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VISUAL & PERFORMING ARTS | RESEARCH ARTICLE

Exploring street graphics: Strategies and challenges for city branding in Kumasi, Ghana

Alexander Boakye Marful^{1*}, Emmanuel Adzah¹, Francis K.N. Nunoo², Daniel Yaw Addai Duah¹ and Eric Anane-Antwi²

Abstract: Street graphics are the main feature of urban areas providing opportunities for advertising, wayfinding, visual stimulation, and other activities while adding to the quality of the urban area. Street graphics can potentially affect a city's overall brand and appeal. Many cities are experiencing visual pollution as a by-product of unregulated street graphics. Due to its unique categorisation as a historical and commercial centre, Kumasi, the second largest city in Ghana, provided the opportunity to investigate the use of street graphics for branding. The study through a constructivist-interpretive perspective approach, utilised visual survey and philology to gather data and analyse the street's graphic composition and establish the reasons for its presence. It became obvious through the results of the study that the clutter of the street graphics has affected the process of identifying and agreeing upon a relevant set of city brand attributes Kumasi require. The mixture of street graphics which is strongly skewed towards Funerals, Religious programs, and Herbal Medicine, suggest that Kumasi may want to be identified with that but that is not the core objective of the City of Greater Kumasi Area. Kumasi does not seem to have a clear identity, although it is home to wonderful tangible and intangible cultural heritages (the Golden Stool and the Ashanti Kingdom). Although the city has seen significant structural development and modernization without any direction for identity, the managers of the city have not sought to define the identity of the city, and the street graphics have also compounded the identity crisis. An assessment criterion was developed to compare the various street graphics on the streets with recommendations regarding the type of street graphics employed and their overall effect on the host street that can have significant impact on its branding.

Subjects: Architecture; Planning; Cities & the Developing World; Urban Development; Tourism; Cities & Infrastructure (Urban Studies); Graphic Design; Photography

Keywords: Street graphics; branding; identity; urban areas; signage; street art; Kumasi

1. Introduction

Many central and local governments, investors, and communities benefit from the unifying, intriguing and powerful effects of street art interventions to enhance, promote and emphasise urban spaces, attract visitors, make urban spaces more recognisable and contribute to social interactions (Miles,

Figure 1. The final result of the process of user perception and cognition of a public space is the mental representation of this space.

Source: Adapted by author from (A. Portella, 2014)

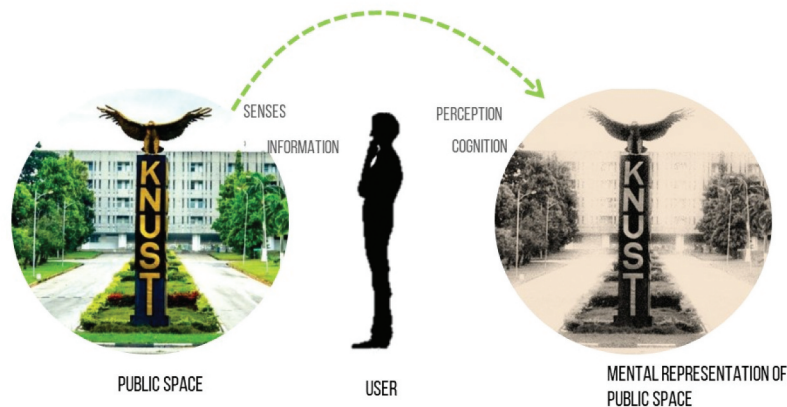
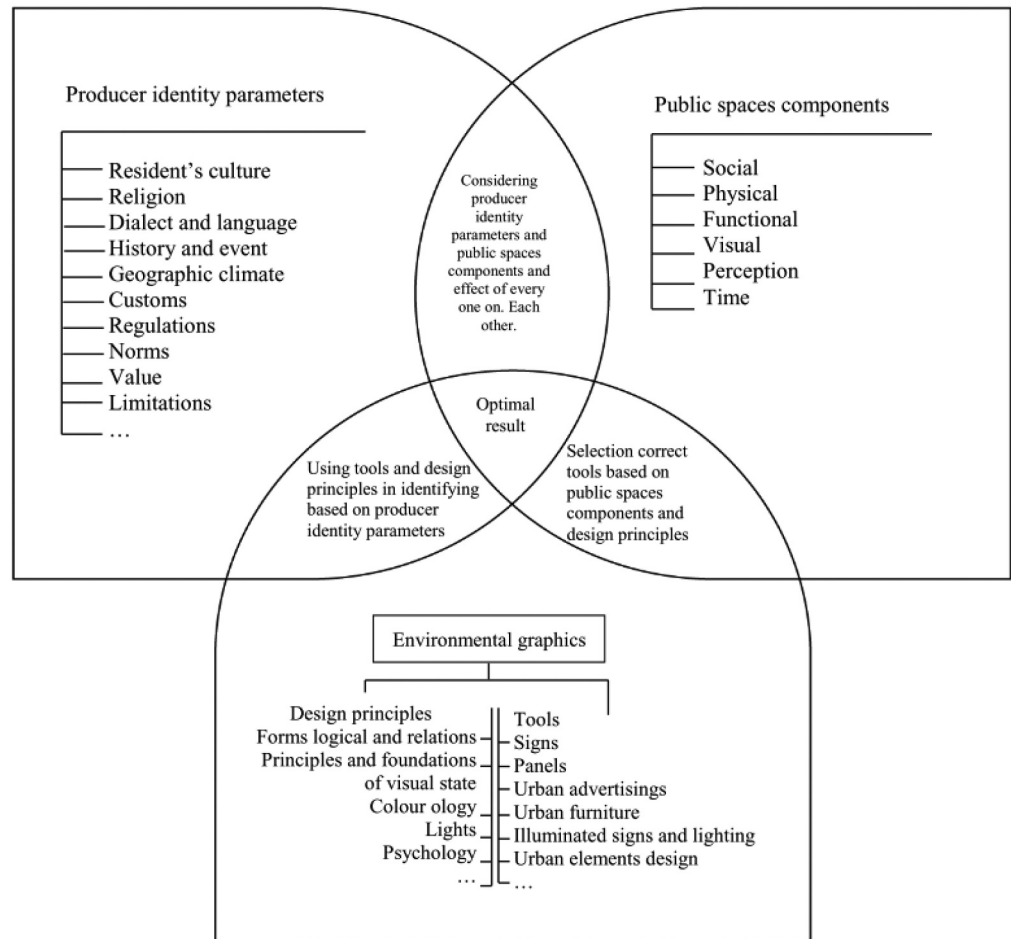


Figure 2. Conceptual model of branding and environmental graphics parameters source: (Eshaghzadeh, 2018).



1997). These artistic productions in public open spaces develop aesthetic and meaningful places with an improved physical environment and social interactions (Selwood, 1994).

