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Short Paper

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Abstract

The migration of consumers from personal computers (PCs) to mobile devices (mobiles) to engage in e-commerce has accelerated in recent years. Despite this trend, the literature tells us little about how the use of mobiles instead of PCs affects information processing and decision making. Seeking to untangle the implications of mobile use, this study defines the device and display as two orthogonal variables, which are hypothesized to affect decision accuracy (consistency with preferences), both directly and indirectly, through the mediating variables of information seeking and information load. Two laboratory experiments show that the mobile display (less information on the main page), but not the mobile device (smaller screen), affects information processing and decreases decision accuracy. Furthermore, when the information subset presented on the mobile display is of higher quality (more informative to the user), the consequences of mobile use relative to PC use are less adverse.

Keywords: Mobile device, mobile display, e-commerce, decision accuracy, experiments

Introduction

Consumers have gradually been migrating from personal computers (PCs) to mobile devices (mobiles), in particular smartphones, as the platform of choice for performing e-commerce activities (Ghose 2017; Pousttchi et al. 2015). This transition has been evident in retail markets. During the 2018 Black Friday in the U.S., for instance, mobiles accounted for nearly half of all e-commerce, and smartphones alone accounted for more than one-third of all sales (Lunden 2018). Many of the tasks performed by consumers in e-commerce are *preference tasks*, in which decisions are made on the basis of individual preferences.

Despite the prevalence of mobile use in everyday life, and despite numerous studies in recent years about the various consequences of mobile use on human behavior (e.g., Fink and Geldman 2017; Lurie et al. 2018; Thornton et al. 2014) and on consumer behavior (e.g., Burtch and Hong 2014; Lee and Gopal 2016), the literature tells us very little about the effects of mobile use on the quality of consumer decisions. In particular, we know little about the effects of mobile use on *decision accuracy*, defined as the extent to which consumers make decisions that are consistent with their preferences. Mobiles have unique features that may impair decision accuracy, in particular their small screens (relative to those of PCs), which limit usability. This feature increases the search costs of mobile users (Ghose et al. 2013), resulting in shorter sessions and less complex online navigation patterns when compared with PC users (Raphaeli et al. 2017). This feature may also increase the information load experienced by users, who may use cognitive heuristics to cope with high levels of information load at the cost of less accurate decisions (Gigerenzer and Goldstein 1996; Payne and Bettman 2004). This reasoning leads to the question that motivates this research: Do consumers make less accurate decisions when they use mobiles than when they use PCs?

As the small screens of mobiles have led to the development of mobile-adapted user interfaces to fit the small size and vertical orientation of mobile screens, we address the confounding inherent to comparing mobile use with PC use by defining the *device* (mobile or PC) and *display* (mobile or PC) as two orthogonal variables. Therefore, we empirically investigate the effects of the device and display, as two independent variables (IVs), on decision accuracy. As these effects are expected to be mediated by the manner in which users process the information presented to them, we include two mediating variables in our research model – *information seeking* and *information load*. Although each of these variables has been central in accounts of how information processing affects decision making, they have seldom been explored together. The first experiment we performed showed that decision accuracy was negatively affected by the mobile display but not by the mobile device. Consequently, a second experiment was performed to examine *information quality*, defined as the quality of the subset of information presented in the mobile display, as a moderating variable of the effects of display. Given that we found support for such moderating effects, we plan to conduct a third experiment (after submission) to examine whether they are maintained if the user has control over the information subset.

This work contributes to both research and practice in several ways. First, it highlights an important consequence of consumer use of mobiles. Given expectations of significant growth in mobile use in coming years, it is important to understand the implications of mobile use on decision making, especially as existing knowledge about e-commerce behavior has been accumulated on the basis of PC use. Although studies have explored the implications of mobile use on consumer behavior, they have typically incorporated no variance in the device used, thereby depicting mobile consumer behavior without contrasting it against traditional, PC-based consumer behavior. Given the significant growth in mobile use to engage in e-commerce, it is important to shed light on the prices that users pay for the convenience of using mobiles, and this work represents an important step in recognizing these prices. Second, this work advances the literature on mobile use by examining the device and display as two orthogonal variables, thereby allowing to untangle their effects on decision making. Third, this work advances theory development about mobile behavior by constructing and testing a research model that incorporates mediating cognitive mechanisms, in particular information seeking and information load. Finally, from a practical standpoint, this work may motivate developers to design interfaces that better take into account the information needs and search behavior of users. It may assist consumers in deciding which device to use for a specific task and in estimating the implications of such use for the accuracy of their decisions.

