoD experience condition. Table 4 presents the comparative results of these analyses.

First, to test of H3a, we ran a two-way ANCOVA for the negative MoD experience conditions ($n = 143$), with PWOM as the dependent variable, courier type and inoculation as factors, and the same set of control variables. The results reveal a significant main effect for courier type ($F(1, 135) = 7.36$, $p = .008$) and inoculation ($F(1, 135) = 9.73$, $p = .002$) but a non-significant Courier Type $\times$ Inoculation interaction ($F(1, 135) = .10$, $p = .75$). Figure 7 shows the planned contrasts ($M_{\text{proprietary, no inoc.}} = 3.94$, $M_{\text{third-party, no inoc.}} = 4.35$, $M_{\text{proprietary, inoc.}} = 4.42$, $M_{\text{third-party, inoc.}} = 4.74$, $p_{\text{no inoc.: proprietary vs. third-party}} = .03$, $p_{\text{inoc.: proprietary vs. third-party}} = .10$, $p_{\text{third-party: no inoc. vs. inoc.}} = .045$, $p_{\text{proprietary: no inoc. vs. inoc.}} = .02$). In contrast to our expectation, the effectiveness of the inoculation message after a negative MoD experience is thus not moderated by courier type, and we reject H3a. Second, for a positive MoD experience, we predicted no moderation effect of courier type (H3b) and confirm this prediction with a two-way ANCOVA among the positive MoD experience conditions ($n = 133$), which reveals a non-significant Courier Type $\times$ Inoculation interaction ($F(1, 125) = .25$, $p = .62$), again together with a marginally significant main effect of courier type ($F(1, 125) = 4.01$, $p = .047$) and inoculation ($F(1, 125) = 4.07$, $p = .046$). We further probed the unexpected main effect of inoculation using planned contrasts (see Figure 8). PWOM trended downward with inoculation ($M_{\text{proprietary, no inoc.}} = 5.25$, $M_{\text{third-party, no inoc.}} = 5.01$, $M_{\text{proprietary, inoc.}} = 5.02$, $M_{\text{third-party, inoc.}} = 4.64$); however, none of the pairwise comparisons was significant ($p_{\text{no inoc.: proprietary vs. third-party}} = .29$, $p_{\text{inoc.: proprietary vs. third-party}} = .07$, $p_{\text{third-party: no inoc. vs. inoc.}} = .08$, $p_{\text{proprietary: no inoc. vs. inoc.}} = .29$).

Discussion. By testing the robustness of the results of Study 1b using an ecologically valid, video-based approach, Study 2

confirms that the MoD experience affects customers' PWOM intentions. The results for non-inoculated participants, who are comparable to the Study 1b sample, reconfirm H1: PWOM intentions are less affected by a negative MoD experience attributable to a third-party courier than one attributable to a proprietary courier. We again find no differences for a positive MoD experience, reconfirming H2. These results again reveal the expected asymmetric effects of negative and positive MoD experiences and further underscore the online retailer's brand strength as an important contingency factor for the attribution of positive MoD experiences.

Beyond these confirmatory findings, we establish that a delivery-related inoculation message reduces customers' susceptibility to the detrimental effects of a negative MoD experience, regardless of courier type. For both types of couriers, the inoculation message mitigates declines in PWOM after a negative MoD experience. Although PWOM means tend to decline slightly, we find no significant difference in PWOM between inoculated and non-inoculated customers when the MoD experience is positive.

We had anticipated that inoculations would be more effective when the source of the message is responsible for the negative experience, but contrary to H3a, the results indicate no difference in the effectiveness of the inoculation message between courier types after a negative MoD experience. In line with H3b, we also find no differences in inoculation effectiveness between courier types following a positive MoD experience. The absence of a stronger inoculation effect after a negative MoD experience with the proprietary provider might imply an effect of blame externalization. As Mikolon et al. (2015) note, incorporating an external explanation into an inoculation message (e.g., attributing responsibility to a third party) can buffer the effects of a negative outcome. Perhaps our study participants interpreted the explicit mention of the third-party provider in the inoculation message ("We are in close contact with DHL") as an external explanation. After the negative MoD experience, this interpretation might have attenuated the negative effects on PWOM in the third-party condition, offsetting the expected advantage of a more effective inoculation message for a proprietary provider.

In addition, another counterintuitive finding emerges: when delivery is handled by a third-party provider, inoculation results in no significant PWOM differences between positive and negative MoD experiences. This effect may stem from the interplay between the intended effect of the inoculation message (i.e., mitigating the detrimental effects of negative MoD experiences) and the additional attributional information (i.e., cues pointing to the third-party provider) that accompanies it. The inoculation message reduces customers' susceptibility to adverse effects of potential failures so that if a failure occurs, its impact is less pronounced, resulting in PWOM values that more closely resemble those following a positive experience. Moreover, the inoculation message provides additional attributional cues clarifying that responsibility for delivery lies with the third-party provider. This additional attributional

information likely influences customer perceptions, leading to less responsibility being assigned to the online retailer in third-party delivery scenarios, and thus reducing the impact of a third-party-handled MoD on PWOM evaluations. The combination of attenuated negative MoD consequences and diminished attribution to the retailer may explain the convergence in PWOM means.

