The Effect of Counterproductive Time on Online Task Completion

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The objective of this study was to investigate how counterproductive time spent on a website affects consumers' online task completion. Two hundred and twenty-eight consumers were asked to perform a task on determined websites. Verbal protocols and clickstream data were collected. Results of Study 1 showed that the time spent waiting for pages to download had no effect on task completion, but that the time lost on pages that were useless to the task at hand had a negative impact on consumers' task completion. Focusing solely on downloading times, Study 2 indicated that the downloading time related to pages that were useful to consumers had no effect on task completion, but downloading times related to pages that were useless had a significant impact on task completion. Managerial and theoretical implications are discussed.

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EXTENDED ABSTRACT

Between 25 and 75% of online shopping carts are abandoned by customers (Hill 2001). The quality of the website is always mentioned as one of the top reasons to explain this phenomenon. It explains, in part, why conversion rates for websites are still low, ranging from 2 to 5% (Betts 2001; Gurley 2000; Sismeiro and Bucklin 2004). The objective of this study was to investigate the impact of two potential reasons why consumers who visit a website to perform a goal-oriented activity rarely complete their task: waiting for pages to download and losing time on pages that are in retrospect useless to the task at hand, that is, losing time in informational dead ends.

Some studies have investigated consumer behavior in online goal-directed tasks such as online purchasing behaviors (Li et al. 2002; Moe 2003; Moe and Fader 2004; Sismeiro and Bucklin 2004). Other studies have investigated the effect of downloading time on consumer behavior (Dalleart and Kahn 1999; Weinberg 2000; Weinberg, Berger, and Hanna 2003). To this date no study has investigated the effect of different types of online counterproductive times (i.e., downloading time and time in informational dead ends) on consumers' likelihood of completing their online shopping task.

A first study was performed to test if time lost waiting for pages to download and time lost in informational dead ends had an effect on consumers' task completion. One hundred and seventy four consumers were recruited for this first study. They were asked to perform a specific shopping task on a specific website. Clickstream data, verbal protoco;s, and questionnaires were used to collect the relevant data and binary logistic regressions were performed to analyse the data. Results of this study suggested that the relative time spent by consumers on pages that did not provide the expected utility (i.e., relative time in informational dead ends) had a significant impact on their task completion and that the relative time spent waiting for pages to download had no impact on their task completion.

A second study was performed to replicate the initial study and also to investigate in more detail the effect of different types of downloading times on task completion. For this study, 111 consumers were recruited and were asked to perform an online shopping task. Results confirmed what study 1 had shown, namely that taken as a bulk, downloading time has no impact on the likelihood of successfully completing an online shopping task. However, it also showed that when downloading time is broken down into various subcomponents reflecting the purpose of those downloads, we clearly see that the time for downloading a useful page has no impact on task completion while the time to download pages leading to and within informational dead ends and the time to download pages leading out of such dead ends have a tremendous impact on the likelihood of completing the task.

In both studies, the variables that discriminated between consumers who did complete their online shopping task and those who did not all pointed in the same direction: informational dead ends. The relative time spent on pages that did not provide the expected utility (informational dead end pages), the total time downloading these pages, and also the downloading time to get out of informational dead ends within a shopping session on a website were all significantly greater for consumers who did not complete their online shopping task than for those who did complete their online shopping task. Finally, results also suggest that the total downloading time and the downloading time of useful pages do not discriminate between consumers who do complete their online purchase and those who do not.

This study has many theoretical and managerial implications. First, the introduction of a new construct, namely informational dead ends, as a predictor of online task completion is a major contribution of this study. In order to address some shortcomings of clickstream data (Bucklin et al. 2002), we introduced a multi-method approach that assesses informational dead ends by identifying only those navigational loops that create frustration for the consumers. Second, results suggest that it would be more profitable for web designers to focus on minimizing the number of informational dead ends, and frustration in general, experienced by consumers while on the website than on making the website faster.

Many research avenues could be pursued following this study. First, although the proportion of time spent in informational dead ends as well as downloading time to and from those informational dead ends explained a good portion of task completion variance, other determinants of task completion need to be identified. Specifically, recently introduced clickstream complexity measures such as linearity and compactness may influence consumers' task completion (Senecal, Kalczynski, and Nantel 2005). Second, although various reasons explain why consumers have abandoned their task, the concepts of frustration and/or satisfaction need to be further investigated in order to better understand what consumers experience while shopping online (Szymanski and Hise 2000). Finally, studies such as this one, using a multi-method approach, (in this study, clickstream and verbal protocols) should be pursued in order to gain a better understanding of online consumer behavior.

This study has some limitations that should be kept in mind before applying the results to real market situations. First, only self selected consumers participated in this study. Thus, as with most online studies, due to the possible self selection bias, it is not possible to confirm that our participants are representative of the population of

Internet shoppers. Second, results are based on fictitious purchases, that is, consumers were not spending their own money in order to complete their online purchases. Third, although similar results were observed across websites, results of the present study are limited to only three websites. Thus, additional studies conducted with different samples and different websites would contribute to the generalization of the present study.

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