Technostress-induced SCR Patterns and Performance

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Prior research reveals that performance between individuals under stress varies (Matthews 2000). Differences in technostress-induced physiological responses might lead to a different end-user performance. Therefore, this research in progress aims to analyze technostress-induced skin conductance response (SCR) patterns and whether these patterns lead to different end-user performances.

Using stressful technology influences an individual’s physiology through affective and cognitive processes and basic brain mechanisms. Research shows that such usage causes an increase in the activity of human sweat glands through multiple brain mechanisms (Randolph et al. 2005). SCR is a well-established measurement method for stress (Boucsein 2012) and has been used to measure technostress (Eckhardt et al. 2012; Riedl et al. 2013). Thereby, prior research shows that performance between individuals under stress varies (Matthews 2000). Differences in technostress-induced physiological responses might lead to a different end-user performance.

To provide first indicative evidence for this proposition we conducted a laboratory experiment. We captured the SCR of 18 participants while working with an unreliable computer, which froze for one minute. We analyzed the first 15 seconds of the SCR after the computer froze to determine the SCR patterns as described by Burk (2005). In addition, end-user performance was calculated by assessing the task results into faulty and correct results, and we analyzed the values of the time needed to accomplish the task.

The results of our pilot study indicate that the subjects react differently towards technostress. In general, 7 out of 18 (39%) react in a regular pattern A or B, whereas 11 out of 18 (61%) follow an irregular reaction course C or D. The majority of the participants followed the irregular pattern C. Results also show differences in the end-user performance. For example, subjects who followed pattern C indicate the best performance, whereas the participants that showed pattern D demonstrate the lowest performance. In addition, the subjects who respond in a regular pattern A and B perform worse, than those who respond in an irregular reaction in terms of pattern C and D.

In conclusion, our first results demonstrate that we found no support for the developed proposition in our pilot study, which might be explained by the small sample. Despite the mean comparison results, we will realize a larger laboratory experiment in order to test the proposition with adequate statistical methods. By extending this experiment we intend to contribute to IS research by showing that technostress-induced physiological responses influence end-user performance and by explaining in-depth how technostress influences end-user performance through the mediation of physiological responses in terms of the SCR patterns.

References