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Constructing and validating a scale to assess the listening difficulties of ESL learners

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ABSTRACT

The primary aim of this study is to construct and validate a scale that measures the listening difficulties of multilingual Indian tertiary-level ESL learners. The researchers adapted a 30-item scale from previous studies to identify listening difficulties, and named the improvised instrument, English Listening Difficulty Scale (ELDS). The participants are 628 engineering undergraduates studying predominantly across various parts of India. With the collected data, the researchers performed an Exploratory Factor Analysis (EFA) to examine the significant factors and refine the items. Then, applying Confirmatory Factor Analysis (CFA), they analysed it to estimate its model fit along with validity and reliability measures. Finally, they validated a three-factor scale with 28 items: (a) Linguistic and cognitive processing difficulties, (b) Attention and strategic based difficulties and (c) Listening support difficulties. The estimated calculations comprising factor loadings, composite reliability, and the evaluation of internal convergent and internal discriminant validity, proved that the scale has a good fit. Latent profile analysis and network analysis showed the various categories of listening difficulties based on the data.

KEYWORDS: assessing and validating a scale, ESL learners, listening difficulty, scale validation, tertiary level

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Introduction

As English continues to evolve as a global lingua franca with new words, phrases, and styles, it has become an essential medium for education, communication and business. The language researchers have made significant contributions, like developing new strategies, instruments and materials to enhance the ESL learners' English language skills. Though students have a growing desire to use English for international communication, it does not always translate into more self-reflective and evaluative activities in their listening practice (Zhou et al., 2024). In the modern technological era, the educational system also needs an accurate measurement to analyse the students' language skills, especially the listening skill. Listening comprehension is one of the most intricate and dynamic language skills, demanding both non-linguistic knowledge and capacities to understand and interpret spoken texts (Zhang & Shen, 2023).

Developing listening skills is problematic for ESL learners, and the main cause for listening difficulties is the lack of effective strategies, skills and activities, assures Hasan (2000). To identify listening problems, researchers have designed various instruments like diaries, self-rated scales, questionnaires, and interviews. However, the assessment of listening difficulties requires a valid and reliable scale especially in the context of multilingualism; in response to this need, the present paper aims to develop an English Listening Difficulty Scale (ELDS) to identify the listening difficulties of students from various parts of India.

Review of Literature

The relevant literature is organised into three main parts: 1) Evolution of research on listening difficulties, 2) Development of Listening Related Measurement Scales, and 3) Research Gap.

Evolution of Research on Listening Difficulties

During the period between 1980 and 2000, studies determined listening difficulties using various instruments such as listening diaries, verbal reports, self-rated questionnaires and interviews and during the period of early 2000s, researchers explored listening difficulties like anxiety, empathy and metacognition. Through these studies, listening difficulties have been conceptualised as a multidimensional construct - text, listener, speaker, task, and environmental related difficulties (Boyle, 1984; Flowerdew & Miller, 1992; Goh, 1999; Hasan, 2000). Boyle (1984) and Flowerdew and Miller (1992) listed out listening difficulties as following: Listener factors; Speaker factors; Factors related to the material and medium. For teachers, the most important factors that affect listening are practice, exposure, experience and opportunity whereas for students, the most critical factors are opportunities for practice, educational background, general English ability, vocabulary, attention and concentration, (Refer to Table 2 and 3, Boyle, 1984). Goh (2000) extended this understanding by introducing cognitive processing of three categories: (1) Perception (2) Parsing and (3) Utilisation.

Field (2004) notes that less proficient learners tend to rely on bottom-up dependency which leads to anxiety, and he grouped difficulties into three: pronunciation-based, content-based, and individual-based. Subsequent studies identified linguistic knowledge, metacognitive awareness, working memory, self-efficacy, and listening anxiety as key predictors of listening performance (Man & Du, 2022; Vafaee & Suzuki, 2020; Zhou & Thompson, 2023). Recent research has also underscored the role of contextual and multimodal support, demonstrating that visual input, co-text, and background information facilitate comprehension, although excessive visual information may also distract learners (Thir, 2023; Révész, A., & Brunfaut, 2013; Westbrook, 2023)

Development of Listening-related Measurement Scales

The research has validated the listening-difficulties scale using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) and gradually used Structural Equation Modeling (SEM) for factor analysis. With the help of a questionnaire, Hasan (2000) examined the multidimensional challenges of listening comprehension using a five-point scale with 34 items. Ford et al. 's (2000) study constructed a scale of 24 items to assess students' self-perception scale assessing five levels of listening: comprehensive, discriminative, therapeutic, appreciative and critical.