In summary, we offer empirical evidence that an inoculation message is an effective strategy for mitigating the adverse effects of negative MoD experiences without significant negative consequences following positive MoD experiences. Moreover, inoculation effectiveness is consistent across both proprietary and third-party providers.

Single-Paper Meta-Analysis

As a strong test of the validity and robustness of our findings, we conducted a single-paper meta-analysis (SPM) of the four experimental studies (McShane and Böckenholt 2017). Specifically, we tested H1 with all data from Studies 1a–1c and the conditions without an inoculation message in Study 2. Consistent with the isolated analyses, the SPM confirms our prediction that a negative MoD experience involving a third-party courier is associated with greater PWOM than one with a proprietary logistics service provider (estimate = .60, $SE = .16$; $z = 3.75$, $p < .001$). To test H2, we used the data from studies involving fictitious online retailers (i.e., Studies 1a, 1b, and 2 without inoculation) to hold the contextual factor of brand strength constant. For a positive MoD, the SPM indicates no differences between courier types (estimate = $-.19$, $SE = .22$; $z = -.86$, $p = .39$), further corroborating the support for H2 in the context of unfamiliar online retailers.

General Discussion

Customers' online shopping journeys span multiple touchpoints, but the MoD is distinctive, because it often represents the only interpersonal or face-to-face interaction customers have with the service provider, whether linked to the retailer or a third-party partner. Because last-mile deliveries often represent the greatest cost driver in the supply chain and a substantial source of service failures (Barker and Brau 2020), they demand active management (Vakulenko et al. 2019a). To achieve better results, online retailers might pursue greater vertical integration and control over this last-mile interaction with the customer. Alternatively, they can shape perceptions of the MoD, and its outcomes, by deploying preemptive messages prior to delivery. Before they implement such solutions though, retailers need insights into the MoD experience created by different types of couriers, the potential payoffs of vertical integration (Masorgo et al. 2023; Wu et al. 2024), and the range of potential effects of preemptive messages.

Prior literature has not provided sufficient insights along these lines, which is surprising considering the sheer number of MoD encounters occurring daily, their implications for service

outcomes, and their potential to be actively managed. In-person delivery can be an online retailer's last chance to make an impression, yet it often is outside the retailer's immediate control and depends instead on the quality of the service achieved by logistics service providers. As our pre-study analysis of over 35,000 customer reviews shows, many customers mention delivery quality, such that the MoD experience is diagnostic of their evaluations of the retailer. In line with these exploratory findings, our experimental studies show that customers' perceptions of their interactions with the courier affect their PWOM intentions, behavior, and retailer choice. This affirms retailers' preferences for vertical integration, but our research also raises a reasonable caution and identifies a double-edged sword effect, in that relying on a proprietary delivery fleet can backfire for negative MoD experiences. Therefore, we offer inoculation as a viable strategy. It can effectively and preemptively mitigate the risks linked to negative MoD experiences.

Theoretical Implications

Service research has long acknowledged the impact of service encounters on key service outcomes (Voorhees et al. 2017). We identify the MoD experience as a largely overlooked, pivotal touchpoint in the e-commerce fulfillment process and also specify its role in driving PWOM and retailer choice, key outcomes for every online retailer. This investigation focuses on a segment of the service delivery process that online retailers can control by developing a proprietary delivery service or else relinquish some control by contracting with third-party logistics providers. Our results thus extend service theory in online retailing contexts by establishing the role of the MoD experience in shaping service outcomes and identifying inoculation messages as a strategic contingency of its effects.

In further detail, this study contributes to service literature pertaining to service encounters across the customer journey (e.g., Fu et al. 2025; Subramony et al. 2021, 2023; Vakulenko et al. 2019a, 2019b; Voorhees et al. 2017). Although previous research has indicated the relevance of the last mile for online retailers (Koufteros et al. 2014; Masorgo et al. 2023; Vakulenko et al. 2019a), and anecdotal evidence and our pre-study affirm that customers regularly report (un)happiness with delivery drivers' behaviors or the delivery experience more generally (e.g., Vogelmann and Bird 2021), extant research has not included courier–customer interactions as a focal unit of analysis. Conceptualizing the MoD experience as pivotal for both online retailers and customers helps enrich service theory. This unique, face-to-face interaction in the e-customer journey, which represents the ultimate fulfillment of the service and the last chance for online retailers—assuming no returns—to influence customers' evaluations, is directly associated with PWOM toward the retailer. This evidence helps support predictions that customers blame online retailers for delivery-related problems, with detrimental effects for key service outcomes (Cui et al. 2024). The consistent evidence we find across four experimental studies also speaks to the robustness of these links and the

substantial relevance of the MoD experience for determining consumers' overall evaluations of online retailers.

