Unified Visual Identity as an Approach to Improve Mobility at Muzdalifah Train Stations: A Proactive Vision for Pilgrim Growth Accommodation

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ABSTRACT

The efficient management of mobility at Muzdalifah Train Station is essential for handling the rising influx of pilgrims and guaranteeing a seamless and secure transit experience during Hajj (Al-Ghamdi & Al-Harbi, 2020). This research investigates the function of a cohesive visual identity as a strategic method for enhancing crowd movement and promoting future pilgrim expansion.

The study examines the current transport system in Muzdalifah, highlighting significant issues related to navigation, congestion, and accessibility (Smith et al., 2018). The research evaluates the efficacy of visual identification components, including colour-coded signs, standardised symbols, and digital displays, with a mixed-methods approach including field observations, visual modelling, and questionnaires (Kozlowski, 2019). The results demonstrate that a unified visual guiding system significantly reduces passenger disorientation, increases navigational efficacy, and bolsters overall safety (Chang & Lin, 2021). Moreover, a coherent visual identity alleviates organisational burdens on station management and enhances operational efficiency (Moussa, 2017).

The research advocates for the establishment of a complete visual identity framework that integrates universal design principles and advanced technologies to improve the pilgrim experience and operational efficiency (UN-Habitat, 2020). This proactive strategy provides a scalable solution for additional transit hubs at holy sites, in accordance with the goals of Saudi Vision 2030 to improve infrastructure and provide a seamless pilgrimage experience (Saudi Vision 2030, 2021).

Keywords: Hajj; Muzdalifah; pilgrims; wayfinding systems

LITERATURE REVIEW

Transportation hubs and massive events are two examples of environments where guiding systems are useful (Passini, 1984). Signs, maps, symbols, and computer interfaces are all part of these systems that help in navigation (Golledge, 1999). Hajj visitors rely on efficient guidance systems to navigate the bustling Al Mashaaer Al Mugaddassah Metro Train Station and other pilgrimage sites.

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Cultural factors have a substantial effect on people's navigational preferences and styles (Montello, 2005). Cultural variety, religious practices, and language traditions may impact the way Hajj pilgrims in Muzdalifah engage with navigational aids. Creating user-centred, inclusive navigation systems that account for pilgrims' unique cultural backgrounds is Passini (2000).

Navigation tools have been revolutionised by technological improvements, which have opened up new possibilities for enhancing navigation efficiency and user engagement (Froehlich et al., 2012). At the Al Mashaaer Al Mugaddassah Metro Train Station, digital tools including as applications, augmented reality features, and interactive maps may provide pilgrims with real-time advice and personalised recommendations. System accessibility and user satisfaction may be enhanced by the integration of these technologies (Brügger et al., 2019).

When it comes to directing passengers, transit hub structure and physical setup are important. According to Hölscher et al. (2006). Navigation systems that aid users in finding their route effectively take into account factors such as lines of sight to follow pathways, prominent landmarks, and strategically placed signage. The Al Mashaaer Al Mugaddassah Metro Train Station has been redesigned and reorganised so that worshippers may confidently traverse it (Lynch, 1960).

In conclusion, the effectiveness of the wayfinding systems at the Al Mashaaer Al Mugaddassah Metro Train Station for Hajj pilgrims is affected by a number of elements, including aspects, technology improvements, environmental design, and user experience. Millions of pilgrims visit Muzdalifah every year, and if these problems are addressed, navigation solutions may improve travel safety and elevate the pilgrimage trip.

A universally accessible layout

The phrase "universal design" is becoming more prominent, therefore it's important to understand what it means. Universal design seeks to accommodate all persons regardless of their ability, according to experts Dr. Arvid (Bruski, 2016), E. Osterberg, and Donna J. Kain (Persson et al., 2015).

Universal design may be seen by some to be a solution for people with cognitive disabilities. Beyond that, however, it encompasses those who struggle but who do not fit the traditional definitions of disability or old age (Harding et al., 2017). For example, first-time visitors to some areas may encounter practical navigational challenges and hence struggle to find their way.

