

Abstract

In this thesis the influence of psychophysical properties of aircraft cabins on their perceived quality (PQ) is investigated. PQ is the overall judgement about the product by a customer, which is based on the perception and evaluation of single product properties. An experimental approach has been used. The use case consists in Economy Class cabins of short-haul aircraft and in the formation of the first impression. Four experiments are presented: a haptics, a psychoacoustics, a visual and a visual-psychoacoustic experiment. In the haptics experiment different various surface samples were rated by subjects in a laboratory environment. The physical roughness showed to be a negative predictor for surface PQ. In the psychoacoustics experiment various locking sounds were rated by subjects in a cabin mock-up. A positive relationship of sharpness and PQ and a negative relationship of loudness and PQ emerged. In the visual experiment the cabin properties lighting intensity, correlated colour temperature and surface gloss were manipulated in a Virtual Reality Environment (Power Wall) and rated by subjects. Hypothetically formulated effects could not be confirmed, although other effects became significant. In the visual-psychoacoustic experiment cabin properties from the visual as well as the psychoacoustic experiment were integrated in one VR environment (CAVE). Overall, five out of eight hypotheses could be confirmed. The results are critically discussed regarding the methodology and the context of aircraft cabins. Possible alternative approaches as well as different use cases within aviation are outlined.