

**LEGIBILITY STUDY ON SINHALA TYPEFACE FOR DIRECTIONAL  
INFORMATIVE SIGN BOARDS IN SRI LANKA**

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**DECLARATION**

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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## **ABSTRACT**

Sri Lanka is a multilingual country; Sinhala, Tamil and English languages are communicated by its representative scripts among various communication tools. Directional informative signboards (DISB) are a tool that assists in road safety and efficiency in driving. DISB in Sri Lanka communicates the destination through the three scripts, the distance through numerals, and direction through arrowheads and other icons. These signs guide the driver to take instant decisions within a short period while operating the vehicle. Therefore, the typefaces, numerals and icons on these boards need to be legible. Legibility and its' practices are discussed in this research. And highlight the importance and need of a unique typeface for DISB to achieve better legibility performance. Thus, this research examines the Sinhala typeface currently used in DISB of Sri Lanka, required type personality traits for DISB and anatomy as key contributors to increasing legibility performance.

Available data on the history of road signs presents the technological development, material (surface) improvements and elaborates on applying scientific methodologies specific to legibility performance. It is relevant to different scripts of different countries. Whereas within the context of Sri Lanka, discussed in the background study and literature survey, the Sinhala typeface used for DISB is a common typeface (DL-Araliya). It was mainly designed to communicate information through print-based material. Further, it was also noted that the typeface was not scientifically tested for the legibility performance of DISB. But DL-Araliya is adopted promptly based on its common usage and the country's rapid development of roads, expressways and national highways (after the end of the Civil war). Thus, the research addresses this gap and the need to identify the most suitable legibility test method, required personality traits for DISB within Sri Lanka. And its application to a Sinhala typeface and its anatomy (required typeface features for the proposed typeface) increases legibility performance.

The research presents the solution within the domain of typography. The literature survey on existing readability and legibility test methods identified the Reader's preference test (RPT) as the most appropriate legibility test method to identify the most suitable typeface features according to the personality traits of DISB. RPT incorporates the importance of having specific typeface personality traits for a specific purpose (communicating directional information). Thus, it also underlined the role of the anatomy of the typeface to enhance type personality and its' legibility. As a result of the literature survey, two variables were identified for the overall research—dependant variable; required typeface features for DISB and independent variable; required typeface personality for DISB. Thereafter the methodology was structured to identify required Sinhala typeface features for DISB. The research experiment was based on RPT and tested six Sinhala typefaces, including DL-Araliya, the currently used Sinhala typeface. The type personality traits were obtained as the findings of the literature survey, and they were based on Latin script. This was because a large amount of research was done within Latin script, and it was the only script discussed on road signs. Thereafter, stimuli were used for the experiments, which contained the six selected typefaces with adjective pairs, required type personality traits and city names where respondents marked their preference on a five-point Likert scale. The results were analysed on SPSS to confirm the size of the sample group. Microsoft Excel was used to analyse the mean value of the most significant personality traits of sample typefaces. Three out of the six typefaces that scored the highest were visually analysed under 33 anatomical features relevant to Sinhala within a set of 26 sample letters. This process was then drafted with the required typeface features and presented as a proposed typeface to increase legibility performance in Sri Lankan DISB. This draft typeface and the methodology of achieving is the main contribution of this research. Thus, the research presents typeface features for DISB to contain large counter spaces, establish a monolinear stroke width, and maintain an equal size ratio for ascender and descender, equal height with the width, to maintain vertical or horizontal terminals and to maintain a closed eye feature. However, since this research contains a one-way experiment test method and selected letters need to be tested on its legibility performance—the suggested test methods are the 'distance study method' and 'short exposure test method'. Even though there are two other scripts, numeral and icons, used on DISB, this research limits the Sinhala typeface. It focuses on legibility performance within the scope of typography research and typeface design.

**Keywords:** Legibility, Type personality traits, Sinhala type anatomy, Sinhala typeface, Directional informative sign-boards

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## LIST OF RESEARCH PUBLICATIONS

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- Conference presentation (Full research paper) - FARU 2019

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## **LIST OF ABBREVIATIONS**

(DISB): Directional Informative Sign-boards

(RPT): Reader's Preference Test

(AAA): American Automobile Association

(RDA): Road Development Authority

(Clearview HWY): Clearview High-way

(FHWA): Federal Highway Administration published a slandered alphabet, namely

(MUTCD): Manual on Uniform Traffic Control Devices for Streets and Highways

(MCQ): Multiple-Choice Questions

(GRE): Graduate Record Exam

(VAT): Visual Accuracy Thresholds

(SPSS): Statistical Package for Social Sciences Software

(KMO): Kaiser-Meyer –Olkin