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Research Article

Artistic Components of London Tube, as Station Distinction and Improving Navigation

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ABSTRACT

In the setting of the London Underground, this study addresses how relationships develop between artistic elements and navigation, recognizing that modern transportation studies increasingly emphasize social and psychological aspects in enhancing the travel experience. Site visits and a London Underground Tour were conducted as part of the direct assessment of artistic elements' role in station distinction and navigation. Additionally, Instagram data analysis and interviews were carried out to gather public perceptions, as well as the potential transferability of these features to Indonesia's mass transit system. The findings indicate that artistic components in the London Underground serve multiple functions in public transport systems, ranging from enhancing navigation to expressing historical and cultural identity. Furthermore, the possibility of applying similar strategies to the decorative details in Indonesia could address current issues in mass transit systems, such as MRT Jakarta, where visual monotony and a dull environment may hinder effective navigation. Besides, this study also supports SDG 9, promoting innovative design practices that enhance the functionality and user experience of public infrastructure. By improving travel guidance and station identification through aesthetic design, the London Underground becomes a more efficient and user-friendly transportation system.

Keywords: Artistic components, London Underground, navigation, station distinction.

INTRODUCTION

In 2014, a study examined the impact of public transport users' perceptions, particularly in relation to the London Tube, on the surrounding built environment [1]. Travelers prioritized their needs based on the degree of importance, starting with the most essential aspects, such as a sense of order and safety, as their minimum expectation is to reach their destination safely and quickly, with comfort being a secondary consideration [1]. Awareness of these priorities has grown, largely due to the evolution of transport studies, which have become increasingly contemporary. Initially, these studies focused solely on functionality, but they are now addressing the social and psychological factors that influence travel choices [2]. One approach to improving the travel experience is by integrating visual elements into the quality of the travel environment [2].

Decorative details are commonly found throughout the London Tube stations, such as the mosaic of Sherlock Holmes at Baker Street Station, which subtly indicates the presence of a famous Sherlock Holmes statue and museum nearby. Many stations, such as Hyde Park Corner, Russell Square, Gloucester Road, and Piccadilly Circus, still showcase their original vibrant tiling, providing insight into the history and practical design of the London Underground. And according to Duell [3], these early 20th century tiles not only served as aesthetic elements, making the stations appear more beautiful, but also had a practical purpose: they helped illiterate members of Edwardian society identify their location when they were unable to read the information provided by the stations.

However, when discussing artistic features in relation to their usefulness in helping travelers navigate and recognize stations, a clear gap emerges, particularly in the case of the London Underground. Several studies do not focus on the correlation between these two aspects. For instances, Harding [4] discusses biased design attitudes, Fulcher [5] discusses heritage conservation challenges, and Welsh [6] evaluates "Art on the Underground," a contemporary art program addressing the station's context and environment. Furthermore, according to Fesler [7], wayfinding strategies within the London Underground, developed by Transport for London (TfL), make no mention of visual elements like murals, mosaics, or other artistic features as aids to assist travelers with navigation or station identification.

Consequently, the author's primary focus centers on the aesthetic quality aspects of underground stations to address this overlooked dimension. The author has formulated the research question "Do specific artistic components contribute to location distinction and improving navigation for travelers within the London Underground?" To address this question, four objectives have been established. First, to generally identify artistic elements in underground stations across multiple countries worldwide. Second, to specifically analyze the London Tube's aesthetic features and examine how they contribute to enhancing navigation and station identification. Third, to understand the general perspectives of travelers regarding the London Underground. Finally, to explore the potential transferability of these design strategies to mass transit systems in Indonesia.

LITERATURE REVIEW

Artistic components, which are also considered part of aesthetics, a branch of the liberal arts, focus on exploring and appreciating beauty through sensory perception. Aesthetics is often viewed as a simpler cognitive theory, emphasizing beauty and sensory-driven thought processes [8]. Numerous studies have examined the visual characteristics that are deemed aesthetically pleasing and how these elements shape our preferences for what we find visually appealing [9].