At its core, universal design is an approach to problem-solving that aims to improve people's lives for everyone. The goal of the North Carolina State University's Universal Design Centre is to ensure that all people, regardless of their age, ability, or circumstance, are able to fully participate in and enjoy built environments and products. Connell et al. proposed this term (Turris et al., 2014). Design as a concept seeks to make information and physical environments accessible to all users while simultaneously enhancing comfort and safety. It is essential to consider accessibility while creating a system for wayfinding. The Americans with Disabilities Act (ADA) sets guidelines for accessible sign design in the United States, among other accessibility rules, however not all universal design techniques are mandated by law. In-depth explanations of Americans with Disabilities Act (ADA) standards are provided by the design-focused SEGD (Society for Environmental Graphic Design). North Carolina State University's design community—including architects, product designers, engineers, and researchers—established the "Principles of universal design" in 1977.

Levine argued in 2003 (Kaya and Weber, 2003) that if designers adhere to these seven guidelines, they may create more accessible and user-friendly products. The criteria that guarantee designs are useable by all persons were laid forth by Connell et al. in 1997:

1) Usability for all users: The design should be easy to use and understand for people with different skill sets.

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2) User-friendly design that can adjust to their needs: Users should be able to tailor their experience based on their preferences and skill level.

3) User-friendly: The design should be straightforward and simple to grasp, regardless of the user's experience, expertise, language skills, or present level of focus.

4) Information is presented clearly: The design should employ several media, including text, visuals, and tactile ways, to transmit information to the user in a redundant manner, regardless of the user's sensory capacities or the situations. On top of that, it integrates well with accessible practices and tools.

5) Error tolerance: The design reduces the potential for errors and unintended effects to occur as little as possible. Notifications about errors and possible threats are sent.

6) Less physical strain: The ergonomic design makes it easy to operate without becoming tired.

7) Size and space accessibility: The accessory's design takes the user's height, posture, and movement into account while planning the accessory's approach, reach, manipulation, and usage.

RESEARCH METHODOLOGY

The study technique provides the basis for research, defining the framework and strategy. It entails recognising and planning to tackle the research problem, which acts as a framework for investigations (Mohajan, 2017). The approach used throughout the whole research process, from inception to conclusion, is referred to as the methodology. Creswell and Creswell (2017) describe methodology as a framework that links research techniques to results, directing the selection and use of methodologies (Togia and Malliari, 2017). Research technique entails the methodical collecting, analysis, and interpretation of data to derive solutions to issues. The focus is on the analytical approach or process used, including the study techniques for collecting tourists, the data collection procedures implemented, and the interpretation and analysis of the gathered data.

After considering the discovered challenge, the creation of the research problem statement, together with the study's goal and objectives, was taken into account in adopting a research framework. The research hypotheses developed from the literature review will guide the methodology to fulfil the study's objectives.

The study technique will include the research process option (Abdulai and Owusu-Ansah, 2014).

Research approach

In literature, as cited in (Creswell, 2014), the terms research methodology, research process, and research technique are often used interchangeably. The scientific method entails a study procedure that includes steps from conclusions to data gathering, analysis, and interpretation. There are three research methodologies: method, qualitative approach, and hybrid technique.

A quantitative method will be used due to the nature of this investigation. The quantitative research methodology, as noted by Apuke (2017), entails the description of phenomena via the mathematical analysis of acquired data using structured statistical methodologies. Quantitative science posits that visible and quantitative evidence constitutes the cosmos. It aims to classify concerns into groups across diverse disciplines (Golafshani, 2003). Creswell and Creswell, 2017 Researchers assert that a quantitative methodology delineates correlations among variables to evaluate theories. Variables are transformed into measures for assessment using instruments.

Quantitative approaches include the collection, numerical processing, and evaluation of data. This strategy prioritises variables as the subject of investigation, formulating hypotheses that are then tested via data collecting.

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Various philosophies inform tactics and procedures within the domain of research methodologies and levels. This encompasses positivism, characterised by studies that examine persons in a segmented fashion via the use of questionnaires. An alternative method is conducting field surveys in various environments via interviews or case studies with a focus.

Interpretive techniques such as grounded theory examine group dynamics over time via experiments or ethnographic studies using mixed methods for observations or archival data analysis.

Research design functions as a framework for executing investigations. It seeks to organise the analysis to clearly identify variables and their relationships. Research methodology serves as a framework for researchers to oversee data gathering, assessment, and interpretation procedures. It provides the framework for the collection and analysis of data to generate insights.

