

Decentralized Distrust: How Cryptocurrency Payments Undermine Firm Trust

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Abstract

The rise of cryptocurrencies is transforming how consumers trade, purchase, and pay for products. The current work explores how cryptocurrencies used as a payment method shape consumer-firm interactions. Through one large-scale pilot study, four experiments, and one field experiment, we demonstrate that consumers perceive cryptocurrencies as a riskier payment method compared to traditional payment methods. We introduce the *Payment Method Technology Risk Transfer* and demonstrate how this heightened risk perception, induced by a payment option, subsequently increases consumers' perceived interaction risk when engaging with the same firm. These risk dynamics negatively impact and ultimately erode consumers' evaluation of the firm offering the payment method. We further demonstrate two essential boundary conditions: When firms actively communicate the privacy benefits of cryptocurrencies as a payment method or when the firm has a higher baseline trust with consumers, the adverse effects of cryptocurrencies as a payment method are reduced. Our findings highlight the unintended risks associated with crypto payments and the importance of effectively managing consumer risk perceptions of digital currencies when used as a means of payment for products and services. This research offers novel insights into how digital currencies and innovative payment technologies influence the psychology of consumer-firm relationships, as well as strategies that firms can employ to manage consumer expectations and mitigate risk effectively.

Keywords: Cryptocurrencies, Payment Methods, Risk Perception, Trust, Consumer-Firm Relationships, Firm Attributions

Introduction

The growing popularity of blockchain technology has prompted firms such as AT&T, Twitch, Gucci, and Microsoft to adopt cryptocurrencies as an alternative to traditional payment methods. A study of 202 firms revealed that 46% had incorporated cryptocurrencies into their accepted payment methods, with most reporting reduced fees and an increase in new customers (Hakkarainen & Colicev, 2023; PYMNTS, 2022). Cryptocurrencies are digital currencies that can be exchanged in systems called blockchains for goods and services similar to money (Hadi et al., 2023). The main difference between cryptocurrencies and traditional currencies (e.g., the Dollar and Euro) lies in their decentralized nature, operating on blockchain technology without the control of a central authority, and their varying degrees of acceptance and regulation (Arpaci & Bahari, 2023; Gleim & Stevens, 2021). Since 2009, when the first cryptocurrency, Bitcoin, was introduced, over 1,000 cryptocurrencies have emerged, with a global cryptocurrency market capitalization surpassing \$ 1 trillion (CoinMarketCap, 2023; Wei & Dukes, 2021). For instance, 16% of the US population and 27% of the Indian population own or have used cryptocurrencies (Statista, 2023). Due to their decentralized structure and fundamentally different mode of operation, cryptocurrencies have started to establish themselves as an alternative to traditional payment methods, such as cash or credit cards, and promote the decentralization of the financial industry (Ilk et al., 2021).

Prior work on the “psychology of paying” revealed that the type of payment method has a far-reaching influence on consumer purchase decisions and behaviors (e.g., Chatterjee & Rose, 2012; Hirschman, 1979; Soman, 2001). For instance, the physical form and appearance of payment methods relative to cash influence consumers’ perception of them as either real money or play money (Raghubir & Srivastava, 2008). Moreover, paying with credit cards, as opposed to cash, has been associated with an escalation in the probability, speed, and extent of (perceived) expenditure (Feinberg, 1986). Using cash can also be an effective strategy for reducing the probability of making impulsive purchases, as it fosters a more tangible connection to the transaction (Inman et al., 2009).

The current research provides a novel perspective on how digital currencies can influence consumer-firm relationships and subsequent evaluations of firms that offer such payment options. In this research, we offer a new theoretical lens and conceptual model proposing a risk transfer

model in which the attributions toward a specific type of payment method (in our case, cryptocurrencies) shape consumers' attributions toward the firm and their downstream behavior in connection with that firm. Across one pilot and five studies, we hypothesize and provide empirical evidence that offering cryptocurrencies compared to more traditional payment methods (e.g., credit cards) elicits a heightened sense of payment risk, which in turn increases consumers' perceived risk to interact with the firm offering the cryptocurrency, ultimately negatively affecting downstream behavioral outcomes (e.g., more negative consumer sentiment or a reduced likelihood to engage with the firm in the future). We further demonstrate that the negative impact of cryptocurrencies on attributions toward the firm can be mitigated when firms proactively communicate the unique advantages of a decentralized payment method or currency (e.g., enhanced privacy benefits) or when firms have a higher baseline level of trust with consumers.

In what follows, we first review prior work on the psychology of paying and the unique role of payment methods on consumers and firms, followed by our predictions on how cryptocurrencies may shape firm perception and downstream behavioral outcomes in connection with the firm. We then provide evidence using both field and experimental evidence and discuss the broader implications of the current work on the future of payment technologies and how they shape consumers' firm attributions and actual behaviors. We finally close with a discussion of the public policy implications, financial regulation, and the impact on consumers and firms.

Theory and Hypotheses

As summarized in the literature review in Table 1, prior work in marketing has deepened our understanding of how different types of payment can systematically impact consumers' product or service decisions, with a strong emphasis on illuminating how each type shapes spending and adoption. For instance, credit card usage has been associated with increased spending due to decreased "pain of payment" relative to cash payments (Prelec & Loewenstein, 1998). From a substantive perspective, the majority of prior work has examined, in particular, how cash, credit, debit cards, vouchers, or mobile payments impact consumers.

Specifically, these studies focused particularly on differences in consumer perception and behavior depending on the payment methods, including cash, credit, and debit cards (e.g., Chatterjee & Rose, 2012; Feinberg, 1986). Recent technological advancements have prompted studies on the influence of mobile phone payments on consumer perception and behavior (e.g.,

Table 1: Payment method literature

Article	Payment method				DV focus		Mediation & Moderation
	Cash	Credit/debit	Cryptocurrencies	Others	Consumer	Firm	
Ahn and Nam 2022	x	x	x	✓	✓	x	Moderation: financial knowledge
Chatterjee and Rose 2012	✓	✓	x	x	✓	x	Mediation: response latency Moderation: dominated decoys (redirecting attention away from primed benefits to costs or the other way around)
Feinberg 1986	✓	✓	x	x	✓	x	-
Gafeeva, Hoelzl, and Roschk 2018	✓	✓	x	x	✓	x	Mediation: payment distinctiveness
Hirschman 1979	✓	✓	x	✓	✓	x	-
Huang and Savary 2023	✓	x	x	✓	✓	x	Mediation: perceived social transaction context Moderation: role in the transaction
Huang et al. 2020	✓	x	x	✓	✓	x	Mediation: competence perception & warmth perception
Inman, Winer, and Ferraro 2009	✓	✓	x	✓	✓	x	-
Kamleitner and Erik 2013	✓	✓	x	x	✓	x	Moderation: Meaning associated with a payment method
Park, Lee, and Thomas 2021	✓	✓	x	x	✓	x	Mediator: arousal Moderation: perceived unhealthiness of the product
Prelec and Loewenstein 1998	✓	✓	x	x	✓	x	-
Prelec and Simester 2001	✓	✓	x	✓	✓	x	-
Raghubir and Srivastava 2008	✓	✓	x	✓	✓	x	Moderation: payment estimation decomposition strategy & salience of parting with money
Shah et al. 2016	✓	✓	x	✓	✓	x	Mediation: the pain of payment & emotional attachment
Soman 2001	x	✓	x	✓	✓	x	Moderation: Recall past payments
Soman 2003	✓	✓	x	✓	✓	x	Mediation: flexibility in usage
Thomas, Desai, and Seenivasan 2011	✓	✓	x	x	✓	x	Mediation: the pain of payment Moderation: chronic pain of payment propensity
Thomas, Ma, and Gauri 2023	✓	✓	x	x	✓	x	Mediation: food carving & perceived unhealthiness (sequence)
Zhou, Ye, and Liu 2023	✓	✓	x	✓	✓	x	Mediation: psychological distance & psychological ownership (parallel)
Current work	x	✓	✓	x	x	✓	Mediation: Risk transfer (sequential perceived payment method risk & perceived firm interaction risk); Moderation: perceived payment method privacy

Payment Method Risk Attributions

Recent advancements in blockchain technologies have given rise to cryptocurrencies, which function as digital assets utilizing a decentralized control system and cryptographic techniques to ensure secure and verifiable transactions on blockchains, resembling conventional money (Hadi et al., 2023; Tan & Saraniemi, 2022). A blockchain serves as the underlying for “cryptographically capturing and storing a consistent, immutable, linear event log of transactions between networked actors” (Risius & Spohrer, 2017, p.386). Consequently, cryptocurrencies emerge as a potentially “revolutionary financial technology”, offering multiple advantages over traditional payment methods (e.g., cash and credit cards), including reduced transaction costs, expedited processing times, verifiability, privacy, anonymity, and decentralized control (e.g., Arpaci & Bahari, 2023; Belk et al., 2022; Li & Wang, 2017; Morewedge et al., 2021). Given their benefits, there is increasing anticipation that cryptocurrencies may eventually replace traditional payment methods (Ilk et al., 2021).

However, despite their potential, cryptocurrencies have not yet lived up to this seemingly superior expectation. Fluctuations in transaction fees and processing times have raised concerns among consumers and firms about the stability of cryptocurrencies, causing them to reconsider their cryptocurrency adoption (Ilk et al., 2021). Significant and unpredictable reduction in rewards paid to miners, who contribute computing power to verify transactions, can disincentivize their involvement, further raising concerns among consumers and firms about the security and stability of cryptocurrencies (Carlsten et al., 2016; Ilk et al., 2021). Prior research also found that people (accurately) perceive cryptocurrencies as a more risky investment due to their volatility (Belk et al., 2022; Colicev, 2023; Gleim & Stevens, 2021; Hadi et al., 2023; Wei & Dukes, 2021). Consumers also perceive new technologies, in general, as riskier compared to established technologies (Herzenstein et al., 2007; Mani & Chouk, 2017). Cryptocurrencies being revolutionary in nature (Ilk et al., 2021) results in heightened consumer risk perceptions. Unlike any other payment method that simply modifies the payment modality without introducing a distinct currency (e.g., cash, credit cards, and Apple Pay), cryptocurrencies introduce mostly fundamentally distinct currencies on a decentralized blockchain ecosystem, altering the very nature of the payment method. However, the majority of prior work examined cryptocurrencies from an investment and not from a payment method perspective.

Against this theoretic background, we hypothesize that consumers perceive

cryptocurrencies as a riskier payment method compared to credit cards.

H1: Cryptocurrencies, relative to traditional payment methods (e.g., credit cards), are perceived as a riskier payment method.

The Mediating Role of the Payment Method Technology Risk Transfer on Firm Attributions

We theorize that greater levels of perceived payment method risk may also have downstream consequences for the consumer-firm relationship by deteriorating consumers' firm attributions. This prediction is supported by prior research on evaluative conditioning. This research shows that associating a neutral stimulus with a negatively (positively) valenced stimulus decreases (increases) the valence of the initially neutral stimulus (De Houwer et al., 2001; Hofmann et al., 2010; Rosengren et al., 2020; Sweldens et al., 2010; Woolley & Sharif, 2021). For example, creative ads, being inherently engaging and enjoyable, tend to elicit positive emotions in consumers. This positivity then enhances their perception of the ad and firm (Rosengren et al., 2020). Analogously, we propose that pairing cryptocurrencies as a payment method (perceived as a riskier payment method) with the purchase process (generally perceived as a neutral consumer-firm interaction) increases the perceived riskiness of the consumer-firm interaction (i.e., the purchase process) and thus negatively influences consumers' firm attributions. Thus, the negative affect of the payment method spills over to the firm interaction and firm attributions. Specifically, given that we expect cryptocurrencies to be perceived as riskier payment method by consumers, we hypothesize that this increased perceived payment method risk subsequently amplifies the perceived firm interaction risk and ultimately reduces consumers' trust in the firm. We term this novel sequential mediation process "payment method technology risk transfer", as it transfers the perceived risk from the payment method to the firm. Taken together, we expect that offering cryptocurrencies reduces consumers' trust in the firm relative to credit cards.

H2: Offering cryptocurrency as a payment method reduces consumers' trust in the firm when compared to credit cards as a payment method.

