

## **Exploring the Role of Personalized UX/UI in Driving Customer Loyalty: The Mediating Influence of Satisfaction and the Moderating Role of Culture in Sri Lankan E-Commerce**

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This study focuses on how consumer loyalty is affected by user experiences (UX) and personalized user interfaces (UI) in Sri Lanka's e-commerce sector. E-commerce is changing consumer behavior, especially in economies that are developing. It is important to understand how customized design features affect client retention. By investigating the moderating impact of cultural factors and the mediating function of customer satisfaction, this research aims to address important gaps in the literature. In order to offer insights into developing more captivating and loyalty driven e-commerce platforms, it examines the interaction between technical personalization and culturally appropriate design techniques.

The nature of the research design is quantitative, and for that purpose, questionnaires were distributed among E-commerce users in the Colombo District. In this regard, the total sample size is 396, which is more than the minimum required of 385 at a confidence level of 95% and margin of error of 5%. The sampling followed will be simple random sampling to make the sample representative and reduce bias. Data analysis was performed in SPSS using a number of techniques: correlation analysis to investigate relationships between variables, regression analysis to estimate direct and combined effects, and mediation/moderation analysis to investigate the role of customer satisfaction and cultural considerations. Reliability and validity of measures were confirmed using Cronbach's Alpha and factor analysis, respectively.

The findings indicate a positive, robust relationship between personalized UX, UI design and customer loyalty, with customer satisfaction playing a major mediating role. This aspect of personalization was translated into features which had to be considered in design phase, such as intuitive navigation, culturally aligned design elements, tailored recommendations, etc. All of these were bolstered by user satisfaction which in turn encouraged

loyalty. In addition, culture was a significant moderating factor affecting responses to personalized UX, UI across demographic groups. These findings highlight the need for E-commerce platforms to customize their designs to accommodate the cultural and social preferences of their target audiences.

A few limitations in this study have to be acknowledged. First, the geographical limitation of this study to the Colombo district alone restricts generalizing findings to other regions of Sri Lanka, given the existing different economic and cultural dynamics in those areas. Second, reliance on self-reported survey data introduces biases associated with social desirability and recall inaccuracies. Lastly, the study's scope was limited to customer satisfaction and cultural considerations, and thus other potential moderating factors include technological literacy and economic status, which were left for future exploration. Addressing these limitations in subsequent research can enhance the comprehensiveness of the findings.

Implications are both theoretical and practical. Theoretically, this adds to the body of increasing literature in e-commerce personalization about how UX, UI design and cultural consideration play a dual role in shaping customer loyalty. Practically, actionable insights are given for e-commerce practitioners operating in Sri Lanka and other similar markets. It is done by a culturally sensitive design strategy and personalized UX and UI elements. This, in turn, goes on to help build long-term loyalty in customers. The study further outlines that continuous improvement and user feedback mechanisms should be used to fine-tune design elements through changing consumer needs.

In this relationship, future research may involve extending the geographical scope by including rural and suburban areas to get a broader insight into E-commerce user behavior in Sri Lanka. They could also delve into what extent emerging technologies, like artificial intelligence and machine learning, are being used for further personalization of UX and UI designs. Comparisons with other developing markets also add depth to the overall generalizability of findings globally.

**Keywords:** *Customer loyalty, Cultural considerations, E-commerce, Personalization, User interface, User experience*