Theoretical Background and Research Model

With respect to decision making in e-commerce, mobile use is different from PC use in two important aspects – device (screen size) and display (information presentation) – which are examined here as orthogonal to each other (the complete research model is presented in Figure 1). Naturally, there are other aspects in which mobile use is different from PC use, but most of those aspects are contextual (e.g., noise in the environment) and do not relate directly to the manner in which information is presented to the user. First, mobile users interact with the system through a considerably smaller screen than do PC users, implying that mobility results in higher information search and integration costs. The small screens of mobile devices hamper their usability (Chae and Kim 2004), resulting in relatively less time spent per visit and less complex navigation patterns (Raphaeli et al. 2017). This feature is likely to reduce ease of use and increase the difficulty of information acquisition for decision making, thereby reducing decision accuracy. Users are likely to be less accurate in decision making (i.e., make decisions that are less consistent with their preferences) when they have to process a large amount of information through a smaller screen.

In addition to the *direct* effect of mobile device use on decision accuracy, attributed to usability aspects, such use may also *indirectly* affect decision accuracy through information processing aspects, in particular information seeking and information load. The concept of search costs, defined in this context as the time and effort the user has invested in information acquisition, is important to understanding the implications of mobile use on information processing. Research has demonstrated that information search costs are higher for mobiles than for PCs (Ghose et al. 2013). We draw on these findings and on the literature about *information seeking behavior*, which is defined as an active search for information that results from the recognition of some perceived need by the user (Wilson 1981), to hypothesize that mobile device users are expected to exhibit less information seeking than PC users.

Finally, mobile device users are hypothesized to experience higher information load than PC users. The theoretical roots of the information load concept lie in the *information-processing approach to decision making* (Payne and Bettman 2004), according to which the scarce resource in decision making is attention

(Simon 1978). Information load, therefore, reflects the intersection of the demands of decision tasks with the cognitive limitations of the decision maker (Payne 1982). Given that mobile device use implies a higher cognitive burden, particularly because of the visual difficulties involved in acquiring information from a smaller screen, the information load experienced by the user is expected to be higher with mobile devices.

Hypothesis 1a-c (H1a-c): *Use of a* ***mobile device*** *for decision making (a) decreases decisions accuracy, (b) decreases information seeking, and (c) increases information load compared to use of a PC.*