The Moderating Role of Privacy Protection & Firm Baseline Trust

If, as we propose, consumers attribute greater risks toward cryptocurrencies as a payment method and, in turn, negatively impact the firm, how should firms actively manage and mitigate such risks? We propose and test two options: Actively communicating the key benefits of it and

leveraging a positive spill-over from the firm to the payment method to reduce risk and uncertainty. First, privacy concerns are one of the most fundamental consumer concerns (Miyazaki & Fernandez, 2001; Shin, 2010). Firms may, therefore, actively address privacy issues by educating consumers through easy-to-understand privacy policies and seals which make it transparent for consumers what personal information is collected and how it is stored and processed (Culnan & Armstrong, 1999; Kim et al., 2008; Shin, 2010). Consequently, we hypothesize that emphasizing the privacy aspects of cryptocurrency payment methods (Morewedge et al., 2021; Peres et al., 2023) can boost consumers' trust in the firm. This proposition is also in line with affordance theory, which suggests that consumers perceive technologies as "action possibilities" (i.e., affordances) rather than their objective characteristics and qualities (J. J. Gibson, 1979). These perceived affordances, shaped by consumers' perceptions, skills, and cultural norms, influence how they interact with technologies (Davis, 2020; Davis & Chouinard, 2016; Mardon et al., 2022). Misalignments between these perceptions and the actual affordances shape consumer attitudes, hinder adoption, and are particularly common with digital technologies (Mardon et al., 2022). Affordance misalignments can be resolved by consumers by transforming the technology's affordances or by revising their perceived affordances. We expect that educating consumers about the privacy aspects of cryptocurrency (i.e., actual affordances) will support them in revising their perceived affordances and thus enhance their perception of cryptocurrencies and the firm offering them as a payment method (payment method technology risk transfer).

H3: Trust in the firm can be raised when offering cryptocurrencies as a payment method by highlighting privacy aspects of the cryptocurrency payment method.

Second, the increased risk perception of cryptocurrencies may not be transferred equally for all firms from the payment method to the firm. Prior work on affect transfer suggests that the affect towards the endorser influences consumers' attitudes toward the firm (Eisend & Langner, 2010; Kahle & Homer, 1985). Similarly, we expect that consumers' higher baseline trust towards a firm (the endorser of cryptocurrencies) reduces the adverse effects of a riskier payment method and increases the likelihood of interacting with the firm (purchasing a product) and thus may offset the negative affect stemming from a riskier payment method. Specifically, we expect that greater levels of firm baseline trust immunize against the negative impact of cryptocurrencies.

H4: Greater levels of baseline trust in the firm immunize against the negative impact of cryptocurrencies as a payment method on firm trust compared to credit cards.

Pilot Study: Field Data

We conducted a pilot study to assess whether offering cryptocurrencies as a payment method impacts consumers' attributions and evaluations of a firm.

Method and Procedure

We examined Gucci's announcement of accepting cryptocurrencies to purchase their products. Gucci has been an early adopter of cryptocurrencies as a payment method (Loeb, 2022) and is among the most valuable brands worldwide (Interband, 2023). The pilot study was inspired by Malhotra & Bhattacharyya, 2022 to utilize publicly available digital footprints of users on social media to assess the impact of Gucci's announcement to utilize cryptocurrencies as a payment option. Similar to prior work, we used public data on Twitter/X as, unlike other social media platforms, Twitter/X A) is known for its public, rapid, and transient conversations, which lead to larger influence on public perceptions of a firm (Lambrecht et al., 2018; Rust et al., 2021), and B) offers public access to the latest firm discussions since most firms are consistently active on it (Lacka et al., 2022; Rust et al., 2021). Thus, Twitter provides a suitable context to study. We scraped tweets directed at Gucci seven days before and after they announced accepting cryptocurrency as a payment method. Before the official announcement, information that Gucci was about to accept cryptocurrency as a payment method was leaked on Twitter. Therefore, we identified the first tweet that spread the information to split the tweets into pre- and post-announcement tweets. We selected tweets in the 24 hours before and after the announcement to measure the actual impact of cryptocurrencies on consumer perceptions and to rule out alternative explanations. For the same reason, we removed tweets from crypto lobbyists by excluding tweets from users whose names contain "crypto", "nft", "krypt", "meta", "block", "coin", or "eth". In addition, we removed tweets that revolved around the topic of NFTs, as Gucci announced an NFT project shortly before, by excluding tweets that contained "nft" or "10ktfshop" in their text.

We analyzed a total of $N = 2,072$ tweets by performing a sentiment analysis using a multilingual model trained on tweets and finetuned specifically for sentiment analysis on social media data (Barbieri et al., 2022). As in prior work (Dotzel & Shankar, 2019; Tang et al., 2014), we report the overall sentiment score per tweet by subtracting the negative sentiment score from the positive sentiment score.

Results and Discussion

As predicted and shown in Figure 1, a one-way ANOVA revealed a significant, negative main effect for the introduction of cryptocurrencies ($F(1, 2070) = 21.32, p < .001$), with significantly more negative overall sentiment toward the firm ($M_{\text{pre}} = .31, SD_{\text{pre}} = .61$ vs. $M_{\text{post}} = .16, SD_{\text{post}} = .52, p < .001$). To illustrate that the negative sentiment is directly linked to the introduction of cryptocurrencies, and not to other exogenous factors, users criticized Gucci for undermining its brand, calling it “the new scammer store” and warning that “shitcoining will destroy the brand of this once luxury name”. Others framed the move as opportunistic, arguing that “they’re only doing this for the hype” and questioning the choice of cryptocurrency: “Had they really respected crypto, they’d accept ETH or even Polygon”.

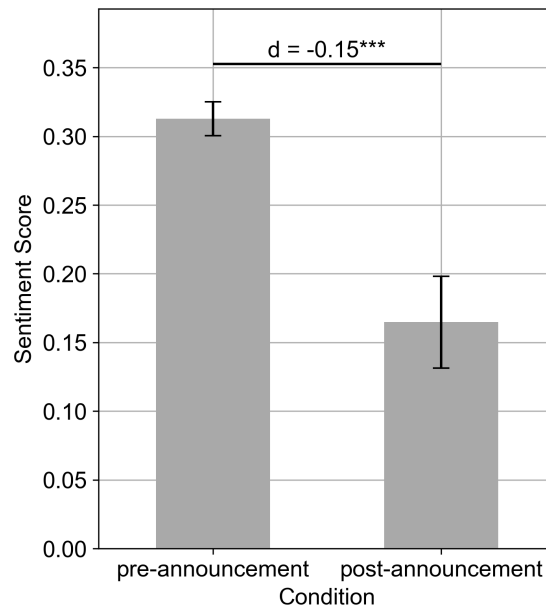


Figure 1: Cryptocurrency adoption announcement reduces consumers’ sentiment

The key insight of this Pilot Study is large-scale field evidence of consumers’ negative reactions toward the firm when offering cryptocurrencies as a payment method. However, these findings are correlational and may be influenced by self-selection or other external factors, which means they do not provide direct, causal evidence. In what follows, we employ tightly controlled experimental paradigms to test our hypotheses.

Study 1

The objective of Study 1 was to provide a direct (i.e., causal) test on whether offering cryptocurrencies as a payment method negatively affects firms.

Method and Procedure

A total of 600 participants were recruited from Prolific in exchange for monetary compensation. Participants were randomly assigned to one of two conditions: cryptocurrencies vs. traditional payment method (i.e., credit card). In both conditions, participants were presented with a screenshot of a fictional running shoe manufacturer's website (the fictional firm was called "Luf"). They were asked to envision being at the end of the checkout process, where the manufacturer offered different payment methods. Next, participants were shown the checkout process of the running shoe manufacturer's website, including information about available payment methods, the shopping cart, and the price. The checkout was either performed in US Dollars or Ethereum. We chose Ethereum as a cryptocurrency as it is a leading cryptocurrency and dominant payment option in current online shops and, unlike Bitcoin, it offers faster confirmation times, lower transaction costs, and compatibility with the ERC-20 token (i.e., allows online stores to issue their own digital tokens which can be used for loyalty programs). The study was pre-registered (https://aspredicted.org/6PG_VJQ), and we excluded individuals who completed the study in less than 30 seconds or who failed to write at least 15 characters in our open question, leaving a final sample of 597 ($M_{age} = 39.88$, 49.41% female & 1.17% non-binary).

Participants first reported their spontaneous thoughts and feelings about the presented payment method via an open-ended question placed directly below the stimulus screenshot. Following this, participants rated perceived payment method risk using three items (adapted from Darke et al. 2016; sample item: "Paying for a product with cryptocurrencies/credit cards would be risky"; 7-point Likert scale, 1 = "Strongly disagree" to 7 = "Strongly agree"; $\alpha = .93$). Finally, participants provided demographic and background information, including age, gender, marital status, cryptocurrency/NFT ownership, prior cryptocurrency payment experience, education level, and annual net income.

We conducted an aspect-based sentiment analysis on the open-ended text responses using OpenAI's GPT-4o (gpt-4o-2024-08-06), accessed via the API. Each participant's response was processed to extract aspects, the corresponding text segments, and their associated sentiment

scores (ranging from -1 = “negative” to 1= “positive”). The JSON output was parsed, aspect embeddings were generated, and k-means clustering was applied to identify dominant topics and sentiment patterns across payment attributes. This approach enables a more granular understanding of how specific aspects of each payment method are perceived, revealing which attributes elicited positive, neutral, or negative reactions. Crucially, by analyzing aspects individually, this method preserves positive and negative sentiments within the same response, rather than averaging them out, thus capturing the full complexity of participants’ evaluations.

Results

Perceived Payment Method Risk. As predicted, a one-way ANOVA revealed a significant main effect of the payment method ($F(1, 595) = 235, p < .001$). The results confirmed that cryptocurrencies were perceived as a significantly riskier payment method compared to more traditional payment methods ($M_{\text{Cryptocurrencies}} = 4.13, SD_{\text{Cryptocurrencies}} = 1.74$ vs. $M_{\text{CreditCards}} = 2.20, SD_{\text{CreditCards}} = 1.32, p < .001$).

Consumer Sentiment. We observed significantly more negative aspect sentiment for cryptocurrencies compared to credit cards as a payment method (see Figure 2:A; $M_{\text{Cryptocurrencies}} = .24, SD_{\text{Cryptocurrencies}} = .60$ vs. $M_{\text{CreditCards}} = .29, SD_{\text{CreditCards}} = .54, p < .001$). Specifically, our study revealed that consumers have concerns regarding the security and usability of cryptocurrencies as a payment method (see Figure 2:B; $M_{\text{Cryptocurrencies}} = -.15, SD_{\text{Cryptocurrencies}} = .64$ vs. $M_{\text{CreditCards}} = .37, SD_{\text{CreditCards}} = .49, p < .001$). They are particularly dissatisfied with the payment options ($M_{\text{Cryptocurrencies}} = -.15, SD_{\text{Cryptocurrencies}} = .63$ vs. $M_{\text{CreditCards}} = .24, SD_{\text{CreditCards}} = .53, p < .001$) and worried about the associated purchase currencies and fees ($M_{\text{Cryptocurrencies}} = -.36, SD_{\text{Cryptocurrencies}} = .54$ vs. $M_{\text{CreditCards}} = .12, SD_{\text{CreditCards}} = .63, p < .001$).

Mediation. To test whether perceived payment method risk mediates the relationship between the payment method and consumers’ firm attributions (i.e., consumer sentiment), we applied PROCESS Model 4 (Hayes, 2022) using 10,000 bootstrapped samples (credit cards dummy-coded as 0 and cryptocurrencies as 1). As predicted, the negative direct effect of cryptocurrencies as a payment method on consumers’ firm attributions ($b_{\text{Direct}} = -.216, 95\% CI_{\text{Direct}}: [-.295; -.138]$) was significantly mediated via first enhancing the perceived payment method risk ($b_{\text{PaymentMethod}} = 1.945, t(594) = 15.4, p < .001$), which in turn reduced consumers’ firm attributions ($b_{\text{PaymentMethodRisk}} = -.147, t(593) = -13.4, p < .001$). The indirect effect through the perceived

payment method risk was significant with the 95% confidence interval excluding zero ($b_{\text{Indirect}} = -.286$, 95% CI_{Indirect} : [-.342; -.237]).