Street graphics is an amalgamation of street art, outdoor advertising, signage and many others serving as a brand. It is a visual cultural production that has broadened its constraints out into the streets, and the surfaces in the city become the platforms of the practitioners' new canvas (Austin, 2010). Branding refers to the identity of a space or place. Identity is the objective—urban structure,

| Table 1. Summary of the determinants of street graphics system | | |
|--|---|---|
| Criteria | Determinant | Basis of Control |
| Image or identity street graphic is to communicate | Individual Proprietor, City image | Good design within the street graphics system |
| Commercial development or regional shopping centre | Strip commercial, neighbourhood | Land use |
| The character of the surrounding area | The visual character of the community; Areas of Special Character | Visual compatibility |
| How the street graphic is seen | By motorists or pedestrians at various speeds | Legibility |

Note: Source: (adapted Mandelker et al.,

Figure 3. Increased mounting height in times square, New York, to encourage pedestrian activity below (A. Portella, 2014).



| Table 2. Codes used for the analysis | |
|--------------------------------------|---|
| CODE | STREET NAME |
| Street 1 | Lake Road near Kumasi City Mall, Kumasi. |
| Street 2 | Kejetia Market Road, Kumasi. |
| Street 3 | Asafo Market Road, Kumasi. |
| Street 4 | Prempeh II Avenue, Kumasi (Melcom main) |
| Street 5 | Accra -Kumasi Highway (Tech Junction stretch) |
| Street 6 | Ayeduase Street, Kumasi. |
| Street 7 | J.A. Opoku Crescent, Commercial Area, KNUST |

Note: Source: Author's Construction, 2021

Figure 6. Street near asafa market.

Source: Author, adapted from Google Maps

Street 3: Asafa Market Road, Kumasi.



Figure 7. Street near the main melcom shop, Adum.

Source: Author, adapted from Google Maps

Street 4: Prempeh II Avenue, Kumasi.



graphics assessment. This assessment tool was used to investigate the use of street graphics as a branding tool and identify the associated challenges in Kumasi.

The objectives of the study were to assess the current state of street graphics in Kumasi, understand the role of street graphics in urban branding and explore ways in which street graphics can be regulated. These were the research question the study seeks to find answers to;

- (i) What is the current state of street graphics in Kumasi?
- (ii) How do street graphics affect city branding?
- (iii) Which policy framework would be best to regulate street graphics?

Figure 8. Accra -Kumasi highway (Tech Junction).

Source: Author, adapted from Google Maps

Street 5: Accra -Kumasi Highway (Tech Junction) - Highway, Kumasi.



Figure 9. Ayeduse Street, near KNUST Gate.

Source: Author, adapted from Google Maps

Street 6: Ayeduse Street, Kumasi.



1.1. Theoretical underpinning

City branding can positively impact the ability of a city to achieve desired economic, social, and cultural objectives (Prilenska, 2012). Branding mostly emphasizes the unique aspects of city culture and creativity, through the promotion of attractive urban images (Rehan, 2014). To understand the concept of a sustainable urban image, it is necessary to understand the visual image as real, legible and tangible (Prilenska, 2012; Rehan, 2014). A good city image is an excellent fusion of action and structure (Rehan, 2014).


Figure 10. Street at commercial Area, KNUST.

Source: Author, adapted from Google Maps

Street 7: J. A. Opoku Crescent, Commercial Area, KNUST



Table 3. Presence of sidewalks on selected streets

| CODE | SIDEWALKS | PRESENCE OF GRAPHICS IMPEDING THE SIDEWALK | |
|----------|-----------|--|--|
| Street 1 | ☑ | ☒ |  <p><i>Street graphics impeding the sidewalk in Adum, Kumasi</i></p> |
| Street 2 | ☑ | ☒ | |
| Street 3 | ☑ | ☒ | |
| Street 4 | ☑ | ☑ | |
| Street 5 | ☑ | ☒ | |
| Street 6 | ☒ | ☒ | |
| Street 7 | ☒ | ☒ | |

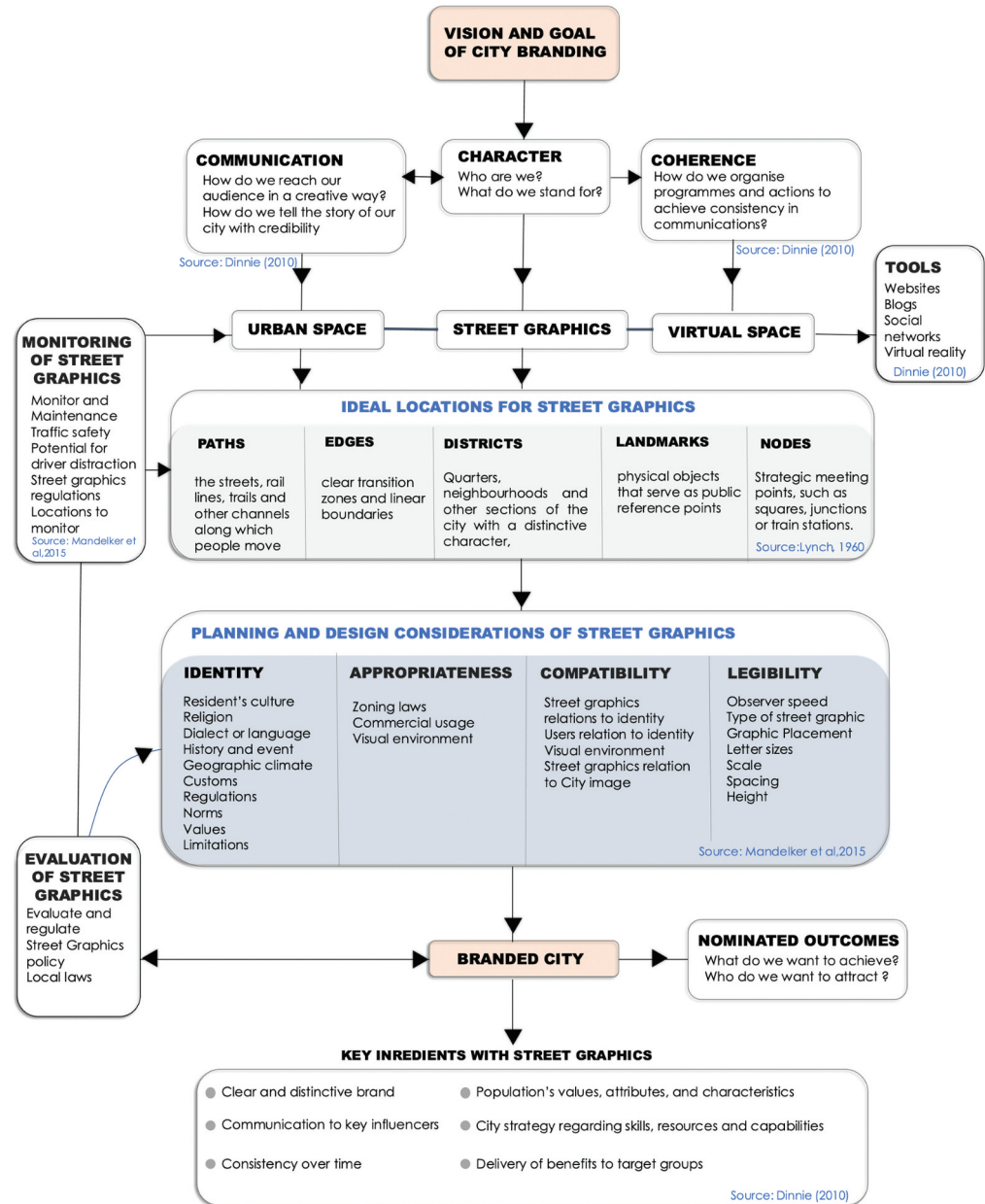
In the 1950s, urban theorist Kevin Lynch conducted a study to gather the image people have of the city. He suggested that from his environment, each person constructs his mental image of the parts of the city. Each person’s image shares an overlap with that of his neighbours. This collective impression is how people perceive reality in the city. That extracted picture (Figure 1) is known as the Image of the city (Lynch, 1960).