Thus, these artistic elements are essential to both design and artwork. They are essential for comprehending and appreciating artworks within their previous and current contexts, as well as for enhancing a design's visual and experiential aspects, making it both practical and appealing [10, 11]. One factor unites these two academic disciplines—designs and artworks—in that they are both visual arts that employ aesthetic principles and need their practitioners to possess an understanding of historical movements, contemporary trends, and other relevant information [12]. Joseph, et al. [13] classifies aesthetic features into three main elements: sensory, formal, and technical. Sensory elements directly engage our senses, encompassing aspects such as line, shape, texture, color, light, darkness, and space. Formal elements are combinations of sensory features that enhance interpretation by the human mind, including patterns, rhythm, symmetry or asymmetry, contrast, proportion, scale, and coherence. Lastly, technical elements refer to the creative and technical skills of the designer, craftsmanship, material properties, execution quality, historical context, design style, and the available technology during the design process.

Legibility refers to how easily an area can be visually understood, requiring a well-organized spatial structure with distinct, recognizable elements and landmarks that enhance clarity [14]. This can serve as an important indicator when assessing how easily travelers can navigate a space, as highlighted in a study by Shayestefar, et al. [15]. The study also highlights artistic aspects, noting that changes in materials or textures can help distinguish different areas, as each space can be identified by a consistent material; however, when multiple materials are used in one area, it can decrease coherence and negatively affect the legibility of the space [15]. Meanwhile, landmarks such as tall buildings, statues, or art installations play a significant role in shaping commuters' sense of legibility, offering clear directional guidance toward their destinations [16].

Unlike the wayfinding strategies used in the London Underground, several airports around the world have explored the use of aesthetic components and visual design as elements that can aid in navigation. Bosma and Nikolaeva [17] emphasized the significance of landmarks, such as Dennis Adams' artwork Coda at Schiphol Airport, which serves as an easily recognizable meeting point. Hubregtse [18] studied Heathrow Terminal 5, where distinct color schemes are used at various access points to assist with navigation, while Lin-Liu [19] pointed out that ceilings are aligned with the direction of passenger movement to help guide traveler flow. Lastly, Adey [20] highlighted how limestone tiles in shopping areas that is applied in airports reflect light to create a warm, inviting ambiance that encourages exploration. The factors of legibility that have been reported in different journals are classified as visually pleasing aspects of this study. Indirectly, they can be seen as features that improve navigation in a specific venue.

METHODOLOGY

Using a technique based on qualitative data, the author of the following study first collects theoretical underpinnings before making firsthand observations of the chosen case study. The underground stations selected as the observation sites are shown in the following Figure 1.

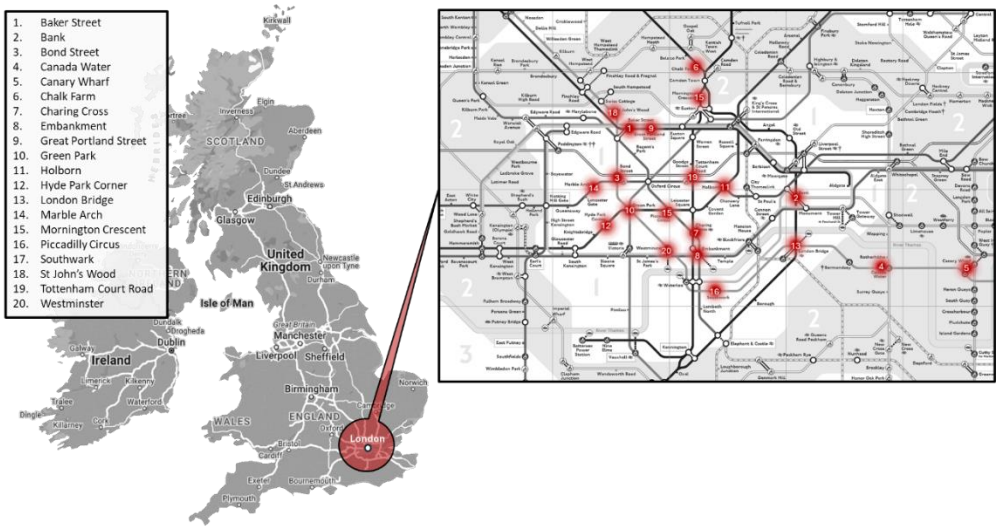

Figure 1. Location of the Case Study: London Underground Zones 1 and 2

Further, to learn what the public thinks about aesthetic features that can enhance navigation and set one station apart from another, interviews and an examination of Instagram postings are performed. Finally, a data synthesis is conducted to address the research questions posed.