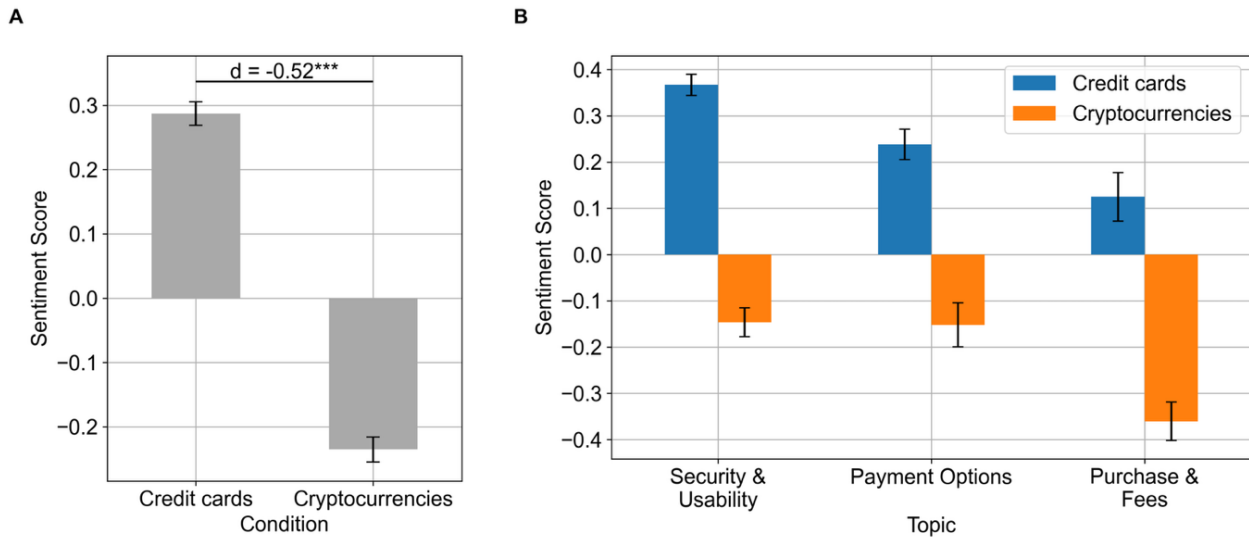


Figure 2: Consumers express negative sentiment towards cryptocurrencies (vs. credit cards)

Discussion

The results of Study 1 demonstrate that consumers attribute a significantly higher payment method risk to cryptocurrencies, which in turn negatively impacts their firm attributions and evaluations.

Study 2

The objective of Study 2 was to replicate the results of Study 1 and to provide a full test of our conceptual model (i.e., assess whether higher perceived payment risk, in turn, leads to higher perceived firm interaction risk and reduced trust in the firm).

Method and Procedure

A total of 500 participants ($M_{\text{age}} = 39$, 49.8% female & 1% non-binary) were recruited from Prolific in exchange for monetary compensation. The study mirrored the experimental paradigm used in Study 1 and was pre-registered (https://aspredicted.org/TB6_LP1). At the end of the shopping task, we used identical scales to assess participants' immediate thoughts and feelings related to the payment method (open question) and perceived payment method risk ($\alpha_{\text{PaymentMethodRisk}} = .92$). Next, participants indicated their trust in the firm using four items (scale

adapted from Darke et al. 2016, sample item: “I believe that I could trust Luf.”; 7-point Likert scale, from 1: “Strongly disagree” to 7: “Strongly agree”; $\alpha_{\text{FirmTrust}} = .96$) and to which extent they perceived interacting with the firm as risky using three items (scale adapted from Darke et al. 2016, sample item: “Purchasing a product from Luf would be risky.”; 7-point Likert scale, from 1: “Strongly disagree” to 7: “Strongly agree”; $\alpha_{\text{FirmInteractionRisk}} = .94$).

Results

Perceived Payment Method Risk. Replicating the finding of Study 1, a one-way ANOVA revealed that cryptocurrencies were perceived as a significantly riskier payment method ($M_{\text{Cryptocurrencies}} = 4.45$, $SD_{\text{Cryptocurrencies}} = 1.67$ vs. $M_{\text{CreditCards}} = 2.46$, $SD_{\text{CreditCards}} = 1.35$, $F(1, 498) = 216.2$, $p < .001$).

Perceived Firm Interaction Risk. As predicted, we also found that consumers perceived a significantly increased firm interaction risk ($M_{\text{Cryptocurrencies}} = 4$, $SD_{\text{Cryptocurrencies}} = 1.39$ vs. $M_{\text{CreditCards}} = 3.04$, $SD_{\text{CreditCards}} = 1.32$, $F(1, 498) = 62.4$, $p < .001$).

Firm Trust. A one-way ANOVA revealed that cryptocurrencies as a payment method decreased the trust in the firm compared to traditional payment methods ($M_{\text{Cryptocurrencies}} = 3.96$, $SD_{\text{Cryptocurrencies}} = 1.25$ vs. $M_{\text{CreditCards}} = 4.6$, $SD_{\text{CreditCards}} = 1.18$, $p < .001$). As a side result and replicating the findings of Study 1, we also found that the cryptocurrency payment method led to more negative overall consumer sentiment ($M_{\text{Cryptocurrencies}} = -.27$, $SD_{\text{Cryptocurrencies}} = .60$ vs. $M_{\text{CreditCards}} = .32$, $SD_{\text{CreditCards}} = .53$, $p < .001$).

Mediation Analysis. As summarized in Figure 3, we applied PROCESS Model 6 (Hayes, 2022) using 10,000 bootstrapped samples to examine the sequential mechanism of how consumers’ perceived payment method risk and perceived firm interaction risk mediate the relationship between payment method and consumers’ trust in the firm. The independent variable was dummy coded (0 = credit cards, 1 = cryptocurrencies).

As predicted, the negative effect on firm trust was mediated by first increasing perceived payment method risk ($b_{\text{PaymentMethod}} = 1.992$, $t(498) = 14.70$, $p < .001$) and subsequently increasing perceived firm interaction risk ($b_{\text{PaymentMethodRisk}} = .559$, $t(497) = 17.84$, $p < .001$), which led to a significant decrease in firm trust ($b_{\text{InteractionRisk}} = -.572$, $t(496) = -13.79$, $p < .001$). The indirect effect through both perceived risk of the payment method and firm interaction level were significant with the 95% confidence interval excluding zero ($b_{\text{Indirect}} = -.637$, 95% CI_{Indirect} : $[-.808; -.486]$).

Controlling for the sequential mechanism, the direct effect turned non-significant, indicating full mediation ($b_{\text{Direct}} = -0.205$, 95% CI_{Direct} : [-.411; .002]).

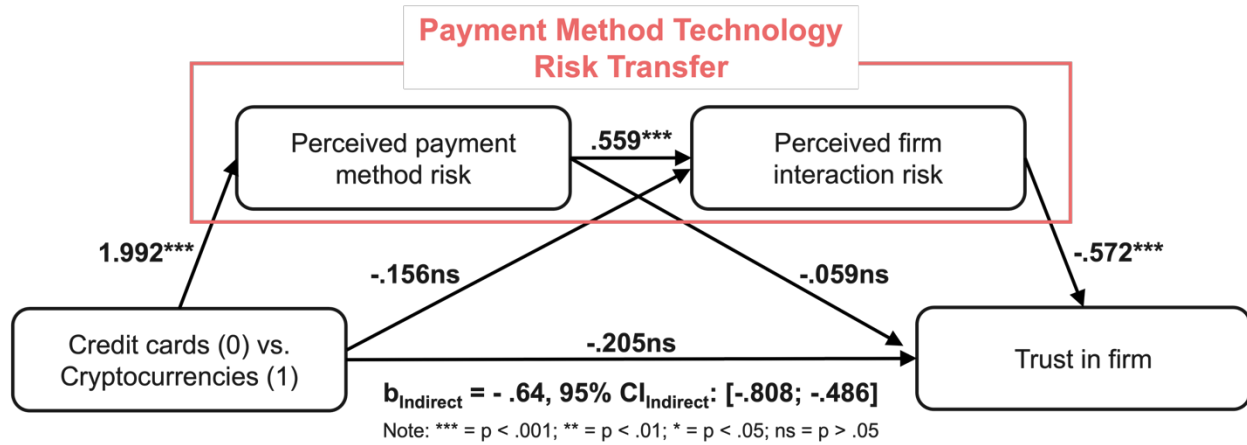


Figure 3: Payment method technology risk transfer

Finally, we also performed a series of robustness checks and found that (1) merely reversing the sequence of the two mediators produced a insignificant indirect effect ($b_{\text{Indirect}} = .04$, 95% CI_{Indirect} : [-.015; .102]), (2) performing a parallel mediation instead of a sequential mediation produced equally worse results ($b_{\text{IndirectPaymentMethodRisk}} = .12$, 95% $CI_{\text{IndirectPaymentMethodRisk}}$: [-.045; .294]), $b_{\text{IndirectInteractionRisk}} = -.55$, 95% $CI_{\text{IndirectInteractionRisk}}$: [-.725; -.39]), and (3) performing two separate mediation results on each mediator only led to significantly lower model fit compared to our proposed sequential mediation mechanism ($b_{\text{IndirectPaymentMethodRisk}} = -.52$, 95% $CI_{\text{IndirectPaymentMethodRisk}}$: [-.694; -.354]), $b_{\text{IndirectInteractionRisk}} = -.51$, 95% $CI_{\text{IndirectInteractionRisk}}$: [-.665; -.365])). These additional sensitivity analyses and robustness checks lend further support to the proposed mechanism and produce consistent results also across all subsequent studies.

Discussion

Study 2 replicates the results of Study 1 and offers initial support for our proposed payment method technology risk transfer conceptual model (i.e., that cryptocurrencies enhance consumers' perceived payment method risk, which in turn increases the perceived firm interaction risk and negative evaluation of the firm). In what follows, we next test potential mitigating strategies either using a privacy intervention (Study 3) or based on firm characteristics (Study 4).

Study 3

The objectives of Study 3 were twofold: First, the current study examines a critical boundary condition and whether illuminating the privacy benefits of cryptocurrencies can reduce the negative effect of our payment method technology risk transfer model on firm attributions. Second, it is plausible that the current effects are explained merely by a simple affect-based account (as opposed to a more complex risk transfer as per our theorizing) or because consumers simply deliberate more because cryptocurrencies might be more unfamiliar to them. We, therefore, assess whether consumers' degree of deliberation or basic consumer affect alone might explain the current effects as alternative mechanisms.

Method and Procedure

A total of 900 participants were recruited from Prolific in exchange for monetary compensation. By our pre-registration (https://aspredicted.org/TRM_ZF4), we excluded participants who completed the study in less than 30 seconds or who failed our manipulation check in the privacy notification condition, leaving a final sample of 860 ($M_{age} = 39, 85, 49.2\%$ female & .02% non-binary). Participants were randomly assigned to one of three conditions in an online shopping scenario of an intangible, high-price experience: they could either pay with credit cards or cryptocurrencies or cryptocurrencies while seeing a note highlighting the privacy of cryptocurrency payments.

In all conditions, participants were informed that they were in the checkout process of a fictional vacation home platform and that the platform is testing a variety of new payment methods. We provided identical background information on either credit cards or cryptocurrencies, depending on the condition the participant was in. In the privacy notification condition, we added a notification that cryptocurrency payments are particularly privacy-friendly. Next, participants needed to complete the checkout process by fictitiously paying (i.e., entering a fictitious credit card and pressing the pay button vs. pressing the pay button vs. pressing the pay button while seeing a privacy notification on the website and confirming a privacy notification popup after clicking the pay button) and receiving a fictional booking confirmation. In the privacy notification condition, participants answered the privacy manipulation check ("Do cryptocurrency payments enhance security and privacy?"; on the scale "Yes", "No", and "I don't know.") before the experience. The conditions differed by the payment method available (credit card vs.

cryptocurrency), the currency of price information (in \$ vs. ETH and total additionally in \$), and the privacy notification (absent vs. present as information and popup on the website). The website and payment methods of the vacation home platform were implemented as realistically as possible to give the scenario the necessary realism.

Immediately after, we employed Study 2's scales on consumer's trust in the firm ($\alpha_{\text{FirmTrust}} = .97$), perceived payment method risk ($\alpha_{\text{PaymentMethodRisk}} = .94$), and perceived firm interaction risk ($\alpha_{\text{FirmInteractionRisk}} = .94$). Participants also indicated their affect (Watson et al., 1988; sample item: "interested"; 7-point Likert scale, from 1: "Strongly disagree" to 7: "Strongly agree") and degree of deliberation (scale adapted from the IPIP representation of Jackson et al., 2000, sample item: "Rushed into things."; 7-point Likert scale, from 1: "Strongly disagree" to 7: "Strongly agree"; $\alpha_{\text{DegreeOfDeliberation}} = .87$), which could provide alternative explanations for the effect detected in Study 2. After that, participants either first reported their perceived payment privacy using a multi-item scale (scale adapted from Liu & Wei, 2023; sample item: "Making myself vulnerable."; 7-point Likert scale, from 1: "Not at all" to 7: "A lot"; $\alpha = .95$) or an own single-item scale ("Paying with *credit cards*, the consumer remains completely anonymous?"; on a scale of "True.", "False.") which was only used to get a better feeling for the participants. Last, participants reported the same demographics as in Study 1 and Study 2.