Drollinger et al. (2005) created the Active Empathetic Listening (AEL) scale of 11 items, and categorized

it into three factors: sensing, processing and responding. Vandergrift et al. (2006) created the 'Metacognitive Awareness Listening Questionnaire' (MALQ) to evaluate the use of strategies when processing spoken texts. In'nami (2006) explored the impact of anxiety on test performance using two questionnaires: The Test Anxiety Scale (TAS) with 37 items, and the Test Influence Inventory (TII) with 20 items, and concluded that test worry, irrelevant thinking emotions, and fear of negative evaluation do not affect test performance. Imhof and Janusik (2006) developed the Imhof-Janusik Listening Concepts Inventory (IJLCI) refined to 65 items after validation. Zhang and Zhang, (2011) created the Listening Comprehension Problem Scale (LCPS) to detect listening difficulties which resulted in a four-factor model: meaning, attention and meaning, words, and sounds. Aryadoust et al. (2012) introduced an Academic Listening Self-Rating Questionnaire (ALSA) with 62 items and then finalized it with 47 items. Using Structural Equation Modeling (SEM), Rating Scale Model (RSM), and CFA, they validated a six-factor model scale for academic listening.

Mickelson et al. (2013) revised the Listening Competency Scale and validated a 20-item scale with a five-factor model: discriminative listening, therapeutic listening, critical listening, comprehensive listening, and appreciative listening. In the same year, Chang et al. (2013) developed the Second Language Listening Difficulty (SLLD) scale with 31 items and identified a 6-element model for listening difficulties: text factor, input channel and surroundings, relevance, listener factors, speaker factors, and task characteristics.

After an extensive review of L2 listening literature, Wang and Fan (2015) listed 38-item listening difficulties of less proficient learners and grouped them into six categories: general language text variables, listening-specific text variables, processing variables, listener variables, task variables, and environmental variables. Akdemir (2016) created a scale for Willingness to Listen (WTL) - a 19-item scale with a four-factor model: speaker, listener, text and topic. Kluger & Bouskila-Yam (2017) developed the Facilitating Listening Scale (FLS) measuring the speakers' perceptions of the positive and negative listening behaviours. Asai et al. (2020) translated an Active-Empathic Listening Scale (AELS) consisting of three dimensions: Sensing, Processing, and Responding. Nushi and Orouji (2020) examined the listening difficulties of 128 EFL teachers. Zhou et al. (2024) constructed a 57-item Mobile-assisted Self-regulated Listening Strategy Questionnaire (MSRLS-Q) and validated the scale using factor analysis and SEM and refined it to a five-factor scale with 31 items.

Despite the growing research of L2 listening, existing studies focused on creating and validating scales on listening difficulties for Western and East Asian countries (Akdemir, 2016; Aryadoust et al., 2012; Asai et al, 2020; Chang et al., 2013; Drollinger et al., 2005; Kluger & Bouskila-Yam, 2017; Mickelson et al., 2013; Nushi & Orouji, 2020; Vandergrift et al., 2006; Zhang & Zhang, 2011; Zhou et al., 2024) and few studies only examined listening difficulties within a multilingual Indian environment. Most previous studies have adopted variable centered approaches, providing limited insights about learner heterogeneity and interrelationships among individual listening difficulties. To address these gaps, this study develops and validates the English Listening Difficulty Scale (ELDS) for Indian Engineering students and extends conventional validation by integrating factor analysis, validity, reliability, Latent Profile Analysis and GraphicalLASSO network analysis.

Methods

The present study is based on two approaches: a qualitative method of creating the questionnaire from the existing literature studies and interviews; and a quantitative method of validating the scale using JASP 0.97.1. This section includes item generation, participants, pilot study, data collection, data cleaning and statistical analysis.

Item Generation

The questionnaire prepared for the present study initially consisted of 38 items drawn from the previous scales of Boyle (1984), Flowerdew and Miller (1992), Goh (1999), (2000), Hasan (2000), and Chang et al., (2013). After improvisation, the finalized scale consisted of only 30 items avoiding the items irrelevant and inappropriate for the participants. The researchers also ensured that the language of the questionnaire is clear and simple for the participants.

Participants

The majority of the 628 participants are first-year engineering undergraduates from 7 colleges. The remaining participants are from other institutions in India. They are students mostly from Chennai, Coimbatore, Bangalore, Mumbai, and a few from North India from first year to fourth year. They are aged between 17 and 22 (male = 312, female = 316) and belong to different disciplines - Civil, Biomedical, Chemical, Mechanical, IT, CSE, ECE, and EEE. The participants learned English as their second language in school and continued studying in English medium engineering programmes. The present study obtained the ethical approval of the Institutional Ethics Committee at SSN College of Engineering, Chennai, India, (IEC/SSN CE/ Pr.No.6/12.09.2023), and all the participants signed the consent forms voluntarily.

The Pilot Study

For the pilot study, the researchers administered the improvised scale to 24 engineering undergraduates and collected their responses. Out of the 24, they selected 10 students for the open-ended interview. Based on the insights from the interview data, the researchers confirmed that the participants could understand the wordings of the 30 items in the questionnaire.

