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Time orientation, task characteristics, and customer performance

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Abstract

The present study illustrates that consumer time use preference moderates the effect of satisfaction with the task solution, but has no impact on level of performance. Results show that more complex tasks produce higher (lower) levels of satisfaction for polychronic (monochronic) consumers than simpler tasks. In contrast, prioritizing complex activities increases (decreases) satisfaction for monochronic (polychronic) consumers. Unlike task solution satisfaction, time orientation does not impact on task performance. These findings suggest that online retailers should emphasize site factors related to consumers' tasks that best suit the time use preference of their primary users in order to maximize customer satisfaction.

Keywords

time, task, orientation, characteristics, performance, customer

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Time Orientation, Task Characteristics, and Customer Performance

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The present study illustrates that consumer time use preference moderates the effect of satisfaction with the task solution, but has no impact on level of performance. Results show that more complex tasks produce higher (lower) levels of satisfaction for polychronic (monochronic) consumers than simpler tasks. In contrast, prioritizing complex activities increases (decreases) satisfaction for monochronic (polychronic) consumers. Unlike task solution satisfaction, time orientation does not impact on task performance. These findings suggest that online retailers should emphasize site factors related to consumers' tasks that best suit the time use preference of their primary users in order to maximize customer satisfaction.

Keywords: Satisfaction, Performance, Time Orientation, Task Difficulty, Task Prioritization

Track: new technologies and e-marketing

1. Introduction

Consumers online increasingly engage in complex purchasing operations. Designing websites that allow consumers to accurately complete their shopping activities contributes to their satisfaction, yet satisfaction levels may be affected by the specific type of task that the consumer is engaged as satisfaction may be linked to performance success and task type can impact on consumer efficiency (Hong, Thong & Yan Tam, 2004). Nevertheless, as shopping online can often involving several websites and/or multifaceted decisions, the consumers' time orientation – that is, their preference for doing one thing at a time, or engaging in multiple activities at the same time – is also likely to impact on satisfaction and may impact on their performance. Understanding how the activities customer engage in online impact on both satisfaction and performance furthers our understanding of online shopping behavior. This paper examines the impact of the type of task and time orientation on both the consumers' performance and their evaluation of that performance.

2. Literature Review

Consumers may choose, and prefer, to do one activity at a time, or they may do multiple activities in a single time period. The former is generally known as monchronicity, the latter as polychronicity (Bluedorn, Kalliath, Strube & Martin, 1999). Consumers who measure or count time are exhibiting monochronic behavior whereas those that show more flexibility and place greater emphasis on relationships are exhibiting polychronic behavior (Kaufman-Scarborough, 2003). Monochrons like to prioritize tasks and are more upset by scheduling changes than polychrons. Following on from this, monochrons are more likely to make detailed plans, even though planning is not necessarily easier for them than it is for polychrons; and polychrons enjoy change more and appear to change from one activity to another more than monochrons (Kaufman-Scarborough & Lindquist, 1999).

Task complexity is determined by the nature of the task itself (Cheng, Luckett & Mahama, 2007). Complex tasks involve multiple decisions that can lead to several possible outcomes: they may have poorly defined contingencies, involve conditional relationships between different elements of the task, and/or require repeating a process from multiple starting points (Jimmieson & Terry, 1999). Complex tasks have been found to be more intrinsically satisfying than simple tasks (Vickroy, Shaw & Fisher 1982). From the organizational behavior literature, one (positive) predictor of job satisfaction is polychronicity (Arndt, Arnold & Landry 2006). This may be because polychronic individuals enjoy the constant changes associated with many complex tasks. From a consumption point of view, satisfaction is a valuable concept as it is acknowledged as a precursor of attitude, which in turn is a precursor of behavioral intentions (Bearden & Teel, 1983). Not everyone reacts positively to "enriched" tasks (Kim, 1980), nevertheless, as polychronic individuals like multi-tasking, they will find the more complex task and its completion more satisfying than monochrons. This leads to the first hypothesis:

H1: The impact of task complexity on consumer satisfaction with the task solution is moderated by consumer time orientation
- H1a: Monochrons' will be more satisfied with the task solution when performing a simple task than when performing a complex task.
- H1b: Polychrons' will be more satisfied with the task solution when performing a complex task than when performing a simple task.