Results

Manipulation Check. A one-way ANOVA revealed that highlighting cryptocurrencies' privacy significantly increased consumers' perceived payment privacy compared to the cryptocurrencies condition and led to similar levels of perceived payment privacy as the credit card condition ($M_{\text{CryptocurrenciesPrivacyNote}} = 4.02$, $SD_{\text{CryptocurrenciesPrivacyNote}} = 1.90$ vs. $M_{\text{Cryptocurrencies}} = 3.50$, $SD_{\text{Cryptocurrencies}} = 1.76$ vs. $M_{\text{CreditCards}} = 3.83$, $SD_{\text{CreditCards}} = 1.65$, $F(2, 857) = 6.311$, $p < .01$).

Firm Attributions. Consistent with Study 2, a one-way ANOVA analysis revealed a significant main effect of consumers' trust in the firm for the payment method conditions ($F(2, 857) = 14.18$, $p < .001$). Follow-up contrasts with Tukey HSD correction for multiple comparisons showed that cryptocurrencies as a payment method decreased the trust in the firm compared to credit cards. However, this effect was reduced when emphasizing privacy benefits of cryptocurrencies (see Figure 4; $M_{\text{CryptocurrenciesPrivacyNote}} = 5.11$, $SD_{\text{CryptocurrenciesPrivacyNote}} = 1.28$ vs. $M_{\text{Cryptocurrencies}} = 4.60$, $SD_{\text{Cryptocurrencies}} = 1.45$ vs. $M_{\text{CreditCards}} = 5.07$, $SD_{\text{CreditCards}} = 1.15$, $p_{\text{CreditCards-Crypto}}$

$< .001, p_{\text{CryptoPrivacyNote-Crypto}} < .001, p_{\text{CreditCards-CryptoPrivacyNote}} > .05$).

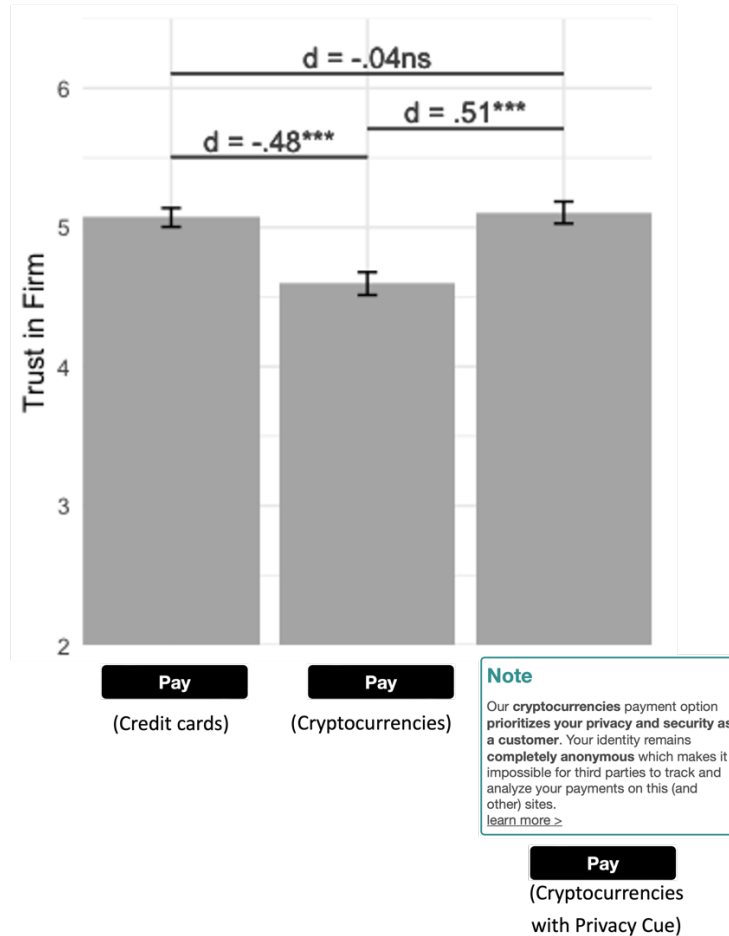


Figure 4: Privacy cues mitigate negative effects of cryptocurrencies on firm trust

Perceived Payment Method Risk and Perceived Firm Interaction Risk. One-way ANOVA analyses and planned follow-up contrasts with Tukey HSD correction for multiple comparisons revealed that cryptocurrencies were perceived as significantly riskier payment method compared to credit cards and that highlighting the privacy aspects of cryptocurrencies significantly reduced the perceived payment method risk ($M_{\text{CryptocurrenciesPrivacyNote}} = 3.55, SD_{\text{CryptocurrenciesPrivacyNote}} = 1.64$ vs. $M_{\text{Cryptocurrencies}} = 4.41, SD_{\text{Cryptocurrencies}} = 1.68$ vs. $M_{\text{CreditCards}} = 2.61, SD_{\text{CreditCards}} = 1.40, F(2, 857) = 96.06, p < .001$). Similarly, cryptocurrencies, compared to credit cards, increased significantly the perceived firm interaction risk but highlighting the privacy aspects of cryptocurrencies dampened this effect ($M_{\text{CryptocurrenciesPrivacyNote}} = 3.28, SD_{\text{CryptocurrenciesPrivacyNote}} = 1.52$ vs. $M_{\text{Cryptocurrencies}} = 3.80, SD_{\text{Cryptocurrencies}} = 1.54$ vs. $M_{\text{CreditCards}} = 2.96, SD_{\text{CreditCards}} = 1.29, F(2, 857) = 25.55, p < .001$). There was a significant main effect for trust in the firm for perceived payment method risk ($F(1, 858) =$

357.3, $p < .001$) and perceived firm interaction risk ($F(1, 858) = 685.5, p < .001$).

Mediation Analysis. We used PROCESS Model 6 (Hayes, 2022) using 10,000 bootstrapped samples to test the mediating effect of the payment method technology risk transfer. The results are presented in Figure 5.

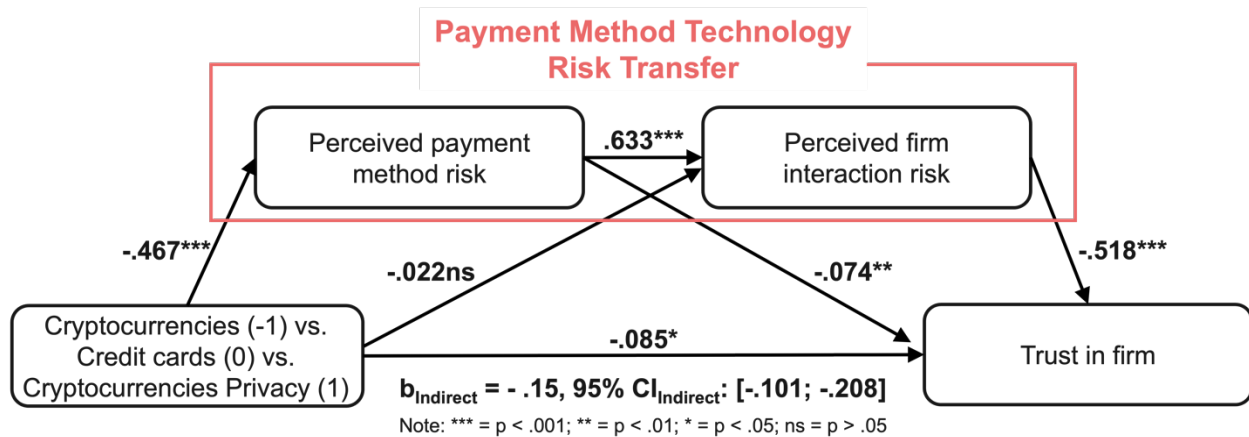


Figure 5: Privacy cues moderate the payment method technology risk transfer

The independent variable of payment method was dummy coded (-1 = cryptocurrencies, 0 = credit cards, 1 = cryptocurrencies and privacy note). We used the cryptocurrency condition as a reference since we examined the influence of the privacy note and expected a decrease in perceived payment method risk for credit cards and cryptocurrencies with privacy note as payment method compared to the cryptocurrencies condition.

Providing evidence for our conceptualization of the payment method technology risk transfer, the effect of the payment method on consumers' trust in the firm was mediated via first decreasing perceived payment method risk when using cryptocurrencies with privacy note as payment method ($b_{\text{PaymentMethod}} = -0.467, t(858) = -6.51, p < .001$) and the subsequent decrease of perceived firm interaction risk ($b_{\text{PaymentMethodRisk}} = 0.633, t(857) = 31.36, p < .001$), which led to a significantly higher trust in the firm ($b_{\text{InteractionRisk}} = -0.518, t(856) = -15.63, p < .001$) compared to credit cards and cryptocurrencies as a payment method. Examining the indirect effect through the perceived payment method risk and perceived firm interaction risk was significant with the 95% confidence interval excluding zero ($b_{\text{Indirect}} = 0.15, 95\% \text{ CI}_{\text{Indirect}}: [0.101; 0.208]$). Controlling for the sequential mechanism, a small direct effect remained significant ($b_{\text{Direct}} = 0.085, 95\% \text{ CI}_{\text{Direct}}: [0.002; 0.167]$). Additionally, the small indirect effect through the perceived payment method risk remained significant with the 95% interval excluding zero ($b_{\text{Indirect}} = 0.03, 95\% \text{ CI}_{\text{Indirect}}: [0.005; 0.068]$).

Robustness Checks. Finally, we tested for alternative explanations of the current results for affect and degree of deliberation. One-way ANOVA analyses and planned follow-up contrasts with Tukey HSD correction for multiple comparisons revealed a non-significant difference in positive affect ($M_{\text{CryptocurrenciesPrivacyNote}} = 4.23$, $SD_{\text{CryptocurrenciesPrivacyNote}} = 1.35$ vs. $M_{\text{Cryptocurrencies}} = 4.11$, $SD_{\text{Cryptocurrencies}} = 1.27$ vs. $M_{\text{CreditCards}} = 3.98$, $SD_{\text{CreditCards}} = 1.42$, $F(2, 857) = 2.51$, $p > .05$), negative affect ($M_{\text{CryptocurrenciesPrivacyNote}} = 1.76$, $SD_{\text{CryptocurrenciesPrivacyNote}} = 1.06$ vs. $M_{\text{Cryptocurrencies}} = 1.85$, $SD_{\text{Cryptocurrencies}} = 1.08$ vs. $M_{\text{CreditCards}} = 1.67$, $SD_{\text{CreditCards}} = .93$, $F(2, 857) = 2.58$, $p > .05$), and participants' degree of deliberation ($M_{\text{CryptocurrenciesPrivacyNote}} = 5.2$, $SD_{\text{CryptocurrenciesPrivacyNote}} = 1.04$ vs. $M_{\text{Cryptocurrencies}} = 5.12$, $SD_{\text{Cryptocurrencies}} = 1$ vs. $M_{\text{CreditCards}} = 5.23$, $SD_{\text{CreditCards}} = 1.03$, $F(2, 857) = 1.04$, $p > .05$) across the conditions.

Discussion

The results of Study 3 expand those of Study 2, highlighting the importance of perceived payment privacy and its effect on consumers' trust in the firm. Study 3 demonstrates that firm attributions can be increased when offering cryptocurrencies by highlighting privacy aspects of the cryptocurrencies payment method (H3). Highlighting the privacy aspects of cryptocurrencies reduces the perceived payment method risk, which reduces the perceived firm interaction risk and ultimately increases firm attributions. Alternative explanation tests corroborate the robustness of this moderated mediation and the role of the payment method technology risk transfer as a driver for consumers' firm attributions.

Study 4

The objective of Study 4 was to examine the boundary condition of whether the type of firm offering cryptocurrencies as a payment method influences consumers' firm attributions. Specifically, we tested whether greater levels of firm baseline trust immunize a firm against the negative impact of a riskier payment method on firm attributions.

Method and Procedure

A total of 800 participants were recruited from Prolific in exchange for monetary compensation. Although Prolific initially marked three participants as timed out, they had completed the entire study. Thus, we retained them in the final sample, resulting in a total of 803

participants ($M_{age} = 41.68$, 49.19% female & 1.74% non-binary). Participants were randomly assigned to a 2 (Amazon vs. AliExpress) x 2 (credit cards vs. cryptocurrencies as default payment method) between-subjects design. The study was pre-registered (https://aspredicted.org/3DK_G5P).

In all conditions, participants were asked to envision being at the end of the checkout process of an online retail platform. We provided identical background information on the platform. Next, participants were shown the checkout process of the platform, including information about the default payment method, the shopping cart, and the price. The conditions differed by the default payment method available (credit card vs. cryptocurrency), the currency of price information (in \$ vs. ETH and total additionally in \$), and the platform (Amazon vs. AliExpress).