In relation to multi-actor service literature (De Keyser et al. 2020), we define the effects of the MoD experience in both vertically integrated (i.e., retailer-controlled) and third-party (i.e., non-retailer-controlled) last-mile delivery settings. With this approach, we identify courier type as an important boundary condition in the MoD experience–PWOM relationship, in accordance with attribution theory. When the MoD experience is negative, a third-party courier buffers the direct negative effect on PWOM toward the online retailer. Our studies consistently confirm that third-party providers are associated with stronger PWOM intentions following negative MoD experiences. By contrast, when retailers use proprietary logistics service, positive MoD experiences can evoke greater PWOM, but only when the retailer possesses sufficient brand strength to enable consumers to readily identify and attribute the positive MoD experience to the retailer. Our findings clarify that this effect arises for a real, established online retailer (Amazon) but not for an unfamiliar retailer brand. Overall, the nuanced results further reveal an asymmetry in the attribution of negative and positive MoD experiences, indicating that attributions of positive MoD experiences are considerably more fragile and depend on contextual contingency factors such as brand strength.

For the growing marketing literature on inoculation effects (e.g., Mikolon et al. 2015; Weiler et al. 2022), we contribute new evidence about how this preemptive strategy can mitigate the consequences of a potential service failure, even before it occurs and without jeopardizing the beneficial outcomes of a positive experience (Mikolon et al. 2015). As we show, inoculated customers are less likely to have their attitudes or behaviors adversely affected by a negative MoD experience, regardless of courier type. Thus, we confirm the applicability and effectiveness of inoculation theory in a multi-actor, multichannel (i.e., online purchase, offline delivery) service environment.

Managerial Implications

Our findings strongly indicate that e-commerce managers should specify strategic goals, beyond efficiency improvements, and include customers' MoD experience in their strategic considerations. Routine encounters between couriers and customers need to be managed, like any element of the service delivery process. Our study is premised on the assumption that customers view the delivery phase as part of a coherent service offering by the online retailer, and their quality perceptions reflect their assessments of each service element, including the MoD experience. The delivery phase and the courier–customer interaction it entails cannot be detached from the overall service offering. As a logical extension, we argue for the need to monitor the customer-oriented performance and service quality of delivery logistics, whether these operations are contracted out to a partner or completed in-house. Effective monitoring might include systematic analyses of customer feedback (e.g., social

Table 5. Summary of Findings and Managerial Implications.

Strategy	Finding	Implication	Retailer		
			L	M	S
E-customer journey	Delivery is a critical factor in the overall assessment of the retailer.	Delivery must be considered an integral part of the service promise.	✓	✓	✓
	MoD experience is a strong indirect predictor of future retailer choice.	Customer-oriented performance and service quality of delivery logistics must be monitored.			
	PWOM are important goals in their own right but also serve as important mediators for future retailer choice.	Encounters between couriers and customers must be managed, like any other element of service delivery.			
Vertical integration	Double-edged sword: Established online retailers benefit (are disadvantaged) particularly strongly by positive (negative) delivery experiences with proprietary couriers.	Established online retailers with sufficient resources to measure and maintain a high level of delivery quality should vertically integrate the last mile.	✓		
	Unfamiliar online retailers with proprietary couriers do not benefit significantly from positive delivery experiences.	Unfamiliar online retailers should carefully consider whether vertical integration is necessary for their business model, and if not, they should refrain from doing so.		✓	✓
	Third-party couriers mitigate the impact of a negative delivery experience on the online retailer's rating.	Outsourcing non-core processes to third-party providers is an appropriate strategy. However, selecting a reliable delivery provider remains crucial, as negative delivery experiences may have adverse consequences for the retailer.	✓	✓	✓
Preemptive	Inoculated customers are more sensitized to and lenient following a negative MoD, with no negative consequences if they actually experience a positive MoD.	Online retailers should use inoculation messages as part of their post-purchase shipping communication.	✓	✓	✓

Note. L = Large; M = Medium; S = Small; MoD = moment of delivery; PWOM = positive word of mouth.

media, review platforms) or real-time feedback tools (e.g., post-delivery SMS, app notifications, and e-mails).

Because the effects of the MoD experience on customers' PWOM depend on the type of courier, we also offer recommendations for the strategic decision to vertically integrate or use external logistics to complete deliveries. We suggest that online retailers adopt contingency guidance tailored to the risk level of a negative MoD experience. At low risk levels (i.e., where a positive MoD is routine) established online retailers should handle last-mile delivery themselves, using their own delivery fleet, provided they can invest sufficient resources to ensure high-quality customer service. Vertical integration is expensive though. To build its electric European delivery fleet for example, Amazon anticipated investments of more than €1 billion (Amazon 2025). For unfamiliar online retailers (i.e., those with low brand strength), we suggest undertaking vertical integration only if it provides a clear strategic advantage. Otherwise, the use of external logistics service providers for this non-core process is an effective strategy that still can confer notable benefits. When negative MoD risk is high (i.e., last-mile failures are systemic rather than anecdotal), retailers should rely on third-party couriers to mitigate PWOM damages. Moreover, service managers should also consider using predelivery inoculation messages to mitigate the detrimental consequences of negative MoD experiences. The strategic use of inoculation messages offers online retailers some control over MoD consequences and represents a cost-effective way to shape

customers' perceptions of the complex last-mile process. Inoculated customers are more sensitized to and lenient following a negative MoD experience, with no negative consequences if they actually get to enjoy a positive MoD experience.

We summarize the main findings and their related managerial implications for various types of online retailers in Table 5.