A. Direct Evaluation

A virtual tour of the London Underground was conducted through the official website of the Museum of Transport for London. This approach aimed to explore both the continuity and evolution of the aesthetic components in the London Underground system. The focus was on how these design features have contributed to station identification over time, examining the role they play in helping passengers recognize and differentiate individual stations. Meanwhile, Site visitations to twenty stations across Zones 1 and 2 of the London Underground offer a direct evaluation of how these stations collectively contribute to a unified identity while maintaining distinct characteristics that enhance navigation and location identification. The sampling criteria involve selecting a diverse range of stations that reflect various architectural styles and historical periods, with the selection informed by multiple sources discussing the aesthetic features of different London Tube stations [1, 21]. In addition, tourist destinations, London landmarks, and heritage sites concentrated in the city center are also considered, which will align with the selection of interviewees for the interview methodology.

B. Public Perception

The first method for gathering public perceptions of the visual elements of the London Tube is through Instagram data collection, which was previously conducted by Shanidze [2]. The approach involves examining Instagram posts to identify key aspects that capture users' attention and the elements that stand out to them while inside Tube stations. This offers valuable insights into how travelers perceive and appreciate the artistic components of these stations. With over 15,000 images related to the London Tube providing a wealth of information, sampling must be limited for more focused analysis. The selection criteria include individual accounts rather than organizational or community profiles, excluding accounts solely dedicated to the London Tube to ensure a broader range of perspectives and content is gathered. Additionally, specific hashtags, such as the names of the stations under study, and captions that focus on the station's aesthetic elements, are used to refine the sample selection for analysis.

Furthermore, interviews serve as the final method to address the fourth objective. The aim is to assess which aesthetic elements of the London Underground are appreciated by occasional travelers or non-daily commuters who use the Tube infrequently. Interviewees are classified as visitors or tourists, whose use of the Tube typically centers around city landmarks or tourist destinations. Priority is given to Indonesian students with experience using the London

Tube and a background in transportation studies or related subjects, as the study aims to investigate the possible application in Indonesia's public transit systems. This ensures that the insights collected are more applicable and aligned with the policies and conditions of Indonesia. The qualitative data from participant interviews was inspected using the Qualitative Analysis Guide of Leuven (QUAGOL), established by De Casterlé, et al. [22]. QUAGOL consists of two sections, each with five steps, following an iterative and flexible approach that allows continuous refinement between phases. The interview results were processed using Ligre, a web-based platform for qualitative data analysis.

RESULT

A. Underground Stations' Artistic Features Around the World

An analysis was conducted on 23 subway stations worldwide, with a concentration on their societal and historical significance as well as uncommon visual characteristics that point to possible navigational improvements. Five stations were selected from this group to be part of the report: the Subway Stations in Tashkent, Uzbekistan; Prague Metro Stations Line A, Czech Republic; Stockholm Metro, Sweden; Moscow Metro, Russia; and the Louvre-Rivoli Metro Station, Paris. Uzbekistan's underground system features stations with completely distinct concepts, each differing in sensory, formal, and technical aspects. There is no overarching concept unifying the entire system, which creates significant contrasts between the stations, serving as an aid for navigation. Differently, Prague's metro stations all have the identical interior design, with formal and sensory components which involves geometry, lines, lighting, and pattern repetition being homogeneous, aimed at creating a cohesive system. To help travelers recognize specific stations, only the colors vary to reflect nearby landmarks or significant locations.

The stations in the cities of Stockholm, Moscow, and Paris feel more like art galleries, as they are designed to reflect museum spaces or exhibition rooms. In Stockholm, the visual components used emphasises local character and makes tourist locations easier to find by reflecting the surrounding environment, such as heritage sites. Important station transitions, including lifts and concourses, are designed in an unusual way to draw passengers in and make them simple to locate.

Meanwhile, in Moscow, the metro's design highlights opulence and intricate artistic value while retaining modest navigational techniques, particularly in the concourse sections and connecting tunnels (Figure 2). These are pointed out by variations in material, colour, artwork, and ornamental features. The layout is identical even though each station has distinct aesthetic aspects that help with station identification. Lighting acts as a navigational aid; the bright, colourful concourses, which are frequently extensively decorated to further make the route towards the platforms clear, appear brighter than the doorways to the platforms. Lastly, the Louvre-Rivoli station in Paris stands out as the only one that showcases multiple artworks and has a distinctly museum-like atmosphere. Unlike other stations with similar features, this station serves as a landmark for visitors heading to the Louvre Museum, as its interior closely resembles that iconic tourist destination.

