ASSESSMENT ON THE ACCEPTABILITY OF FUNCTIONALITY AND AESTHETICS OF THE CALL AND SMS ALERT SYSTEM OF A VEHICLE

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ABSTRACT *– The Autotronics program of the University of Science and Technology of Southern Philippines has a numerous developed trainer for classroom setting. These developed trainers were implemented yet without the assessment of its acceptability from the experts of automotive industry. This study focused on the assessment of the level of acceptability and functionality of a Call and SMS alert system integrated into vehicles, with a focus on the academic community of the University of Science and Technology of Southern Philippines, Cagayan de Oro (USTP CDO). The study employed a quantitative descriptive method approach, combining surveys and interviews to collect comprehensive data. The surveys assessed the overall satisfaction and perceived utility of the alert system, while interviews with USTP instructor experts explored into the system's technical aspects and potential improvements. With twenty (20) respondents from the industry experts and academe experts' results found that, the Call and SMS Notification for Anti-Theft System demonstrated excellent performance across various parameters, achieving high average means, including 4.35 in functionality, 4.32 in aesthetics, 4.43 in portability, 4.06 in cost and effectiveness, 4.38 in safety, and 4.08 in durability. The findings can inform future developments in vehicle alert technology and serve as a basis for improving similar systems in educational institutions and beyond. Further recommendations by the experts are presented in this study for future development and improvement of the study.*

Keywords: Vehicle Alert System, Call and SMS, User Acceptability, Functionality

INTRODUCTION

The University of Science and Technology of Southern Philippines (USTP), the process of evaluating and assessing prototypes for the purpose of designing and developing goods or services is a comprehensive endeavor [1]. This involves a rigorous examination of various factors including their viability, efficacy, and usefulness [2]. USTP's approach emphasizes not only the technical aspects of prototypes but also their practical application and potential impact on society [3]. Through interdisciplinary collaboration and innovative research facilities, USTP ensures that prototypes undergo thorough analysis to meet industry standards and address real-world challenges [4]. By fostering innovation and promoting a culture of excellence, USTP has been an important factor in establishing the future of technology and entrepreneurship in the region [5].

This dedication is supported by collaborative teamwork, in which researchers share their knowledge and viewpoints [6]. Through promoting such cooperation, USTP establishes a setting in which concepts may be improved, put to the test, and turned into workable solutions that could significantly impact society [7]. Overall, USTP's dedication to excellence in prototype evaluation and assessment serves as a catalyst for innovation and progress by having a significant impact on how technology and entrepreneurship foster growth in the Southern Philippines as well as internationally [8]. A preliminary interview with data gathering were conducted around at Cagayan De Oro City and University of Science and Technology in southern Philippines. An evaluation were done at Cagayan De Oro City while the data analysis and presentation were conducted at the University of Science and Technology in southern Philippines (USTP) [9].The respondents of the study are vehicle drivers, car owners from throughout Cagayan de Or City, and professors/experts from the Autotronics, College of Technology, University of Science and Technology of Southern Philippines-CDO campus. The purpose of the research project is to evaluate the Call & SMS Alert System's effectiveness for vehicle security. Due to improvements in recent viewpoints, several door lock safety systems rely on biometrics that include facial recognition, iris checking, RFID, smart card reading, and credentials, as well as microcontrollers with GSM, GPS, and various other sensors, along with software like as MATLAB and PROTEUS. There are several advantages and disadvantages to any system. The majority of systems utilize the SMS approach for communication in order to save costs, improve system reliability, and reduce message delivery delays. Modern safety monitoring equipment need to use the latest technologies considering security has grown to be becoming increasingly important [10]. The assessment of a vehicle's call and SMS alert system's acceptability and functionality is important. Feedback in assessments is very important particularly from car owners. After collecting all that data, we have an acceptable reason of which features might need improvements or modifications in the future. Therefore, having a variety of knowledge assists in our capability to figure out what future improvements or modifications may be needed. In basic terms, it serves as guides that assist us in the future and we develop more significant ideas. To put it simply, understanding what is effective as well as what isn't helped them design better products in the future, particularly in the automotive industry. The study places special emphasis on how the device's design elements work together seamlessly to ensure a unified and user-friendly implementation. The researcher applied instructional material using the ADDIE process and evaluate the level of acceptability utilizing an instrument of 5 points Likert scale.