Limitations and Further Research

Along with these research contributions, this article features some limitations that offer directions for further research. In particular, across all four studies, we used experimental data based on scenario manipulations. Although we captured actual customer behavior using both online ratings and retailer choice, our approach cannot fully substitute for real-world observations. Field research into the links among courier type, inoculation messages, and customer behaviors could increase the external validity of our findings. Furthermore, the specific MoD experience we investigate involves human interactions, but we acknowledge the growing reliance on delivery concepts without personal contact, such as parcel lockers and robotic deliveries (Boysen et al. 2021). Studies of the distinct outcomes of customer–technology interactions, according to whether those new delivery technologies are owned and operated by the online retailer versus a third-party provider, could complement and extend our findings. Moreover, we investigated the impact of MoD experiences on the online retailer; it would be

worthwhile to explore whether and how they affect specific perceptions and evaluations of the products that customers purchase from these retailers too.

To test the efficacy of the inoculation messages, we introduced a fictitious online retailer. Replications with a real online retailer could establish a stronger case for the appeal of inoculation messages. Although not statistically significant, we observe a trend that an inoculation message may lead to potential negative consequences following a positive MoD experience, especially when a third-party provider is involved. We therefore hope continued research will explore additional factors that might affect these impacts, such as message specificity (specific vs. unspecific), repetition (i.e., frequency of exposure), or valence framing (loss vs. gain) in inoculation messages. In addition, further research is needed to better understand the effects of inoculation messages in multi-actor service environments.

Finally, considering the potentially severe effects of service failures, including negative MoD experiences, we encourage researchers to investigate other preemptive methods beyond inoculation messages and compare their effectiveness.

Acknowledgements

The authors thank Frederik Simon Bäumer for support in extracting the data used in the pre-study and Jan Karnatz for contributing to the development of the video-based scenarios.

ORCID iDs

Christopher Funke  <https://orcid.org/0000-0002-5514-3928>

Gianfranco Walsh  <https://orcid.org/0000-0002-7010-3633>

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Supplemental Material

Supplemental material for this article is available online.

Notes

1. Web Appendix A provides details on the various analyses that account for the substantially unequal group sizes, skewed data, and possible clustering of observations within industries.
2. To ensure that participants understood the procedure for the choice variable and perceived the homepage mockups of both retailers equivalently, we conducted a pretest with forty-nine participants, recruited from Clickworker.de (women=36.7%, $M_{\text{age}}=43.53$ years, $SD=11.09$). They evaluated the mockups in randomized order, using three items (“positive/negative,” “appealing/unappealing,” “realistic/unrealistic”) on seven-point semantic differential scales, and they also indicated their

purchase intentions toward each retailer (“I can imagine ordering from this online shop in the future”; seven-point Likert scale, 1=“strongly disagree,” 7=“strongly agree”). Finally, we presented both online retailers side-by-side and asked participants to make a forced-choice decision. Paired *t*-tests revealed no significant differences between the mockups in terms of positivity ($M_{\text{shoezone}}=4.92$, $M_{\text{dreamshoes}}=4.94$, $p=.90$), appeal ($M_{\text{shoezone}}=4.69$, $M_{\text{dreamshoes}}=4.78$, $p=.71$), realism ($M_{\text{shoezone}}=5.51$, $M_{\text{dreamshoes}}=5.63$, $p=.29$), or purchase intentions ($M_{\text{shoezone}}=4.49$, $M_{\text{dreamshoes}}=4.63$, $p=.30$). Nor did the forced-choice decision reveal any initial preference between the two fictitious brands (shoezone=51%, dreamshoes=49%).

3. After data cleaning, the analyzable sample is smaller than the desired size ($n=211$) established by an a priori power calculation using G*Power (Faul et al. 2007) for an expected medium effect size ($f=.25$) and a power of .80 ($\alpha=.05$). Therefore, we checked the statistical power with a post-hoc calculation, based on the observed effect size of the MoD Experience $\times$ Courier Type interaction of $f=.33$ ($\eta^2=.098$). It yields an actual power of .951 ($\alpha=.05$), substantially greater than the targeted power of .80.
4. We pretested the material to assess the effectiveness of the manipulations among eighty-seven participants, recruited on Clickworker.de (women=50.6%, $M_{\text{age}}=39.47$ years, $SD=12.22$). They completed the scenario described in the previous section and responded to three manipulation checks. Only two participants failed to recognize the correct logistics service provider. In their judgments of the MoD experience (1=“negative,” 7=“positive”), a *t*-test ($t[74.6]=-6.28$, $p<.001$) revealed the expected difference between the negative ($M=4.29$, $SD=1.58$) and positive ($M=6.05$, $SD=.99$) MoD experience conditions. In addition, to test whether participants recognized the presence of an inoculation message, we asked if they had been informed in advance by the online retailer about potential problems that could occur during delivery. The respondents answered on a seven-point semantic differential scale, from 1=“not mentioned at all” to 7=“mentioned in detail.” A *t*-test ($t[85]=-5.98$, $p<.001$) affirmed the expected differences between the conditions without inoculation ($M=2.55$, $SD=1.71$) and with inoculation ($M=4.87$, $SD=1.89$). We confirmed the realism of the video-based scenario too, such that the mean value indicated by participants significantly exceeded the scale midpoint ($M_{\text{realism}}=6.18$, $SD=1.06$, $t[86]=19.18$, $p<.001$).
5. We thank an anonymous reviewer for the suggestion to examine the moderating effect of the inoculation message on the relationship between delivery experience and PWOM, although this effect is not hypothesized.