Figure 2. A striking contrast in three different concourses of Moscow Metros

Source: x.com/JamesLucasIT

B. London Tube's Aesthetic Components

From the tour, it is known that the creation of the London Underground's aesthetic components shows a conscious attempt to forge a distinctive character and improve its aesthetic appeal. Red ox-blood tiles, Art Nouveau-style murals, and ornamental carvings were among the design elements used to define the Underground's unique identity

and enhance the underground space's vibrancy and attraction. When the roundel emblem and the Johnston typeface were introduced, they became iconic symbols of the London Underground and functioned as unifying factors throughout the network. The design changed over time to reflect contemporary styles, highlighting station recognition over overt navigation enhancements.

Several significant discoveries that greatly advance the comprehension of how visual components might enhance wayfinding and location identification were drawn from visits to 20 London Underground stations. Every case study has the same recurring elements, like the roundel, traditional ceramic tiles, and the Johnston font. These components' uniformity throughout stations is essential to creating the London Underground's character and helping passengers recognise it. In the meantime, a sensory element's ability to facilitate navigation increases with the contrast it has with its surroundings. For example, the unique entry design that contrasts with the surrounding buildings, or the colour and material variations between the platform and the connecting tunnel. Moreover, the artwork in the stations acts as a crucial "landmark," making a noticeable and unforgettable impression on visitors and improving their memory of particular places. Travellers can better identify a given site by using artwork that depicts historic structures or nearby locations, which gives them contextual cues. The simplicity of navigation can also be increased by using colour schemes and patterns that are specific to lines or stations and match the colours on maps. Despite the intricacy of the Tube's routes and lines, these results highlight how crucial careful design is to ensure a smooth and simple travel experience, especially for those who use it infrequently. This can be more clearly illustrated by referring to the following Figure 3, Figure 4, and Figure 5. Further, the research's documentation and conclusions form the foundation for the interview methodology's question development.

Figure 3. Bond Street Station - Elizabeth Line

Figure 4. Bond Street Station - Central Line

Figure 5. The artwork, mostly in the form of wall murals, can be found at several stations.

C. General Traveler Viewpoint on Using the London Tube

Prior to talking about how this idea may be applied in Indonesia, it's critical to comprehend the general viewpoint of travellers, which is based on data collected and analysed from Instagram. The development of interview questions

for Indonesian students is based on this viewpoint and examining these results could offer an alternative perspective to the site visitation observations.

Travellers are attracted to the distinctive aesthetic features of the London Tube, including the recognisable roundel, the tube-shaped vertical circulation, and the uniform ambiance of the platforms at different stations, according to Instagram photos. Furthermore, some stations have distinguishing characteristics that act as landmarks (Figure 6), making them easier for viewers of these postings to remember and familiarise themselves with when they visit the stations. The impact of social media trends on infrequent travellers and how online trends and material influence their experiences, tastes, and opinions of the London Underground will be one of the topics discussed in the interview.

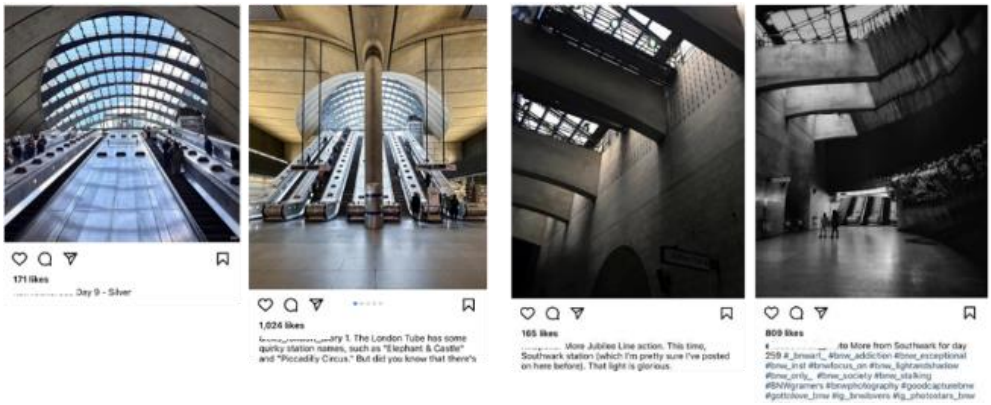

Figure 6. Outstanding artistic elements frequently highlighted by Instagram users