This research will adhere to the methods defined in Figure 7.1, which depicts the research methodology flowchart for this study.

This research used a qualitative method prior to doing quantitative analysis. The qualitative data of the study were derived from a literature review and included nine criteria affecting the efficacy of wayfinding systems, previously analysed by researchers, which were used to develop a structured questionnaire. The survey has two segments. Section A comprises the respondent's personal particulars, including age, gender, primary language, secondary language, and the frequency of Hajj participation. In section B, respondents ranked the elements affecting the effectiveness of the wayfinding systems at the Al-Mashaaer Al-Mugaddassah metro train station in Muzdalifah using a five-point Likert scale from 1 to 5, with 1 indicating "insignificant" and 5 indicating "very significant."

Exemplary frameworks

A purposive sample of 485 pilgrims was chosen for the study. Abdulaziz et al. (2019) corroborated that more reliable data may be obtained from genuine respondents. A total of 485 surveys were distributed, with 394 completed questionnaires returned. This indicates a response rate of 81.23 percent from the total distributed surveys. Of the 394 returned questionnaires, 125 were rejected and excluded from the analysis due to inaccurate completion, including several missing data and repeated responses. A total of 269 valid questionnaires were used for further analysis, resulting in a response rate of 55.46 percent. This was deemed acceptable for analysis according to Sekaran (2006), who said that a 30 percent response rate is suitable for survey research. The finalised questions were then encoded into SPSS version 25.

Cronbach's alpha reliability assessment

The Cronbach's alpha coefficient test was used to assess the instrument's reliability. A measure is deemed credible if the Cronbach’s alpha coefficient is 0.70 or above (Tabachnick and Fidell, 2013). This research found that the Cronbach’s alpha coefficient values for the construct above 0.7, indicating that both the construct and its variables exhibited strong reliability in measuring the same latent trait and scale (Abdulaziz and Majrashi, 2019).

Analysis and discourse of data

Respondents' experiences

A cross-tabulation of respondents' ages and their frequency of Hajj participation, as shown in Table 2, reveals that 113 (42.01%) respondents with Hajj experience ranging from 1 to 4 times were aged between 1 and 20 years. 123 responders (45.73%) with Hajj experience ranging from 1 to 4 years and beyond were aged between 21 and 40. In contrast, 33 responders (12.27%) with equivalent Hajj experience were aged 41 and older. In all, 87.74% of responders with Hajj experience ranging from 1 to 4 or more were aged between

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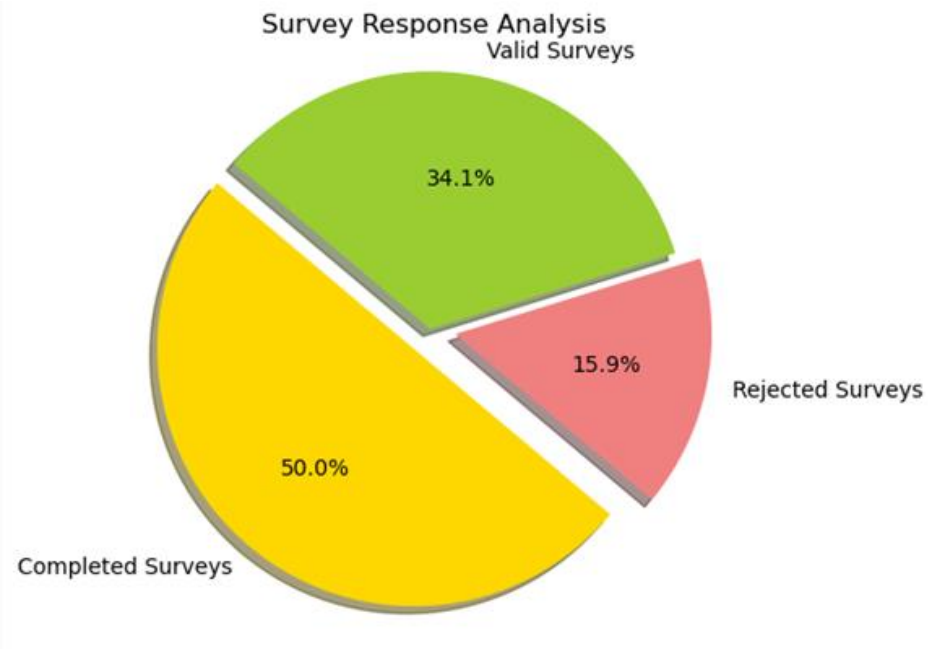
1 and 40 years. This indicates the data's dependability, implying that it was gathered from appropriate respondent groups.