Utilizing the identical scales employed in Study 2, we measured consumer's trust in the firm ($\alpha_{FirmTrust} = .97$), perceived payment method risk ($\alpha_{PaymentMethodRisk} = .94$), and perceived firm interaction risk ($\alpha_{FirmInteractionRisk} = .96$) immediately after. Additionally, participants indicated how many lottery tickets (\$.01 each) they wanted to buy from their bonus payment (\$.25) for the chance to win one of three \$20 gift cards from the online retail platform (single item: "How many lottery tickets do you want to buy for the chance to win a \$20 gift card from the online retail platform?"). This scale functions as an incentive-compatible measure of willingness to pay. Last, participants reported the same demographics as in the previous studies.

Pre-Test

We conducted a pre-test with a total of 100 participants ($M_{age} = 39.18$, 49% female & 1% non-binary) from the same population and using the identical selection criteria as in the main study to evaluate whether the chosen firms in the experimental manipulation represent a high and low baseline trust firm. Specifically, the objective of this pre-test was to evaluate whether Amazon is perceived by consumers as a high baseline trust firm and AliExpress as a low baseline trust firm. All participants first saw the logo of Amazon, background information on the online retail platform firm, and a screenshot of the landing page. Immediately below, they were asked how much they trust Amazon ("How much do you trust the American online retail platform Amazon?"). Below, all participants saw the logo of AliExpress, background information on the online retail platform firm, and a screenshot of the landing page. Immediately below, they were asked how much they

trust AliExpress (“How much do you trust the Chinese online retail platform AliExpress?”). Next, participants indicated which retail platform they trust more (“Which retail platform do you trust more?”). Finally, they reported their age, gender, marital status, whether they are a customer of Amazon, whether they are a customer of AliExpress, education, and income. Supporting the choice of the low and high baseline trust firms in the experimental manipulation, the trust in Amazon was significantly higher than in AliExpress ($M_{\text{Amazon}} = 5.17$, $SD_{\text{Amazon}} = 1.44$ vs. $M_{\text{AliExpress}} = 2.98$, $SD_{\text{AliExpress}} = 1.34$, $t = 11.15$, $p < .001$). In direct comparison, 98% of the participants stated that they trust Amazon more. These findings provide evidence that Amazon represents a high baseline trust firm, and AliExpress is a low baseline trust firm.

Results

Firm Attributions. Replicating the findings of Study 2 and Study 3, a one-way ANOVA analysis with planned follow-up contrasts with Tukey HSD correction for multiple comparisons revealed that cryptocurrencies as a payment method decreased the trust in the firm compared to credit cards. The trust in the firm was higher for the high baseline trust firm (Amazon) compared to the low baseline trust firm (AliExpress) regardless of the payment method (see Figure 6; $M_{\text{AmazonCryptocurrencies}} = 5.15$, $SD_{\text{AmazonCryptocurrencies}} = 1.55$ vs. $M_{\text{AmazonCreditCards}} = 5.55$, $SD_{\text{AmazonCreditCards}} = 1.33$ vs. $M_{\text{AliExpressCryptocurrencies}} = 3.73$, $SD_{\text{AliExpressCryptocurrencies}} = 1.61$ vs. $M_{\text{AliExpressCreditCards}} = 4.46$, $SD_{\text{AmazonCreditCards}} = 1.53$, $F(3, 799) = 129.04$, $p < .001$).

Perceived Payment Method Risk and Perceived Firm Interaction Risk. Replicating the findings of the previous studies, a one-way ANOVA analysis with planned follow-up contrasts with Tukey HSD correction for multiple comparisons revealed that cryptocurrencies were perceived as a significantly riskier payment method ($M_{\text{AmazonCryptocurrencies}} = 3.78$, $SD_{\text{AmazonCryptocurrencies}} = 1.89$ vs. $M_{\text{AmazonCreditCards}} = 2.13$, $SD_{\text{AmazonCreditCards}} = 1.31$ vs. $M_{\text{AliExpressCryptocurrencies}} = 4.58$, $SD_{\text{AliExpressCryptocurrencies}} = 1.82$ vs. $M_{\text{AliExpressCreditCards}} = 3.01$, $SD_{\text{AmazonCreditCards}} = 1.6$, $F(3, 799) = 78.82$, $p < .001$) and increased consumers’ perceived firm interaction risk ($M_{\text{AmazonCryptocurrencies}} = 2.49$, $SD_{\text{AmazonCryptocurrencies}} = 1.48$ vs. $M_{\text{AmazonCreditCards}} = 2.25$, $SD_{\text{AmazonCreditCards}} = 1.3$ vs. $M_{\text{AliExpressCryptocurrencies}} = 4.63$, $SD_{\text{AliExpressCryptocurrencies}} = 1.65$ vs. $M_{\text{AliExpressCreditCards}} = 3.92$, $SD_{\text{AmazonCreditCards}} = 1.7$, $F(3, 799) = 109.4$, $p < .001$). Cryptocurrencies were perceived as riskier payment method independent of the baseline trust, but the firm interaction risk was significantly lower for the high baseline trust firm compared to the low

baseline trust firm. For the high baseline trust firm, there was no significant difference in the firm interaction risk of the payment method ($M_{\text{AmazonCryptocurrencies}} = 2.49$, $SD_{\text{AmazonCryptocurrencies}} = 1.48$ vs. $M_{\text{AmazonCreditCards}} = 2.25$, $SD_{\text{AmazonCreditCards}} = 1.3$; $p > 0.05$).

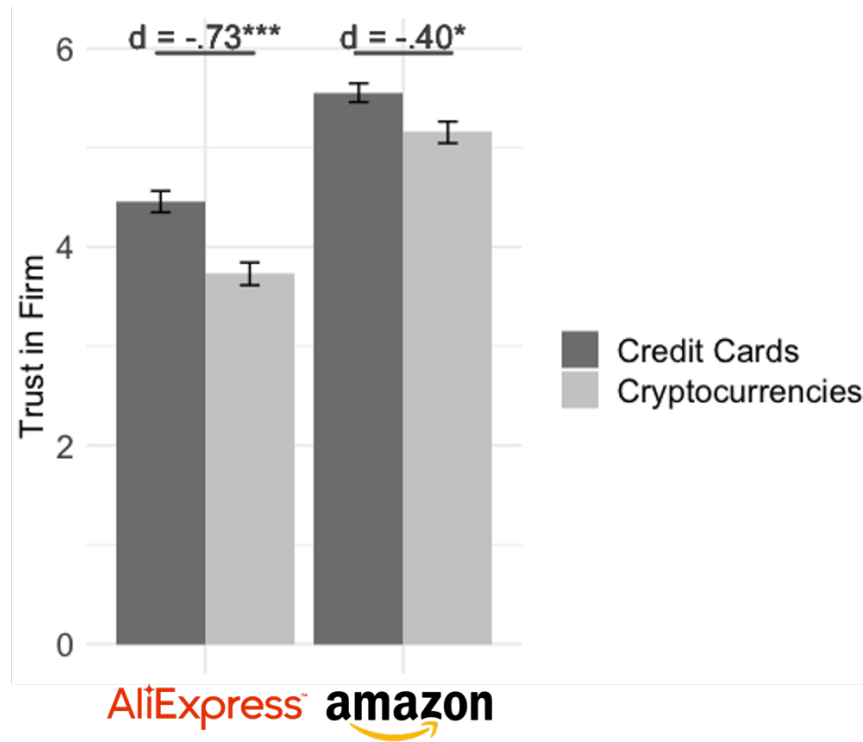


Figure 6: High firm baseline trust immunizes a firm against the negative effects of cryptocurrencies on firm trust

Willingness to Pay. One-way ANOVA analysis and planned follow-up contrasts with Tukey HSD correction for multiple comparisons revealed that the willingness to pay is higher for high baseline trust firms compared to low baseline trust firms ($M_{\text{AmazonCryptocurrencies}} = 10.04$, $SD_{\text{AmazonCryptocurrencies}} = 10.01$ vs. $M_{\text{AmazonCreditCards}} = 10.4$, $SD_{\text{AmazonCreditCards}} = 10.29$ vs. $M_{\text{AliExpressCryptocurrencies}} = 6.75$, $SD_{\text{AliExpressCryptocurrencies}} = 9.15$ vs. $M_{\text{AliExpressCreditCards}} = 6.85$, $SD_{\text{AmazonCreditCards}} = 9.1$, $F(3, 799) = 109.4$, $p_{\text{AmazonCrypto\&Credit}} > .05$, $p_{\text{AliExpressCrypto\&Credit}} > .05$, all other p 's < 0.01). The payment method had no significant influence on the willingness to pay.

Moderated Mediation Analysis. We used PROCESS Model 91 (Hayes, 2022) using 10,000 bootstrapped samples to test the mediating effect of the payment method technology risk transfer and the moderating effect of the baseline trust on the path between the perceived payment method risk and perceived firm interaction risk. The results are presented in Figure 7. The independent

variable of payment method was dummy coded (0 = Credit cards, 1 = Cryptocurrencies). Additionally, the moderator baseline trust was dummy-coded (0 = low baseline trust, 1 = high baseline trust). The effect of the payment method on consumers' trust in the firm was mediated via first increasing perceived payment method risk ($b_{\text{PaymentMethod}} = 1.606$, $t(801) = 13.23$, $p < .001$) and a subsequent increase of perceived firm interaction risk ($b_{\text{PaymentMethodRisk}} = .633$, $t(798) = 18.42$, $p < .001$), which ultimately led to a significant decrease in firm trust ($b_{\text{InteractionRisk}} = -.578$, $t(799) = -20.61$, $p < .001$). The index of moderated mediation was significant with the 95% confidence interval excluding zero ($b_{\text{Indirect}} = .147$, 95% CI_{Indirect} : [.046; .25]), such that the indirect effect was significant for low ($b_{\text{Indirect}} = -.5871$, 95% CI_{Indirect} : [-.714; -.473]) and high security platform firms ($b_{\text{Indirect}} = -.441$, 95% CI_{Indirect} : [-.554; -.341]). Additionally, there were significant negative indirect effects through the perceived payment method risk ($b_{\text{Indirect}} = -.198$, 95% CI_{Indirect} : [-.314; -.089]) and the perceived firm interaction risk ($b_{\text{Indirect}} = .241$, 95% CI_{Indirect} : [.138; .352]).

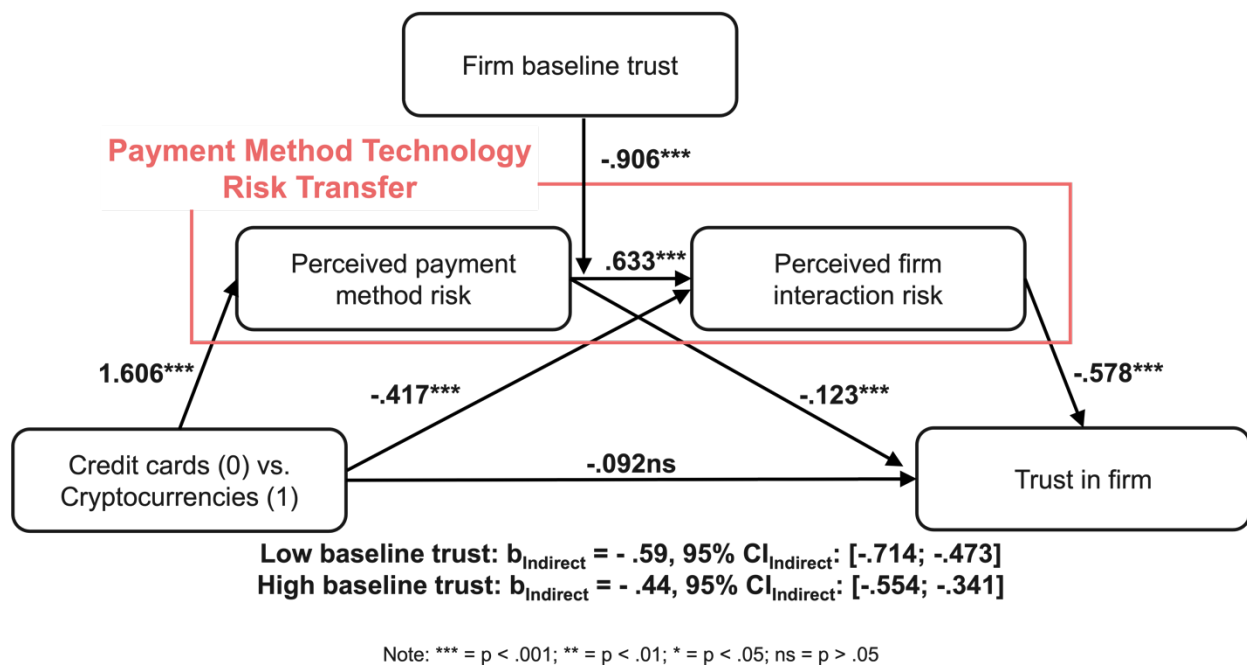


Figure 7: Firm baseline trust moderates the payment method technology risk transfer

Discussion

Study 4 provides evidence in support of the moderating role of baseline trust (H4). Other than pre-registered, it demonstrates that high baseline trust firms are more immune against the negative impact of a riskier payment method on firm trust. Furthermore, Study 4 corroborates the

evidence of Study 2 and Study 3 on the payment method technology risk transfer.