D. Indonesian Views on the London Underground and Its Applicability to MRT Jakarta

Six Indonesian students were interviewed on six subjects related to London Underground's stations: general impressions, navigation, artistic appearances, important local attractions, Instagram insights, and the ability to transfer to Indonesia.

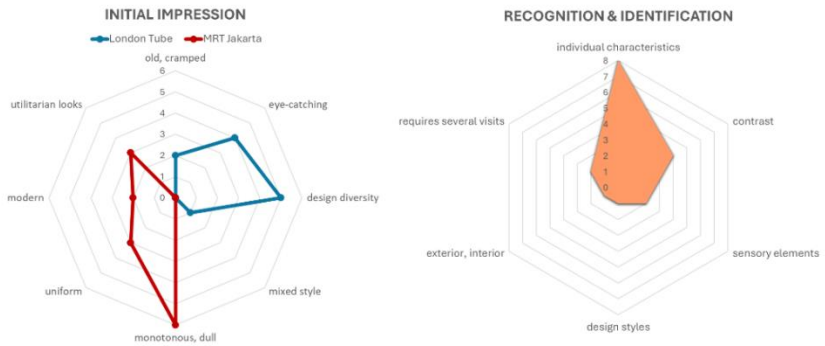

Figure 7. Initial Impressions (left); Recognition & Identification (right)

On initial glance, the London Tube and MRT Jakarta were substantially distinct (Figure 7 - left). With a blend of contemporary features in some of its more recent stations, the London Tube was seen as more traditional generally, adding to the network's overall feeling of design variety. MRT Jakarta, on the other hand, was perceived as more contemporary, having a functional appearance devoid of aesthetic appeal. When subjects had to identify and recognise particular stations in Tube, the most important factors were found to be the unique features of each station (Figure 7 - right). When sensory components like colour, illumination, materials, and shape contrasted with their surroundings, these traits were frequently simpler to recall. For instance, the unique tube-shaped architecture in connecting tunnels or lifts, the ox-blood colour of the tiles in some of the classic stations, and the murals on ceramic tiles on the walls of some station platforms. Nevertheless, respondents said that in order for visitors to recognise a station, they needed to visit it several times in order to rapidly and accurately recall its visual characteristics.

Significant changes in aesthetic aspects, such as colour shifts from the platform to the concourse and variances in wall materials, made it easier for participants to navigate throughout stations when it came to navigation (Figure 8). Most notable shapes in the station design, especially at station entrances with unusual forms, further reinforced these

adjustments and improved memorability. Wayfinding was also aided by the entire design, whether it was old Victorian like Baker Street or futuristic and geometric like Canary Wharf. But because of the London Tube's complexity, users—especially those who used it occasionally—still had to rely on signs and maps. Although they were guided by decorative features, signage was still necessary for efficient navigation.

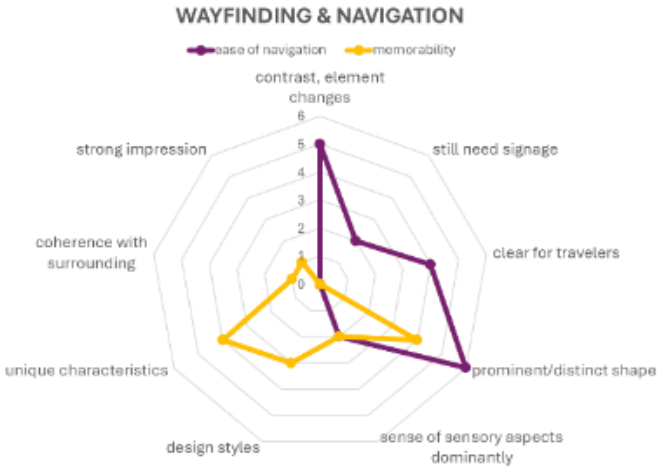

Figure 8. Navigation

Regarding how design characteristics affect how space is perceived within stations (Figure 9 - left), classic stations frequently made a bad impression because of its gloomy atmosphere, small interiors, damp conditions, unique underground odour, and overall lack of hygiene. Modern stations, such as those on the Elizabeth Line, on the other hand, were seen more favourably because of their use of natural lighting, spaciousness, and clean, monochromatic designs. The overall comfort of the trip was thought to be much improved by attractive components, especially sensory ones.