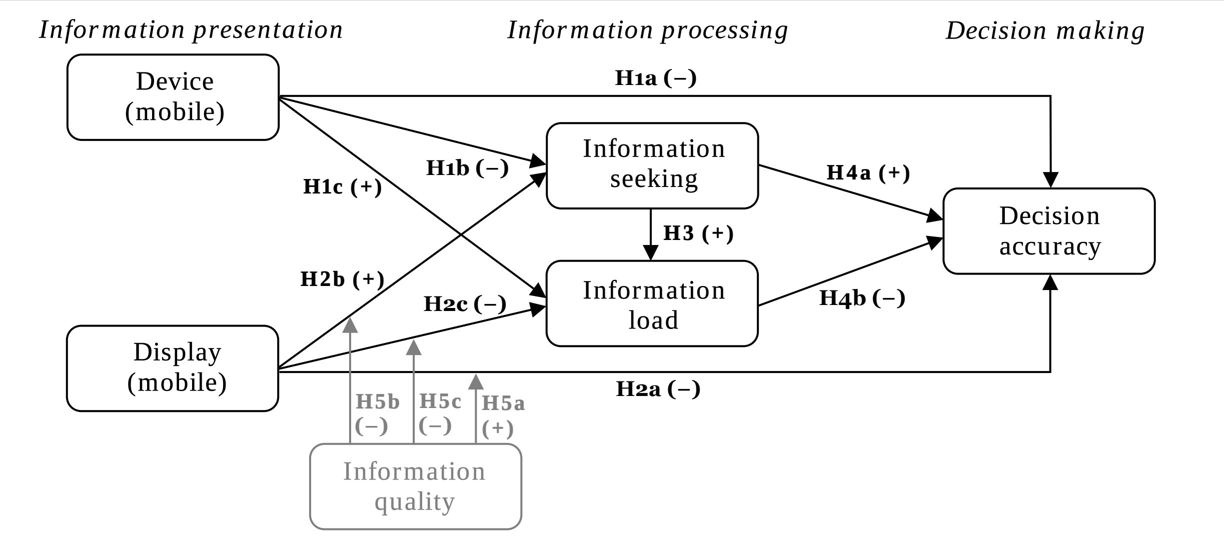

Figure 1. Research Model

The popularity of mobiles has led to the emergence of "responsive design", which allows e-commerce sites to provide a display that fits mobile screens by arranging content in a more vertical display and including less information than that included in a typical PC display. The same information is typically available to mobile users, but they have to go through more pages than PC users to acquire it. Specific to e-commerce settings, users see a "main page" with available alternatives for the product of interest, from which they can proceed to individual pages for the complete information about each alternative. The mobile display implies that less information (i.e., a subset of the information) per alternative is presented on the main page. This mobile display is likely to affect decision accuracy. The information-processing approach suggests that limited cognitive capacity and scarce attention may lead decision-makers to use cognitive shortcuts or rules-of-thumb, termed heuristics, which trade effectiveness (optimality) for efficiency (resources expended). Although such heuristics are not necessarily negative and may assist individuals in attaining personal objectives in a more economical manner (Gigerenzer 2004; Payne 1982), they do imply the attainment of suboptimal outcomes. If users are required to exert significantly more effort to acquire the same amount of information, the information-processing approach suggests that they are more likely to resort to use of heuristics for decision-making, implying that decisions are likely to be less accurate. Consequently, we hypothesize that use of a mobile display decreases decision accuracy relative to the use of a PC display.

Information seeking and information load are also likely to be affected by the mobile display. We argue that when users are presented with less information as the starting point for addressing their information needs, they are expected to exhibit more information seeking behavior. Such users should be more motivated to search for information than users who are presented with significantly more information to start with. However, consistent with the primary ergonomic objective of the mobile display (Schlick et al. 2009), users who are presented with less information are expected to experience less information load, given the smaller number of dimensions that need to be processed together (Jacoby et al. 1974). Accordingly, we hypothesize that the mobile display positively affects information seeking and negatively affects information load.

Hypothesis 2a-c (H2a-c): *Use of a* ***mobile display*** *for decision making (a) decreases decisions accuracy, (b) increases information seeking, and (c) decreases information load compared to use of a PC display.*

Concerning the interrelationship between the two mediating variables, we hypothesize that information seeking increases information load. Assuming that information seeking is effective in providing additional relevant information, this hypothesis relies on the definition of information load as largely determined by the variety of stimuli to which the user must attend (McCormick 1970). We ignore a possible reversed effect of information load on information seeking because we define information load as the cumulative load experienced by the user during a task rather than as a temporary level of load.

Hypothesis 3 (H3): *Information seeking increases information load.*

Concerning the effects of the two mediating variables on decision accuracy, we hypothesize that information seeking increases decision accuracy, while information load decreases it. Information seeking exposes the user to more information. Assuming that the additional information is relevant to the decision at hand, the decision should be more accurate as the user has a more solid basis for it. As information load increases, the user may experience information overload, which may cause the user to refrain from processing all information and to use heuristics as the basis for decision making instead (Jacoby et al. 1974; Payne 1982). Although overload is unnecessarily experienced by the user, higher demands on available cognitive resources are expected to lead to less optimal decision making. Importantly, the research model suggests that the mediated effects of mobile display on decision accuracy may be opposite to its direct effect, consistent with the definition of *competitive mediation* in the literature (Zhao et al. 2010).

Hypothesis 4a-b (H4a-b): *Decision accuracy is (a) increased by information seeking, and (b) decreased by information load.*

