Socially Safe on Smartphones: How Smartphone Use Reduces Social Risk Taking

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Abstract:

Consumers are often faced with decisions that carry a degree of social risk, with uncertain outcomes (i.e., reactions by others) that could impact their social standing. Examples include choosing the ideal outfit to wear to an upcoming party or selecting a gift to give to a friend. Given the prevalence of smartphones in consumer decision making, we investigate the effect of smartphone use on social risk taking. Across seven studies, we find that smartphone use, relative to the use of a PC, results in a lower propensity to make socially risky decisions. We propose that one's smartphone, by increasing the salience of one's social relationships, decreases the need for affiliation, and lowers the perceived benefits associated with social risk taking. This effect holds across a variety of consumption and social media scenarios. The findings contribute to the literature on consumer risk taking and consumer-technology interactions and offer practical insights for digital marketing and mobile retailing strategies.

Keywords: consumer risk taking, consumer-technology interactions, social cognition

Track: Consumer Behaviour

1. Introduction

Picture yourself shopping on your smartphone for a Halloween costume to wear to an upcoming party. As you scroll through the selections, you narrow your choices down to two top contenders. The first option is a vampire costume – a classic, safe Halloween costume that you are certain the guests at the party would appreciate. The second option is a more daring costume – a full-body banana suit. This eccentric costume has a more humorous tone but also leaves you feeling uncertain about how the people at the party might react to it. On the one hand, they might find the banana costume fun, hilarious, and bold. They may form a positive impression of you for putting yourself out there and get a good laugh at the quirky costume. But on the other hand, they might see the costume as attention-seeking or embarrassing. They could form a more negative impression of you for wearing something so outrageous. You feel the banana costume could go either way in terms of people's reactions at the Halloween party. As you evaluate which costume to purchase while shopping on your smartphone, you weigh the safer, assured response to the vampire costume versus the risky, unpredictable response to the banana costume. Which costume do you purchase to wear to the party? And importantly, does the very device you are shopping on – your smartphone – play a role in how you decide between these safe and risky options compared to other devices like your computer?

Consumers are frequently confronted with choices that carry a degree of social risk - that is, choices where outcomes are uncertain and may lead to either positive or negative evaluations by others. For example, like the Halloween costume scenario, consumers may encounter decisions such as whether to purchase either a traditional outfit or a more unusual, bold outfit to wear to an upcoming party or work function. Even choices as simple as which bottle of wine to bring to a dinner or which restaurant to suggest for lunch with new colleagues all carry potential social consequences: these risks may either leave a positive or negative impression on others (Busemeyer, 1985; Rode et al., 1999; Volz & Gigerenzer, 2012; Weber & Millman, 1997, Weber & Hsee, 1998, 1999; Blais & Weber, 2006).

Despite the integral role that smartphones now play in purchasing decisions, limited research has investigated how smartphone use might shape consumers' tendencies towards or away from options carrying social risk. This gap warrants investigation given the frequency with which consumers now use their smartphones for consumption and given the extensively documented relevance of social risk in diverse consumer behaviors – from willingness to try new

products to spreading positive or negative word-of-mouth to purchasing status-signaling products (Barasch & Berger, 2014; Berger & Heath, 2007; Campbell & Goodstein, 2001; Erdem, 1998; Garcia et al., 2019). Moreover, while positive social reactions to a socially risky decision may increase self-esteem and feelings of social inclusion, negative social responses may inflict embarrassment, social isolation, or even outright rejection - harming consumers' well-being (Cacioppo & Cacioppo, 2014; Leary, 1990; Srivastava & Beer, 2005; Baumeister & Leary, 1995).