Study 5

Study 5 is a platform A/B test conducted on Instagram. The main objective of the study was to replicate the main effect in a field setting.

Method and Procedure

The study was a pre-registered platform A/B test (https://aspredicted.org/JQ2_117) conducted on Instagram. We created an Instagram page for a fictional cashback app called “Flux Cashback”, which we used for displaying the ads. Next, we created two static single-image ads with identical visual representation and varied the text. For the cryptocurrencies ad, we advertised “Get 50% OFF on your NETFLIX subscription when you pay by cryptocurrency*. Register for cashback on Flux”. Contrary, we advertised “Get 50% OFF on your NETFLIX subscription when you pay by credit card*. Register for cashback on Flux.” for credit card conditions. To increase the ad realism, we added “* This promo is valid from July 24 – August 31, 2023.” at the bottom and added the link to our landing page with the words “Sign Up”. The landing page consisted of a block that informed users clicking through that Flux is a cashback service under development gauging customer demand for their service, a block providing background information on the cashback service, and a block that debriefed participants that the landing page is part of an ongoing research project. Users had the opportunity to sign up to the app waitlist to gain the chance of winning one of three \$50 Netflix gift cards.

We created a 2 (cryptocurrency vs. credit card ad) x 2 (general Instagram public vs. online gamers and gamblers) condition campaign setup and configured the campaigns using automatic bidding optimizing for traffic (maximize the number of landing page link clicks). We added a customer segmentation into the general Instagram public and online gamers and gambles since prior research indicates an increasing convergence between cryptocurrencies, online gaming, and online gambling (Andrade et al., 2023; Kolandai-Matchett & Wenden Abbott, 2022; Rockloff et al., 2021). We expect that the negative effect of cryptocurrencies is at least attenuated for target consumers with an interest in online gaming and gambling. Since Meta did not allow us to spend the initially planned \$20/day per condition (we created a new account where we had a daily limit of \$44 which we could spend), we had a budget of \$11/day per condition available and run the ads

with this budget for seven days. The ads were shown to Instagram users in the US who were over 18 years of age and used English since the ads were in English. Additionally, we targeted Instagram users with interests in online gambling or gaming for our online gamers and gambling conditions. The ads were exclusively placed as Instagram stories to avoid biased behaviors of Instagram users due to reactions and comments to the ad from other Instagram users.

We calculated the click-through rate (CTR) by dividing the number of unique landing page link clicks by the reach of the ad. Reach refers to the number of unique users who have seen the ad. Prior research (e.g., Maier et al., 2023) indicated that the number of individuals reached can vary significantly across conditions due to marketplace conditions (e.g., different ad competitions). Next, we calculated the email sign-up rate (ESR) by dividing the number of unique emails signed up by the reach of the ad. We had a total reach of $N_{\text{Reach}} = 43,511$ (45.03% female, .84% unknown).

Results

Click-through rate. Providing evidence for our conceptualization, the click-through rate was significantly smaller for ads containing cryptocurrencies compared to credit cards (see Figure 8; $CTR_{\text{Cryptocurrencies}} = .78\%$ vs. $CTR_{\text{CreditCards}} = 2.3\%$, $\chi^2(1, N = 43,511) = 173.47, p < .001$). Further, the drop in the CTR was less pronounced for Instagram users with an interest in online gambling and gaming ($CTR_{\text{CryptocurrenciesGamersGamblers}} = .78\%$ vs. $CTR_{\text{CreditCardsGamersGamblers}} = 1.93\%$, $d_{\text{CTR}} = -1.15$, $\chi^2(1, N = 22,266) = 56.64, p < .001$) compared to all Instagram users ($CTR_{\text{CryptocurrenciesPublic}} = .79\%$ vs. $CTR_{\text{CreditCardsPublic}} = 2.71\%$, $d_{\text{CTR}} = -1.92$, $\chi^2(1, N = 21,245) = 121.97, p < .001$).

Email sign-up rate. Similar to the click-through rate, the email sign-up rate was smaller for ads containing cryptocurrencies compared to credit cards ($ESR_{\text{Cryptocurrencies}} = .02\%$ vs. $ESR_{\text{CreditCards}} = .29\%$, $\chi^2(1, N = 43,511) = 59.21, p < .001$). The drop in email sign-up rate however was more pronounced for Instagram users with an interest in online gambling and gaming ($ESR_{\text{CryptocurrenciesGamersGamblers}} = .01\%$ vs. $ESR_{\text{CreditCardsGamersGamblers}} = .31\%$, $d_{\text{CTR}} = -.3$, $\chi^2(1, N = 22,266) = 35.66, p < .001$) compared to all Instagram users ($ESR_{\text{CryptocurrenciesPublic}} = .03\%$ vs. $ESR_{\text{CreditCardsPublic}} = .28\%$, $d_{\text{CTR}} = -.25$, $\chi^2(1, N = 21,245) = 21.76, p < .001$).

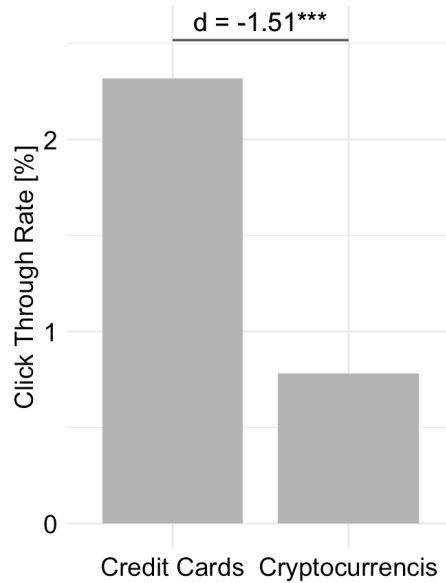


Figure 8: CTR decreases for ads promoting cryptocurrency (vs. credit card) payments

Discussion

The results of Study 5 indicate that cryptocurrencies as payment method decrease consumers' willingness to interact with the firm compared to credit cards. Furthermore, the negative effect of cryptocurrencies as a payment method on actual behavior is attenuated for target consumers with an interest in online gaming and gambling, but this may be driven by alternative explanations. For downstream consequences (i.e., email sign-up), the targeting of users with an interest in online gaming or gambling leads to a lower willingness to interact with the firm.

General Discussion

The current paper is the first research we are aware of that sheds light on how payment methods influence consumers' attributions towards a firm and consider cryptocurrencies as a payment method. Across one pilot and five studies, we present evidence that cryptocurrencies as a payment method reduce consumers' attributions towards the firm relative to credit cards and that this effect is fully mediated by the payment method technology risk transfer. The sequential mechanism via perceived payment method risk and subsequent perceived firm interaction risk. We demonstrate that the negative impact of cryptocurrencies on firm attributions can be mitigated when firms proactively highlight the unique privacy advantages of the decentralized payment method or when consumers have a higher baseline trust in the firm.

Theoretical Implications

The current research makes three novel contributions. First, this work introduces the payment method technology risk transfer model to explain how payment methods influence consumers' firm attributions via the sequential mediation through perceived payment method risk and subsequent perceived firm interaction risk. By developing this model, we connect the previously disconnected research streams on the psychology of payment (e.g., Chatterjee & Rose, 2012; Hirschman, 1979; Soman, 2001), technology affordances (e.g., Davis & Chouinard, 2016; Mardon et al., 2022), and risk perception (e.g., Campbell & Goodstein, 2001; Oglethorpe & Monroe, 1987). Our work advances our understanding of how payment methods influence how consumers feel (firm attributions) and behave (sentiment) towards a firm. Prior literature on risk perception argued that perceived risk increases as uncertainty levels rise and/ or the probability of significant negative consequences increases (e.g., Campbell & Goodstein, 2001; Oglethorpe & Monroe, 1987). For the perceived payment method risk, this could mean that consumers who want to pay for a product or service with cryptocurrencies consider the perceived payment method risk to be higher due to the mentioned cryptocurrencies adoption barriers (uncertainty) and could fear that the payment will not work or that they will even lose money (consequences). Further, consumer research identified multiple sources of perceived risk, including financial, performance, physical, psychological, and social risk (e.g., Jacoby & Kaplan, 1972; Peter & Ryan, 1976; Zikmund & Scott, 1974). Consumers' overall perceptions of risk are often influenced by one or more of these sources (Campbell & Goodstein, 2001). In our case of perceived payment method risk, the overall perceived risk could stem, for example, from negative perceived consequences associated with financial (losing money), performance (transaction not getting through due to technological error), and/ or physical (security and privacy breaches) risk sources.

Second, the findings of this research contribute to evaluative conditioning and affect transfer on how risk-related cryptocurrency memories shape the purchase process and firm attribution, showing that cryptocurrencies as a payment method reduce consumers' trust in the firm and sentiment towards the firm. We extend previous studies that identified the effects of evaluative conditioning on brand attitude (e.g., Gorn, 1982; Miller & Allen, 2012; Stuart et al., 1987) and affect transfer in goal systems (e.g., Fishbach et al., 2004; Kruglanski et al., 2002; Woolley & Sharif, 2021) by showing that the perception of cryptocurrencies as riskier payment methods in the goal system of completing a purchase spill over to the purchasing process resulting

in a higher firm interaction risk perception. Research on affect transfer in goal systems showed that the positive emotions associated with successful goal attainment can spill over to the process used to achieve the goal through mere association (Fishbach et al., 2004; Kruglanski et al., 2002; Woolley & Sharif, 2021). We find that the negative emotions towards cryptocurrencies (perceived as a riskier payment method) in the goal system of completing a purchase spilled over to the purchasing process (i.e., perceiving higher risk when completing a purchase with cryptocurrencies leads to perceiving higher risk when interacting with the firm). Furthermore, prior research indicates that the affect transfer is more likely to occur if the process is closely connected to goal attainment (Fishbach et al., 2004; Woolley & Sharif, 2021). Since the purchasing process and the purchase completion are tightly coupled, we might find this strong affect transfer through the payment method technology risk transfer. Additionally, we corroborate research on consumer trust that has shown that perceived risk erodes consumers' trust in the firm (Khamitov et al., 2024). Further, prior evaluative condition research has shown that evaluative condition works worse for familiar firms (B. Gibson, 2008), and affect transfer literature has shown that the affect towards the endorser has a significant influence on the attitude towards the firm (Eisend & Langner, 2010; Kahle & Homer, 1985). The current findings extend these research streams by demonstrating that firms with higher baseline trust are immunized against the negative effects of a riskier payment method on firm attribution.

Third, we integrate trust-repair theory (e.g., Xie & Peng, 2009) with affordance theory (e.g., Mardon et al., 2022) in information systems to explain how signaling cues (Culnan & Armstrong, 1999; Kim et al., 2008; Shin, 2010) reduce the negative cryptocurrencies effect on firm attribution.

Future Research

The current research aims to serve as inspiration for future work in two noteworthy ways. First, future research may further explore the design requirements of cryptocurrencies as a payment method to enhance their attractiveness, reduce perceived riskiness, and promote greater adoption. For example, the role of money illusion (e.g., Wertenbroch et al., 2007) on the indication of prices in cryptocurrencies rather than in vernacular currencies could be investigated.

Second, as previously noted, research on cryptocurrencies as payment methods is less developed compared to cryptocurrencies as financial assets (e.g., Belk, 2023; Wei & Dukes, 2021). In these studies, cryptocurrencies are viewed as volatile financial assets that provide diversification

for short-term investors rather than a payment method (Corbet et al., 2018). We see great potential for future work on cryptocurrencies as a payment method and the influence cryptocurrencies as a payment method have on consumer perception and behavior more broadly. While our findings suggest that offering cryptocurrencies as a payment method reduces consumers' trust in the firm, they do not explore the impact on further downstream consequences. Prior research provides initial findings that trust affects consumer behavior (Chaudhuri & Holbrook, 2001; Sirdeshmukh et al., 2002; Verhoef et al., 2002), but an in-depth exploration is required to fully understand the consequences of offering cryptocurrencies as a payment method.