Finally, if the mobile display presents to the user on the main page only an information subset, then the quality of this subset (i.e., the extent to which it is informative to the user) is likely to affect information processing variables and decision accuracy. Naturally, information quality is germane in the case of a mobile display, when partial information is presented, but less so in the case of a PC display, implying that it has a moderating (interaction) effect. We hypothesize that when the information presented on the mobile display is of higher quality, the negative consequences of the mobile display (drop in decision accuracy and increase in information seeking) are lower, and its positive consequences (drop in information load) are higher. First, if the information subset presented to the user is of higher quality, then it should allow the user to reach a more accurate decision on the basis of partial information. Therefore, the decrease in decision accuracy with the mobile display is smaller when information quality is higher (i.e., the negative effect described in H2a is positively moderated). Second, if the information subset presented to the user is of higher quality, then the user should be less motivated to seek for additional information. Therefore, the increase in information seeking with the mobile display is smaller when information quality is higher (i.e., the positive effect described in H2b is negatively moderated). Last, if the information subset presented to the user is of higher quality, then the decrease in information load should be more dramatic, because the user has to process less information (mobile display) that is also more relevant to her preferences (information quality). Therefore, the decrease in information load with the mobile display is larger when information quality is higher (i.e., the negative effect described in H2c is negatively moderated).

Hypothesis 5a-c (H5a-c): *Information quality (a) positively moderates the negative effect of mobile display on decision accuracy, (b) negatively moderates the positive effect of mobile display on information seeking, and (c) negatively moderates the negative effect of mobile display on information load.*

Experiment 1

The primary objective of Experiment 1 was to empirically test the effects of device (mobile or PC) and display (mobile or PC) as two orthogonal variables. Therefore, Experiment 1 was designed to test all hypotheses except for H5a-c, which focuses on the interaction between mobile display and information quality.

Participants and Design

One hundred and thirty undergraduate engineering students (58.5% female, mean age of 23.96 years with an STD of 1.25 years) at a leading Israeli university participated in Experiment 1 in return for extra credit.

The experiment used a mixed factorial design with a single between-subjects IV (device: mobile or PC) and a single within-subjects IV (display: mobile or PC). Participants were randomly assigned to a specific device and the display was counterbalanced across participants by asking them to perform two tasks with a random order of displays. The experimental platform was an online website, developed specifically for this study. The website simulated the process of booking a hotel room online. For the decision-making process to be as realistic as possible, we performed two preliminary steps, designed to choose the set of *attributes* and set of *alternatives* for the decision tasks. The first step was a preliminary survey of 36 respondents, aimed at identifying which attributes have the greatest influence on consumers in choosing a hotel room. The survey presented 16 common attributes of a hotel double room and asked the respondents to rate the importance of each attribute on a 7-point Likert-type scale. The eight attributes chosen for the study were those that received the highest importance means in the survey. In descending order of importance, the eight attributes were price per night, distance from city center, location score, general score, free access to Wi-Fi, cleanliness score, the inclusion of a free breakfast, and number of stars (the three scores were based on consumer reviews).

The second preliminary step was to generate a set of alternatives that would be as realistic as possible and that would reflect real-world trade-offs among attributes. The alternatives presented to participants were based on search results from Booking.com for a one-night double room in London. We sorted the search results by price, randomly sampled one of each 16 results, and collected data about the eight attributes for each sampled alternative. This procedure resulted in a matrix of 110 alternatives by eight attributes. To avoid having a biased sample because of specific observations, we next averaged the attribute values for each block of five sequential alternatives, resulting in a matrix of 22 alternatives by eight (averaged) attributes. These 22 alternatives were then divided into two sets, with odd alternatives defined as Set 1 and even alternatives defined as Set 2. This process ensured that the two alternative sets for the two within-subjects tasks (mobile display and PC display) were different, yet equivalent.

To manipulate the display IV as realistically as possible, the PC display presented information about all eight attributes on the main page of the alternatives, implying that the complete information (11 alternatives by eight attributes) was presented on the main page. The mobile display presented information about only three of the eight attributes – price per night, distance from city center, and number of stars (the two most important and the least important) – on the main page of the alternatives (11 alternatives by three attributes). In both PC and mobile displays, the alternatives were clickable, leading to a specific page for each alternative with the complete information (all eight attributes) for that alternative. While complete information was available on the main page in the PC display, the mobile display required participants to go back and forth from the main page to all 11 alternative pages to acquire the complete information.

Procedure

To control for potential distractions during task execution (which may vary across devices in real use), the experiment was performed at a university lab. Participants were asked to access the website developed for the study either with their own smartphone or with a PC located at the lab (we plan to empirically rule out the potential confounding by device familiarity in the third experiment). Upon entering the website, the preferences of participants were elicited by asking them to first evaluate the relative importance (weight) of the eight attributes for them by dividing a total of 100 points among the attributes. For each attribute that received a positive weight (above 0) from a participant, the participant was asked to select a preferred value from a range of possible real-world values. We asked for preferred values because people unnecessarily opt for the highest or lowest values (e.g., they unnecessarily prefer the cheapest hotel room).