Thus, as the use of smartphones for consumption becomes more prevalent in consumers' lives, a deeper understanding of the influence of these devices on social decision-making processes remains limited yet highly valuable. We address this knowledge gap by investigating how smartphone use versus the use of a personal computer (PC) shapes consumers' willingness to make socially risky decisions. Our theorizing predicts that smartphone use satisfies consumers' need for social affiliation by automatically cueing social connections (an association accrued through repeated pairings of smartphone use for social purposes; Cuevas et al., 2006). We propose that smartphones, by satisfying this need for affiliation, subsequently diminish the degree to which consumers anticipate and value the potential social benefits that might arise from taking a social risk. Consequently, consumers will be less likely to take social risks when making decisions on their smartphones compared to on their PC.

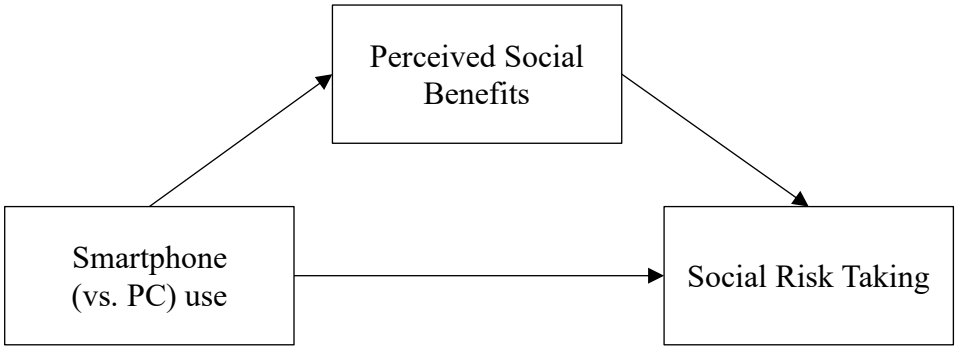

Figure 1. Theoretical model depicting the proposed effects of smartphone use on social risk taking.

2. Studies

We tested our theoretical model through seven studies, five of which were pre-registered on https://www.aspredicted.org. We examined whether and how smartphone use influences consumers' willingness to make socially risky decisions compared to the use of PCs. Due to page

limitations for this submission, we are reporting a subset of three representative studies that capture key effects observed across the broader series of studies.

2.1 Pilot study

In an initial pilot study conducted on Amazon Mechanical Turk (N = 55, 65.1% women, M_{age} = 37.3), we confirm the theoretical premise that consumers more strongly associate their social connections with their smartphones compared to other devices (e.g., PC or tablet). Participants completed a measure designed to capture their social associations with different devices on 7-point Likert scales. Participants were asked to indicate to what extent they thought about social-related concepts when they thought about their [smartphone/PC/tablet]. These social concepts included: "Your family," "Your friends," "Your social life," "Your social network," and "Social media like Facebook, Instagram, Twitter" on 7-point Likert scales (1 = *Not at all* to 7 = *A great extent*). Scores across the five items were averaged to create a composite of a social association index. To analyze the differences in social associations across the three devices, we ran a repeated-measures ANOVA with device type as a three-level within-subjects factor. The omnibus effect was significant ($F(2,141) = 13.99$, $p < .001$), suggesting significant differences in social associations between devices. To further probe and disentangle whether specific device types differed in associative strength, we next ran a series of post-hoc pairwise comparisons using Tukey's Honestly Significant Difference (HSD) tests, which controls well for familywise error when making multiple comparisons between group means. Results showed that there was a significant difference in social associations between smartphone and PC, such that smartphones engendered stronger social associations ($M_{smartphone} = 4.83$, $M_{PC} = 3.78$, $p < .001$). The post-hoc analysis also revealed a significant difference between smartphone and tablet, such that smartphones engendered stronger associations ($M_{smartphone} = 4.83$, $M_{tablet} = 3.29$, $p < .001$). There was no significant difference in social association strength between PC and tablet ($p = .25$).