References

- Aiken, Leona S. and Stephen G. West. 1991. *Multiple Regression: Testing and Interpreting Interactions*. Sage Publications.
- Amat-Lefort, Natalia and Stuart J. Barnes. 2026. “An Inconvenient Truth: Understanding Service Inconvenience in Digital Platforms.” *Journal of Service Research* 29, no. (1): 45–62.
- Amazon. 2025. “Everything You Need to Know about Amazon’s Electric Delivery Vans from Rivian.” Retrieved May 18, 2026, from <https://www.aboutamazon.com/news/transportation/everything-you-need-to-know-about-amazons-electric-delivery-vans-from-rivian>

- Arlinghaus, Clarissa S., Charlotte Wulff, and Günter W. Maier. 2024. "Inductive Coding with ChatGPT—An Evaluation of Different GPT Models Clustering Qualitative Data into Categories." *OSF Preprints*. https://osf.io/preprints/osf/gpnye_v1
- Barker, Jordan M. and Rebekah I. Brau. 2020. "Shipping Surcharges and LSQ: Pricing the Last Mile." *International Journal of Physical Distribution & Logistics Management* 50, no. (6): 667–91.
- Bateson, John E. G. and Michael K. Hui. 1992. "The Ecological Validity of Photographic Slides and Videotapes in Simulating the Service Setting." *Journal of Consumer Research* 19, no. (2): 271–81.
- Bauer, Hans H., Tomas Falk, and Maik Hammerschmidt. 2006. "ETransQual: A Transaction Process-Based Approach for Capturing Service Quality in Online Shopping." *Journal of Business Research* 59, no. (7): 866–75.
- Becker, Jan U., Martin Spann, and Christian Barrot. 2020. "Impact of Proactive Postsales Service and Cross-Selling Activities on Customer Churn and Service Calls." *Journal of Service Research* 23, no. (1): 53–69.
- Bergkvist, Lars and John R. Rossiter. 2007. "The Predictive Validity of Multiple-Item Versus Single-Item Measures of the Same Constructs." *Journal of Marketing Research* 44, no. (2): 175–84.
- Bhattacharjya, Jyotirmoyee, Adrian Ellison, and Sonali Tripathi. 2016. "An Exploration of Logistics-Related Customer Service Provision on Twitter." *International Journal of Physical Distribution & Logistics Management* 46, no. (6/7): 659–80.
- Blut, Markus, Nima Heirati, and Klaus Schoefer. 2020. "The Dark Side of Customer Participation: When Customer Participation in Service Co-Development Leads to Role Stress." *Journal of Service Research* 23, no. (2): 156–73.
- Bolton, Ruth N., Janet R. McColl-Kennedy, and Lilliemay Cheung, et al. 2018. "Customer Experience Challenges: Bringing Together Digital, Physical and Social Realms." *Journal of Service Management* 29, no. (5): 776–808.
- Boysen, Nils, Stefan Fedtke, and Stefan Schwerdfeger. 2021. "Last-Mile Delivery Concepts: A Survey from an Operational Research Perspective." *OR Spectrum* 43, no. (1): 1–58.
- Cian, Luca, Aradhna Krishna, and Ryan S. Elder. 2014. "This Logo Moves Me: Dynamic Imagery from Static Images." *Journal of Marketing Research* 51, no. (2): 184–97.
- Cohen, Jacob, Patricia Cohen, Stephen G. West, and Leona S. Aiken. 2003. *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. 3rd ed. Routledge.
- Compton, Josh. 2025. "Inoculation Theory." *Review of Communication* 25, no. (1): 1–13.
- Cui, Miao, Xin Li, and Ken Kamoche. 2021. "Transforming from Traditional to E-Intermediary: A Resource Orchestration Perspective." *International Journal of Electronic Commerce* 25, no. (3): 338–63.
- Cui, Ruomeng, Zhikun Lu, Tianshu Sun, and Joseph M. Golden. 2024. "Sooner or Later? Promising Delivery Speed in Online Retail." *Manufacturing & Service Operations Management* 26, no. (1): 233–51.