Implementation and Evaluation

In total of twenty respondents: fifteen Autotronics students, four automotive industry workers and one academe expert from the College of technology critique the functionality and indicating a high level of satisfaction with the overall

performance. Regarding aesthetics, scoring a high average, respondents praise the device's compatibility with vehicle design, labeling it as excellent. Additionally, the overall aesthetics receives a commendable rate. And also, safety is rated as very good, with all indicators reflecting positively. Particularly, with the highest mean. The technology has the ability to succeed in actual automotive contexts, as evidenced by the excellent comments it has received from professionals in the industry and academic specialists. Overall, the respondents' criticism presents an image of a very practical and beautiful outcome that is set to have a big influence on the automobile sector. Respondents give feedback "Excellent," suggesting the device's ease of construction for both educators and students [11].

Statement of the Problem

The University of Science and Technology of Southern Philippines has implemented a call and SMS alert system in vehicles to enhance communication and safety within the university community. Theres a lack of comprehensive understanding regarding the system's effectiveness in fulfilling its intended functions and its alignment with aesthetic preferences. Thus, there is a pressing need to conduct a thorough assessment to evaluate both the functionality and aesthetics of the call and SMS alert system. This assessment will involve gathering feedback from vehicle users within the university, including students, faculty, and Automotive Industry expert, to determine the system's acceptability, functionality, and overall aesthetics. Additionally, the assessment will explore the aesthetic aspects of the system, such as its design, interface, and integration with the vehicle's interior [12]. By conducting this evaluation, the university aims to identify areas for improvement [13].

METHODOLOGY

Research Design

In order to gather a variety of various data on University of Science and technology Southern Philippines (USTP) the researcher conducts evaluation of the alert system, the study researchers used a comprehensive descriptive methodology that comprised an effective combination of survey instruments and interviews. Using the descriptive methodology, the study aimed to gather important information on the technical details of the system and the opinions of the respected academic members who are USTP instructors regarding its efficacy and user satisfaction. Specifically, the descriptive approach involved getting feedback from subject matter expert instructors via structured interviews [14].These discussions centered around the technological features of the system and any proposed enhancements deemed necessary to optimize its performance. Concurrently, surveys were administered to assess the perceived utility and overall satisfaction levels of the alert system amongst the same group of participants. The combination of these two complementary tools allowed the research team to acquire a holistic perspective on the strengths and weaknesses of the alert system, while also providing actionable intelligence for subsequent improvements and refinements [15].

Research setting and respondents of the study

The study was conducted in the University of Science and Technology on Cagayan de Oro City, where is located in the southern part of the Philippines. Participants' varied knowledge helped improve the study's perspective: fifteen USTP Autotronics students, one COT department educator, and four industry experts. Gathering information and viewpoints from different automotive technology participants was the primary aspiration. The objectives of this comprehensive approach were to assess the acceptability of functionality and aesthetics of the instructional device.

Research Instrument

The research instrument used in the study was composed of *Technical Values* such as functionality, aesthetics, and safety of the developed trainer model. The instrument was adopted from the study of Barbosa [16]. Each item is measured using 5 points Likert Scale. Table 1 shows the Range of Values and Descriptive Equivalent for the Mean. The main tool used in this study was a researcher - made questionnaire - checklist. Set of questionnaire checklist was constructed for the vehicle owner respondents. With a particular focus on the interest in and perceived importance of a Call & SMS Alert System for automobiles, the questionnaire-checklist was carefully created to determine the preferences and priorities of the car owner. Researchers carefully created twenty-one questions to explore various aspects of this system within the context of this comprehensive questionnaire. With regards to anti-theft measures and alerting systems, every question aimed at collecting details of the owner's opinions, issues, and expectations. The questionnaire asked respondents to select their levels of understanding or preference for each item by placing check boxes next to each question to make it easier. The researchers used a descriptive methodology in order to provide valuable information into the possible acceptability and implementation of these security measures by car owners.