The concepts of legibility and imaging concern how people use and visualize a city (A. Portella, 2014). These impressions often go beyond visual and are more intertwined with memories, experiences, smells, hopes, crowds, places, buildings and drama.

Some group of scholars agree that recent conceptualizations of city branding have been misunderstood (Boisen et al., 2018; Bonakdar & Audirac, 2020; Kavaratzis & Hatch, 2013). They argued that originally, City branding centres on identity and should be thought of as a complex process

Figure 11. A framework for harnessing the potential of street graphics for city branding.

Source: Author's Field Diary, 2023



that facilitates the process of identity formation and city reputation over time. This position is in line with earlier studies conducted by Lynch in the 1950s. As a result, part of today's urban policies consist of designing, developing and maintaining an adequate brand concept which has a direct result of creating a viable visual identity and brand narrative (Paganoni, 2015).

Identity is the core concept of a product or even a place which is distinctively expressed. (Dinnie, 2010). Identity tries to ask the questions; Who are we? And What do we stand for? Community assesses its shared assets, personality, desirable attributes and so on and selectively emphasizes aspects of the city's place identity. Community participation must be encouraged through policies and conducive environment to garner support for the brand strategy. Opportunities for residents to participate in their city's identity development fosters a climate where the community thrives, enhancing their well-being and in turn attachment to the place they live (Paganoni, 2015).

Figure 12. 1 Examples of street graphics used in street 1.

Source: Author's Field Diary, 2021



Figure 13. 2 Types of street graphics used in Street 1.

Source: Author's Construction, 2021

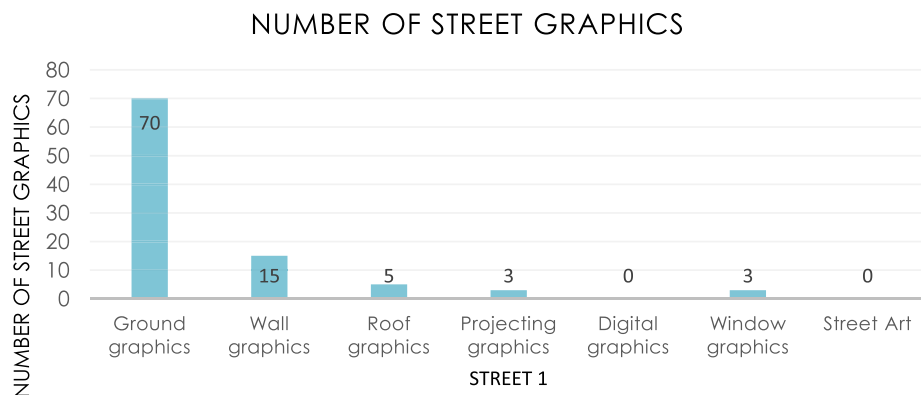


Figure 14. 3 Examples of street graphics used in street 2.

Source: Author's Field Diary, 2021



What then qualifies as urban branding? “It is a process of differentiation and diversification whereby local tourism organizations, arts and cultural facilities, museums, historic preservation groups harness and construct place images, help to produce tourist sites to attract consumers and investors to a particular local area” (Gotham, 2007). Helmy (2008) defines it as “Urban Imaginary” of a place representing a collection of feelings and perceptions about the image, urban life and cityscape.

City branding represents an interesting application of place branding strategies within the spatial and informational configuration of the post-modern city (Paganoni, 2015). What is the essence of the city and how does it wish to be perceived? According to Paganoni (2015), without a reasonable degree of clarity at this initial stage of brand development, the likelihood is that there

Figure 15. 4 Types of street graphics used in Street 2.

Source: Author's Construction, 2021

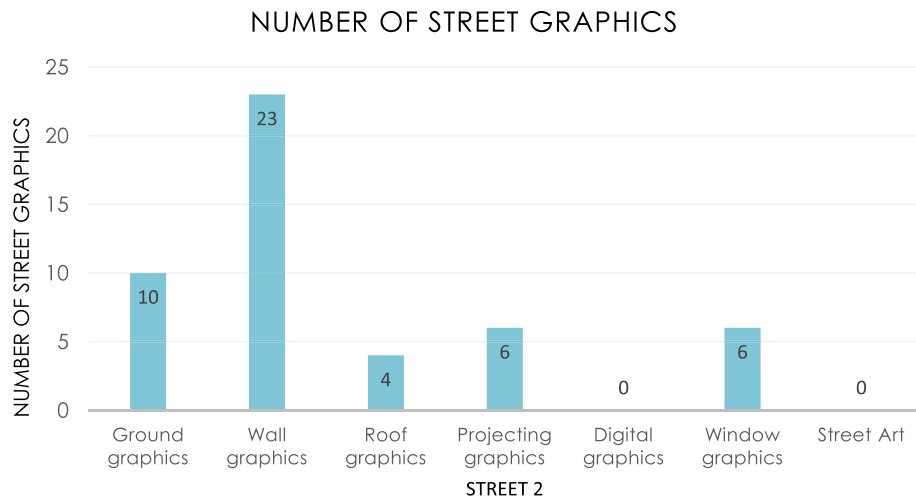


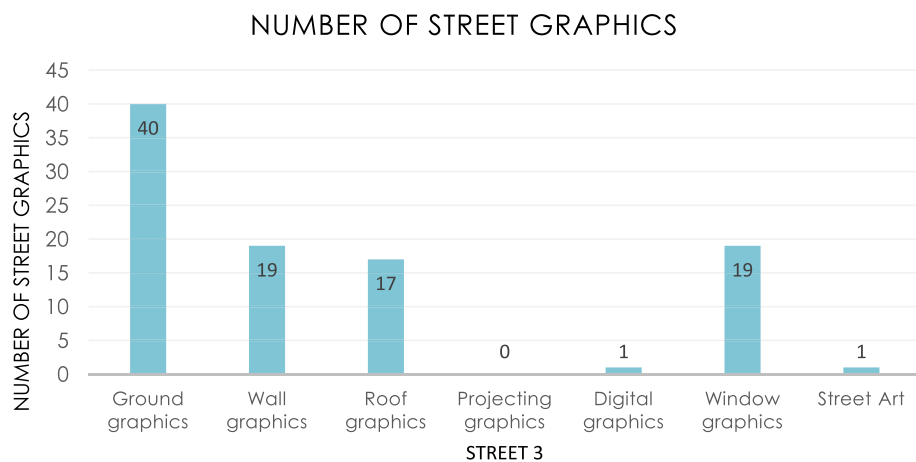
Figure 16. 5 Examples of street graphics used in street 3.

