Do Salespersons Tell the Truth of ADAS? An Analysis of Information Flowing from Salespersons to Customers

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Abstract:
[Objectives] Drivers’ understanding of Advanced Driver Assistance Systems (ADAS) is closely related to driving safety in SAE Level-2/3 vehicles. Thus, with an increasing number of SAE level-2 vehicles becoming available on the roads, it is vital to ensure users receive accurate information about the ADAS. In general, users can obtain knowledge regarding ADAS from user manuals, online forums, trial and error, and word-of-mouth communications with their friends or salespersons. Previous research has found that only a small portion of users would read the user manual. Thus, information from salespersons is vital for them to understand the ADAS, and shape their initial trust in the system, especially for those users who have no prior knowledge regarding the ADAS. However, given that to boost sales of the products, vehicle manufacturers are inclined to brand their products exaggeratedly or hide certain limitations of the systems, it is interesting to investigate how salespersons communicate with customers or potential customers regarding ADAS features during vehicle sales interactions.

[Methods] To capture real customer-salesperson interactions in automotive sales contexts, researchers visited direct-sale stores of six leading automotive manufacturers who are renowned for their advanced ADAS technologies in the Chinese market. To avoid bias in the information, all researchers pretended to be real prospective buyers and the salespersons were not aware that they were involved in a study until being briefed after the study. Semi-structured interviews were conducted with salespersons, involving two in-store interactions and one on-road demonstration drive for each brand, which simulated typical customer interactions. In total, 18 salespersons were involved in the study. Each interview covered pre-determined topics related to ADAS, including functionalities, software, hardware, human-machine interfaces (HMIs), limitations, usage guidelines, and user education. The interviews were conducted conversationally, allowing flexibility in the sequence of topics explored. Oral consent was obtained from each participant after the interview. Data collection involved audio recording of the interactions, which were later transcribed and subjected to qualitative analysis by two researchers. The transcribed text underwent coding and thematic sorting, with researchers scrutinizing quotes within each theme to assess the accuracy of the conveyed information.

[Results] Analysis of the interview data reveals several noteworthy findings regarding salespersons’ communication of ADAS features. First, descriptions of ADAS automation levels often lack precision and clarity. According to the SAE taxonomy of driving automation, the ADAS features currently equipped on consumer vehicles still fall under Level 2 (i.e. partially automated driving). More than half (N=10) of the salespersons utilized misleading terms such as “autonomous driving”, “intelligent driving”, “L2.5”, and “L2.999” to differentiate their product from other SAE Level 2 ADAS, potentially causing confusion among customers. Furthermore, there is a notable lack of clarity in explaining the shared responsibility between the driver and the ADAS system during operation, which could potentially foster misunderstandings about the role of these technologies in driving assistance. Specifically, while most (N=14) salespersons mentioned that the system would issue an alarm if drivers removed their hands from the steering wheel, many (N=8) attributed this solely to complying with traffic regulations. Only a minority (N=5) explicitly stated that the system is designed for assistance, emphasizing that drivers must continuously monitor both the environment and the system and be prepared to take control at any moment. Moreover, crucial limitations of ADAS technology, including factors related to road conditions, lighting conditions, and obstacles, were inadequately conveyed to customers. While user manuals provide comprehensive details on these limitations, salespersons' descriptions often lack precision and accuracy, potentially leading customers to misunderstand the capabilities of these systems. Finally, regarding user education about ADAS, some (N=12) salespersons mentioned the availability of in-person training during the delivery process and online video tutorials.

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for customers. However, their attitude toward the importance of user education varied. Only a minority (N=3) emphasized the importance of informing users about critical situations where the system may struggle and how to take over control safely in such instances.

[Conclusions] The findings of this study underscore the importance of improving communication practices regarding ADAS features in automotive sales settings. So far, inaccurate or incomplete information has still been provided by salespersons. Vehicle manufacturers should standardize training programs for salespersons, enabling them to provide accurate and transparent communication of ADAS features. Moreover, there is a need for clearer industry guidelines or regulations to ensure consistent and reliable communication practices in automotive sales channels. By enhancing the transparency and accuracy of information provision, automotive dealerships can foster an accurate mental model of ADAS among customers, and thus make effective adoption and utilization of ADAS technologies possible.

Keywords: ADAS; interview; mental model; customer education
Short Abstract

(filling in the submission system Abstract column, the length should be within 400 words)

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Abstract: Accurate information about Advanced Driver Assistance Systems (ADAS) during vehicle sales interactions is crucial to correct understanding and safe utilization of ADAS. This study delves into the communication regarding ADAS features in automotive sales contexts, focusing on the accuracy and thoroughness of information provided by salespersons. Real customer-salesperson interaction data were collected at direct-sale stores of six leading automotive manufacturers recognized for their advanced ADAS technologies in China. Through semi-structured interviews, salespersons' communication regarding ADAS functionalities and limitations was evaluated. Findings revealed significant challenges at this stage, including the imprecise depiction of automation levels and the insufficient emphasis on the shared responsibility between drivers and ADAS systems. On one hand, salespersons often used misleading terms such as "autonomous driving" and "intelligent driving," potentially leading to confusion among customers. On the other hand, limitations of ADAS technology, such as its sensitivity to road and lighting conditions, were inadequately conveyed, posing risks of misuse. Based on these findings, the study underscores the need for clearer industry guidelines or regulations to ensure consistent and reliable communication practices in automotive sales channels. For example, standardized training programs for salespersons should be provided to ensure accurate and transparent communication of ADAS features. By enhancing the transparency and accuracy of information, customers can develop a more precise understanding of ADAS, ultimately contributing to the effective adoption and utilization of these technologies for improved road safety.

Keywords: ADAS; interview; mental model; customer education