Data collection

Experts, chosen deliberately, received official invitations to assess the anti-theft model's call and SMS alerts during data collection. The researcher took the opportunity to meet some of these experts in person, allowing them to evaluate our prototype in their free time, focusing on technical aspects like functionality, aesthetics, and safety. Following the assessment, the researcher collected the technical values instrument used by the experts, preparing it for subsequent data analysis. This thorough process ensured a comprehensive evaluation of the anti-theft model's effectiveness and user experience.

Table 1. Range of Values and Descriptive Equivalent basis for Data Analysis

Numerical Scale	Range of Values	Descriptive Equivalent
5	4.24-5.00	Highly Acceptable
4	3.43-4.23	Acceptable
3	2.62-3.42	Moderately Acceptable
2	1.82-2.61	Fairly Acceptable
1	1.00-1.80	Not Acceptable

Data Analysis

The data gathered in this study were analyzed using Mean and Standard Deviation. The basis for the analysis of the mean score is presented in Table 1. In table 2 below, has an over-all mean of 4.35 which is the functionality, and the descriptive equivalent or overall functionality is Highly

Acceptable. In terms of aesthetics below, with a mean of 4.50. respondents say that the device provided with compatible design in the vehicle is highly acceptable. Moreover, with an over-all mean of 4.32, the overall aesthetics is rated as Highly Acceptable.

Table 2. Evaluation of the Functionality of Call & SMS Alert System of a Vehicle.

Indicator	Mean	Descriptive Equivalent
The device is easy to function	4.45	Highly Acceptable
The device is movable	4.15	Acceptable
The device provided with compatible design in the vehicle.	4.45	Highly Acceptable
Overall	4.35	Highly Acceptable

Table 3. Evaluation of the Aesthetics of Call & SMS Alert System of a Vehicle.

Indicator	Mean	Descriptive Equivalent
Each component of the device is properly mounted. .	4.20	Acceptable
The appearance of the device is pleased to look.	4.25	Highly Acceptable
The device provided with compatible design in the vehicle.	4.50	Highly Acceptable
The mock-up is really prepared.	4.35	Highly Acceptable
Overall	4.32	Highly Acceptable

Table 2 presents that the functionality has an over-all mean of 4.35. this defines' the functionality of the Call & SMS Alert System of a Vehicle fined to be "Acceptable". Furthermore, table 3 presented the Aesthetics has a data with the mean of 4.32, this defines the Call & SMS Alert System of a Vehicle to be "Acceptable".

RESULTS OF THE DATA ANALYSIS

Evaluation on the Acceptability of the call and SMS alert

From the result of evaluation using questions in each parameter, in terms of functionality it attains 4.35 average mean, which results in very good verbal description; 4.32 average mean resulted in very good verbal description in terms of aesthetics; 4.43 average mean resulted in very good verbal description in terms of portability; 4.06 average mean resulted in very good in verbal description in terms of cost and effectiveness; 4.38 average mean resulted in very good in verbal description in terms of safety; and in terms of durability, it attains 4.08 average mean resulted in very good in verbal description. The evaluation and testing of the Call and SMS Notification for Anti-Theft System shows that the system can perform at its peak, as perceived and predicted by the researchers.

CONCLUSION

The evaluation and testing of the Call and SMS Notification for Anti-Theft System shows that the system can perform at its peak, as perceived and predicted by the researchers. Therefore, experts concluded that the overall assessment of the call and SMS system used in Autotronics Instructional guide commend as a highly acceptable and also it can be used for Autotronics laboratory because it is highly acceptable for the experts. In this technology-human intercommunication, warning messages can embody an important tool to help users when making a decision [17].

RECOMMENDATION

The research study contains constraints and flaws. This allows the initiative to expand in the next few years. The experts recommend further development and enhancement of the call and SMS alert systems of vehicle in terms of Aesthetics and functionality.

The future researcher may use this study for further references.

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