Data Collection

The researchers administered the questionnaire via Gmail as a Google form to 628 engineering undergraduates of various departments. They also sent it through WhatsApp as a link to encourage a quicker response. The method used here is convenient sampling.

Data Cleaning

The researchers carefully screened the 628 student responses for missing or duplicate responses. They coded the responses with numerical values as follows: Strongly disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly agree = 5. After coding the data quantitatively, they separated it into two sub-groups for Exploratory Factor Analysis (EFA: n=314) and Confirmatory Factor Analysis (CFA: n=314).

Statistical Analysis

The researchers performed EFA using JASP 0.97.1 to identify the important factors and to reduce the factors. They analysed the first subgroup (n=314) using Principal Axis Factoring (PAF) to extract the factors, followed by the promax rotation after violating the Mardia's multivariate normality. The suitability of the data was assessed using the Kaiser-Melkin-Olkin (KMO) measure of sampling adequacy, and Bartlett's test of sphericity. They determined the number of factors based on two criteria: (i) Parallel Analysis (ii) Scree plot. Items with loadings below 0.4 are removed from further analysis.

The researchers tested the factors extracted from the EFA through CFA with the second subgroup (n=314) using Diagonally Weighted Least Squares (DWLS). For a well-fitting model, they checked that the chi-square value was significant, and ^{2}/df ratio did not exceed 2.0 (Byrne, 1994, 2012). They required the Goodness-of-Fit Index (GFI) to be ≥ 0.95 (Doll et al., 1994), Tucker Lewis Index (TLI) value at ≥ 0.95, and Comparative Fit Index (CFI) value between 0.90 and 0.95 as a good fit (Hu & Bentler, 1999). They ensured Root Mean Square Error of Approximation (RMSEA) ≤ 0.06 (Hu & Bentler, 1999) and Standard Root Mean Squared Residual (SRMR), ≤ 0.08 for a good fit (Hu & Bentler, 1999). They assessed the Composite Reliability (CR) and the internal Convergent Validity (AVE), requiring the composite reliability values of ≥ 0.6, and the AVE values of ≥ 0.5 (Fornell & Larcker, 1981). Finally, they established internal discriminant validity by Heterotrait Monotrait (HTMT) ratio, which did not exceed 0.90 (Gold et al., 2001).

Latent Profile Analysis (LPA) was conducted to identify homogenous subgroups of participants based on their listening difficulty patterns using python *scikit*-learn library. This adopts a person-centered approach, identifying subgroups of learners who exhibit similar patterns of listening difficulties. Standardized factor scores obtained from the validated three factor CFA were used as continuous indicators. Gaussian Mixture Models (GMMs) with one to six profile solutions were estimated and compared using the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and entropy. The optimal profile solution was selected based on

model fit, and classification accuracy, profile size and theoretical interpretability. Posterior probabilities were computed to evaluate the precision of participant classification to the identified latent profiles.

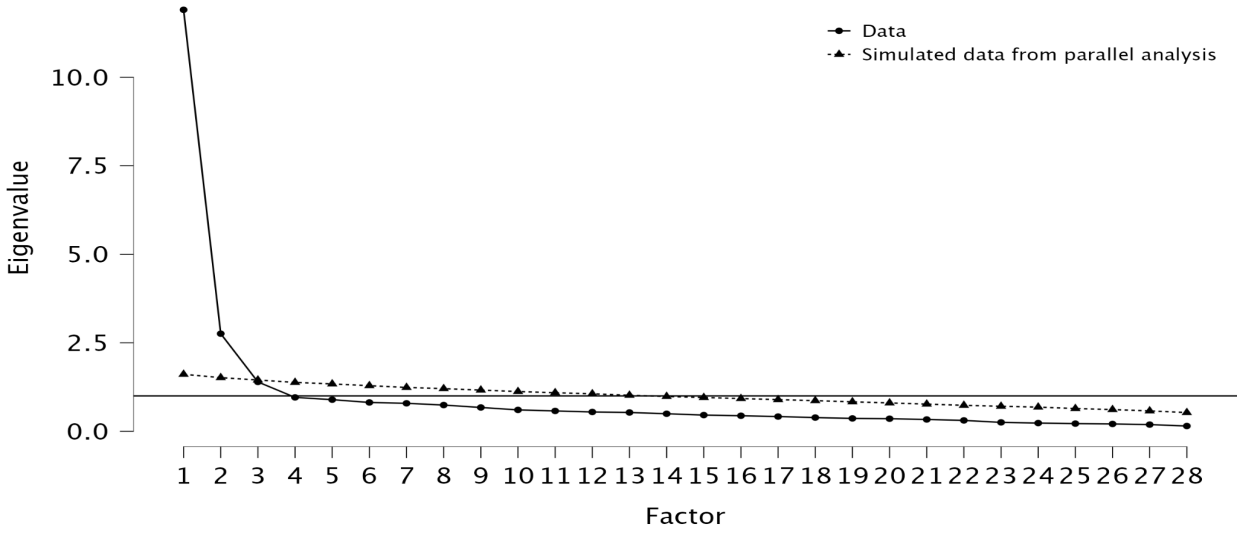
Furthermore, a network analysis was conducted using the *scikit-learn, NetworkX*, and *python-louvain* libraries to examine the relationships among the validated ELDS items. The aim is to identify which difficulties were central and which acted as bridges between clusters. A partial correlation network was estimated via the Graphical Least Absolute Shrinkage and Selection Operator (Graphical LASSO) using cross validation. In the network, nodes represented individual listening difficulty items, and edges represented partial correlations between items while controlling for all remaining variables. Node importance was evaluated using strength, expected influence, closeness, and betweenness centrality indices, while Louvain community detection algorithm was applied to identify clusters of closely connected items. Together these analyses provide learner-level and an item-level understanding of listening difficulties.