Next, participants were asked to perform two sequential preference tasks, with information presented in a mobile display in one task and in a PC display in the other task (counterbalanced to prevent sequence effects). In each task, participants were presented with a list of 11 alternatives of possible hotel rooms, from which they had to choose their preferred alternative (they could make the choice from any page). Finally, participants were asked to provide estimates (on 7-point Likert-type scales) of the extent to which they experienced information load during task execution, and to provide additional background information.

The mediating and dependent variables were measured as follows. Information seeking was measured as the number of specific alternative pages that the participant accessed before making a choice. Information load was self-reported by participants, as noted above. Decision accuracy was actually measured as decision *inaccuracy*, defined as the distance (in number of superior alternatives) of the observed choice (the alternative chosen by the participant) from the normative choice (the best alternative given the preferences elicited from the participant at the beginning of the experiment). To rank the 11 alternatives for each participant, we employed the weighted additive (WADD) strategy, considered to be the normative, value-maximizing strategy for decision making (Jacoby et al. 1974; Payne and Bettman 2004). This strategy was applied by computing an overall distance score for each alternative from the "ideal" choice (not included in the alternative set), given the participant's attribute weights and preferred values, consistent with previous work about decision accuracy in consumer behavior (e.g., Jacoby et al. 1974). For each alternative, we summed the eight products of multiplying the attribute weight by the absolute difference (standardized across attributes) between attribute value and preferred value, to obtain an overall distance score from the "ideal" choice. Thus, alternatives with larger distances were those in which there were larger differences from preferred values in relatively important attributes. Then, the 11 alternatives could be ranked for each participant from best (lowest distance) to worst (highest distance). To minimize the influence of actual attribute values, we measured *decision inaccuracy* as the number of alternatives in the alternative set that were superior (closer to preferences) to that chosen for the specific participant (i.e., the superior alternatives "missed" by the participant). Consequently, decision inaccuracy was an integer that ranged from 0 (the best alternative was chosen) to 10 (the worst alternative was chosen).

Summary of Results

The unit of analysis was the decision made by a participant in a task (N=260). Mobile devices were used by 63 participants, with decision inaccuracy means (standard errors) of 2.59 (0.32) for mobile display and 2.03 (0.25) for PC display. PC devices were used by 67 participants, with decision inaccuracy means (standard errors) of 2.49 (0.31) for mobile display and 1.97 (0.25) for PC display. To test the hypotheses, we estimated three models, with information seeking, information load, and decision inaccuracy as explained variables. All models included device, display, age, gender, task order (i.e., whether the task was first or second), alternative set (i.e., whether Set 1 or 2 was used), and device commonly used for task (i.e., users reported whether they commonly use mobile devices to book hotel rooms) as fixed effects, and participant as a random effect. Models 1 and 2 for information seeking and information load, respectively, were estimated with a mixed-effects linear regression. Model 3 for decision inaccuracy, measured as a count of missed superior alternatives, was estimated with a mixed-effects Poisson regression. To test H3, information seeking was included in Model 2. To test H4a-b, information seeking and information load were included in Model 3.

The regression results for Models 1-3, presented in Table 1, showed that the device used had no significant effect in any of the three models, providing no support for H1a-c. By contrast, the mobile display significantly increased information seeking, decreased information load, and increased decision inaccuracy (decreased accuracy), providing support for H2a-c. The effect of information seeking on information load was positive and statistically significant, supporting H3. Finally, the effects of information seeking and information load were in the hypothesized directions, but only the effect of information load (increased decision inaccuracy) was statistically significant, providing support for H4b but not for H4a.

Experiment 2

Given the statistically significant effects found in Experiment 1 for mobile display but not for mobile device, Experiment 2 added information quality as a moderating variable. By manipulating the quality of the subset of information presented to participants in the mobile display, we were able to test H5a-c as well.

Participants, Design, and Procedure

One hundred and seventy-four undergraduate engineering students (52.9% female, mean age of 25.21 years with an STD of 1.58 years), who did not participate in Experiment 1, participated in Experiment 2 in return for extra credit.