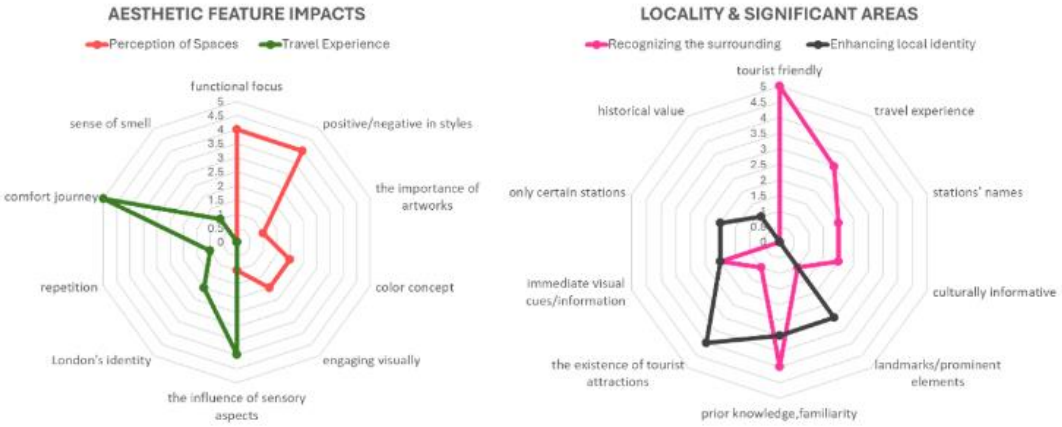

Figure 9. Impact of Aesthetic Features (left); Locality & Significant Areas (right)

Even so, travelers' past knowledge has a major role in how well these artistic elements aid in their recognition of their surroundings (Figure 9 - right). A traveler who is familiar with Sherlock Holmes, for instance, would instantly understand the artwork at Baker Street station and connect it to other historical sites that are close by and have anything to do with the well-known figure. In these situations, these visual aspects can be made tourist-friendly with a little basic information. On the other hand, more information or visual signals would be helpful for those who are not accustomed to the area. In a similar vein, visual components can strengthen local identity, but only if there are already established tourist destinations close to the station. As a result, these factors' effects are restricted to particular sites with cultural or historical significance rather than being generally relevant across every single station.

In addition to highlighting variations in content concentration across different posts, the study of Instagram data collection demonstrates the existence of visual attractions that encourage social media users to take images. After

viewing these postings, the participants said that one important element that motivates Instagram users to take pictures is the building designs (Figure 10). While murals and other landmarks also attracted attention, modern architectural forms were most popular, especially in colossal constructions like those seen at Southwark, the entrance to Tottenham Court Road, Westminster, and Canary Wharf. Furthermore, the station's artistic features and the people occupying the facility are usually the two areas of content attention. Because people respond to and voluntarily record visually appealing characteristics of the station, these outcomes imply that beautiful elements might enhance passenger experiences, and the tendency of society naturally recognises station individuality.

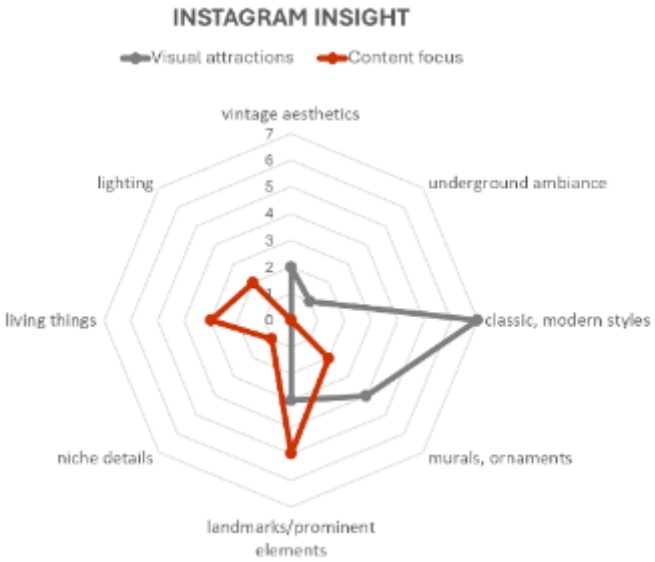

Figure 10. Instagram Posts Understanding

Figure 11. Applicability in Indonesia (left); cultural & practical adaptation (right)

