India to have its own ‘Footwear Sizing System’

New Delhi, Oct 29 (India Science Wire): India is world’s second largest producer of footwear after China. Despite this India is following the footwear sizing system of other countries. Footwear made on adapted sizing system prevalent in other countries, is less likely to be an ideal fit for Indian feet as the foot characteristics are different in India as compared to the feet of people where the sizing system is adapted from. The Bureau of Indian Standards had notified its footwear sizing standards under IS 1638 – 1969, published in 1969. This required to be updated since the anatomy and functional requirements of footwear for children, youth, and adults have changed in the last five decades. It was a long felt need to develop an Indian footwear sizing system based on the foot dimensions of Indian feet.

To meet the goal, the Central Leather Research Institute of India (CLRI) has taken it up to conduct a pan India foot survey to evolve indigenous ‘Footwear Sizing System’, post due evaluation and analysis of the survey-data.

As a part of the mission, a nationwide survey for reliable data on foot proportions would be conducted by the institution. This is to characterize the foot dimensions of the Indian population based on a specially designed foot measurement survey. The main objective of this foot survey is to collect data on the anthropometric properties of the Indian feet.

To conduct the survey the sample sizes for measurement are first determined and the places of measurement would be selected based on geographical, ethnic, social and biological variables. Based on the desired confidence level of the survey and error of measurement inherent in any mass survey, the statistical minimum number of feet measurements that need to be taken would be computed. The whole country is divided into 4 Zones - North, South, East (further split into North East and rest of East) and West. Based on the ‘Foot Growth Parameters’ the population is divided into various Age and Gender Groups which can be classified as:

- C-GROUP: children (boys and girls aged 4-11)
- G-GROUP: girls (only girls aged 12-18)
- B-GROUP: boys (only boys aged 12-18)
- W-GROUP: women (only women aged 19-55)
- M-GROUP: men (only men aged 19-55)

“For a very robust survey and for better statistical correlation it was decided that a total of 2 Lakh feet measurements would be taken from across the country which would mean that we would be carrying out a total of 40,000 measurements in each of the above 5 groups for all zones combined” mentioned the CLRI statement.
For foot measurement, “3D Digital Imaging” technique would be used which comprises of a 3-Dimensional foot scanner that scans the foot form and the anatomical landmark points and measures automatically over 20 feet measurement parameters through an optical laser scanning system. The scan data is captured as cloud point data and can be saved and exported to various file formats like CSV, DXF, VRML, and STL for further statistical investigations.

It is worth mentioning that the Government of India is keenly encouraging exports of leather and footwear products. The Govt. has taken measures to increase Leather & Footwear Exports to 900 Billion INR by the end of 2020. Indian footwear market is projected to grow at Combined Annual Growth Rate of 9.6% for the next five years.

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