2.2 Study 1

Building on this foundation, Study 1 (N = 385, 51.4% women, M_{age} = 38.44), a pre-registered study, aimed to test the main proposition that using a smartphone versus a PC to make decisions will reduce consumers' preference for socially risky choice alternatives. We used a mixed design in which participants were randomly assigned to complete the study either via their

smartphone or via their PC (between-subjects) and indicated their relative social risk preference across two product consumption scenarios (within-subjects). All participants were presented with the two consumption scenarios in a counterbalanced order - one involving purchasing wine, and one involving purchasing snack foods. For each scenario, they were asked to imagine that they had a choice between two options to purchase for a social gathering: Option A was a certain, "safe" choice involving a product they were familiar with that was likely to be moderately appealing to the guests at the gathering based on prior experiences. In contrast, Option B represented a risky, uncertain choice involving an unfamiliar product that could potentially range in appeal to the guests from very poor to excellent. Participants we asked to indicate their relative preference between Option A and Option B on a 9-point Likert scale (*1 = Strongly prefer Option A* to *9 = Strongly prefer Option B*). Participants also indicated the extent to which they perceived social benefits from choosing the risky option on a 9-point Likert scale (*1 = No benefits at all* to *9 = Great benefits*). Given that the user experience of these devices may influence consumers' risk preferences, we also controlled for device-induced frustration to isolate the influence of the device itself rather than the experience of the device's functional interface.

To test our predicted effect of device type on social risk preference, we first examined possible differences between the two product scenarios (wine and snacks). To accomplish this, we conducted a two-way mixed ANCOVA including the between-subjects factors of device type (smartphone vs. PC), product context (snack vs. wine) as a within-subjects factor, and device-induced frustration as the covariate. Importantly, results revealed a non-significant two-way interaction between the factors ($F(1,765) = .67$, $p = .42$). This indicates that the effect of device did not depend on the specific product scenario and confirms that the effect of smartphone vs. PC operated consistently across both wine and snacks. Given these results, it was justified to collapse observations across scenarios to create a single social risk preference index for subsequent analyses. To analyze the data and test the prediction that using a smartphone versus PC would reduce the preference for socially risky options, we ran an ANCOVA comparing social risk-taking preference between device conditions controlling for device-induced frustration. Results from this ANCOVA confirmed our prediction and revealed a significant main effect of device type on social risk preference: participants in the smartphone condition reported significantly a lower preference ($M = 4.00$) compared to participants in the PC condition ($M =$

3.38), $F(1, 767) = 9.15$, $p = .003$).

Our results also uncovered process evidence consistent with the proposed underlying role of perceived social benefits as an underlying mechanism. An ANCOVA controlling for device-induced frustration indicated significantly lower perceived benefits from choosing the risky option in the smartphone condition ($M = 4.22$) compared to the PC condition ($M = 4.63$), $F(1, 767) = 2.72$, $p = .007$. To test for mediation, we next ran a mediation model controlling for device-induced frustration with 200 bootstrap samples using R (Preacher & Hayes, 2008). Results confirmed a significant indirect effect of device type on social risk preference through reduced perceived social benefits, $b = -.23$, $p < .001$. We also conducted a path analysis through a series of regression models that revealed: 1) Smartphone (vs. PC) use negatively predicted perceived benefits, $b = -.41$, $p = .007$; 2) Perceived benefits positively predicted social risk likelihood, $b = .56$, $p < .001$; and 3) The direct effect of device type weakened when perceived benefits was included in the model, $p = .04$.

