What Drives Competency-based and Integrity-based Trust in Voice Assistants?

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Voice commerce in which consumers make purchases using a voice assistant (VA) is on the rise. A VA is a digital agent that uses natural language to communicate with consumers via a human-like voice (Hu et al., 2021). Amazon's Alexa, Google Assistant, and/or Apple's Siri are popular VAs. According to eMarketer (2020), the number of U.S. VA users is estimated to top 135.6 million by 2022, which is 40.2% of the population. COVID-19 has accelerated the growth of voice commerce, as in-person service interactions have become more difficult and uncertain (Harvard Business Research, 2020).

An industry report revealed lack of trust was a major barrier for shoppers who used VAs to continue that use in the future (PwC, 2019); however, the role of trust on interactions between consumers and VAs remains under-researched (Foehr & Germelmann, 2020). Therefore, an important empirical question is what drives the development of trust in consumers interactions with VAs. The objectives of this research are twofold: (1) to unpack the dimensionality of trust in VAs; and (2) to explore the antecedents and outcomes of trust in interactions between consumers and VAs. Empirical findings of the study will help fill a void in the literature by developing a model of trust in the context of VAs.

Trust refers to "the willingness of a trustor (e.g., consumer) to be vulnerable to the actions of trustee (e.g., VAs) based on the expectation that the trustee will perform a particular action important to the trustor, irrespective of the ability to monitor or control the trusted agent" (Mayer et al., 1995, p. 712). Applied to VAs, trust can be conceptualized: (1) competence-based trust that refers to a VA's ability and skills to meet consumers' expectations; and (2) integrity-based trust that refers to the degree to which a VA adheres to a set of sound principles and performs actions in a reliable way (Chattaraman et al., 2019).

Role Theory (Solomon et al., 1985) provides a theoretical framework to conceptualize the relationship between consumers and VAs. According to the theory a variety of norms (e.g., functional, social, and/or cultural norms) are involved in dyadic interactions which structure how individuals are expected to behave in certain contexts. Such expectations include expectations for VAs' behavior. Fernandes and Oliveira (2021) identify two dimensions of role expectations for VAs as social-emotional (i.e., humanness and enjoyment) and functional (i.e., innovativeness, autonomy, ease of use, and usefulness). Humanness refers to the extent to which a VA has anthropomorphic qualities in form and behavior (Wirtz et al., 2018). Enjoyment refers to the degree to which a VA is perceived to be fun (Venkatesh, 2000). Innovativeness is defined as a VA's ability to adopt new ideas or skills (McLeay et al., 2021). Autonomy is defined as the ability to perform the tasks self-controllably (Hong & Williams, 2019). Ease of use refers to the way a VA is perceived to be used without any effort and usefulness refers to the degree of which a VA can bring benefits (Davis, 1989). Together, the roles performed by interacting parties will impact evaluation of that performance (Solomon et al., 1985). Given this, the social-emotional

and functional dimensions are proposed to influence trust in consumers' interpersonal relationships with VAs. Lastly, trust has been found to increase behavioral intentions such as usage intention (Pitardi & Marriott, 2021) and word-of-mouth (WOM). Therefore, the following hypotheses are proposed:

H1-6. (H1) Humanness, (H2) enjoyment, (H3) innovativeness, (H4) autonomy, (H5) ease of use, and (H6) usefulness positively impact (a) competence-based trust and integrity-based trust (b).

H7-8. (H7) Competence-based trust and (H8) integrity-based trust positively impact (a) usage intention and (b) WOM.

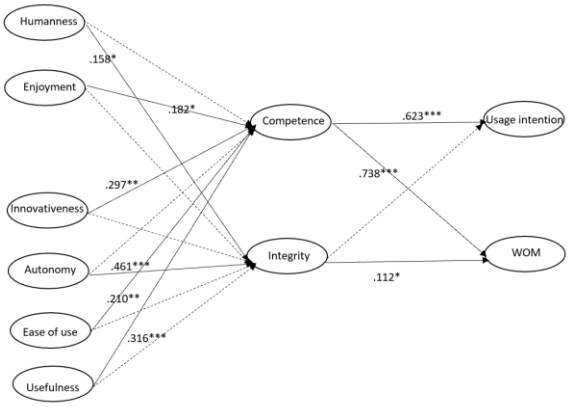

Figure 1. SEM Results of the Proposed Model

An online survey was developed with measurement items of research variables that were adopted from previous studies. A total 263 usable responses were collected from users of VAs (M_{age} = 44.7, 52.9% male, 67.7% White, 59.3% with a bachelor's degree or above). First, a good measurement model was established using CFA with the maximum likelihood (ML) estimation in AMOS: $\chi^2(419) = 803.202$, $p < .001$, $\chi^2/df = 1.917$, RMSEA = .059, IFI = .953, TLI = .943 and CFI = .952. Reliabilities, convergent and discriminant validity were also confirmed. Second, a good structural model was performed using SEM: $\chi^2(433) = 978.418$, $p < .001$, $\chi^2/df = 2.260$, RMSEA = .069, IFI = .933, TLI = .922 and CFI = .932. Results indicated that enjoyment (H2a), innovativeness (H3a), ease of use (H4a), and usefulness (H5a) positively impacted competence-based trust, whereas humanness (H1b) and autonomy (H4b) positively impacted integrity-based trust. Competence-based trust positively influenced usage intention and WOM (H7), whereas integrity-based trust only has a positive influence on WOM (H8b).

This research proposes and empirically tests the trust model in the context of VAs. Findings enrich the literature on AI technology by exploring different drivers that contribute to competence-based trust and integrity-based trust. In addition, this study offers empirical evidence regarding the role of trust in consumers' continuous adoption of VAs. Practically, the results provide insight into how fashion retailers can encourage and enhance consumers' relationship building with VAs. For instance, to boost consumer trust in VAs' abilities, fashion brands should incorporate the features of "being fun, innovative, free of effort, and useful" into the technology. To strengthen consumer trust in VAs' reliability, the features of "being human-like and autonomous" should be considered in the design of VAs.

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