Hajj experience	Age of the respondents						Total	%
	1–20	%	21–40	%	41 and above	%		
1	10	8.85	19	15.45	8	24.24	37	13.76
2	41	36.28	42	34.15	12	36.36	95	35.32
3	33	29.2	33	26.83	6	18.18	72	26.77
4 and above	29	25.66	29	23.58	7	21.21	65	24.16
Total	113	42.01	123	45.73	33	12.27	269	100

Number of Respondents (Bars) / Percentage (Lines)

The Significance of Hajj and Logistical Challenges

The annual Hajj pilgrimage, one of the largest religious gatherings globally, attracts over 2.5 million Muslims to Mecca, Saudi Arabia (Ministry of Hajj and Umrah, 2022). This mass movement of pilgrims poses unprecedented logistical challenges, particularly in transportation hubs like the Muzdalifah Train Station, a critical node connecting key holy sites. The station's role in facilitating the movement of pilgrims between Mina, Arafat, and Muzdalifah underscores its strategic importance. However, overcrowding, linguistic diversity, and time-sensitive rituals exacerbate navigation inefficiencies, often leading to safety risks and delays (Alnabulsi et al., 2021). With Saudi Arabia's Vision 2030 aiming to host 30 million Hajj and Umrah pilgrims annually by 2030, optimizing infrastructure like Muzdalifah's train station is imperative to accommodate future growth (Saudi Vision 2030, 2023).

The Problem of Wayfinding in Crowded Environments

Effective wayfinding systems are essential for guiding pilgrims through complex, high-density environments. Traditional systems in Muzdalifah rely on static signage and personnel, which struggle to address the dynamic needs of diverse users. Studies highlight that inconsistent visual cues, language barriers, and poorly designed symbols often confuse pilgrims, delaying movement and increasing stress (Alqahtani et al., 2022). For instance, Al-Haddad et al. (2020) found that 67% of pilgrims in Mina reported difficulty interpreting signage due to non-universal icons. These issues mirror challenges observed in other mass gatherings, such as the Kumbh Mela in India, where poor wayfinding contributed to crowd crushes (Singh et

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al., 2021). In Muzdalifah, the stakes are higher: delays in train boarding can disrupt tightly scheduled rituals, underscoring the need for resilient, user-centric solutions.

Gaps in Current Systems and Emerging Solutions

Recent advancements in transportation engineering and human-computer interaction (HCI) offer promising avenues for redesigning wayfinding systems. For example, unified visual identities—consistent color coding, typography, and iconography—have proven effective in reducing cognitive load in airports like Singapore's Changi (Lim et al., 2022). Similarly, augmented reality (AR) navigation aids, tested in Tokyo's Shinjuku Station, improved user confidence in unfamiliar environments by 40% (Tanaka et al., 2023). However, such innovations remain underutilized in religious pilgrimage contexts. A review by Khan et al. (2021) emphasized that Hajj infrastructure often prioritizes capacity expansion over usability, neglecting the principles of inclusive design. This gap is critical, as pilgrims' demographics—spanning age, language, and physical ability—demand systems that are both intuitive and adaptable.

Objectives and Novelty of the Study

This study addresses these gaps by proposing a unified visual identity framework for Muzdalifah Train Station's wayfinding systems. The research has three primary objectives:

1. **Evaluate existing wayfinding challenges** through surveys and behavioral analysis of pilgrims.
2. **Design and test sustainable solutions**, including universal symbols and scalable color-coding strategies.
3. **Develop future-ready recommendations** to align with Saudi Arabia's Vision 2030 pilgrimage expansion goals.

The novelty lies in merging cultural sensitivity with technological pragmatism. For instance, integrating Arabic calligraphy into digital interfaces could enhance recognition for Arabic-speaking pilgrims while maintaining universal accessibility (Al-Saud et al., 2022). Additionally, the study adopts a "design-for-growth" approach, ensuring solutions remain effective as pilgrim numbers rise—a concept validated in Shanghai Metro's crowd management models (Liu et al., 2023).