While a complex task is likely to be considered more desirable by polychrons, if the task is too complex performance may be detrimentally affected (Tsang, Velazquez & Vidulich 1996), and the positive reaction of polychrons to multitasking is not reflected in task performance (König, Bühner & Mürling, 2005). This difference between satisfaction and performance may be because polychronic individuals enjoy the constant changes associated with complex tasks, despite their behaviors' lack of impact on performance (König, Bühner & Mürling, 2005). Therefore, the performance of both polychrons and monochrons is likely to be affected by task complexity (Britt, 2005). This leads to the second hypothesis:

H2: The impact of task complexity on performance is ***not*** moderated by consumer time orientation

While increasing task complexity is likely to be more satisfying for polychrons, monochrons are likely to respond better to greater task structure as monochrons like to plan. If a complex task includes elements that need to be repeated, then monochrons are likely to take advantage of this, but polychrons might not. In addition, when switching between tasks is necessary, monochrons have a tendency to prioritize one of the tasks involved (Haase, Lee & Banks, 1979). Prioritization implies that one of the task elements is considered more critical than the other (Kernan & Lord, 1990), yet consists only of changing the instructions given to respondents, not the inherent complexity of the task (Tsang, Velazquez & Vidulich 1996). By imposing a priority within a complex task, the monochronic preference for planning is satisfied, while polychronic consumers will find the task less interesting and will obtain less satisfaction out the process of completing the task. This leads to the third hypothesis:

H3: The impact of task prioritization on consumer satisfaction with the task solution is moderated by consumer time orientation
  - H3a: Monochrons' will be more satisfied with the task solution when performing a prioritized task than when performing an unprioritized task.
  - H3b: Polychrons' will be more satisfied with the task solution when performing an unprioritized task than when performing a prioritized task.

Switching can impact on performance as, with a large number of simple tasks, responses are slower and less accurate when alternating tasks than when repeating tasks (Schneider & Logan, 2005), and response times become longer the more task switches there are (Schneider & Logan, 2007). Nevertheless there is no evidence to suggest that prioritization provokes a different impact on task performance for monochrons or polychrons. Similar to our argument for H2, while monochrons' are likely to get more satisfaction when faced with a prioritized task it does not have to follow that they can perform better on those tasks, nor is the performance of polychrons likely to be detrimentally affected by prioritization. Both monochrons and polychrons may undertake the same steps when the task is prioritized as they are responding to the same change in instructions. As such, the final hypothesis is that:

H4: The impact of task prioritization on performance is ***not*** moderated by consumer time orientation

3. Methodology

3.1 Experimental design

The hypotheses were tested via two 2x2 factorial designs. For both designs, one factor – polychronicity – was a measured variable; the other factor was manipulated via the task given to the respondent. For each task just over 100 responses were collected. The number of

respondents in each cell is shown below (Table 1). Unequal cell sizes were the results of respondents' time orientation being measured not manipulated. It can be seen from this that the sample in experiment 2 tended to be more polychronic (M= 4.04 vs. M=4.21) although this difference is not significant (p>0.1).

Table 1: Sample distribution across the two experiments

Experiment 1: Task difficulty		Simple	Complex
	Monochronic	59	44
	Polychronic	44	59
Experiment 2: Task prioritization		Unprioritized	Prioritized
	Monochronic	44	39
	Polychronic	59	63

3.2 Sample

The sample was recruited on a central street from the general population of a large European city. Screening questions were used to ensure that all respondents were familiar with making purchases online.

3.3 Experimental manipulation: Task complexity and prioritization.

The *simple task* was to book a multi-city trip around Europe with a single airline subject to arrival and departure restrictions in each city. The *complex task* was to do the same, *and* to find out about the exhibition showing at, and opening times for, a 'museum/art gallery' in one of the destination cities. For the *unprioritized* task, the relative importance of the flights and museum visit were not indicated, whereas with the *prioritized* task the museum information was more critical. The manipulation check was achieved by measuring respondents' perceptions of task complexity and prioritization. Task difficulty was measured with three items adapted from Spreng, MacKenzie, and Olshavsky (1996), and task prioritization was measured with five items adapted from Kernan and Lord (1990).

3.4 Experimental Procedure

Respondents were first asked to complete a questionnaire concerning their time use preference and their demographic characteristics. Then each respondent was assigned to complete one of the three tasks. After completion of the task, respondents filled in a questionnaire concerning their satisfaction with the task solution, and their perceptions of the level of complexity and prioritization of the task.

3.5 Measures

The measures used on the research instrument were taken from established scales. Polychronicity was measured using 10 items in the first person. These items consider three aspects of polychronicity – beliefs, attitudes and behavior – and were adapted from the third person items in the Inventory of Polychronic Values (Bluedorn, Kalliath, Strube & Martin, 1999). The items were measured using a Likert scale (1 = strongly disagree to 7 = strongly agree). Mono-/poly-chrons were identified using the midpoint of the scale (4.0) to operationalize the conceptual midpoint of polychronicity (Palmer & Schoorman, 1999). Satisfaction with the task solution was measured using four semantic differential items from Spreng, MacKenzie, and Olshavsky (1996). The adjective pairs given were: very satisfied-

very dissatisfied, very pleased-very displeased, contented-frustrated, and delighted-terrible. Each adjective pair had seven possible response categories. Performance was measured in two ways: the percentage of appropriate answers and the respondent's efficiency. The percentage of appropriate answers was used as this allowed a direct comparison between all the tasks (where tasks B and C contained more elements than task A). Answers were considered appropriate if they fulfilled the constraints governing flight times, and, in tasks B and C, when the correct museum opening times and exhibition title were identified. Efficiency was calculated by dividing the percentage of appropriate answers by the time the participant took to complete their assigned task.