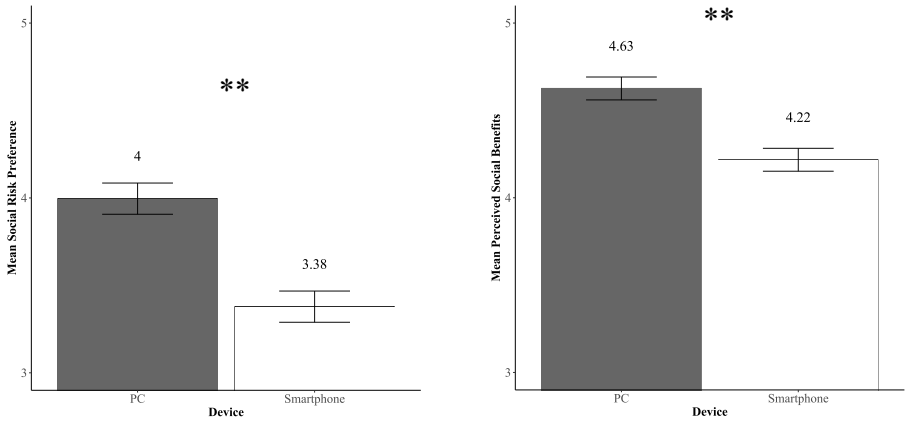

Figure 2. Study 1 results: effect of device on social risk preference (left) and on perceived social benefits (right).

*** p < .01*

Notes: Error bars = ± 1 SEs.

2.3 Study 2

The purpose of Study 2 ($N = 602$, 63.7% women, $M_{age} = 39.8$), a pre-registered study, was twofold. The first goal was to establish an important boundary condition for the effects by directly manipulating the visibility of the consumption decisions. Past research indicates an action can only be considered socially risky if there is public visibility such that the decisions or

behaviors at hand may be observed and evaluated by others (Campbell & Goodstein, 2001). Therefore, public consumption decisions visible to others may be influenced by device type, whereas private consumption decisions intended only for personal use should not be affected to the same extent. We predicted that while smartphone use would not impact preferences when products are for private use, the effect on risk preferences would emerge when purchases are made public and thus carry the possibility of social risk. The second goal was to provide further process evidence testing the proposed mechanism based on perceived social benefits associated with making risky versus safe purchase decisions. Based on our theorizing, we hypothesize that by making one's social world salient and satisfying affiliation needs, using a smartphone may diminish consumers' motivation to affiliate with others through socially risky product selections. As a result, smartphones may decrease the degree to which social benefits are valued as possible outcomes, subsequently lowering preferences for socially risky options. We used a 2 (device type: smartphone vs. PC) x 2 (visibility: private vs. public) x 2 (scenario: wine vs. snacks) mixed design in which device type and visibility were manipulated between subjects and the consumption scenario was again manipulated within subjects (i.e., displayed in a counterbalanced order).

Results revealed a non-significant three-way interaction between the factors ($F(1,579) = .029$, $p = .87$). This indicates the interaction of device and visibility did not depend on the specific product scenario. There was a non-significant two-way interaction between device and scenario ($F(1,579) = .045$, $p = .83$), further confirming the effect of smartphone vs PC operated consistently across both wine and snacks. Given these results, it was justified to collapse observations across scenarios to create a single social risk preference index for subsequent analyses. We then examined the two-way interaction between device type and visibility on the collapsed social risk preference index. A two-way ANCOVA with device-induced frustration as a covariate revealed a significant interaction between device and visibility ($F(1, 1199) = 5.86$, $p = .02$). Planned contrasts revealed that in the public visibility condition, use of a smartphone significantly reduced risk preferences ($M = 2.45$) compared to use of a PC ($M = 3.4$), $F(1, 605) = 18.2$, $p < .001$. However, in the private visibility condition, as expected, the effect of device was attenuated ($M_{smartphone} = 3.2$, $M_{PC} = 3.54$, $p = .08$). After establishing the interactive effect of device and visibility on social risk preferences, we next tested the process through perceived social benefits. To accomplish this, we conducted a moderated mediation analysis with 10,000

