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Exploring the Effects of Specialist versus Generalist Embodied Virtual Agents in a Multi-Product Category Online Store

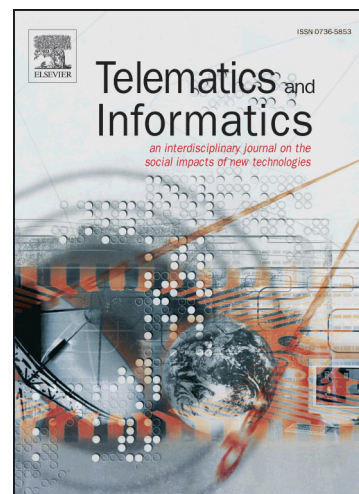Tze Wei Liew, Su-Mae Tan

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Title: Exploring the Effects of Specialist versus Generalist Embodied Virtual Agents in a Multi-Product Category Online Store

Tze Wei Liew [a]
Su-Mae Tan [b,*]

[a] Department of Knowledge Management, Faculty of Business, Multimedia University, Jalan Ayer Keroh Lama, 75450 Melaka, Malaysia; twliew@mmu.edu.my; +6062523528

[b] Center for Consumer Research and Education, Multimedia University, Jalan Ayer Keroh Lama, 75450 Melaka, Malaysia; smtan@mmu.edu.my; +6062523496

*Corresponding author

Abstract

Embodied virtual agents have been increasingly implemented in e-commerce websites to provide a more natural, social, and engaging way to deliver product information to online shoppers. The media equation theory posits that users' responses to computer agents adhere to human-to-human social rules; hence, effective designs of embodied virtual agents should be based upon social psychology rules. One such rule is the notion of specialisation. While the concept of media specialisation in terms of TVs, computers, websites, web agents, smartphones, and voice assistants have been examined; no studies have yet to explore the effects of specialists and generalist embodied virtual agents in a multi-product category online store. To bridge this research gap, an experiment was conducted in which university undergraduates (n=132) were randomly divided to interact with either a multi-product category website that incorporated specialist virtual agents or a multi-product category website that deployed a generalist virtual agent. Consistent with the hypotheses of this study, it was shown that the use of specialist virtual agents (as compared to a generalist virtual agent) enhanced perceptions of agent expertise, information credibility, website trust (ability, benevolence, integrity), and purchase intention. Meditation analyses revealed that the effects agent specialisation on purchase intention were mediated by perceived virtual agent expertise, perceived information credibility, and website trust (ability, benevolence, integrity). Finally, the effects of agent specialisation were shown to be more evident for females than for males. Theoretical and practical implications related to virtual agent specialisation in the context of multi-product category online stores are discussed in this paper.

1. Introduction

The advent of embodied virtual agents is humanising online shopping experience. Embodied virtual agents are computer-generated visual characters that simulate sales assistants in online stores (Holzwarth et al., 2006). They are capable of conveying verbal and nonverbal cues through animated facial expression, body gestures, and text-to-speech dialogues. As such, embodied virtual agents can provide anthropomorphic personifications to e-commerce recommender systems; and thus, allowing for a more engaging, social, and humanised way of conveying product information in e-commerce (Beldad et al., 2016; McGoldrick et al., 2008; Qiu and Benbasat, 2005, 2009; Jin & Bolebruch, 2009). Recent years have seen the nascent integration of embodied virtual agents in online stores. For instance, Ikea.com, a Swedish furniture retailer, implemented a virtual agent (Anna) that answers questions related to products and services. Alaska Airlines implemented Jenn, a virtual agent that delivers information based on consumers' queries. Hokkaido Bank's virtual agent features an anime-like agent with large friendly eyes, which answers general questions and supports the application process (such as filling out new application forms from the web). There is an increasing number of web-based services that offer the development and implementation of embodied virtual agents in online stores, e.g., Sitepal, OddCast, Haptek and Voki. Depending on the service packages, with fees ranging from USD 10 to USD 50 per month, the rendered agents can be equipped with facial expressions, text-to-speech, translation, and conversational dialogue engines.