Source: Author's Field Diary



Figure 17. 6 Types of street graphics used in Street 3.

Source: Author's Construction, 2021



will be no clear city brand but rather an incoherent set of fragmented sub-brands each delivering its own messaging, or worse still, no conscious branding at all, in which case the city's reputation is completely at the mercy of an indifferent society.

What is important is the need to become familiar with the city's history and culture so that the eventual visual identity system is grounded in the city's culture (Paganoni, 2015). As Paganoni

Figure 18. 7 Examples of street graphics used in street 4.

Source: Author's Field Diary, 2021

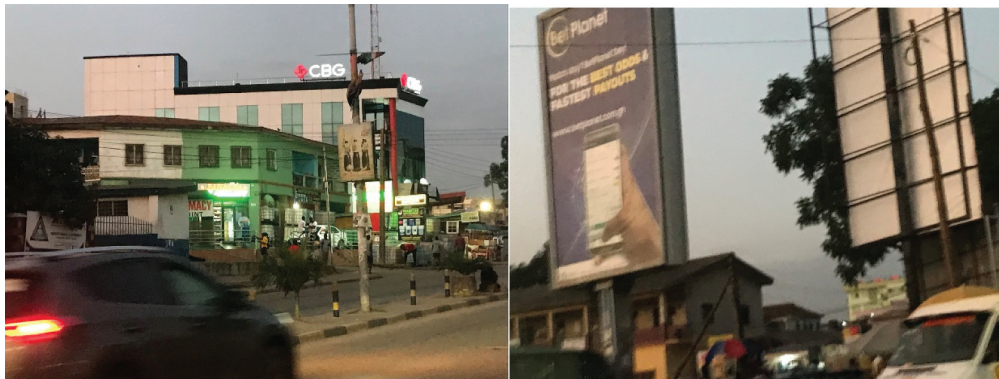


Figure 19. 9 Types of street graphics used in Street 4.

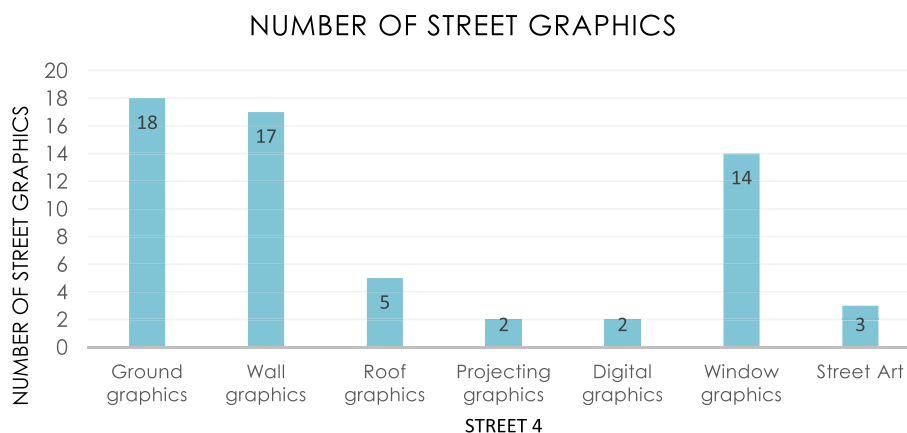


Figure 20. 10 Examples of street graphics used in street 5.

Source: Author's Field Diary, 2021



(2015) further explains, branding initiatives build a new identity for the city by rediscovering the polyphonic richness of its citizenry who made the city what it is.

1.2. Main objective of city branding

Rehan (2014) stated the main goals of city branding are to reimagine a city, to depend on place-based identity and understanding local culture. The main concern of urban branding is the promotion of the image of places, through the representation, communication and marketing of the place's image to the target audience on measurable tangible assets such as physical infrastructure, location, nature, public facilities and services (Helmy, 2008).

Such branding affords new paths to convey the city's image to the world, allowing the city to enjoy competitive international advantages, attracting tourists, and linking the physical character of the city to cultural and economic activities (Rehan, 2014). The view is supported by (Bonakdar &

Figure 21. 2 Types of street graphics used in Street 5.

Source: Author's Construction, 2021

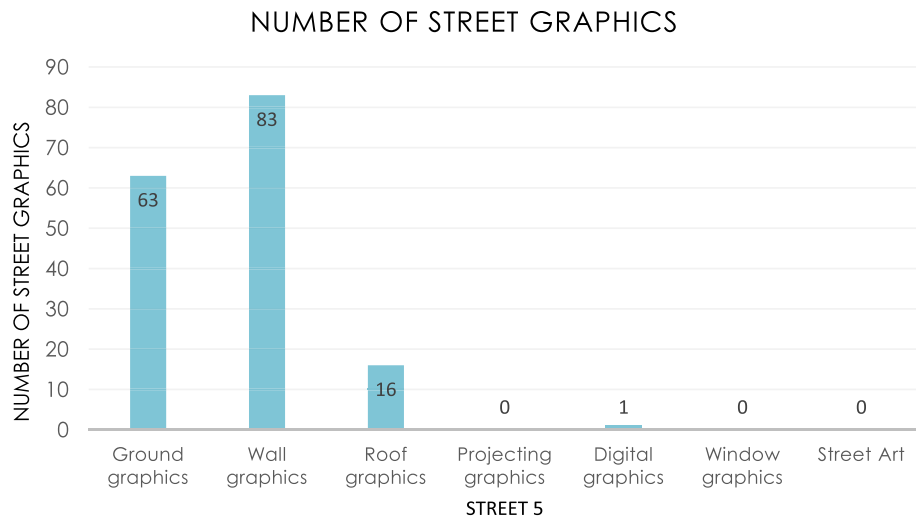


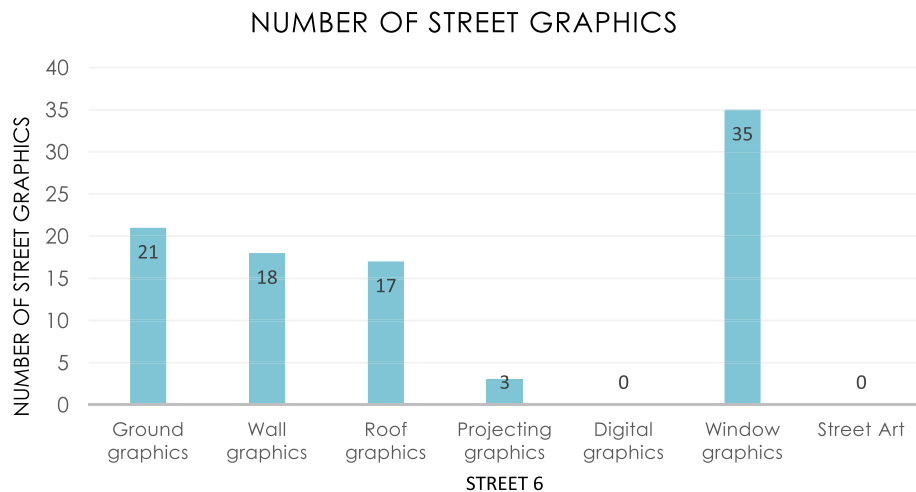
Figure 22. 32 Examples of street graphics used in street 6.