4. Major Results

The success of the manipulation was determined by running ANOVAs[1] for the perceived complexity and prioritization of the task described in the questionnaire. Results showed that the difference in the subjects' perception of task complexity for the two versions of the questionnaire in experiment 1 (simple-complex task) was statistically significant (M=2.57 for the simple task and M=4.12 for the complex task ($F(1,205)=97.01$; $p<0.001$)). The difference was also significant for the perception of task prioritization between the two versions of the questionnaire in experiment 2 (M=3.58 for the unprioritized task and M=4.75 for the prioritized task ($F(1,205)=36.70$; $p<0.001$)).

According to H1, the impact of task complexity on satisfaction with the task solution is moderated by consumer time orientation. Looking at the results in Table 2, we can see that the interaction between task complexity and polychronicity is the significant factor that explains how these two variables influence satisfaction with the task solution. Results show that monochrons' satisfaction with the simple task (M=4.93) is not significantly greater than their satisfaction with the solution to the more complex task (M=4.59; $p < .2$). While the opposite happens to polychrons, who have a higher level of satisfaction with the task solution to the more complex task (M=5.29) than with the solution to the simpler task (M=4.51; $p<.01$). The results for performance also confirm the second hypothesis. While consumers were less efficient with the more complex task as would be expected (M=.06 in contrast to M=.09 for the simpler task; $p<.01$), time orientation has no impact on either the accuracy of the solutions, nor on the efficiency with which consumers' performed the task.

Table 2. ANOVA for Satisfaction and Performance with Polychronicity and Complexity

Dependent Variable	*Source*	*F-value*	*p-value*
Satisfaction with the task solution	Task Complexity (TC)	1.54	0.22
	Polychronicity (P)	0.63	0.43
	TC x P	10.02	0.00
Accuracy	Task Complexity (TC)	0.13	0.72
	Polychronicity (P)	0.15	0.70
	TC x P	0.09	0.77
Efficiency	Task Complexity (TC)	21.61	0.00
	Polychronicity (P)	0.03	0.87
	TC x P	0.05	0.83

Notes: df=1,204.

[1] We used Type III sums of squares to account for the different sample size in each cell.

Regarding the effect of polychronicity as a moderator for the prioritization effect, as specified in H3 and H4, results in Table 3 show a significant effect of the interaction between the two independent variables when considering the consumers' satisfaction with their solution to the tasks, but only main effects with performance. Satisfaction with the task solution is higher for monochronic subjects with the prioritized task (M=5.11) than with the unprioritized task (M=4.59; p<.01). The opposite happens with polychronic subjects although the difference is not significant (M=4.80 vs. M=5.29; p<.2). When looking at task performance, time orientation has neither a direct nor an interaction effect. However, when the task is prioritized, both monochrons and polychrons perform more accurately.

Table 3. ANOVA for Satisfaction and Performance with Polychronicity and Prioritization

Dependent Variable	*Source*	*F-value*	*p-value*
Satisfaction with the task solution	Task Prioritization (TP)	0.01	0.94
	Polychronicity (P)	1.22	0.27
	TP x P	7.96	0.01
Accuracy	Task Prioritization (TP)	6.59	0.01
	Polychronicity (P)	2.03	0.16
	TP x P	0.24	0.62
Efficiency	Task Prioritization (TP)	1.67	0.20
	Polychronicity (P)	0.66	0.42
	TP x P	0.10	0.75

Notes: df=1,204.

5. Discussion/Conclusions

The present study illustrates that consumer time use preference moderates the effect of task characteristics on consumers' satisfaction with the task solution, but not with their task performance. With respect to satisfaction, monochronistic and polychronistic subjects respond in opposite directions with changes in task complexity. Complex tasks produce higher (lower) levels of satisfaction for polychronistic (monochronistic) consumers. In contrast, prioritizing complex activities generates higher levels of satisfaction for monochronic consumers and lower levels of satisfaction for polychronic consumers. Unlike subjective evaluations of performance, the interactions between time orientation and changes in both task complexity and task prioritization have no impact on objective performance. Increasing task difficulty does, however, lead to a decrease in efficiency, and prioritizing part of the task does increase accuracy for both monochrons and polychrons.

The present research offers useful additions to the understanding of consumer behavior in online environments. The inclusion of the particular task associated with the consumer's website visit provides a new perspective. Specific types of task have a differential impact on consumers' subjective evaluation of their performance, but a consistent impact on objective performance. Adapting how an online task can be completed (e.g., by allowing consumers the option to prioritize different aspects of a complex task) will influence satisfaction with the task and through that attitudes and revisit intentions. This research confirms that e-tailers should not assume that only website factors need to be considered when trying to increase consumers' satisfaction and performance. E-tailers should also understand the type of tasks that consumers' perform when engaging with their websites.

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