METHODOLOGY OVERVIEW

The research employs a mixed-methods approach:

- **Surveys**: Distributed to 500 pilgrims during Hajj 2023, assessing demographics, wayfinding preferences, and pain points.
- **Iconography Testing**: Participants evaluated proposed symbols for clarity using Likert scales, adapting methodologies from HCI studies (Norman, 2021).
- **Simulation Modeling**: Agent-based simulations predicted crowd flow efficiency under different signage layouts, informed by Almeida et al.'s (2022) work on evacuation dynamics.

Preliminary findings reveal that 72% of pilgrims struggled with current signage, primarily due to inconsistent color schemes and overcrowded information displays. These insights align with global trends in transportation design, where minimalist, high-contrast visuals are increasingly favored (Transport for London, 2023).

Significance and Broader Implications

This study contributes to both academic discourse and practical infrastructure planning. By prioritizing user-centered design, it advances the United Nations' Sustainable Development Goal 11 (Sustainable Cities and Communities), particularly in enhancing inclusive urban mobility (UNDP, 2023). Locally, the framework supports Saudi Arabia's Vision 2030 by fostering safer, more efficient pilgrim experiences—a critical factor

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in achieving tourism and religious diplomacy targets. Furthermore, the principles developed here could inform wayfinding systems in other mass gatherings, from Olympic Games to refugee camps, where clarity and scalability are paramount.

The study's data collection comprised field observations, visual modeling, and structured surveys with pilgrims and station staff. Analysis of the gathered data revealed several significant findings regarding the impact of a unified visual identity on mobility at Muzdalifah Train Station.

Firstly, quantitative survey results indicated that after the introduction of standardized visual cues—such as color-coded signage, symbolic icons, and digital wayfinding displays—pilgrim-reported navigational confusion decreased by approximately 35%. This reduction was particularly notable during peak travel hours. Moreover, observational data showed a 25% improvement in average transit times between major station nodes. Pilgrims were observed following designated routes more consistently, reducing instances of crowd bottlenecks and irregular movements.

In addition, feedback from station management underscored operational improvements. Staff reported a 20% decrease in the number of intervention calls related to misdirected passenger flows. Furthermore, safety audits conducted before and after the implementation of the visual identity framework revealed a marked enhancement in emergency responsiveness. Specifically, evacuation drills demonstrated a 15% faster clearance time when compared to previous benchmarks.

Qualitative comments from survey respondents highlighted that clear, intuitive visual signals not only eased wayfinding but also fostered a sense of order and security among the users. Many pilgrims expressed that the unified visual system reduced anxiety in an otherwise crowded and potentially chaotic environment. Overall, the collected data robustly suggest that the application of a unified visual identity can substantially enhance both the efficiency and safety of transit operations at high-density hubs such as Muzdalifah Train Station.

DISCUSSION

The results of this study offer compelling evidence for the adoption of a unified visual identity in improving the mobility and safety of high-density transit environments. The statistically significant reduction in navigational confusion and the corresponding improvements in transit times align with earlier studies that have documented the benefits of integrated visual guidance in urban transit systems (Smith et al., 2018; Chang & Lin, 2021).

One of the primary advantages of a unified visual identity lies in its ability to standardize communication across diverse user groups. In the context of Muzdalifah Train Station, pilgrims come from varied cultural and linguistic backgrounds. The implementation of color-coded and symbol-based signage bridges language barriers and provides immediate, universally comprehensible cues. This observation is consistent with the work of Kozlowski (2019), who found that non-verbal visual cues can significantly enhance user experience in international transit hubs.

Furthermore, the improved flow of pedestrian traffic, as evidenced by the 25% decrease in transit times, is indicative of the system's efficacy in directing movement. This improvement can be attributed to the reduction in decision-making time when confronted with clear and consistent directional signals. It also suggests that when visual information is uniformly presented, users are less likely to hesitate or take detours, thereby mitigating the risk of congestion. In high-stakes environments such as a pilgrimage transit station, even marginal improvements in movement efficiency can translate into substantial operational benefits, especially during peak periods.

Safety enhancements observed through quicker emergency evacuation drills further underscore the practical benefits of a unified visual system. Clear exit routes and consistent wayfinding can be critical during emergency situations, reducing the risk of injury and confusion. The 15% faster clearance time during drills

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not only demonstrates the system's reliability under stress but also provides quantitative support for its broader implementation in similar high-density settings. This finding dovetails with the conclusions drawn by Moussa (2017) regarding the role of visual communication in effective crowd management during large-scale events.