Source: Author's Field Diary, 2021.



Figure 23. 13 Types of street graphics used in Street 6.

Source: Author's Construction, 2021



Audirac, 2020), who stated that remaining competitive in an increasingly global economy is a chronic concern for city leaders.

1.3. Challenges of city branding

A city's richness and diversity, a source of inspiration for its branding strategy, may also present challenges and complexity (Paganoni, 2015). Thus, a one-size-fits- all approach is misguided and

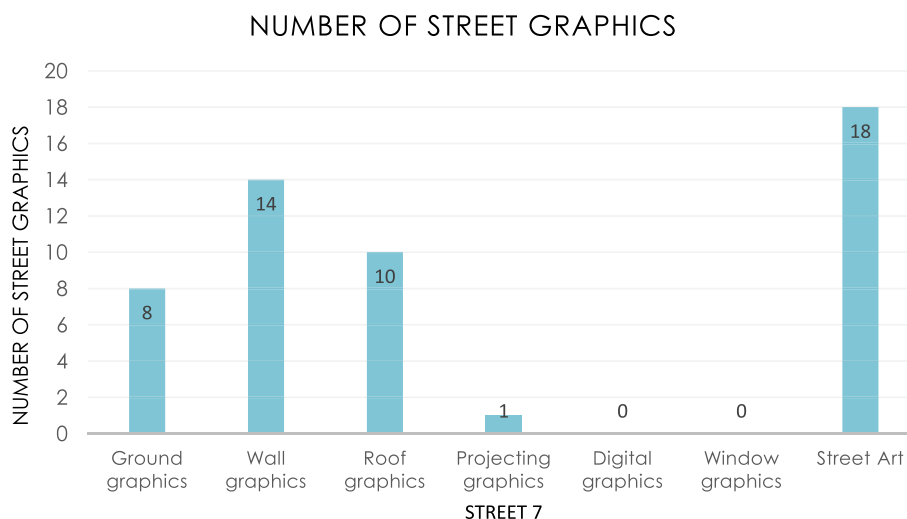
Figure 24. 4 Examples of street graphics used in street 7.

Source: Author's Field Diary, 2021



Figure 25. 5 Types of street graphics used in street 7.

Source: Author's Construction, 2021



impractical. The key challenge for a city brand revolves around the issue of how to develop a strong “umbrella” brand that is coherent across a range of different areas of activity with different target audiences, whilst at the same time enabling sector-specific brand communications to be created. The challenges that are associated with city branding are further elaborated below.

1.4. Asymmetrical political processes

According to studies (Bonakdar & Audirac, 2020; Masuda & Bookman, 2018; Sihlongonyane, 2015), city branding is inherently political nature in nature. The process invariably involves decisions on what can be reimagined, which is suggestive of a power dynamic (Bonakdar & Audirac, 2020). The implications for local communities are aggravated when the question of identity is followed by whose identity (Ashworth & Kavaratzis, 2010). What remains most of the time is a culturally disparate image, aiming to improve international standings instead of the local positioning of cities (Boland, 2013).

Mainstream city branding strategies devoted to this practice are often representing the ambitious interests of city leaders, seemingly oblivious to residents’ needs and aspirations (Greenberg, 2008; Masuda & Bookman, 2018; Vivant, 2011).

1.5. Social inequity and exclusion

A resonant theme relating to social justice surfaces as a direct result of imbalanced power dynamics associated with the political nature of city branding (Bonakdar & Audirac, 2020). While

the commercialization of place has become a mainstream practice, city branders and growth coalitions benefit from creating monopolies on place, with the intended benefits mostly appropriated by the ruling class (Logan & Molotch, 1987).

In China, packaging and rebranding suburban culture, inspired by the western model, is associated with a seemingly higher quality of life (Wu, 2010). However, the results have been counterproductive in that socially disadvantaged residents and migrant workers cannot afford decent accommodation (Bonakdar & Audirac, 2020).

2. The commodification of culture and gentrification

Viewed by some planners as a rather obvious outcome of neoliberal policies, urban redevelopment is equal to the commodification of the culture and the built environment through prolonged, large-scale urban design interventions (Bonakdar & Audirac, 2020; Keatinge & Martin, 2016).

The drive for mobilizing entrepreneurship is often a central premise to creating a need for these large urban projects (Brenner & Antipode, 2002).

2.1. Street graphics and urban branding

Urban design is people's use of accumulated technological knowledge to control and adapt the environment for social, economic, political and religious requirements as means by which city problems are solved (Moughtin, 2003). In developing countries, urban growth and dynamic economic transformation are accompanied by other phenomena (Wakil et al., 2019). For a city to be beautiful, various elements must be put together to improve the aesthetic value of the environment (Bankole, 2013), and identity is a key part of urban design that needs to be considered by designers, architects, etc. Cities that are well developed and enforce planning guidelines have a defining trait, as the various districts are identifiable by the era they were developed as one drives along its street (Handy et al., 2003).

The concept of street graphics design is arranging the city elements both functionally and beautifully (A. A. Portella, 2007; A. Portella, 2014; Bankole, 2013). The elements are separated into four basic factions as vegetation, water bodies, landforms and landscape features; both man-made and natural (Nwai-Usi, 1995). Key among these elements include building, beautification, artistic posters and illuminating electronic signs. For example, marketing agencies install several kinds of outdoor advertisements, particularly notices and billboards, which in the absence of stringent enforcement strategies end up as eye-sores and visual blots (Wakil et al., 2019).

Resultantly, urban life has morphed into a disaster of aesthetic deterioration, transportation issues, air pollution, fumes, smog, land and water pollution. In stark contrast to these, visual pollution has remained the most neglected aspect of urban life, both in policy and enforcement (Wakil et al., 2019).

The integration of the visual image created through the city development process and the brand image creates by the city branding experience offers great opportunities for understanding the future development of cities (Helmy, 2008).

Once a brand has been separated from the crowd, it is easier to develop its image (Rooney, 1995). In the Ghanaian markets, many visual communication tools do not achieve their desired impact. This is a worrying trend as Small and Medium-sized Enterprises (SMEs) are the backbone of the Ghanaian economy and constitute 85% of businesses (International Trade Centre, 2016). The influence of good brand design on consumer decisions is immeasurable (Appianing, 2018). The identification of physical components of buildings and business signage seen and assessed negatively and favourably by individuals from various urban settings can be aided by analysing user preference and satisfaction regarding the look of commercial streetscapes (Hong & Nasar, 1999).