Given that aesthetic aspects can enhance direction and station identity in theory and research, it is absolutely possible to apply such an idea to Indonesia's mass transport system, namely to MRT Jakarta. But there are a number of factors and difficulties that must be taken into account. (Figure 11). Allocation of funds is a crucial issue since Indonesia, as a developing nation, frequently faces financial limits in public infrastructure projects. This budgetary constraint affects other areas, like the government's revenue philosophy, where emphasis on advertising space often takes precedence over efforts to improve navigation through aesthetic aspects. Furthermore, from the standpoint of the users, even though this idea might draw in new travelers, the public's priorities right now are more for basic facilities like dependable services, reasonably priced tickets, on-time schedules, and sufficient capacity than for aesthetically pleasing qualities.

Besides, modifying this idea for Jakarta's setting should entail combining decorative and practical design features, making use of the city's historical monuments, and incorporating Indonesian cultural themes and the artwork of local artists. Yet, it's also critical to remember that Indonesia's climate differs greatly from London's, which could provide fresh obstacles. The year-round greater humidity and temperatures seen in tropical nations can have an impact on the amount of moisture in subterranean constructions, which can cause materials to get worse more quickly [23].

Hence, for sustaining the quality and endurance of aesthetic features like murals, wall colours, and other artworks under these conditions, meticulous maintenance is necessary. As well as careful planning is essential both during the initial construction and in future developments, since incorporating aesthetic elements into already-built stations may cause operational challenges.

Despite having traits in common that represent the London Tube's unified identity, each station included as a case study in this study can generally be identified by its unique qualities. In addition to their aesthetic appeal, the decorative components covered in the interviews enhance station navigation, which adds value. However, when combined with the traveler's existing knowledge of London, this extra value performs better. Also, strengthening navigation and station identity works best when technical, formal, and sensory components work well together to create a smooth movement experience.

DISCUSSION

The results show a high degree of agreement with previous research, especially when it comes to the categorisation of visually pleasing components [13]. According to earlier research, this relationship is particularly clear in the way that travelers quickly interact with sensory components including line, shape, texture, colour, light, darkness, and space. Either through colour contrast, recognisable symbols, unique shapes, or platform-specific pieces of art, contrast is essential for improving orientation. This bolsters the notion that these decorative components improve a space's readability and facilitate navigation.

This study differs from previous research in that it focusses specifically on infrequent London Underground users rather than all travellers [17, 19, 20, 24]. The results provide information from these users' point of view, showing how underground design aspects affect their wayfinding and station recognising, which would vary if applied to all users. The particular effect of visual aspects on first-time users is shown by the requirement for prior knowledge of London in order to identify adjacent tourist spots, or the remarkable first impressions produced by avant-garde station entrances acting as landmarks. Moreover, infrequent London Tube passengers are more likely to want to photograph these beautiful features and spaces within the station and its environs, then post them to Instagram as keepsakes. This demonstrates how these characteristics help individuals remember particular places after viewing them on social media by offering new viewpoints and establishing a unique visual trademark.

Further, this study broadens the scope to include underground train stations, since ideas about the relationship between wayfinding and visually appealing components usually concentrate on airports or above-ground structures like shopping stores [17-20]. As international gateways, airports place a high value on aesthetically beautiful and culturally representative designs to make a good first impression and support the location's brand image, which makes this wider application very pertinent. On the other hand, train stations typically place more of a focus on functionality—like capacity and punctuality—than on aesthetics. Therefore, in the context of underground stations, the ability of aesthetic aspects to facilitate navigating has not been thoroughly investigated.