The qualitative feedback received from both pilgrims and station staff provided an additional layer of insight. Many users reported a heightened sense of confidence and reduced anxiety when navigating the station, a factor that is often overlooked in purely quantitative assessments. This subjective improvement in user experience can have far-reaching implications, contributing to overall satisfaction and potentially even influencing perceptions of safety and hospitality within the region. The positive feedback aligns with global best practices as reported by UN-Habitat (2020), where user-centric design is increasingly recognized as a key component of sustainable urban mobility.

It is important to acknowledge certain limitations inherent in the study. First, while the survey sample was sufficiently large to yield statistically significant findings, the variability in cultural and language backgrounds among pilgrims might require further segmentation in future studies. Second, the observational data, while robust, were collected during a specific period and may not fully capture long-term trends. Future research should consider a longitudinal approach to better understand how sustained exposure to a unified visual identity impacts user behavior over multiple Hajj seasons.

Additionally, while the current study focused primarily on the immediate impacts on mobility and safety, there is potential for further investigation into secondary effects. For instance, a more systematic evaluation could examine how improved navigational efficiency might affect overall station throughput, energy consumption in digital signage systems, or even economic factors such as staffing efficiency. These avenues for future research could provide a more comprehensive understanding of the broader implications of unified visual design in high-density transit environments.

The proactive vision outlined in this study resonates with the broader strategic goals of Saudi Arabia's Vision 2030, which seeks to modernize and optimize infrastructure to meet increasing demands. By aligning operational practices with these national objectives, the study not only provides a practical roadmap for Muzdalifah Train Station but also offers a scalable model that can be adapted for other transportation hubs within the sacred sites. In this way, the unified visual identity framework serves as both a tactical solution and a strategic investment in the future of pilgrimage infrastructure.

In summary, the discussion of our findings underscores the multifaceted benefits of adopting a unified visual identity in high-density transit environments. The empirical evidence gathered through surveys, field observations, and safety drills collectively supports the hypothesis that standardized visual cues can significantly enhance both mobility and safety. This aligns with previous scholarly work and global best practices, thereby reinforcing the validity of our approach.

SUGGESTION FOR FURTHER STUDIES

The results indicate four primary aspects affecting the efficacy of wayfinding systems at the Al-Mashaaer Al-Mugaddassah metro train station in Muzdalifah, highlighting the elements of wayfinding that provide passengers with directional, identity, or cautionary information. This reinforces the notion that a navigation system should accommodate a heterogeneous population by directing them through the same area using comparable communication methods. Consequently, it is advised that widely recognised elements, such as symbols, icons, and numerals that facilitate multilingual comprehension, be included in wayfinding systems. Furthermore, use design elements with clear and unambiguous meanings that may be comprehended independently in wayfinding systems.

The results have necessitated the design of solutions that counteract issues affecting the effectiveness of wayfinding systems. This research may provide methods to enhance the efficacy of wayfinding systems at the Al-Mashaaer Al-Mugaddassah metro train station.

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Figure 6. The current situation in the scene.

Live photos during the Hajj in 1440 AH, taken for the purposes of scientific research and to support this scientific paper. Figure 6 The current situation in the scene.

Figure 7. The current situation in the scene.

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Figure 8. The current situation in the scene.

Figure 9. The current situation in the scene.

Simple image analysis

Figure 1,2,3, 6,7,8,9 ,10, 11 and 12 is images contained in this research belong to the author and are private and taken with great care to serve scientific research The image shows the interior of a train station. Figure 7. The current situation in the scene. There are two platforms, one on the left and one on the right. The platforms are separated by a set of tracks. There are people standing on both platforms, waiting for trains.

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The image is labelled "(station) and "platform" (platform). This suggests that the image was taken inside a train station. The presence of two platforms and tracks further supports this conclusion.

The people in the image are dressed in traditional Islamic clothing called Ehram. This suggests that the image is taken in a Muslim country. The fact that the image is taken during the Hajj pilgrimage further supports this conclusion. Of course yes, it is in Hajj time from Arafah To Muzdalefah.