A location that is seen to be thrilling is thought to be more pleasant and attractive than a place that is thought to be upsetting, while a place that is relaxing is thought to be more pleasant and less interesting than a place that is thought to be gloomy (A. Portella, 2014). This image will influence the perceived worth of the product and increase the value of the product to the user (Rooney, 1995).

The parameters which are considered in urban branding are numerous. They include the culture of its target audience, their religion, customs, etc., as well as the feature of the public space itself (Appianing, 2018).

In order to develop a strong brand, policy makers need to identify a clear set of brand attributes that the city possesses and which can form the basis for engendering positive perceptions of the city across multiple audiences as indicated in Figure 2. Whatever attributes are selected, they need to be communicated effectively not only through traditional channels but also through the plethora of digital media and street graphics

2.2. The street graphics concept

“Street Graphics” was a new term coined when a signage program was introduced in 1971 in the United States of America (USA). Street because the system focuses on communication along roads and highways, and Graphics because it deals with the characters, letters, and symbols as they appear on signage in the urban environment (Mandelker et al., 2004).

Streets are more than public utilities and channels for the movement of goods and people, shaping the form and comfort of urban communities. Using street graphics, they may focus on one or many centres (Jacobs, 1993). A street is also a place to be seen, often displaying what a city/town has to offer, relaying its identity.

The system for regulating street graphics is based on three elements; the built environment where the street graphics are displayed, the regulatory issues the system must address and the regulatory framework that governs their display (Mandelker et al., 2004). The key issues in this process are land use issues, design issues, the balance factor and quantity issues.

The essence of street graphics is to index the environment by communicating with the observer.

Mandelker et al. (2004) identified three types of commercial development for which a street graphics system is especially appropriate; commercial strip development adjacent to the street with no on-site parking, the neighbourhood shopping centre with moderate setback and on-site parking and the regional shopping centre with extensive parking.

2.3. Types of street graphics

Mandelker et al. (2015) identified two types of street graphics; the graphics attached to buildings—roof graphics, wall graphics, projecting graphics and free-standing ground-based graphics. They posit that the size, area and spacing between ground graphics are based on regulations of traffic speed (Mandelker et al., 2004). Banners and window signs are a secondary group of temporary signs. The main categories are explained below;

- (I) Ground graphics—A ground graphic is a ground-supported graphic erected on a base or a pole. Ground signs that are legible and low are recommended for areas with an indicated speed limit.
- (II) Wall Graphics—A signable area is a continuous section of the external wall unbroken by fenestrations (Mandelker et al., 2004). This area is computed by selecting a continuous façade free of architectural details and setting limitations or boundaries within that space.

- (III) Roof Graphics—These street graphics are designed to be read from a distance. They function by the same mechanisms as wall graphics and can be permitted at all driving speeds as they remain visible.
- (IV) Projecting Graphics- Projecting graphics mostly featured on awnings are an important visual cue in commercial developments. Any graphic that is projected in this manner should be clear of the sidewalks by a recommended distance.
- (V) Digital Signs—The advent of Light Emitting Diode (LED) allowed designers to replace static graphics with thousands of tiny pixels to act like a television screen on which to advertise (Zukauskas, Shur and Gaska, 2013).
- (VI) Special Street Graphics- These graphics fall outside the established scope of street graphics. These include window signs, banners, and directional signs such as entrance and exit signs. These can either be temporary or permanent.

2.4. The street graphics system and principles

The street graphics system is conceived based on perception and visual performance factors (Mandelker et al., 2015). It is proposed to stimulate variety and good design that effectively communicates each business type and reinforces a sense of place. A city, for example, can choose to fine-tune the performance standards and other elements of the street graphics framework to reinforce its unique identity.

2.4.1. Principle 1: Flexibility and identity

The street graphics system is flexible and allows businesses to express their identities. The street graphics system can be used by graphic designers to portray their identities (Mandelker et al., 2015). Colour, light, texture, content, three dimensions, shape, motion, typography, and other design elements for street graphics may be combined within a context that considers whether the street graphic is suitable for the use for which it is shown, consistent with the visual environment, and so on.

2.4.2. Principle 2: Appropriateness

The street graphics system should result in displays appropriate to the type of use. This type of street graphics scheme is feasible, and some communities have implemented it; however, experience suggests that if the street graphics ordinance is combined with the zoning ordinance, an equally successful match of graphics with the visual environment can be achieved. The street graphics ordinance only requires that graphics be assigned to the required commercial zoning uses in the zoning ordinance. The type of graphics allowed by the street graphics ordinance must be properly matched to the commercial uses defined in the zoning ordinance. It's possible that separate zoning for neighbourhood and regional shopping centres would be needed.

2.4.3. Principle 3: Compatibility

The street graphics system promotes compatibility with the surrounding visual environment and area. (Mandelker et al., 2015) The street graphics framework must be compatible with the surrounding visual environment (Blewitt, 2015). A city, for example, can choose to fine-tune the performance standards and other elements of the street graphics framework to reinforce its unique identity. One option is to use the types of street graphics allowed by the ordinance to differentiate different areas of the city.

2.4.4. Principle 4: Legibility

The street graphics system promotes legibility. The framework for creating fun, effective street graphics recognizes that a person's ability to see and remember while driving is limited (Mandelker, 2015). A variety of factors influence this, including traffic speed, letter size, and sign placement. The street graphics system's performance specifications for ground signs and building-mounted signs specify the scale, height, and spacing of the signs that will provide optimal legibility (Watson et al., 2003).

2.4.5. Principle 5: Traffic safety

The street graphics system promotes traffic safety. Drivers may be more distracted and divert their attention away from the highway at crucial moments as a result of the introduction of smart-phones. (Mandelker et al., 2004). Some street graphic elements can further complicate drivers' ability to reach their destinations safely, particularly in situations where a large number of signs compete for the limited attention of drivers and passengers for each determinant for the street scape criteria has been shown in table 1 with its corresponding basis of control..

A street graphics system is applied to commercial uses because it shapes the environment (Mandelker et al., 2004). The primary need for a robust street graphics system is the need to avoid ambiguity in the rules. The system should also consider the various forms in which street graphics appear. The benefits of a street graphics system include flexibility, appropriateness, compatibility with surroundings, legibility and traffic safety. A road map for establishing a street graphics system is also established.

2.5. Criteria of good street graphics

Street graphics are needed to index the environment. Doing so requires it to communicate effectively in its environment. The ability of a street graphic to effectively convey its message to its target audience is what makes a good street graphic. In commercial settings, they are effective based on their advertising strength. The following criteria determine the effectiveness of a street graphic in its commercial context.

- (i) The street graphic is expressive of the identity of the business. A street graphic should always resonate with the brand of business it represents. A street graphics system should give businesses leeway to express their personality and services clearly.
- (ii) The street graphic is appropriate for the business it identifies. Each business should be identifiable by the style of the signs that announce it. Creative use of colour or lighting can contribute to the quick sorting out of an activity or business premises.
- (iii) The street graphic is compatible with the visual character of the surrounding area. A street graphic should be compatible with its location.(Mandelker et al., 2004). While some may be required to be distinct and stand out, the same graphics in a historical township may avoid bright colours and follow the mood of the place.
- (iv) The street graphic is legible under viewing circumstances. For a street graphic, its effectiveness is based on how people view it when in motion (Watson et al., 2003). This depends on speed, orientation as well as letter height.
- (v) The likelihood of the street graphic to serve as a distraction to the drivers. Traffic safety always takes priority when it comes to street graphics. Communities can be assisted to create a graphics system that addresses driver distraction.

