

**Moderation Effects for the Use Behavior of Online Distance Education by Florida
Extension Agents: An Application of the UTAUT Model**

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Introduction

Extension has a long history with many forms of distance education such as correspondence courses, radio, and video (Eberle & Shroyer, 2000) and online distance education has the potential to increase the relevancy and reach of extension while also saving time and money (Ferrell & Fishel, 2007). However, studies related to online distance education in extension are limited and those that are available are dated. This leaves a large knowledge gap in understanding what characteristics may significantly affect if an agent uses online distance education and how they may be supported. To address this issue, this study was designed to increase understanding of the factors that may moderate the use of online distance education by extension agents.

Theoretical Framework

To further understanding of how moderating factors may affect the use of online distance education by extension agents in Florida, the Unified Theory for Acceptance and Use of Technology (UTAUT) model was utilized as a framework (Venkatesh et al., 2003). Within the UTAUT model, relationships are investigated between the independent variable of use behavior and the constructs of performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003). Performance expectancy is defined as how well a technology will help an individual achieve their goals, effort expectancy is how easy a technology is to use, social influence relates to other's perceptions of the use of a technology, and facilitating conditions refers to how much support an individual perceives they have when adopting the technology (Venkatesh et al., 2003). The moderating factors of agent age, gender, experience, and voluntariness are also identified as having moderating influence on the relationships between use behavior of online distance education and the four constructs (Venkatesh et al., 2003).

Methodology

To examine the moderation of use behavior of online distance education, extension agents in Florida were surveyed using an online questionnaire over the course of 21 days in June and July of 2023. Within this population ($N = 314$), 100 responses were collected. The survey metric was adapted from the UTAUT model (Venkatesh et al., 2003) where respondents self-rated their level of agreement with multiple statements related to the variables of performance expectancy, effort expectancy, social influence, and facilitating conditions. Averages of the statements for each of the independent variables were utilized to create indexes for analyses. Use behavior was measured by calculating an average for agent's self-ratings of their usage of 10 online distance education methods. Age and gender were also shared by respondents to serve as moderating factors and were included in analyses to control for demographics. Respondents also self-rated their level of experience with online distance education as well as how voluntary they viewed its use in their programming.

After the data was collected, a step-wise moderation analysis was deployed to identify significant moderating effects on use behavior. After the moderation analysis, a simple slopes analysis was used on significant relationships to identify potential differences between low and high rated construct groups (Field, 2017).

Results

Moderation analyses identified a significant model ($R^2_{adj} = .26$) including the moderating factors of experience on social influence, the theory's core construct of effort expectancy and the demographic of age. The latter two relationships indicated that as effort expectancy increased, (i.e., the technology was perceived as easier to use), the use behavior of online distance education increased and as age increases, so does use behavior.

For the moderating relationship of experience on social influence, the responses were mean ($M = 4.5$) split into low social influence ($SI \leq 4.5$) and high social influence ($SI > 4.5$) groups by mean. These two groups were plotted to conduct a simple slopes analysis. While both social influence groups showed that use behavior increases as experience increases, use behavior increases at a higher rate in the high social influence group ($y = 2.73 + 0.29x$, $R^2 = 0.04$) than the low social influence group ($y = 2.64 + 0.1x$, $R^2 = 0.13$) given the same increase in experience.

Conclusions

Overall, the findings of this study indicate that Florida extension agents use online distance education more when they perceive online distance education to be easier to use and when they are older. Additionally, the effect of social influences' positive relationship with use can be increased with higher levels of experience, which aligns with source credibility theory, finding that those with higher perceived experience will have more perceived credibility (Hovland & Weiss, 1952).

Recommendations

The findings of this study should be utilized by extension administration when choosing online distance education technologies by ensuring that agents are able to use the online distance education format targeted to address effort expectancy. Additionally, it is vital that extension agents be given opportunities to gain experience with online distance education to increase the positive effect of social influence on use. The significance of social influence also indicates that those using online distance education should be highlighted to other agents and professional learning communities to encourage collaborative works should be created. Future research related to this study should be conducted in different populations of extension as the findings of this study are not generalizable due to it using a non-random, convenience sample. By studying other populations of agents or conducting a larger scale, randomized study a greater overview of the characteristics affecting use of online distance education throughout extension nationwide or worldwide could be found. Further study of online distance education usage by extension agents should also utilize the UTAUT theory and its included constructs and moderating variables. However, it would also be beneficial to include other potential significant factors including years working in Extension, programmatic areas, and client-base characteristics.

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