Future research could explore these effects in real market conditions with consequential outcomes or further evaluate the robustness of the current findings across different cryptocurrencies, exchange rates, types of firms, user interfaces, and sales channels.

Practical Implications

The findings of this research have significant managerial implications. First, we see great potential for retailers to enhance their communication strategy of cryptocurrencies in consumer markets. Given that affordance misalignments (perceived vs. actual affordances) are particularly prevalent with new digital technologies, it is crucial to effectively communicate the actual affordances to resolve these misalignments of cryptocurrencies (Mardon et al., 2022). Our findings demonstrate that such cryptocurrency affordance misalignments can have adverse effects, leading to diminished firm attributions. Notably, we find that seals are effective in resolving these misalignments. This finding is particularly relevant for firms that do not have a high baseline trust with consumers. Thus, the current work introduces a theory-driven framework to communicate cryptocurrencies in consumer markets effectively.

Second, the findings of this research provide robust evidence of the adverse effects of cryptocurrencies as a payment method on trust in the firm across a broad range of applications of consumer settings (fashion, consumer electronics, and services) and at varying shopping cart price levels. For managers, these findings are important in light of prior research demonstrating the substantial impact of consumers' trust on loyalty (Sirdeshmukh et al., 2002), customer referrals (Verhoef et al., 2002), and market share (Chaudhuri & Holbrook, 2001) as well as short-term purchase behavior (Kim et al., 2008). These findings become even more relevant when the possibility that cryptocurrencies may eventually replace traditional payment methods (e.g., cash

or credit cards) (Ilk et al., 2021) is taken into account. Therefore, the current research provides insights for managers on how to navigate the tension between cryptocurrency adoption benefits, such as profiting from the growing cryptocurrency market and a reduction of credit card companies' dependence (Gleim & Stevens, 2021; Hakkarainen et al., 2024), and the adverse effects of cryptocurrencies as a payment method on consumers' firm attributions.

Finally, the findings of this research contribute to the ongoing global debate on cryptocurrency regulation. Current research emphasizes the need for swift and appropriate public policy development to ensure consumer protection and prevent money laundering and terrorist financing. However, regulators face difficulties in keeping pace with the rapid innovations in cryptocurrency and in establishing global regulatory principles (WEF, 2024; Wronka, 2024). Additionally, the regulations developed primarily treat cryptocurrencies as investment assets rather than a payment method, focusing on intermediaries (specifically cryptocurrency exchanges) (Blockchain Regulatory Certainty Act, 2024; Financial Innovation and Technology for the 21st Century Act, 2024; ESMA, 2024). The findings of this research suggest that additional regulations are needed for cryptocurrencies as payment methods to ensure effective consumer protection. Without such regulations, consumers might be deceived into cryptocurrency scams, especially when cryptocurrencies are offered as payment methods alongside fake privacy seals. Effective regulations for cryptocurrency payment methods would reduce consumers' perceived risks and increase their trust in using cryptocurrencies (Wronka, 2024). Consequently, our findings show that this would also mitigate the negative impact of cryptocurrencies on consumers' perceptions of firms. Therefore, public policy and financial regulations for cryptocurrency payment methods would have far-reaching impact on consumers, firms, and society.

References

- Ahn, S. Y., & Nam, Y. (2022). Does mobile payment use lead to overspending? The moderating role of financial knowledge. *Computers in Human Behavior, 134*, 107319. <https://doi.org/10.1016/j.chb.2022.107319>
- Andrade, M., Sharman, S., Xiao, L. Y., & Newall, P. W. S. (2023). Safer gambling and consumer protection failings among 40 frequently visited cryptocurrency-based online gambling operators: Psychology of Addictive Behaviors. *Psychology of Addictive Behaviors, 37*(3), 545–557. <https://doi.org/10.1037/adb0000885>
- Arpaci, I., & Bahari, M. (2023). A complementary SEM and deep ANN approach to predict the adoption of cryptocurrencies from the perspective of cybersecurity. *Computers in Human Behavior, 143*, 107678. <https://doi.org/10.1016/j.chb.2023.107678>
- Barbieri, F., Anke, L. E., & Camacho-Collados, J. (2022). *XLM-T: Multilingual Language Models in Twitter for Sentiment Analysis and Beyond* (arXiv:2104.12250). arXiv. <https://doi.org/10.48550/arXiv.2104.12250>
- Belk, R. (2023). The digital frontier as a liminal space. *Journal of Consumer Psychology, n/a*(n/a). <https://doi.org/10.1002/jcpy.1357>
- Belk, R., Humayun, M., & Brouard, M. (2022). Money, possessions, and ownership in the Metaverse: NFTs, cryptocurrencies, Web3 and Wild Markets. *Journal of Business Research, 153*, 198–205. <https://doi.org/10.1016/j.jbusres.2022.08.031>
- Blockchain Regulatory Certainty Act, 1747 (2024). <https://www.congress.gov/bill/118th-congress/house-bill/1747/titles>
- Campbell, M. C., & Goodstein, R. C. (2001). The Moderating Effect of Perceived Risk on Consumers' Evaluations of Product Incongruity: Preference for the Norm. *Journal of Consumer Research, 28*(3), 439–449. <https://doi.org/10.1086/323731>
- Carlsten, M., Kalodner, H., Weinberg, S. M., & Narayanan, A. (2016). On the Instability of Bitcoin Without the Block Reward. *Proceedings of the 2016 ACM SIGSAC Conference on Computer and Communications Security*, 154–167. <https://doi.org/10.1145/2976749.2978408>
- Chatterjee, P., & Rose, R. L. (2012). Do Payment Mechanisms Change the Way Consumers Perceive Products? *Journal of Consumer Research, 38*(6), 1129–1139. <https://doi.org/10.1086/661730>

- Chaudhuri, A., & Holbrook, M. B. (2001). The Chain of Effects from Brand Trust and Brand Affect to Brand Performance: The Role of Brand Loyalty. *Journal of Marketing*, 65(2), 81–93. <https://doi.org/10.1509/jmkg.65.2.81.18255>
- CoinMarketCap. (2023). *Cryptocurrency Prices, Charts And Market Capitalizations*. CoinMarketCap. <https://coinmarketcap.com/>
- Colicev, A. (2023). How can non-fungible tokens bring value to brands. *International Journal of Research in Marketing*, 40(1), 30–37. <https://doi.org/10.1016/j.ijresmar.2022.07.003>
- Corbet, S., Meegan, A., Larkin, C., Lucey, B., & Yarovaya, L. (2018). Exploring the dynamic relationships between cryptocurrencies and other financial assets. *Economics Letters*, 165, 28–34. <https://doi.org/10.1016/j.econlet.2018.01.004>
- Culnan, M. J., & Armstrong, P. K. (1999). Information Privacy Concerns, Procedural Fairness, and Impersonal Trust: An Empirical Investigation. *Organization Science*, 10(1), 104–115. <https://doi.org/10.1287/orsc.10.1.104>
- Darke, P. R., Brady, M. K., Benedicktus, R. L., & Wilson, A. E. (2016). Feeling Close From Afar: The Role of Psychological Distance in Offsetting Distrust in Unfamiliar Online Retailers. *Journal of Retailing*, 92(3), 287–299. <https://doi.org/10.1016/j.jretai.2016.02.001>
- Davis, J. L. (2020). *How Artifacts Afford: The Power and Politics of Everyday Things*. The MIT Press.
- Davis, J. L., & Chouinard, J. B. (2016). Theorizing Affordances: From Request to Refuse. *Bulletin of Science, Technology & Society*, 36(4), 241–248. <https://doi.org/10.1177/0270467617714944>
- De Houwer, J., Thomas, S., & Baeyens, F. (2001). Association learning of likes and dislikes: A review of 25 years of research on human evaluative conditioning. *Psychological Bulletin*, 127(6), 853–869. <https://doi.org/10.1037/0033-2909.127.6.853>
- Dotzel, T., & Shankar, V. (2019). The Relative Effects of Business-to-Business (vs. Business-to-Consumer) Service Innovations on Firm Value and Firm Risk: An Empirical Analysis. *Journal of Marketing*, 83(5), 133–152. <https://doi.org/10.1177/0022242919847221>

- Eisend, M., & Langner, T. (2010). Immediate and delayed advertising effects of celebrity endorsers' attractiveness and expertise. *International Journal of Advertising*, 29(4), 527–546. <https://doi.org/10.2501/S0265048710201336>
- ESMA. (2024). *Markets in Crypto-Assets Regulation (MiCA)*. <https://www.esma.europa.eu/esmas-activities/digital-finance-and-innovation/markets-crypto-assets-regulation-mica>
- Feinberg, R. A. (1986). Credit Cards as Spending Facilitating Stimuli: A Conditioning Interpretation. *Journal of Consumer Research*, 13(3), 348–356. <https://doi.org/10.1086/209074>
- Financial Innovation and Technology for the 21st Century Act, 4763 (2024). <https://www.congress.gov/bill/118th-congress/house-bill/4763/text?s=2&r=2&q=%7B%22search%22%3A%224763%22%7D>
- Fishbach, A., Shah, J. Y., & Kruglanski, A. W. (2004). Emotional transfer in goal systems. *Journal of Experimental Social Psychology*, 40(6), 723–738. <https://doi.org/10.1016/j.jesp.2004.04.001>
- Gibson, B. (2008). Can Evaluative Conditioning Change Attitudes toward Mature Brands? New Evidence from the Implicit Association Test. *Journal of Consumer Research*, 35(1), 178–188. <https://doi.org/10.1086/527341>
- Gibson, J. J. (1979). *The ecological approach to visual perception* (pp. xiv, 332). Houghton, Mifflin and Company.
- Gleim, M. R., & Stevens, J. L. (2021). Blockchain: A game changer for marketers? *Marketing Letters*, 32(1), 123–128. <https://doi.org/10.1007/s11002-021-09557-9>
- Gorn, G. J. (1982). The Effects of Music in Advertising on Choice Behavior: A Classical Conditioning Approach. *Journal of Marketing*, 46(1), 94–101. <https://doi.org/10.1177/002224298204600109>
- Hadi, R., Melumad, S., & Park, E. S. (2023). The Metaverse: A new digital frontier for consumer behavior. *Journal of Consumer Psychology*. <https://doi.org/10.1002/jcpy.1356>
- Hakkarainen, T., & Colicev, A. (2023). Blockchain-enabled advances (BEAs): Implications for consumers and brands. *Journal of Business Research*, 160, 113763. <https://doi.org/10.1016/j.jbusres.2023.113763>

- Hakkarainen, T., Colicev, A., & Pedersen, T. (2024). A perspective on three trade-offs of blockchain technology for the global strategy of the MNC. *Global Strategy Journal*. <https://doi.org/10.1002/gsj.1509>
- Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (Third edition). The Guilford Press.
- Herzenstein, M., Posavac, S. S., & Brakus, J. J. (2007). Adoption of New and Really New Products: The Effects of Self-Regulation Systems and Risk Salience. *Journal of Marketing Research*, *44*(2), 251–260. <https://doi.org/10.1509/jmkr.44.2.251>
- Hirschman, E. C. (1979). Differences in Consumer Purchase Behavior by Credit Card Payment System. *Journal of Consumer Research*, *6*(1), 58–66.
- Hofmann, W., De Houwer, J., Perugini, M., Baeyens, F., & Crombez, G. (2010). Evaluative conditioning in humans: A meta-analysis. *Psychological Bulletin*, *136*(3), 390–421. <https://doi.org/10.1037/a0018916>
- Hofstetter, R., de Bellis, E., Brandes, L., Clegg, M., Lambertson, C., Reibstein, D., Rohlfesen, F., Schmitt, B., & Zhang, J. Z. (2022). Crypto-marketing: How non-fungible tokens (NFTs) challenge traditional marketing. *Marketing Letters*, *33*(4), 705–711. <https://doi.org/10.1007/s11002-022-09639-2>
- Ilk, N., Guangzhi Shang, Shaokun Fan, & Zhao, J. L. (2021). Stability of Transaction Fees in Bitcoin: A Supply and Demand Perspective. *MIS Quarterly*, *45*(2), 563–592. <https://doi.org/10.25300/MISQ/2021/15718>
- Inman, J. J., Winer, R. S., & Ferraro, R. (2009). The Interplay among Category Characteristics, Customer Characteristics, and Customer Activities on in-Store Decision Making. *Journal of Marketing*, *73*(5), 19–29. <https://doi.org/10.1509/jmkg.73.5.19>
- Interbrand. (2023). *Best Global Brands 2023: How Iconic Brands Lead Across Arenas*. Interbrand. <https://interbrand.com/best-global-brands/>
- Jackson, D. N., Paunonen, S. V., & Tremblay, P. F. (2000). *Six Factor Personality Questionnaire: Technical Manual*. MI: Sigma Assessment Systems.
- Jacoby, J., & Kaplan, L. (1972). The Components Of Perceived Risk. *Advances in Consumer Research*, *3*.
- Kahle, L. R., & Homer, P. M. (1985). Physical Attractiveness of the Celebrity Endorser: A Social Adaptation Perspective. *Journal of Consumer Research*, *11*(4), 954–961. <https://doi.org/10.1086/209029>