2.6. Case study

Since 1996, the United States Sign Council (USSC) together with engineers, researchers and analysts from Pennsylvania Transportation Institute (PTI) established a distinct and objective basis for understanding the way motorists process roadside information (Mandelker et al., 2015). New York City has one of the densest and most diverse skylines, accompanied by a huge collection of building styles (Helmy, 2008). It is also the most recognizable skyline in the world.

Various areas have different regulations for control by local governments. For example, Agoura Hills, California set a maximum height of 6 feet for monument signs to “preserve and enhance the city’s unique character and visual appearance”, and Dutchess County, New York recommended a maximum height of 4 to 7 feet as shown in Figure 3 for some freestanding signs in 2018, stating that the signs could then be “better integrated with landscaping” (Garvey & Klena, 2019). Low sign mounting heights restrict motorists’ ability to find and read signs (Pietrucha et al., 2006). Regulators often agree that the lower the sign, the better (Kuhn et al., 1997).

The lessons gained from this city are that successful programs have the same qualities as strong brands, and market their history, quality of place, lifestyle, culture, diversity, and form partnerships between urban municipalities and government to enhance infrastructure (Helmy, 2008).

2.7. Problems with existing regulations

In the modern-day, the placement of street graphics poses a nuisance to the built environment (Bankole, 2013). The current regulations (Kumasi Metropolitan Assembly bye-laws) do not tackle all-encompassing themes regarding street graphics. The most glaring of these legislative loopholes have been grouped into 2: medium and technology.

Over time, more media has been developed for street graphics. Street graphics are no longer solely bound to signboards and billboards but on the sides of buildings. Street art has also evolved in our society are publicly displayed on surrounding buildings, streets and other publicly viewed surfaces (Young, 2014). As such, walls have become a new medium for such display. Such work has also become an outlet for political slogans. While the legislation is designed around billboards and signs, a wider range of media (LED art, mosaic tiling, stencil art, graffiti and rock art) fall outside the net.

Regulations concerning the use of technology in street graphics are missing entirely. Electronic signs, floodlit signs, and neon signs, among others, fall outside this bracket. These produce outdoor lighting, which is more visible at night and disrupts the normal street lighting levels. Glare from this source is of major concern (Watson et al., 2003). The key to quality exterior lighting is to place light where it is needed without causing glare. Handy et al. (2003) also suggests similar light regulations regarding glare. No mention is, however, made of controlling these in existing regulations.

3. Methodology

This was a case study employing a visual survey and questionnaires to gather the needed data. The study location and respondents were purposively sampled. The specific research method chosen depended on the various questions that the research posed (Bryman, 2014).

Kumasi (the study area) is the capital city of the Ashanti Region of Ghana. By its size and rapid urban growth, the city is subdivided into smaller municipalities for effective governance (Cobbinah & Amoako, 2012). Some streets in Kumasi based on the recommended setting for street graphics, such as Regional Shopping Centres, Commercial strips, Neighbourhood Shopping Areas and a place of special character, were purposively sampled. The study is based on the commercial centres in this urban enclave, emphasising the streets that give them character.

The visual survey involved field observation which helped to provide first-hand information on the implementation of street graphics in Kumasi. The selected streets were observed for the type of street graphics employed (Ground, wall, roof, digital or window graphics, street art etc.), predominant graphics colour, level of complexity, legibility, and safety. Photographs were also taken during the observation to support the findings from the analysis. The form of observation was a non-participant observation and was carried out with the aid of a prepared guideline. This methodology has been applied in other studies (A. Portella, 2014; Abdelaal & Hussein, 2012; Bankole, 2013; Mandelker et al., 2004, 2015; Wakil et al., 2019).

The questionnaires were issued to 22 industry professionals within Kumasi to gain expert opinions on the subject matter investigating policy formulation and evaluation of the existing program. The questions were administered to know the image of the city, existing signage control measures, usage of street graphics and ways of improving the street graphics program within the city centre.

The data collected was critically analysed to explain the study's purpose. The research processes were explained carefully, as well as the data presented. Results for data were not altered to fit

preconceived views. Errors and shortcomings in the research were acknowledged. All methods and results are genuine.

4. Findings and discussions

Kumasi is a major commercial hub in Ghana (Devas & Korboe, 2000). It comprises many areas like Bantama, Asafo, Kejetia and KNUST. Adum is the city centre of Kumasi and is the major commercial centre. It also serves as the centre of the radial road pattern of the city and has a high traffic volume.

4.1. Current state of street graphics in Kumasi

Direct observation and photography were critical to this study because they provided a good graphical representation of the information acquired. The conditions of the area study were observed, and the current state of street graphics in Kumasi was documented. A guideline was prepared to aid in the observation focusing on the types of street graphics used at these locations, their complexity level and quantity (See Figures 4, 5, 6, 7, 8, 9 & 10 and Table 2).

4.1.2. Assessment of sidewalks

Upon careful observation of the selected areas, two (2) out of the seven (7) streets did not have a dedicated walkway for pedestrians. There was also only one (1) street that had street graphics impeding the sidewalk as shown in table 3.

4.1.3. Street graphics types used for branding

This section looks at the various types of graphics in the study area. These are categorised into ground graphics, wall graphics, roof graphics, window graphics, and digital signs. Ground graphics, wall graphics and roof graphics were located in seven (7) out of the seven (7) streets visited, making them the most commonly used street graphics per the survey.

4.1.4. Common colour of street graphics

The study sorted information on the common colours that are featured predominantly in the design of street graphics. White was the most dominant colour across all the locations, featuring prominently in seven (7) out of seven (7) streets. White featured prominently in 100% of the locations, followed by red at four (4) locations (57.1%), blue at two (2) locations (28.6%) and green at one (1) location (14.3%).

4.1.5. Street assessment

On street 1, out of the 96 street graphics observed, 73% were ground graphics, 16% were wall graphics, 5% were roof graphics while projecting, and window graphics stood at 3%. There were no digital signs or street art. The most widely used street graphic along the stretch was ground graphics. This was to determine the type of street graphics used in the Regional Commercial centre (See Figures 11 & 12).

On street 2, the most commonly used form was wall graphics, at 49% of the street graphics found. Ground graphics were at 20%, projecting graphics and window graphics were at 12% and roof graphics at 8%. Digital signs and street art were not found on street 2 (See Figures 13, 14, 15 & 16).

In assessing the graphics used in the commercial strip on street 3, the most common form was ground graphics, at 41% on the stretch. Wall graphics and window graphics were at 20%, Roof graphics were next with 17%, while digital graphics and street art were at 1%, with Projecting graphics being nil.