Data Analysis and Results

Exploratory Factor Analysis

The researchers performed EFA on the first group of 314 samples using PAF and promax rotation. Bartlett's test of sphericity was significant (χ^2 = 5355.567, df = 378.00, p-value < .001) and the KMO measure of sampling adequacy value was 0.935, confirming the sample's suitability for EFA exploratory. After performing promax rotation, they examined the factor loadings for each item which are below 0.4. The items V15 and V23 were removed due to low loadings. The scree plot (Figure 1) and the factor loadings suggested three extractable factors. The final factor loadings of the EFA indicated three factors represented by 28 items (Table 1).

Figure 1: Scree Plot



The researchers labelled the three factors as F1, F2, and F3 confirming that these three factors include most important listening difficulties.

Table 1: Loadings from EFA

	F1	F2	F3
V2	0.968		
V3	0.883		
V6	0.872		
V7	0.834		
V4	0.789		
V5	0.757		
V1	0.741		
V8	0.669		
V10	0.657		
V9	0.654		
V14	0.594		
V21	0.539		
V12	0.527		
V16	0.511		
V20	0.454		
V22	0.438		
V18		0.743	
V19		0.659	
V11		0.642	
V17		0.514	
V13		0.506	
V26			0.736
V30			0.721
V27			0.709
V25			0.621
V24			0.589
V29			0.483
V28			0.478

Confirmatory Factor Analysis

This study examined the measurement properties of the three factors extracted with 28 items using CFA using DWLS estimator. CFA was conducted to verify the three-factor structure identified during EFA. The three-factor structure demonstrated satisfactory fit to the data (χ^2= 1064.180, df = 347, p < .001; CFI = 0.916, TLI = 0.908, GFI = 0.981, RMSEA = 0.0812 [0.075, 0.086, 90% CI], SRMR = 0.070). standardized factor loadings ranged from 0.4378 to 0.7981, indicating all the retained items represented their respective later constructs.

Reliability Indices

Internal consistency reliability was evaluated using Cronbach's alpha, Coefficient Omega, and composite reliability (CR). The overall internal consistency of the scale is Alpha = 0.936, Omega = 0.965. Cronbach's alpha ranged from 0.787 to 0.934, and Coefficient Omega ranged from 0.775 to 0.949 indicating satisfactory to good internal consistency (Hamid et al., 2017). CR values ranged - F1 = 0.948, F2 = 0.818, F3 = 0.817, exceeding the threshold of .70 (Table 2).

Validity measures

Internal convergent validity was assessed using AVE values. Although the AVE for one construct was slightly below .50 (F1 =0.533, F2 =0. 479, F3 = 0.396) the corresponding CR exceeded .60, indicating acceptable internal convergent validity (Table 2 - Fornell & Larcker, 1981). Internal Discriminant validity was evaluated using HTMT ratio. All HTMT values were below the recommended threshold .90, indicating satisfactory discriminant validity among the three constructs (Table 3). Overall, the results of EFA, CFA, internal convergent validity, and internal discriminant validity confirmed that the ELDS possesses satisfactory psychometric properties (Hamid et al., 2017).

Table 2: Composite Reliability and AVE

Factor	CR	AVE		
F1	0.948	0.533	0.949	0.934
F2	0.818	0.479	0.782	0.787
F3	0.817	0.396	0.775	0.787
Overall			0.965	0.936

Table 3: HTMT Ratio

F1	F2	F3
1.000		
0.790	1.000	
0.47	0.614	1.000

In LPA, a two-profile solution was retained based on model fit, classification quality, and profile interpretability (AIC = 2003.98, BIC= 2088.39, entropy =0.732). Profile 1 (n=538) exhibited slightly above-average scores across all three factors (F1 = 0.179, F2 = 0.136, F3 = 0.106), indicating a moderate listening difficulty profile. Profile 2 (n = 90) demonstrated below average scores across all three dimensions (F1 = -1.072, F2 = -0.811, F3 = -0.636), representing low listening difficulty profile. The average posterior probabilities indicated satisfactory classification accuracy for the two profile solutions (Profile 1 = 0.944; Profile 2 = 0.804- Table 4). Figure 2 illustrates the standardized factor scores across the two latent profiles.