This sparks an intriguing conversation on the variation between above-ground and beneath surroundings, as well as how decorative features could affect visitors in various ways in underground settings. For example, the Louvre-Rivoli metro station offers a distinctive underground experience that would not be the same if the station were constructed above ground by incorporating elements from the Louvre Museum as a means of location identity.

During the interviews, an unexpected discovery surfaced: navigation and station understanding are significantly influenced by sensory experiences other than the visual. Some interviewees reported that their overall impression of the subterranean stations was influenced by their sense of scent. For instance, the peculiar smells of wetness and mustiness that are sometimes connected to subterranean settings can detract from the entire sensory experience. These participants tended to ignore the many pleasing design features that were present to help with direction and station recognising, preferring to concentrate on the major signage in order to get to their destination as soon as possible. Because these artistic features were unable to successfully grab the attention of the travellers, their added value was reduced.

Concerning the concept's applicability in Indonesia, the majority of interviewees concurred that adding aesthetic components to the nation's mass transit systems could have advantages, but there is still a chance that MRT Jakarta will not be well suited for its implementation. The MRT's sleek, contemporary design, which is distinguished by its simplicity and absence of competing colours or elaborate details, is intentional. Because station layouts and

characteristics are predictable, identical designs across stations may help to establish a consistent identity and facilitate traveler navigation. The more straightforward MRT Jakarta network would be better suited to a consistent artistic approach that promotes direction finding through uniformity rather than diversity, in contrast to the London Tube, which benefits from various station designs due to its enormous and complicated network.

CONCLUSION

While legibility, a metric used to assess how well the guidance is working, refers to the clarity of spatial layout and distinguishable features that make an area easier to grasp, navigation involves manoeuvring through intricate, well-organised spaces using environmental signals. One of these recognisable components, signage, has always been crucial for guiding people, particularly in public areas like public transportation. Nonetheless, contemporary planners are making navigating easier by using fewer signage [24]. This underlines the necessity of further legibility markers, including attractive design elements. Thus, this study investigates the relationship between artistic and navigation. According to the research, appealing design elements serve a number of purposes in public transit systems worldwide, ranging from providing guidance to symbolising traditions and ancient identity. This flexibility suggests that the aesthetic of form can be purposefully modified to meet the particular needs of a transit system, whether those needs are practical, cultural, or a combination of the two. The historical development of the London Underground's aesthetic aspects shows that the original design decisions were mostly made with the goal of giving the Tube an original and identifiable identity. Although these design features were initially meant to create a powerful visual identity, data from site visits, interviews, and literature reviews indicate that they have also unintentionally improved tourist navigation. Travellers' navigation and station recognising within underground stations can be greatly improved by the overall sensory aspects (line, colour, material, shape, and lighting), formal aspects (repetition, pattern, rhythm, and proportion), and technical aspects (building style and historical/cultural value), especially when these elements work well together. Furthermore, when evaluating how well visual features support wayfinding in subterranean habitats, non-visual sensory factors like scent should also be taken into account. All things considered, the steady application of specific architectural elements throughout time has made it easier for passengers to identify stations and find their way around the intricate Underground system. This puts the study in tune with SDG 9, which encourages creative design approaches that improve public infrastructure's usability and functionality.

The potential for applying such comparable aesthetic element tactics to Indonesian mass transit systems, such as the MRT Jakarta, further emphasises the findings' wider application. Such design interventions could address present issues in Indonesian public transit systems, where visual monotony and dismal atmosphere may limit effective navigation. Nonetheless, it's also critical to recognise that there's still a likelihood that these design concepts could not be totally appropriate for the MRT Jakarta.

Several limitations must be noted, even if this study offers important insights into how artistic aspects can improve navigation and station identity within the London Underground. It was challenging to carry out in-depth observations on the London Underground due to its busy and hectic atmosphere. Data collection was also considerably slowed down by the sheer number of case studies and the researcher's lack of familiarity with the station layouts. As a result, not every section of the stations could be investigated in detail. These lost chances might have impacted the analysis, possibly omitting important information that would have helped create a deeper awareness. Furthermore, when examining the potential transferability of visual characteristics from the London Tube to the MRT Jakarta, this study skips over the specific stages of the transferability process. Although six Indonesian students were interviewed to determine the chance for ability to be transferred, this method lacked the rigorous analysis usually needed for such evaluations.

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