- Dagogo-Jack, Sokiente W. 2024. "The Moral Superiority of Temporal (vs. Social) Comparisons." *Journal of Consumer Psychology* 34, no. (4): 650–59.
- De Keyser, Arne, Katrien Verleye, Katherine N. Lemon, Timothy L. Keiningham, and Philipp Klaus. 2020. "Moving the Customer Experience Field Forward: Introducing the Touchpoints, Context, Qualities (TCQ) Nomenclature." *Journal of Service Research* 23, no. (4): 433–55.
- DHL. 2025. "2025 E-Commerce Trends Report." Retrieved May 18, 2026, from <https://www.dhl.com/content/dam/dhl/local/global/dhl-e-commerce/documents/pdf/g0-dhl-e-commerce-trends-report-2025.pdf>
- Faul, Franz, Edgar Erdfelder, Albert-Georg Lang, and Axel Buchner. 2007. "G*Power 3: A Flexible Statistical Power Analysis Program for the Social, Behavioral, and Biomedical Sciences." *Behavior Research Methods* 39, no. (2): 175–91.
- Fu, Xiaorong, Lifei Bai, and Flora F. Gu. 2025. "Why Platforms Become Scapegoats: Extending Attribution Theory in Multi-Actor Service Contexts." *Journal of Service Research* 29, no. (1): 97–114.
- Furunes, Trude and Muchazondida Mkono. 2019. "Service-Delivery Success and Failure Under the Sharing Economy." *International Journal of Contemporary Hospitality Management* 31, no. (8): 3352–70.
- Gelbrich, Katja, Jana Gäthke, and Yany Grégoire. 2015. "How Much Compensation Should a Firm Offer for a Flawed Service? An Examination of the Nonlinear Effects of Compensation on Satisfaction." *Journal of Service Research* 18, no. (1): 107–23.
- Geopost. 2025. "E-Shopper Barometer Tool 2025." Retrieved May 18, 2026, from https://www.geopost.com/en/e-shopper-barometer-2025/e-shopper-comparison-tool-2025/?chart_category=2&chart_question=1
- Gupta, Tanvi, Shirley Chen, and Smaraki Mohanty. 2025. "More the Merrier: Effects of Plural Brand Names on Perceived Entitativity and Brand Attitude." *Journal of Consumer Psychology* 35, no. (1): 150–7.
- Harter, Alice, Lucas Stich, and Martin Spann. 2025. "The Effect of Delivery Time on Repurchase Behavior in Quick Commerce." *Journal of Service Research* 28, no. (2): 211–27.
- Hayes, Andrew F. 2022. *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. 3rd ed. New York: Guilford Press.
- Higgins, E. Tory 1996. "Knowledge Activation: Accessibility, Applicability, and Salience." In *Social Psychology: Handbook of Basic Principles*, edited by E. T. Higgins and A. W. Kruglanski, 133–68. The Guilford Press.
- Hoeffler, Steve and Kevin L. Keller. 2003. "The Marketing Advantages of Strong Brands." *Journal of Brand Management* 10, no. (6): 421–45.
- Ivanov, Bobi, William J. Burns, Timothy L. Sellnow, Elizabeth L. Petrun Sayers, Shari R. Veil, and Marcus W. Mayorga. 2016. "Using an Inoculation Message Approach to Promote Public Confidence in Protective Agencies." *Journal of Applied Communication Research* 44, no. (4): 381–98.
- Kapalschinski, Christoph. 2021. "Hellofresh Liefert Künftig Seine Kochboxen Selbst Aus." Retrieved May 18, 2026, from <https://www.handelsblatt.com/27033972.html>
- Koufteros, Xenophon, Cornelia Droge, Gregory Heim, Nelson Massad, and Shawnee K. Vickery. 2014. "Encounter Satisfaction in E-tailing: Are the Relationships of Order Fulfillment Service Quality with Its Antecedents and Consequences Moderated by Historical Satisfaction?" *Decision Sciences* 45 (1): 5–48.
- Lawler, Edward J. 2001. "An Affect Theory of Social Exchange." *American Journal of Sociology* 107, no. (2): 321–52.