The most common form found on street 4 was ground graphics at 30%. Wall graphics were the next at 28%, followed by window graphics at 23%, roof graphics at 8%, and street art at 5%, with projecting and digital graphics at 3% on this commercial strip (See Figures 17 & 18).

Street 5 was a neighbourhood shopping area. The commonly used form in the former was wall graphics, at 50%, Ground graphics at 38 %, Roof graphics at 10%, and digital graphics at 2%. Projecting graphics, window graphics, and street art were non-existent (See Figures 19, 20 & 21).

On street 6, window graphics at 37%, Ground graphics at 23%, Wall graphics at 19%, Roof graphics at 18% and projecting graphics at 3%. Digital graphics and street art were not found on street 6 (See Figure 22).

Street 7 was a place of special character. The commonly used form of street graphics was street art at 35%, Wall graphics at 27%, Roof graphics at 20%, ground graphics at 16% and projecting graphics at 2% (See Figures 23 & 24).

4.2. Street graphics and branding

On the image identity of the city centre of Kumasi, the majority of respondents, 86.4%, stated it as a commercial centre, 9.1% saw it as a historic centre and 4.5% as a tourist centre.

The respondents were asked to rank the usage of the city centre. For leisure, 40.9% of the respondents saw it as very important, 54.5 % stated it as important, and 4.5% saw it as unimportant. For work (trade and business), 68.2% saw it as very important, and 31.8% stated it as important. Regarding its use for transit, 63.6% rated it as very important, while 36.4% stated it as important. For its use as a tourist destination, 40.9% saw it as very important, 36.4% as important, and 13.6% as unimportant.

In identifying the influence street graphics had on the city's image, 59.1% of respondents identified street graphics as positive, 31.8% saw street graphics as a negative influence, and 9.1 % remained neutral.

On the influence of street graphics within the city centre on pedestrians, many respondents, 59.1%, see them as landmarks, 36.4% as commercial advertising, and 4.5% as impediments to the pedestrian walking. None of the respondents stated that it causes visual pollution.

The purpose of this question was to identify the perception of the respondents on the appearance of street graphics in the city. 11 of the respondents stated street graphics in the city centre were disordered, representing 50%. 31.8% were neutral on the topic. However, 13.6% stated the street graphics in the city centre as very disordered. One respondent, however, stated the street graphics in the city were ordered.

4.3. Development of a framework to regulate street graphics

The framework for regulating street graphics in Kumasi is categorised into the principles that were established during the literature review. These principles were adapted from studies by Mandelker et al. (2015), Lynch (1960), Dinnie (2010) and others.

The vision and goal of city branding is always paramount to the regulatory framework. The issues that rise are how to communicate the city brand, what character does the city brand express and how coherent are the actions being used to achieve consistency. The city brand is then communicated in two spaces; the virtual space where the brand is communicated using websites, blogs, social networks etc and the urban space where the brand is communicated with street graphics.

The idea locations for street graphics are the primary areas that make up the image of the city as stated by Lynch (1960). These areas are the paths, edges, districts, landmarks, and the nodes. For these areas, the planning and design considerations of street graphics are key to their

implementation. The considerations are about identity (culture, religion, dialect, customs, norms, values), appropriateness (zoning laws, commercial usage, and the visual environment) compatibility (street graphics relation to city identity, users relation to the identity) and legibility (dealing with how visible the street graphics are).

The outcome of this framework is the branded city which has to be evaluated by the local policies, street graphics regulations and identity the graphics set out to achieve. The ideal street graphics system has to be monitored for traffic safety, its conformity to local laws and its potential to distract drivers. The figure 25 below shows a summary of the framework to harness the potential of street graphics.

5. Conclusion and recommendations

This research was carried out to investigate the use of street graphics for branding in Kumasi, with certain objectives set to achieve this aim. The chapter refocused on the research objectives to see whether the aim of the study had been achieved throughout the study.

5.1. Achieving research objectives

The objectives of this research were the very yardstick by which the aim of the research was pursued. The way these objectives have been met is elaborated on below.

5.1.1. The current state of street graphics in Kumasi

This objective has been achieved by conducting a thorough observation in Kumasi. Specific urban design strategies sourced from the literature were looked out for. These included categorising the street graphics found into wall, ground, window, roof, and street art. Ground graphics was the commonest type of street graphics employed. The common colours used for the street graphics were also observed, with white being the most dominant. During the observation, street graphics obstructing the pedestrian sidewalks were also noted; however, this was not prevalent. It became apparent that street graphics in the city were in disarray when most respondents stated it was in a disordered state. A similarly large number agreed that the city needed signage controls.

5.1.2. The effects of street graphics on branding

This objective has been addressed through the literature on street graphics and how they affect branding. After reviewing the literature, it became clear that there was a correlation between street graphics and branding. Small and Medium Scale Enterprises use street graphics as a primary means of advertising their services. The survey conducted, which solicited the views of industry professionals, reinforced this view, with the majority of respondents identifying street graphics as positive additions to the city image.

5.1.3. The regulation of street graphics

The objective was met by thoroughly reviewing the existing regulations concerning street graphics in Kumasi in conjunction with the parameters established by Mandelker (2015) to help establish a street graphics system. The gaps in the existing laws were identified. The factors that affect street graphics regulation, like the appearance of buildings, the appearance of commercial signs, the presence of historic buildings and places, and the number of commercial signs, were identified in establishing a regulatory system for street graphics. This proposed Street Graphics system aims to provide type-specific regulations for street graphics in Kumasi.

5.2. Conclusions

The following conclusion could be drawn from the study:

- Ground graphics and wall graphics are the commonest street graphics employed in Kumasi. Digital graphics are not enjoying widespread use in Kumasi.
- Most people visit the city centre of Kumasi for business or trade purposes.
- Street graphics help people navigate the city centre (wayfinding).
- Professionals in the field of planning were seen as regulating street graphics.

5.3. Recommendations

Based on the findings of the research, the following recommendations are proposed:

- (1) First, updating the existing policies geared towards using street graphics for branding. These policies are important as they provide a roadmap for daily operations and promote compliance with rules and regulations. Such policies will ensure that the current gaps in law will be covered.
- (2) Temporary graphics (Banners, Paper stickers and portable signs) that are advertising events should be removed after the event or said date elapses. They should be done by the authorities and the local businesses that advertise them. Such action will help declutter the city streetscape.
- (3) Another recommendation is to encourage people to embrace digital signs since numerous graphics can be incorporated into a seamless flow of changing electronic displays on a single display reducing visual pollution and clutter in commercial centres.
- (4) Finally, it is recommended that historic buildings be protected from street graphics. These buildings carry historical value to the culture of the people and must be protected from damage from street graphics such as stickers, graffiti, and such, ensuring that history and culture are not lost due to commercial pursuits.

5.4. Recommendations for future research

This study investigated the strategies and challenges of using street graphics for branding in Kumasi. Further studies should be conducted to compare the use of street graphics in other cities in the country. This will help identify the nuances and help the state fashion out relevant policies to regulate and design street graphics for the various cities and towns.

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