- Khamitov, M., Rajavi, K., Huang, D.-W., & Hong, Y. (2024). Consumer Trust: Meta-Analysis of 50 Years of Empirical Research. *Journal of Consumer Research*, *51*(1), 7–18. <https://doi.org/10.1093/jcr/ucad065>
- Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, *44*(2), 544–564. <https://doi.org/10.1016/j.dss.2007.07.001>
- Kolandai-Matchett, K., & Wenden Abbott, M. (2022). Gaming-Gambling Convergence: Trends, Emerging Risks, and Legislative Responses. *International Journal of Mental Health and Addiction*, *20*(4), 2024–2056. <https://doi.org/10.1007/s11469-021-00498-y>
- Kruglanski, A. W., Shah, J. Y., Fishbach, A., Friedman, R., Woo Young Chun, & Sleeth-Keppler, D. (2002). A theory of goal systems. In *Advances in Experimental Social Psychology* (Vol. 34, pp. 331–378). Academic Press. [https://doi.org/10.1016/S0065-2601\(02\)80008-9](https://doi.org/10.1016/S0065-2601(02)80008-9)
- Lacka, E., Boyd, D. E., Ibikunle, G., & Kannan, P. K. (2022). Measuring the Real-Time Stock Market Impact of Firm-Generated Content. *Journal of Marketing*, *86*(5), 58–78. <https://doi.org/10.1177/00222429211042848>
- Lambrecht, A., Tucker, C., & Wiertz, C. (2018). Advertising to Early Trend Propagators: Evidence from Twitter. *Marketing Science*, *37*(2), 177–199. <https://doi.org/10.1287/mksc.2017.1062>
- Li, X., & Wang, C. A. (2017). The technology and economic determinants of cryptocurrency exchange rates: The case of Bitcoin. *Decision Support Systems*, *95*, 49–60. <https://doi.org/10.1016/j.dss.2016.12.001>
- Liu, B., & Wei, L. (2023). Unintended effects of open data policy in online behavioral research: An experimental investigation of participants' privacy concerns and research validity. *Computers in Human Behavior*, *139*, 107537. <https://doi.org/10.1016/j.chb.2022.107537>
- Loeb, W. (2022). *Gucci Leads In Crypto Transactions*. Forbes. <https://www.forbes.com/sites/walterloeb/2022/08/04/gucci-leads-in-crypto-transactions/>
- Maier, L., Schreier, M., Baccarella, C. V., & Voigt, K.-I. (2023). University Knowledge Inside: How and When University–Industry Collaborations Make New Products

- More Attractive to Consumers. *Journal of Marketing*, 00222429231185313.
<https://doi.org/10.1177/00222429231185313>
- Malhotra, P., & Bhattacharyya, S. (2022). Leveraging Cofollowership Patterns on Social Media to Identify Brand Alliance Opportunities. *Journal of Marketing*, 86(4), 17–36. <https://doi.org/10.1177/00222429221083668>
- Mani, Z., & Chouk, I. (2017). Drivers of consumers' resistance to smart products. *Journal of Marketing Management*, 33(1–2), 76–97.
<https://doi.org/10.1080/0267257X.2016.1245212>
- Mardon, R., Denegri-Knott, J., & Molesworth, M. (2022). “Kind of Mine, Kind of Not”: Digital Possessions and Affordance Misalignment. *Journal of Consumer Research*, ucac057. <https://doi.org/10.1093/jcr/ucac057>
- Miller, F. M., & Allen, C. T. (2012). How does celebrity meaning transfer? Investigating the process of meaning transfer with celebrity affiliates and mature brands. *Journal of Consumer Psychology*, 22(3), 443–452.
<https://doi.org/10.1016/j.jcps.2011.11.001>
- Miyazaki, A. D., & Fernandez, A. (2001). Consumer Perceptions of Privacy and Security Risks for Online Shopping. *Journal of Consumer Affairs*, 35(1), 27–44.
<https://doi.org/10.1111/j.1745-6606.2001.tb00101.x>
- Morewedge, C. K., Monga, A., Palmatier, R. W., Shu, S. B., & Small, D. A. (2021). Evolution of Consumption: A Psychological Ownership Framework. *Journal of Marketing*, 85(1), 196–218. <https://doi.org/10.1177/0022242920957007>
- Oglethorpe, J. E., & Monroe, K. B. (1987). Risk Perception and Risk Acceptability in Consumer Behavior Conceptual Issues and an Agenda.... *AMA Winter Academic Conference Proceedings*, 255.
- Peres, R., Schreier, M., Schweidel, D. A., & Sorescu, A. (2023). Blockchain meets marketing: Opportunities, threats, and avenues for future research. *International Journal of Research in Marketing*, 40(1), 1–11.
<https://doi.org/10.1016/j.ijresmar.2022.08.001>
- Peter, J. P., & Ryan, M. J. (1976). An Investigation of Perceived Risk at the Brand Level. *Journal of Marketing Research (JMR)*, 13(2), 184–188.
<https://doi.org/10.2307/3150856>
- Prelec, D., & Loewenstein, G. (1998). The Red and the Black: Mental Accounting of Savings and Debt. *Marketing Science*, 17(1), 4–28.

- Prelec, D., & Simester, D. (2001). Always Leave Home Without It: A Further Investigation of the Credit-Card Effect on Willingness to Pay. *Marketing Letters*, 12(1), 5–12. <https://doi.org/10.1023/A:1008196717017>
- PYMNTS. (2022). *Paying With Cryptocurrency: What Consumers And Merchants Expect From Digital Currencies*. <https://www.pymnts.com/wp-content/uploads/2022/06/PYMNTS-Paying-With-Cryptocurrency-June-2022.pdf>
- Raghubir, P., & Srivastava, J. (2008). Monopoly money: The effect of payment coupling and form on spending behavior. *Journal of Experimental Psychology: Applied*, 14, 213–225. <https://doi.org/10.1037/1076-898X.14.3.213>
- Risius, M., & Spohrer, K. (2017). A Blockchain Research Framework. *Business & Information Systems Engineering*, 59(6), 385–409. <https://doi.org/10.1007/s12599-017-0506-0>
- Rockloff, M., Russell, A. M. T., Greer, N., Lole, L., Hing, N., & Browne, M. (2021). Young people who purchase loot boxes are more likely to have gambling problems: An online survey of adolescents and young adults living in NSW Australia. *Journal of Behavioral Addictions*, 10(1), 35–41. <https://doi.org/10.1556/2006.2021.00007>
- Rosengren, S., Eisend, M., Koslow, S., & Dahlen, M. (2020). A Meta-Analysis of When and How Advertising Creativity Works. *Journal of Marketing*, 84(6), 39–56. <https://doi.org/10.1177/0022242920929288>
- Rust, R. T., Rand, W., Huang, M.-H., Stephen, A. T., Brooks, G., & Chabuk, T. (2021). Real-Time Brand Reputation Tracking Using Social Media. *Journal of Marketing*, 85(4), 21–43. <https://doi.org/10.1177/0022242921995173>
- Shin, D.-H. (2010). The effects of trust, security and privacy in social networking: A security-based approach to understand the pattern of adoption. *Interacting with Computers*, 22(5), 428–438. <https://doi.org/10.1016/j.intcom.2010.05.001>
- Sirdeshmukh, D., Singh, J., & Sabol, B. (2002). Consumer Trust, Value, and Loyalty in Relational Exchanges. *Journal of Marketing*, 66(1), 15–37. <https://doi.org/10.1509/jmkg.66.1.15.18449>
- Soman, D. (2001). Effects of Payment Mechanism on Spending Behavior: The Role of Rehearsal and Immediacy of Payments. *Journal of Consumer Research*, 27(4), 460–474. <https://doi.org/10.1086/319621>

- Statista. (2023). *Crypto ownership by country 2019-2023*. Statista.
<https://www.statista.com/statistics/1202468/global-cryptocurrency-ownership/>
- Stuart, E. W., Shimp, T. A., & Engle, R. W. (1987). Classical Conditioning of Consumer Attitudes: Four Experiments in an Advertising Context*. *Journal of Consumer Research*, 14(3), 334–349. <https://doi.org/10.1086/209117>
- Sweldens, S., Van Osselaer, S. M. J., & Janiszewski, C. (2010). Evaluative Conditioning Procedures and the Resilience of Conditioned Brand Attitudes. *Journal of Consumer Research*, 37(3), 473–489. <https://doi.org/10.1086/653656>
- Tan, T. M., & Saraniemi, S. (2022). Trust in blockchain-enabled exchanges: Future directions in blockchain marketing. *Journal of the Academy of Marketing Science*. <https://doi.org/10.1007/s11747-022-00889-0>
- Tang, T. (Ya), Fang, E. (Er), & Wang, F. (2014). Is Neutral Really Neutral? The Effects of Neutral User-Generated Content on Product Sales. *Journal of Marketing*, 78(4), 41–58. <https://doi.org/10.1509/jm.13.0301>
- Thomas, M., Desai, K. K., & Seenivasan, S. (2011). How Credit Card Payments Increase Unhealthy Food Purchases: Visceral Regulation of Vices. *Journal of Consumer Research*, 38(1), 126–139. <https://doi.org/10.1086/657331>
- Thomas, M., Ma, Y., & Gauri, D. K. (2023). EXPRESS: Food Craving Increases Unhealthy Food Purchases: A Study of SNAP Households. *Journal of Marketing Research*, 00222437231168339. <https://doi.org/10.1177/00222437231168339>
- Verhoef, P. C., Franses, P. H., & Hoekstra, J. C. (2002). The effect of relational constructs on customer referrals and number of services purchased from a multiservice provider: Does age of relationship matter? *Journal of the Academy of Marketing Science*, 30(3), 202–216. <https://doi.org/10.1177/0092070302303002>
- Watson, D., Clark, L. A., & Teitlegen, A. (1988). Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales. *Journal of Personality & Social Psychology*, 54(6), 1063–1070. <https://doi.org/10.1037/0022-3514.54.6.1063>
- WEF. (2024, May 2). *Cryptocurrency regulations are changing across the globe. Here's what you need to know*. World Economic Forum.
<https://www.weforum.org/agenda/2024/05/global-cryptocurrency-regulations-changing/>

- Wei, Y. (Max), & Dukes, A. (2021). Cryptocurrency Adoption with Speculative Price Bubbles. *Marketing Science*, 40(2), 241–260.
<https://doi.org/10.1287/mksc.2020.1247>
- Wertenbroch, K., Soman, D., & Chattopadhyay, A. (2007). On the Perceived Value of Money: The Reference Dependence of Currency Numerosity Effects. *Journal of Consumer Research*, 34(1), 1–10. <https://doi.org/10.1086/513041>
- Woolley, K., & Sharif, M. A. (2021). Incentives Increase Relative Positivity of Review Content and Enjoyment of Review Writing. *Journal of Marketing Research*, 58(3), 539–558. <https://doi.org/10.1177/00222437211010439>
- Wronka, C. (2024). Crypto-asset activities and markets in the European Union: Issues, challenges and considerations for regulation, supervision and oversight. *Journal of Banking Regulation*, 25(1), 84–93. <https://doi.org/10.1057/s41261-023-00217-8>
- Xie, Y., & Peng, S. (2009). How to repair customer trust after negative publicity: The roles of competence, integrity, benevolence, and forgiveness. *Psychology & Marketing*, 26(7), 572–589. <https://doi.org/10.1002/mar.20289>
- Zhou, K., Ye, J., & Liu, X. (2023). Is cash perceived as more valuable than digital money? The mediating effect of psychological ownership and psychological distance. *Marketing Letters*, 34(1), 55–68. <https://doi.org/10.1007/s11002-022-09624-9>
- Zikmund, W. G., & Scott, J. E. (1974). A Multivariate Analysis of Perceived Risk and Self-Confidence and Information Sources. *Advances in Consumer Research*, 1(1), 406–416.