- Linzmajer, Marc, Simon Brach, Gianfranco Walsh, and Tillmann Wagner. 2020. "Customer Ethnic Bias in Service Encounters." *Journal of Service Research* 23, no. (2): 194–210.
- Ma, Ke and Si Qian. 2022. "The Effect of Inoculation Messages on Service Recovery." *Marketing Intelligence & Planning* 40, no. (6): 710–23.
- Ma, Ke and Weizheng Sun. 2024. "Guarantee or Inoculate? Ex Ante Messages against Service Failures." *Asia Pacific Journal of Marketing and Logistics* 36, no. (11): 3081–98.
- Masorgo, Nicolò, Saif Mir, and Adriana R. Hofer. 2023. "You're Driving Me Crazy! How Emotions Elicited by Negative Driver Behaviors Impact Customer Outcomes in Last Mile Delivery." *Journal of Business Logistics* 44, no. (4): 666–92.
- McGuire, William J. 1961. "The Effectiveness of Supportive and Refutational Defenses in Immunizing and Restoring Beliefs Against Persuasion." *Sociometry* 24, no. (2): 184–97.
- McShane, Blakeley B. and Ulf Böckenholt. 2017. "Single-Paper Meta-Analysis: Benefits for Study Summary, Theory Testing and Replicability." *Journal of Consumer Research* 43, no. (6): 1048–63.
- Mikolon, Sven, Benjamin Quaiser, and Jan Wieseke. 2015. "Don't Try Harder: Using Customer Inoculation to Build Resistance Against Service Failures." *Journal of the Academy of Marketing Science* 43, no. (4): 512–27.
- Mittal, Vikas, William T. Ross, Jr., and Patrick M. Baldasare. 1998. "The Asymmetric Impact of Negative and Positive Attribute-Level Performance on Overall Satisfaction and Repurchase Intentions." *Journal of Marketing* 62, no. (1): 33–47.
- Murfield, Monique, Christopher A. Boone, Paige Rutner, and Rodney Thomas. 2017. "Investigating Logistics Service Quality in Omni-Channel Retailing." *International Journal of Physical Distribution & Logistics Management* 47, no. (4): 263–96.
- Paley, Anna, Stephanie M. Tully, and Eesha Sharma. 2019. "Too Constrained to Converse: The Effect of Financial Constraints on Word of Mouth." *Journal of Consumer Research* 45, no. (5): 889–905.
- Papageorgis, Demetrios and William J. McGuire. 1961. "The Generality of Immunity to Persuasion Produced by Pre-Exposure to Weakened Counterarguments." *Journal of Abnormal and Social Psychology* 62, no. (3): 475–81.
- Peinkofer, Simone T. and Yao H. Jin. 2023. "The Impact of Order Fulfillment Information Disclosure on Consequences of Deceptive Counterfeits." *Production and Operations Management* 32, no. (1): 237–60.
- Pfau, Michael and Michael Burgoon. 1988. "Inoculation in Political Campaign Communication." *Human Communication Research* 15, no. (1): 91–111.
- PostNord. 2021. "E-Commerce in Europe." Retrieved May 18, 2026, from <https://www.postnord.se/siteassets/pdf/rapporter/e-commerce-in-europe-2021.pdf>
- Richards, Adam S. and John A. Banas. 2015. "Inoculating Against Reactance to Persuasive Health Messages." *Health Communication* 30, no. (5): 451–60.
- Roskos-Ewoldsen, David R. and Russell H. Fazio. 1992. "On the Orienting Value of Attitudes: Attitude Accessibility as a Determinant of An Object's Attraction of Visual Attention." *Journal of Personality and Social Psychology* 63, no. (2): 198–211.
- Spears, Nancy and Surendra N. Singh. 2004. "Measuring Attitude Toward the Brand and Purchase Intentions." *Journal of Current Issues & Research in Advertising* 26, no. (2): 53–66.
- Statista. 2025. "Global Parcel Shipping Volume between 2013 and 2027 (in Billion Parcels)." Retrieved May 18, 2026, from <https://www.statista.com/statistics/1139910>
- Subramony, Mahesh, Markus Groth, Xinyu Hu, and Yu Wu. 2021. "Four Decades of Frontline Service Employee Research: An Integrative Bibliometric Review." *Journal of Service Research* 24, no. (2): 230–48.
- Subramony, Mahesh, Danielle van Jaarsveld, Helena Nguyen, Markus Groth, and David Solnet. 2023. "Frontline Service Employee Research: Integration of Systematic Literature Reviews and Recommendations for Future Scholarship." *Journal of Service Management* 34, no. (5): 829–42.
- Ta, Ha, Terry L. Esper, and Adriana R. Hofer. 2018. "Designing Crowdsourced Delivery Systems: The Effect of Driver Disclosure and Ethnic Similarity." *Journal of Operations Management* 60, no. (1): 19–33.
- Ta, Ha, Terry L. Esper, Adriana R. Hofer, and Annibal C. Sodero. 2023. "Crowdsourced Delivery and Customer Assessments of E-Logistics Service Quality: An Appraisal Theory Perspective." *Journal of Business Logistics* 44, no. (3): 345–68.
- Ta, Ha, Terry L. Esper, Adriana R. Hofer, and Annibal C. Sodero. 2025. "Reconceptualizing E-Logistics Service Quality (E-LSQ) In Emerging Contexts: The Case of Crowdsourced Delivery." *Journal of Business Logistics* 46, no. (1): e12401.
- Target. 2017. "Target to Acquire Same-Day Delivery Platform Shipt, Inc. to Bolster Fulfillment Capabilities." Retrieved May 18, 2026, from <https://corporate.target.com/press/release/2017/12/target-to-acquire-same-day-delivery-platform-shipt,-inc-to-bolster-fulfillment-capabilities>
- Uzir, Md. U. H., Hussam Al Halbusi, and Ramayah Thurasamy, et al. 2021. "The Effects of Service Quality, Perceived Value and Trust in Home Delivery Service Personnel on Customer Satisfaction: Evidence from a Developing Country." *Journal of Retailing and Consumer Services* 63: 102721.
- Vakulenko, Yulia, Poja Shams, Daniel Hellström, and Klas Hjort. 2019a. "Service Innovation in E-Commerce Last Mile Delivery: Mapping the E-Customer Journey." *Journal of Business Research* 101: 461–68.
- Vakulenko, Yulia, Poja Shams, Daniel Hellström, and Klas Hjort. 2019b. "Online Retail Experience and Customer Satisfaction: The Mediating Role of Last Mile Delivery." *International Review of Retail Distribution and Consumer Research* 29, no. (3): 306–20.
- van Vaerenbergh, Yves, Chiara Orsingher, Iris Vermeir, and Bart Larivière. 2014. "A Meta-Analysis of Relationships Linking Service Failure Attributions to Customer Outcomes." *Journal of Service Research* 17, no. (4): 381–98.
- Villarroel Ordenes, Francisco, Grant Packard, Jochen Hartmann, and Davide Proserpio. 2025. "Using Traditional Text Analysis and Large Language Models in Service Failure and Recovery." *Journal of Service Research* 28, no. (3): 382–88.
- Vogelmann, Emma and Daisy Bird. 2021. "Supermarkets, the Pandemic and the Future for Disabled Customers." Retrieved May 18, 2026, from <https://www.scope.org.uk/campaigns/research-policy/supermarkets-the-pandemic-and-the-future-for-disabled-customers>
- Voorhees, Clay M., Paul W. Fombelle, Yany Gregoire, et al. 2017. "Service Encounters, Experiences and the Customer Journey: Defining the Field and a Call to Expand Our Lens." *Journal of Business Research* 79: 269–280.