Figure 2: Latent Profile Analysis

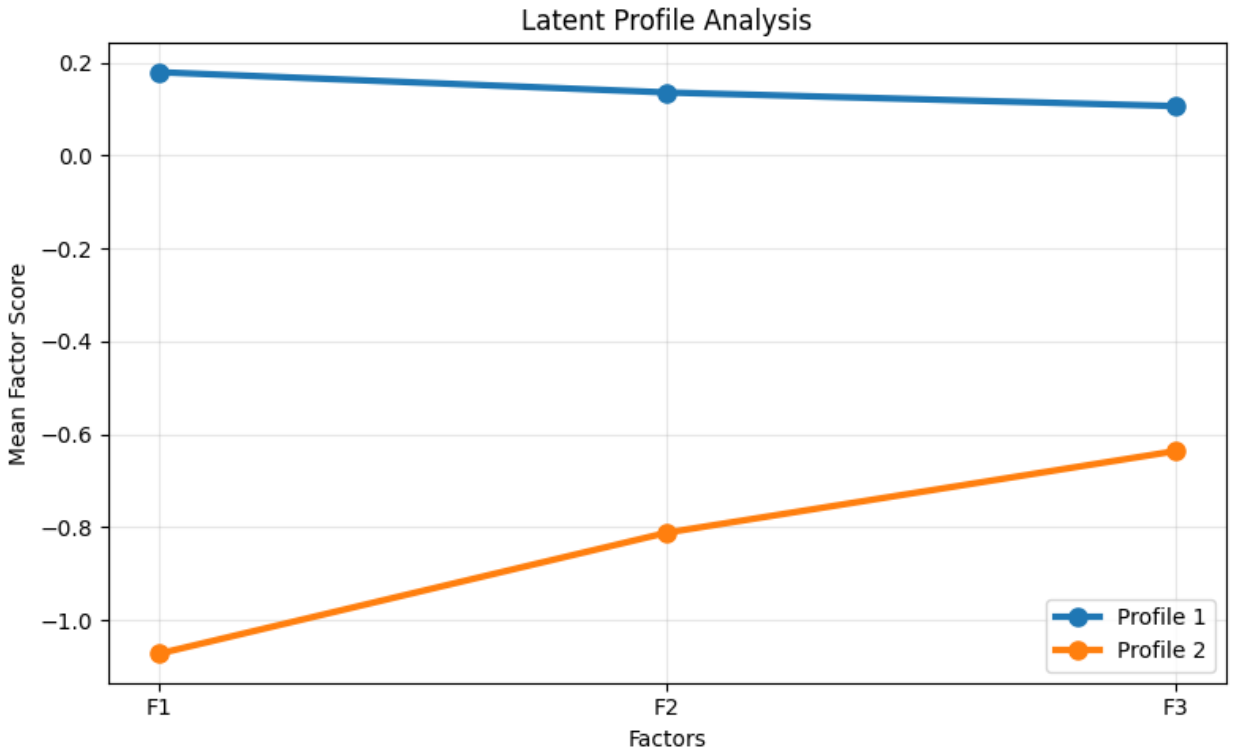


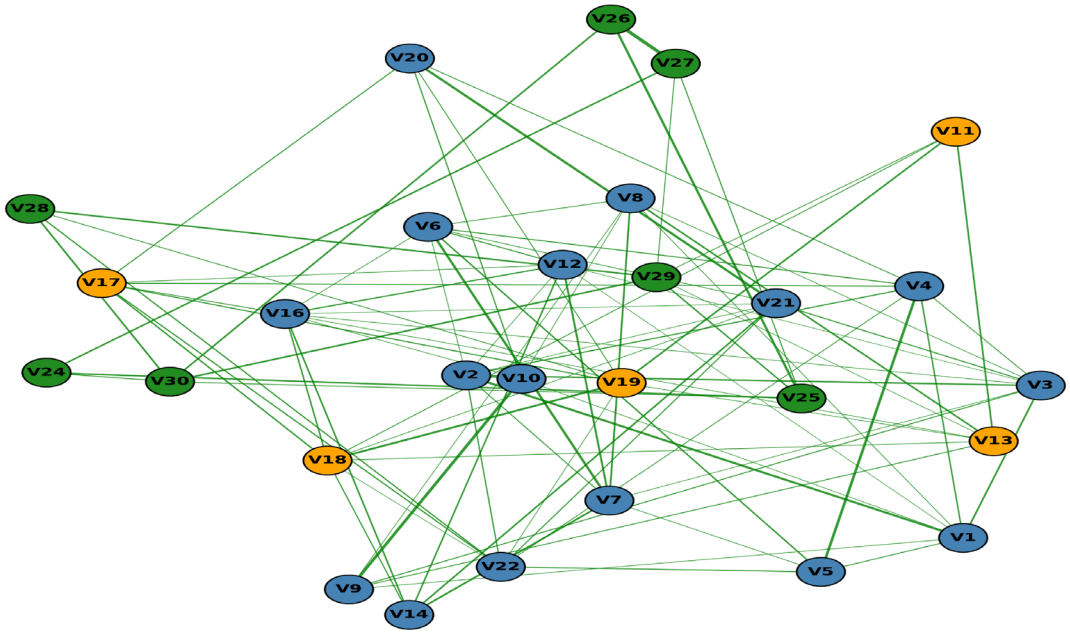
Table 4: Posterior Probabilties

Profile	F1	F2	F3	Prob1	Prob2
1	0.179	0.136	0.106	0.944	0.056
2	-1.072	-0.811	-0.636	0.196	0.804

Network analysis

Using Graphical *LASSO* to examine the interrelationships, the network revealed a densely connected structure, with predominantly positive edges, indicating that listening difficulties tend to co-occur and reinforce one another. Louvain community detection identified three distinct communities, broadly corresponding to the three-factor structure obtained through EFA and CFA.

Figure 3: Network Analysis



Strength centrality indicated that V2 - grammatical structures (0.964) was the most influential node in the network, followed by V4 - slang/ colloquial (0.854), V3 - long sentences (0.833), V7 - pauses and fillers (0.821), and V21 - listening repeatedly (0.817). This suggests that these listening difficulties are highly interconnected and learners who struggle with these issues also experience comprehension, anxiety, and meaning based difficulties. In contrast, V11 - uninteresting (0.418) and V24 - MCQs (0.422) exhibited the lowest strength values, indicating comparatively peripheral roles. Expected influence values were identical to strength, reflecting the predominance of positive associations within the network. Closeness centrality identified V22 - speed of delivery (0.519) and V13 - poorly organized output (0.519) as the most centrally positioned nodes, suggesting that they can rapidly influence other listening difficulties. Betweenness centrality revealed V29 - earphones (0.206), V13 - poorly organized output (0.204), and V22 - (0.154) as important bridge nodes connecting different communities within the network. Improving these bridge difficulties may reduce the spread of difficulties across multiple domains. Providing well-structured listening materials, gradually increasing speech rate, and improving audio quality may alleviate interconnected listening problems. Overall, the network analysis suggests that the ELDS comprises a system of interconnected listening difficulties (Figure 3).

Exploring the Finalized Factors and Items