Experiment 2 replicated Experiment 1 in all methodological aspects, including the instruments, design, and procedure, but with information quality as another between-subjects IV, as the participants in Experiment 2 were randomly assigned to either high or low information quality. This assignment had no impact on the task performed with the PC display, as the main page in the PC display included the complete information (11 alternatives by eight attributes). By contrast, this assignment influenced the attributes presented in the mobile display. In the *high* information quality group, the main page included information about the three attributes that were rated by the individual participant as *most* important (received the highest weights in the preference elicitation stage at the beginning of the experiment). In the *low* information quality group, the main page included information about the three attributes that were rated by the participant as *least* important. Notably, whereas the three attributes presented on the main page in the mobile display in Experiment 1 were fixed, these three attributes were adapted to participant preferences during task execution, and were either the most informative (high quality) or least informative (low quality) subset.

	Experiment 1			Experiment 2		
Variable	(1) Information seeking	(2) Information load	(3) Decision inaccuracy	(4) Information seeking	(5) Information load	(6) Decision inaccuracy
Intercept	2.811 (2.641)	0.722 (2.078)	-0.076 (0.866)	-0.434 (2.623)	5.656*** (1.598)	0.618 (0.679)
Device (mobile)	-0.099 (0.252)	0.022 (0.190)	0.018 (0.080)	0.486+ (0.289)	0.185 (0.177)	0.118+ (0.071)
Display (mobile)	1.223*** (0.247)	-0.570** (0.195)	0.288*** (0.083)	3.516*** (0.401)	-0.613* (0.271)	0.694*** (0.106)
Information seeking		0.120* (0.047)	-0.033 (0.020)		0.161*** (0.033)	-0.051*** (0.014)
Information load			0.075** (0.025)			0.052* (0.022)
Inf. quality (high)				0.002 (0.402)	0.024 (0.245)	0.009 (0.110)
Inf. quality (high) ×display (mobile)				-2.364*** (0.567)	-0.597+ (0.354)	-0.188 (0.142)
Device commonly used (mobile)	-0.453 (0.325)	-0.179 (0.247)	0.146 (0.098)	-0.411 (0.460)	0.381 (0.281)	0.730*** (0.089)
Age	-0.119 (0.107)	0.143+ (0.080)	0.023 (0.035)	0.009 (0.101)	-0.088 (0.061)	-0.017 (0.025)
Gender (female)	0.110 (0.272)	0.335 (0.205)	0.013 (0.088)	0.215 (0.314)	-0.771*** (0.191)	-0.076 (0.078)
Task order (first task)	0.388 (0.247)	0.145 (0.187)	-0.059 (0.079)	0.246 (0.285)	-0.305+ (0.174)	0.073 (0.069)
Alternative set (Set 1)	0.465+ (0.247)	0.328+ (0.187)	0.190* (0.080)	0.081 (0.285)	0.377* (0.173)	0.149* (0.069)

Notes. Unstandardized coefficients are shown, with standard errors in parentheses. Models 1, 2, 4, and 5 were estimated with a mixed-effects linear regression. Models 3 and 6 were estimated with a mixed-effects Poisson regression. All models included the participant as a random effect (each participant performed two tasks). Experiment 1 N=260 and Experiment 2 N=348. Decision inaccuracy in Models 3 and 6 was opposite to decision accuracy in the hypotheses. Baseline conditions for IVs were PC device, PC display, and low information quality.
+ p<0.1; * p<0.05; ** p<0.01; *** p<0.001; two-tailed p values are reported.

Table 1. Results of Estimation of Mixed-Effects Regression Models

Summary of Results

Experiment 2 followed the same analytical approach (N=348). Mobile devices were used by 84 participants, with decision inaccuracy means (standard errors) of 3.36 (0.32) for mobile display and 1.93 (0.24) for PC display. PC devices were used by 90 participants, with decision inaccuracy means (standard errors) of 2.89 (0.31) for mobile display and 1.93 (0.23) for PC display. In this experiment, information quality and its interaction with display were included as additional fixed effects in all three models. The regression results for Models 4-6, also presented in Table 1, were highly consistent with the results for Models 1-3 in Experiment 1. Specifically, the hypothesized effects of the mobile display (H2a-c), of information seeking on information load (H3), and of information load on decision accuracy (H4b) were again supported. Contrary to Experiment 1, we found support (at the 0.10 level) for two effect of the mobile device – on information seeking and on decision accuracy. While the latter effect was in the hypothesized direction (mobile device increased inaccuracy), the former effect was not, as the mobile device increased information seeking. This finding could be explained by a need to acquire information on individual alternative pages rather than on the main page (because of lower visibility) that outweighed the higher search costs. Finally, information quality was found to have the hypothesized moderating influences on the effects of the mobile display on information seeking (H5b supported) and on information load (H5c supported at the 0.10 level). Specifically, high information quality mitigated the increase in information seeking and intensified the decrease in information load as a consequence of using a mobile display. The moderating influence of information quality on the effect of mobile display on decision accuracy was in the hypothesized direction (high information quality mitigated the increase in decision inaccuracy) but it was not statistically significant. Figure 2 depicts these three moderating influences according to estimated means.