bootstrap samples using PROCESS. In the model, we specified the social risk preference index as the dependent measure, device type as the independent variable, and included the perceived social benefits associated with the risky product options as the mediator. We also included visibility as a moderator of the indirect mediation pathway and device-induced frustration as a covariate. We identified a marginally significant index of moderated mediation (b = -.13, 90% CI: [-.25, -.01] and a significant conditional indirect effect of device type on risk preferences through perceived benefits specifically for the public visibility condition (b = -.16, 95% CI: [-.29, -.06]), but no indirect effect for private visibility (95% CI crossed zero). This confirms the predicted moderated mediation - smartphones impacted perceived benefits and subsequent preferences only when consumption was public and, thus, carried social risk. Probing the indirect effect further through conditional path analysis of just the public condition uncovered that smartphone use (vs. PC) predicted significantly lower perceived social benefits ($M_{smartphone}$ = 3.38 vs. M_{PC} = 3.82, p = .02). In turn, lower perceived benefits predicted reduced risk preferences (b = .30, t = 9.09, p < .001). This aligned with predictions that smartphones diminish sensitivity to potential social benefits tied to risky options.

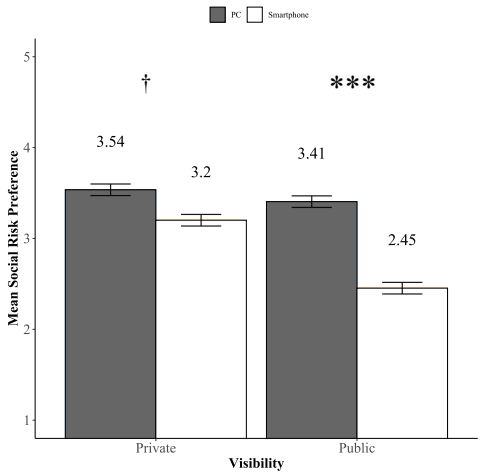

Figure 3. Study 2 results: interaction of device type and visibility on social risk preference.
† p < .10, *** p < .001
Notes: Error bars = ± 1 SEs.

3. General Discussion

Across these studies, we show that smartphone use reduces the extent to which consumers perceive social benefits from taking a social risk. In turn, this reduction of perceived benefits diminishes the likelihood that consumers will make a socially risky consumption decision. This research puts forward both theoretical and practical contributions. First, this research advances the literature focused on consumer-technology interactions by demonstrating a psychological effect resulting from passive smartphone use. While prior work has honed in on smartphones' impacts on outcomes like affect, cognitive capacities, task performance, and well-being, this research reveals that smartphone use also shapes willingness to take on behaviors with uncertain social outcomes. Furthermore, identifying reductions in the perceived social

benefits linked to social risk taking as an explanatory process provides insights into the underlying psychology governing these smartphone effects. This elucidates the motivational shifts linking passive smartphone use to cautious social decision making. Secondly, we contribute to the literature on consumer risk taking by demonstrating that extent to which consumers are willing to take risks with potential social consequences may be dependent on the device they are using to make decisions.

In addition to advancing theory, the findings from this research also carry a number of practical implications for marketers and policymakers in an increasingly smartphone-immersed digital marketplace. For digital marketing strategy, these studies indicate the value of a nuanced understanding of how smartphones shape consumers' motives and decisions outside of conscious control. Brands using social media and digital communications should consider integrating these consumer psychology insights into crafting content and channel strategies responsive to smartphone-induced shifts toward social caution. Emphasizing social benefits over costs and facilitating social learning may resonate given smartphone effects. These insights also suggest potential value in thoughtfully incorporating interface designs, digital choice architectures, and engagement strategies that empower consumers to judiciously take positive social risks to derive satisfaction. Platforms encouraging digital spaces where consumers feel comfortable with prudent social risk taking may enrich user experiences. For public policy, results highlight the benefits of establishing guidelines and digital literacy programs educating consumers on how smartphone use may unconsciously shape social motives. Policy initiatives may also be warranted to ensure marketing practices ethically consider consumers' innate social vulnerabilities in digital environments. Promoting responsible digital choice architectures could contribute to consumer well-being.

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