This segment includes the details of the finalized scale, and the implications of learning and teaching listening. Previous studies have extensively documented and grouped the individual sources of listening difficulties using theoretical classifications rather than validating their underlying structure through psychometric properties (Boyle, 1984; Chang et al. 2013; Goh, 1999; 2000; Hasan, 2000; Nushi & Orouji, 2020; Wang & Fan, 2015; Zhou & Thompson, 2023). Furthermore, by integrating LPA and Network analysis, this present study enables

identification of listening profiles and the examination of interrelationships among listening difficulties. This makes the ELDS a reliable and diagnostic tool.

The finalized questionnaire comprises three first-order dimensions: (a) Linguistic and cognitive processing difficulties (16 items), (b) Attention and strategic difficulties (5 items), and (c) Listening support difficulties (7 items). The present study finalized the English Listening Difficulty Scale (ELDS) with three factors and 28 items. The present study classification extends previous frameworks by integrating lexical, syntactic, phonological, discourse, and affective barriers into a single factor (F1) labelled, 'Linguistic and cognitive processing difficulties,' includes 16 items of difficulties: unknown vocabulary, difficult grammatical structures, long sentences, unfamiliar colloquial slangs / cues, different accent and pronunciation, stress and intonation, pauses and fillers, unfamiliar topics, highly-specialized input, distinguishing main ideas and supporting ideas, anxious, unable to repeat the content, speed of delivery, speaker's proficiency, listening repeatedly, and unable to understand words' intended meaning (Boyle, 1984; Flowerdew & Miller, 1992; Goh, 1999; Goh, 2000; Hasan, 2000; Goh and Vandergrift, 2012; Chang et al, 2013; Wang & Fan, 2015; Nushi & Orouji, 2020; Vafaee and Suzuki, 2020; Man & Du, 2022; Zhou & Thompson, 2023). This supports an integrated view of listening comprehension in which linguistic, cognitive, and affective processes operate simultaneously during speech processing.

The second factor (F2), 'Attentional and strategic difficulties' consists of five items and isolates learners' sustained attention and concentration related problems: poorly organized input, missing one part while listening to another, attention for a long time, unrelated and uninteresting topics (Boyle, 1984; Flowerdew & Miller, 1992; Goh, 1999; Hasan, 2000; Chang et al., 2013; Wang & Fan, 2015 and Nushi & Orouji, 2020).