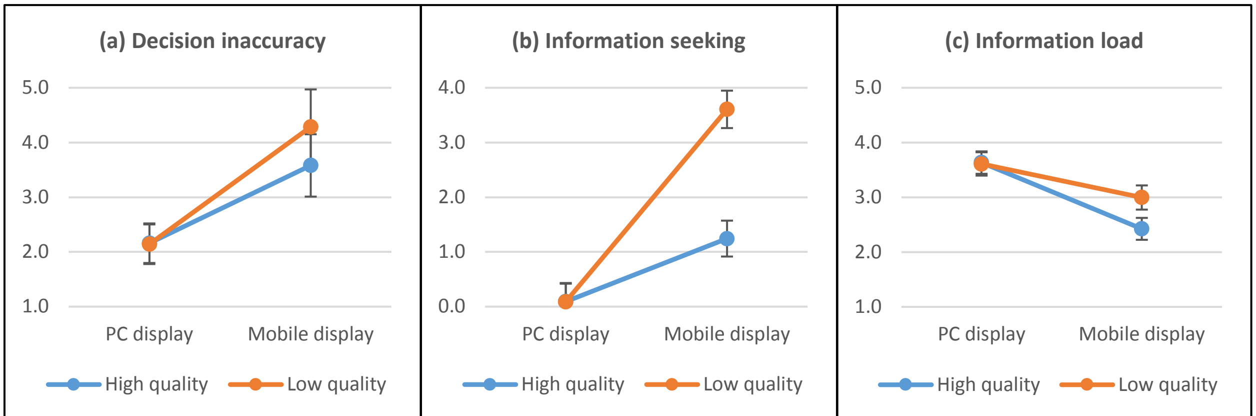

Figure 2. Moderating Effects of Information Quality (Estimated Means)

Discussion

The two experiments are consistent in showing that the hypothesized effects of mobile use on information processing (information seeking and information load) and on decision making (decision accuracy) are the consequence of the mobile display rather than of the mobile device. Evidently, in our research setting, decisions with mobiles are less accurate because users are exposed to less information on the main page and not because they have to process the information via a smaller screen. We find that the mobile display increases information seeking, decreases information load, and decreases decisions accuracy. We further find that when the information subset presented on the mobile display is of higher quality (i.e., more informative given user preferences), the disadvantages of the mobile display are mitigated and its advantages are intensified. Our findings are of value because we are able to *replicate* them in two laboratory experiments, which increase *internal validity* by controlling for potential confounding, in particular the higher probability of environmental interruptions during mobile use.

The contributions of this work to the information systems literature are threefold. First, it is among the first studies that aim at investigating how mobile use affects information processing and decision making relative to PC use. Second, the study contributes by breaking down the concept of use into two orthogonal factors – device and display – which are typically confounded in the case of mobile use. Third, the study advances the literature by constructing and testing a research model in which information seeking and information load mediate effects on decision accuracy. From a practical standpoint, our finding that the mobile display reduces information load is an indication that responsive designs are effective. However, we show that this benefit comes at the cost of increased information seeking and decreased decision accuracy. Finally, we show that the benefits of mobile use are higher and its costs are lower when the information presented on the mobile display is more informative given individual user preferences.

This research is currently in progress. By the time of the conference, we plan to conduct a third experiment that will further investigate the moderating effect of information quality. In particular, we plan to allow users to decide on which specific attributes (among the eight) are presented on the main page in the mobile display. We will then examine user choices and consequent effects on information seeking, information load, and decision accuracy. This third experiment, together with the two described above, will advance our understanding of how information processing and decision making are affected by mobile use.

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