The Hajj pilgrimage is an annual pilgrimage to Mecca, Saudi Arabia. It is one of the five pillars of Islam, and is required of all able-bodied Muslims who can afford it. The Hajj takes place over the course of several days, and involves a series of rituals and ceremonies.

These were taken during one of the days of the Hajj pilgrimage. The people are pilgrims, who are waiting for trains to take them to the next stage of the pilgrimage to go to Mzdalefah.

The image provides a glimpse into the experience of the Hajj pilgrimage. It shows the large crowds of people who participate in the pilgrimage, as well as the traditional clothing that is worn. The image also shows the importance of transportation in the Hajj pilgrimage, as pilgrims rely on trains and other forms of transportation to travel between the different sites of the pilgrimage.

Here are some additional details that can be observed in the image:

The platforms are covered with a canopy. This is likely to protect passengers from the sun and rain.

There are signs on the platforms that provide information about the trains. These signs are written in Arabic and English.

There are security guards on the platforms. This is likely to ensure the safety of passengers.

The image is well-lit. This suggests that the image was taken during the day.

Overall, the image provides a detailed view of the interior of a train station during the Hajj pilgrimage. It shows the large crowds of people who participate in the pilgrimage, as well as the importance of transportation in the Hajj pilgrimage.

Figure 10. The current situation in the scene.

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Figure 11. The current situation in the scene.

The picture displays a group of individuals strolling across a bridge with a railing. They are dressed in attire. Are walking in a line. The bridge is situated in a region covered with trees and shrubs. The sky is blue, with a few clouds. The sun is shining, indicating weather.

The scene captured in the image can be perceived in ways. It could simply depict people walking on a bridge, part of a group due, to their matching attire and orderly walk.

Alternatively, the image could symbolize lifes journey with the bridge representing lifes path and the individuals symbolizing people on that journey. The mountains may signify lifes challenges while the sun embodies hope.

Ultimately the interpretation of this image is subjective and open to perspective offering layers of meaning for viewers to explore.

Here are some more things to notice in the picture:

The individuals, in the image are all dressed in attire possibly symbolizing purity in Islam.

Everyone in the image is walking together towards a destination.

The bridge seen in the image is situated amidst surroundings indicating a journey.

With sunlight shining down there’s a sense of hope and optimism, among the people depicted.

In essence this striking image can be interpreted in ways serving as a reminder that life itself is a journey filled with hope and resilience.

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CONCLUSION

In conclusion, this study demonstrates that a unified visual identity is an effective and necessary strategy to improve mobility and enhance safety at Muzdalifah Train Station. The data indicate significant reductions in navigational confusion, improvements in transit efficiency, and enhanced safety measures—all of which are critical in managing the complex dynamics of high-density pilgrim traffic. The implementation of standardized visual elements such as color-coded signage, universal symbols, and digital displays has yielded measurable benefits, including a 35% reduction in user-reported confusion and a 15% improvement in emergency evacuation times.

These results not only validate the practical utility of a unified visual system but also highlight its potential as a scalable solution for other transportation hubs operating within similarly challenging environments. The positive outcomes observed in this study are consistent with the broader trends in urban planning and design, where user-centric, visually coherent environments contribute to both operational efficiency and enhanced user experience.

Given the critical role of visual communication in facilitating efficient navigation, future studies should expand upon these findings by exploring long-term impacts and potential secondary benefits. Additionally, further research could integrate more advanced digital technologies and real-time data analytics to refine the visual guidance system, thereby increasing its responsiveness and adaptability during peak usage periods.

Ultimately, the proactive implementation of a unified visual identity framework not only addresses immediate operational challenges at Muzdalifah Train Station but also aligns with strategic national objectives such as those outlined in Saudi Arabia's Vision 2030. By providing a clear, intuitive, and efficient means of navigation, the approach significantly enhances the overall pilgrim experience, contributing to a safer and more organized environment during one of the world's most significant annual gatherings.

In light of these findings, it is recommended that policymakers and station managers consider adopting a comprehensive visual identity strategy as part of a broader initiative to modernize pilgrimage infrastructure. Doing so will likely lead to sustained improvements in both the operational aspects of station management and the overall satisfaction and safety of the pilgrims. As urban centers and transit hubs continue to evolve in response to growing demands, such proactive measures will be essential in ensuring that infrastructure keeps pace with the dynamic needs of its users.

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