The third factor (F3) 'Listening Support difficulties' includes seven items and represents a novel contribution because it captures learners' reliance on external instructional and environmental scaffolds: MCQs, pre-listening information, visual support, video input, noise, earphones, and loudness of the input (Boyle, 1984; Flowerdew & Miller, 1992; Goh, 1999; Goh, 2000; Hasan, 2000; Goh and Vandergrift, 2012; Chang et al., 2013; Wang and Fan, 2015; Nushi and Orouji, 2020; and Zhou & Thompson, 2023).

The present findings suggest that multilingual ESL learners perceive these difficulties in broader cognitive dimensions rather than as independent categories. Variables that frequently co-occurred clustered together, indicating that learners experience several listening problems simultaneously. The validated three factor structure reflects the underlying cognitive organisation of listening difficulties.

Conclusion

The validation of this questionnaire resulted in a reliable and valid scale with three factors - F1, F2, and F3- comprising a total of 28 items. The teachers should develop new strategies to help students overcome their listening difficulties. There is a belief that effective listening comprehension is closely tied to strategy use (Nushi & Orouji, 2020). Goh (2000) also asserts the values of strategic interventions to improve listening comprehension. While this scale measures the listening difficulties of the tertiary level learners, scales for young learners and employers are left unresearched.

Future research should focus on scales for listening strategies and for developing listening materials. In that case, syllabus designers can create listening activities that integrate listening strategy knowledge within the activity (Hasan, 2000; Aryadoust et al., 2012). Material designers should develop materials assisted with the help of artificial intelligence for students' needs (Sheema & John, 2025). John and Devi (2021) suggested designing student-friendly subject-specific content for engineering learners in the English classroom.

Limitations

As the present study is limited to engineering undergraduates, to generalize the study, future research can be conducted with other majors. The study depends upon the self-reported data of the students, which should be examined further with measures of listening performance, think aloud, and classroom protocols. This study does not examine the external validity measures of the scale. Longitudinal based research can be conducted in future to ensure the stability of the data.

Implications for Teaching and Learning

In recent times, the students are increasingly involved in self-directed learning, and to foster this approach, they should be aware of their own learning difficulties and how they impact their progress. Aryadoust et al. (2012) suggested using the scales to enhance learner-centered approaches in the curriculum and to raise their self-awareness (Zhang & Zhang, 2011). Learners must identify their listening difficulties which is the crucial first step towards language improvement. This scale can help students understand the factors that affect their language learning. Identifying listening problems enables teachers to determine the cause and design listening tasks accordingly for each difficulty (Hasan, 2000; Goh, 2000). Beyond education, listening skills are crucial in global communication, business, and other professional settings where English is widely used. Kalinowski et al (2019) discuss the need for professional development programmed to facilitate academic language proficiency of students. The network results suggest that teachers should prioritise addressing the most central listening difficulties. Overall, the validated scale provides instructors with a diagnostic tool to design targeted, cognitively informed listening interventions tailored to engineering learners' specific needs.

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Disclaimer Statement
This work is not part of a thesis submitted to a university for award of any degree.

Biographies
S. Sheema, PhD research scholar, Department of English, Sri Sivasubramaniya Nadar (SSN) College of Engineering, is working with Dr Divya John as a Junior Research Fellow (JRF). They have jointly presented 8 papers at (inter)national conferences on listening skills.

Divya John, PhD, Associate Professor, Department of English, School of Science and Humanities, Shiv Nadar University, Chennai, has 22 years of teaching and research experience. She presented 55 papers in (inter)national conferences and published 30 articles on ELT and literature in (inter)national journals.

Authorship and Level of Contribution
Sheema – Conceptualization, Methodology, Data Analysis & Writing the original draft
Divya – Conceptualization, Data Collection, Supervision, Writing – Reviewing and Editing

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Appendix I

English Listening Difficulty Scale (ELDS) - Finalized Scale

Factor 1 - Linguistic Processing Difficulties

1. When listening to English, I find it difficult to understand unknown vocabulary.
2. When listening to English, I find it difficult to understand complex grammatical structures and patterns.
3. When listening to English, I find it hard to interpret the meaning of a long and complicated sentence.
4. When listening to English, I find it difficult to understand unfamiliar slangs, colloquial cues, cliches and collocations that are not available in textbooks.
5. When listening to English, I find it very hard to understand different accents and pronunciations.
6. When listening to English, I find it difficult to understand word stress and intonation.
7. When listening to English, I cannot understand a speech with too many pauses and fillers.
8. When listening to English, I cannot comprehend improper and inaccurate pronunciation.
9. When listening to English, I find it difficult to understand unfamiliar topics due to my lack of background knowledge.
10. When listening to English, I find it hard to understand technical and highly specialized input.
11. When listening to English, I am unable to distinguish the main ideas from the supporting ideas.
12. When listening to English, I become nervous and anxious even at the very thought of listening
13. When listening to English, I find it difficult to repeat the content if there is a follow-up discussion.
14. When listening to English, I can understand the words sometimes but not their intended meaning.
15. When listening to English, I can interpret the meaning only after listening to it repeatedly.
16. When listening to English, I find it difficult to comprehend if the speed of delivery is fast.