- Walsh, Gianfranco and Marc Linzmajer. 2021. "The Services Field: A Cornucopia Filled with Potential Management Topics." *European Management Journal* 39, no. (6): 688–94.
- Warren, Nathan, Sara Hanson, and Hong Yuan. 2021. "Feeling Manipulated: How Tip Request Sequence Impacts Customers and Service Providers?" *Journal of Service Research* 24, no. (1): 66–83.
- Watson, George F., Stefan Worm, Robert W. Palmatier, and Shankar Ganesan. 2015. "The Evolution of Marketing Channels: Trends and Research Directions." *Journal of Retailing* 91, no. (4): 546–68.
- Weiler, Severin, Christian Matt, and Thomas Hess. 2022. "Immunizing with Information: Inoculation Messages Against Conversational Agents' Response Failures." *Electronic Markets* 32, no. (1): 239–58.
- Weiner, Bernard. 1985. "An Attributional Theory of Achievement Motivation and Emotion." *Psychological Review* 92, no. (4): 548–73.
- Weiner, Bernard. 2000. "Attributional Thoughts About Consumer Behavior." *Journal of Consumer Research* 27, no. (3): 382–7.
- Whang, Claire and Hyunjoo Im. 2021. "'I Like Your Suggestion!' The Role of Humanlikeness and Parasocial Relationship on the Website Versus Voice Shopper's Perception of Recommendations." *Psychology & Marketing* 38, no. (4): 581–95.
- Wilder, Kelly M., Joel E. Collier, and Donald C. Barnes. 2014. "Tailoring to Customers' Needs: Understanding How to Promote an Adaptive Service Experience With Frontline Employees." *Journal of Service Research* 17, no. (4): 446–59.
- Wolter, Jeremy S., Todd J. Bacile, and Pei Xu. 2023. "How Online Incivility Affects Consumer Engagement Behavior on Brands' Social Media." *Journal of Service Research* 26, no. (1): 103–19.
- Wong, Paul T. and Bernard Weiner. 1981. "When People Ask 'Why' Questions, and the Heuristics of Attributional Search." *Journal of Personality and Social Psychology* 40, no. (4): 650–63.
- Wu, Banggang, Yubo Chen, and Prasad A. Naik. 2024. "How Own Delivery Services Influence Customer Behavior and Sales in Online Retail? Building Trust and Improving Delivery Quality in Digital Economy." *Journal of Marketing* 88, no. (5): 131–52.
- Yang, Sha, Mantian Hu, Russell S. Winer, Henry Assael, and Xiaohong Chen. 2012. "An Empirical Study of Word-of-Mouth Generation and Consumption." *Marketing Science* 31, no. (6): 952–63.
- Yurt, Oznur, Metehan F. Sorkun, and Juliana Hsuan. 2023. "Modularization of the Front-End Logistics Services in E-Fulfillment." *Journal of Business Logistics* 44, no. (4): 583–608.
- Zeithaml, Valarie A., Leonard L. Berry, and A. Parasuraman. 1996. "The Behavioral Consequences of Service Quality." *Journal of Marketing* 60, no. (2): 31–46.
- Zhang, Yinlong, Lawrence Feick, and Vikas Mittal. 2014. "How Males and Females Differ in Their Likelihood of Transmitting Negative Word of Mouth." *Journal of Consumer Research* 40, no. (6): 1097–108.
- Zhang, Yufei, Clay M. Voorhees, and Chen Lin, et al. 2022. "Information Search and Product Returns Across Mobile and Traditional Online Channels." *Journal of Retailing* 98, no. (2): 260–76.

Author Biographies

Christopher Funke is a PhD student at Leibniz University Hannover. His research interests include customer experience, tipping behavior, and digital stress. Christopher's work has been published in *Review of Managerial Science* and *Cross Cultural & Strategic Management*.

Gianfranco Walsh is a Professor at Leibniz University Hannover and a research fellow with Vlerick Business School. He is specifically interested in service and healthcare management, as well as e-commerce, with publications in leading journals such as *Academy of Management Journal*, *Journal of Consumer Psychology*, and *Journal of Service Research*.

Tobias Schaefers is a Professor at Bielefeld School of Business and an Associate Professor at Copenhagen Business School. His work on topics such as service recovery, access-based services, and digitalization of the customer-company interface has appeared in *Journal of Service Research*, *Psychology & Marketing*, and *Industrial Marketing Management*, among others.