Preliminary evidence for the psychophysiological effects of technologic feature in e-commerce

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Keyword: S-O-R paradigm, e-commerce, psychophysiology, online behaviors

Since 2000 when the smart devices began to become popular among consumers, both online and offline retail stores have a mutual influence on the entire consumption process (i.e. from searching information to purchasing products), and boundaries of retailing between online and offline has been blurred during the process (Cao, 2014; Piotrowicz & Cuthbertson, 2014). Moreover, developing organic relationship with customers by providing seamless experiences appeared as a critical factor of retailers' success or failure (Mahajan et al., 2002). Unlike the consumers before the smart device era, current consumers living in the smart era when life is convenient as product, technology, and service are integrated (Cao, 2014; Piotrowicz & Cuthbertson, 2014). Hence, consumers today are also known as smart consumers who are active in their consumption journey, which required retailers to move along with the new trend of consumer behaviors. For instance, as information and communication technologies are advanced, consumers are now able to enhance their retailing experiences regardless the channel, and it leads fashion retailers to develop newer and more innovative experiential strategy to secure sustainable competency. Therefore, the purpose of this study is to focus on apparel website to investigate the effect of branded contents on consumer's pleasure and arousal that in turn may influence consumer's response behaviors, such as searching, acting, and sharing.

The impact of the external stimulation on consumer behavior has been studied base on the theories of psychology (Kawaf & Tagg, 2012). This study, hence, employed S-O-R paradigm which explains that consumers' inner organisms change according to the exposed external stimulation, and the changes antedate behavioral responses (Donovan & Rossiter, 1982; Mehrabian & Russell, 1974). Stimulus component describes load of information of the stimulus; organism component explains consumers' emotional reactions such as pleasure and arousal; and Response components initially explains approach-avoidance responses that this research focuses on searching, acting, and sharing behaviors. As consumers are more active on communicating and interacting with both retailers and other consumers than before Web 2.0 era (Jung & Kim, 2016), such behavioral responses are worth to investigate.

Total of 30 female subjects participated the experiment. As this study focuses on the importance of providing seamless experience to consumers, authors developed mock branded contents in video format and measured the changes of pleasure and arousal along with its impact on behavioral responses with both psychophysiological indicators and self-reported survey. Subjects observed the branded content video for 15 seconds and result of first 10 seconds were used for analysis. Pleasure and arousal were measured with BioPAC MP150, which indicates the changes of electromyogram (EMG: pleasure), galvanic skin reflex (GSR: arousal), and heart rate (HR: pleasure) follow by the self-reported survey about behavioral responses.

Repeated measure ANOVA results show S-O relationship that the branded content video has significant effect on arousal [F (1, 30) = 4.688, M_{GSR} = .411, p = .006] while it has insignificant effect on pleasure indicators EMG [F (1, 30) = 1.709, M_{EMG} = 187.757, p = .125], and HR [F (1, 30) = 1.257, M_{HR} = 1122.743, p = .288] (Figure 1). As the branded content video contains complex components, this results are consistent with past researches that posit more complex external environment increases consumers' arousing reaction. Regression analysis results show O-R relationship that arousal has positive significant effect on search and action behaviors. Moreover, changes of the first three seconds and 10 seconds show different indication of the behavioral responses. The first three seconds show increased arousal which has impact on search and action behaviors, while the result of 10 second only has positive impact on search behavior (Table 1).

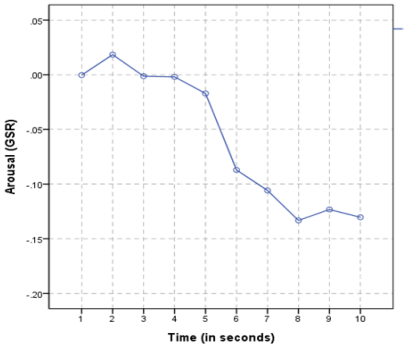

Figure 1. Arousal - Repeated measure ANOVA result

	Affective reaction – Behavioral responses(O-R)	**R^2**	**β**	***t***	*p*
3 seconds	Arousal → Search	.216	.455	2.593	.015
	Arousal → Action	.132	.359	1.945	.062
10 seconds	Arousal → Search	.144	.320	1.763	.089

Table 1. Regression results

Supporting the S-O-R paradigm, this study found that the effect for branded content video on consumer's behavioral response is indirect, and in consistent with past research (Cai & Xu, 2007), change of arousal is an indicator of hedonic shopping behavior. Also, retailers may first need to develop interactive and experiential contents seamlessly in order to attract consumers.

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This work was supported by the National Research Foundation of Korea Grant funded by the Korean Government (NRF-2016S1A2A2912526).