Factor 2 - Attentional Difficulties

17. When listening to English, I am not enthusiastic about listening if the topic is uninteresting.
18. When listening to English, I find it difficult to understand the input if it is poorly organized.
19. When listening to English, I tend to miss one part of the listening comprehension exercise while guessing the meaning of the other part.
20. When listening to English, I find it difficult to pay keen attention for a considerable length of time.
21. When listening to English, I find it difficult to concentrate if the topic is unrelated.

Factor 3 - Listening support Dependence

22. When listening to English, I can answer multiple choice questions (MCQs) better than long-answer ones.
23. When listening to English, I can understand the information better if the input is provided during the pre-listening task.
24. When listening to English, I find visual support like the TV, video, etc helpful to understand the content and context.
25. When listening to English, I like to listen to the video content rather than the audio content.
26. When listening to English, I find it difficult to comprehend if there is a disturbing noise from the outside.
27. When listening to English, I find it comfortable to hear with the earphone rather than the room speaker.
28. When listening to English, I can understand easily when the loudness of the input is clear without any background sound.

Appendix II

Table 3: Descriptive Statistics of the questions

Items	Mean	Median	SD	Skewness	Kurtosis
1. I find it difficult to understand unknown vocabulary.	3.029	3	1.079	-0.11	-0.701
2. I find it difficult to understand complex grammatical structures and patterns.	2.879	3	1.107	-0.021	-0.941
3. I find it hard to interpret the meaning of a long and complicated sentence.	2.801	3	1.138	0.109	-0.917
4.I find it difficult to understand unfamiliar slangs, colloquial cues, cliches and collocations that are not available in textbooks.	3.237	3	1.111	-0.331	-0.671
5. I find it very hard to understand different accents and pronunciations.	2.863	3	1.104	0.023	-0.814
6. I find it difficult to understand word stress and intonation.	2.618	3	1.058	0.259	-0.643
7. I cannot understand a speech with too many pauses and fillers.	2.492	2	1.091	0.414	-0.582
8. I cannot comprehend improper and inaccurate pronunciation.	2.943	3	1.032	-0.112	-0.648
9. I find it difficult to understand unfamiliar topics due to my lack of background knowledge.	2.836	3	1.123	0.055	-0.885
10. I find it hard to understand technical and highly specialized input.	3.046	3	1.037	-0.144	-0.624
11. I am not enthusiastic about listening if the topic is uninteresting.	3.338	4	1.093	-0.389	-0.621
12. I am unable to distinguish the main ideas from the supporting ideas.	2.621	2	1.026	0.373	-0.457
13. I find it difficult to understand the input if it is poorly organized.	3.159	3	1.028	-0.216	-0.63
14. I become nervous and anxious even at the very thought of listening	2.253	2	1.141	0.647	-0.524
15. I tend to forget what I heard earlier especially if there are too many ideas expressed.	3.065	3	1.134	-0.2	-0.813
16. I find it difficult to repeat the content if there is a follow-up discussion.	2.799	3	1.036	0.149	-0.71
17. I tend to miss one part of the listening comprehension exercise while guessing the meaning of the other part.	3.092	3	1.084	-0.094	-0.792
18. I find it difficult to pay keen attention for a considerable length of time.	2.903	3	1.066	-0.051	-0.772
19. I find it difficult to concentrate if the topic is unrelated.	3.049	3	1.062	-0.186	-0.809
20. I can understand the words sometimes but not their intended meaning.	3.097	3	1.099	-0.258	-0.766
21. I can interpret the meaning only after listening to it repeatedly.	2.838	3	1.099	0.086	-0.697
22. I find it difficult to comprehend if the speed of delivery is fast.	3.228	3	1.098	-0.213	-0.689
23. I find it difficult if the speaker is not proficient enough to deliver the content properly.	3.296	3	0.99	-0.432	-0.302
24. I can answer multiple choice questions (MCQs) better than long-answer ones.	3.475	4	1.103	-0.389	-0.531
25. I can understand the information better if the input is provided during the pre-listening task.	3.545	4	0.91	-0.488	0.181
26. I find visual support like the TV, video, etc... helpful to understand the content and context.	3.836	4	0.988	-0.76	0.239
27. I like to listen to the video content rather than the audio content.	3.656	4	1.018	-0.472	-0.333
28. I find it difficult to comprehend if there is a disturbing noise from the outside.	3.443	4	1.011	-0.367	-0.451
29. I find it comfortable to hear with the earphone rather than the room speaker.	3.495	4	1.09	-0.483	-0.405
30. I can understand easily when the loudness of the input is clear without any background sound.	3.912	4	0.972	-0.993	0.971