Research Papers

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The Important Factors of Corridors Settings in Shopping Center Design

A Study of Indonesian Shopping Centers

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ABSTRACT

The existence and function of corridors as quasi-internal public spaces is important in accommodating shopping activities and creating a comfortable shopping experience. This research aims at further examining the corridor setting factors that might offer identification and orientation to achieve the objective of creating a sense of place in a shopping center. The findings are important for the owner, management, and the architects and interior designers of shopping centers.

The research in Gandaria City and Ciputra World, Indonesian shopping centers used sequential exploratory method. The study began with a grounded research with 45 informants and later performed data sampling through interviews, focus groups and design observation. The results comprise a corridor setting’s indicator elements and constitute input to the study’s survey stage. That stage was analyzed using a quantitative method with factor analysis. This survey involved 350 visitors from both shopping centers.

The survey resulted in different outcomes for Gandaria City and Ciputra World. In Gandaria City, the corridor setting factors in creating sense of place are corridor legibility, social image and interaction, as well as store design. In Ciputra World, the corridor setting factors are visual harmony, corridor legibility, and corridor ambience along with social image and interaction.

KEYWORDS: Corridor setting, shopping center design

1 INTRODUCTION

Shopping centers are now commonly found in every part of developing countries, not only in urban areas but also in suburban areas. However, over the past decade, there have been many changes in terms of the architectural and interior design of shopping centers, particularly in Indonesia (Kusumowidagdo et al., 2013a).
The development of shopping centers is discussed by Williams (2006), who agreed that future development will prioritize experience and that experience will be the rationale of design. Many theatrical architectural designs have increasingly been explored, from bent-shaped corridors to thematic corridors (Kusumowidagdo et al., 2013a). With specific designs but functionality, the modern corridor is currently more attractive, provides a clear identity to the shopping centers, and allows visitors to enjoy their activities while being as comfortable as possible.

According to Zacharias (2002), a corridor has many functions, including linking the tenant space areas, facilitating the visitors’ activities and exploration of the various products offered, and providing access to all areas of the shopping centers. Visitors come to shopping centers with or without a shopping plan. As a link between tenant spaces, a corridor helps visitors to select their walking route. Furthermore, a corridor can contribute to a shopping route preference, which is also associated with the social condition and the variety of tenant spaces.

With the first and second functions stated previously, the circulation of a corridor can encourage visitors to engage in their own activities. A corridor allows the visitors to discover information about direction (Wee and Tong, 2005) and products displayed in a window (Kusumowidagdo, 2009). The third function of a corridor is to provide access to all areas of the shopping center. In this context, it is assumed that a corridor provides orientation and identification to visitor because a corridor is one of the images in a shopping center (Kusumowidagdo et al., 2013b; Kusumowidagdo, et al., 2015). A corridor that is straight and easy to identify will also directly link all tenant areas, such as the city street routes that link all nodes.

To implement the above functions, a corridor should be well designed because it has dimensional borders and vibrant activities as a circulation place. The meaning and value of a corridor is created by the users per se. An exceptional place should integrate the user and the place (Najafi & Bin Mohd Shariff, 2011) and the physical and social settings (Steel, 1981). The integration between those settings could escalate the purpose value, satisfaction, and people’s relationship with the designated place. This place-human relationship strongly binds people to experiences perceived in a certain place through all of the senses: sight, hearing, smell, taste, and touch (Tuan, 1976; Dale et al., 2008; Najafi & Bin Mohd Shariff, 2011; Cheng and Kuo, 2015). Moreover, based on Sell et al. (1984), place experience is, in fact, a “total sensual experience” of a place.

The sensation associated with a place could be defined as sense of place, which, according to Shamai (1991), has several stages. The first stage is having the knowledge of being located in the place, followed by belonging to a place, being attached to a place, identifying with place’s goals, and being involved in a place, and the highest level is sacrificing for a place. Therefore, in this context, a corridor setting that is supported by its spatial and social conditions will provide customers the experience of interacting with the designated place and experiencing a sense of place in a shopping center.

This research explores the corridor setting of the studied shopping centers, which creates a sense of place from the visitors’ perspective. The findings of this study will be beneficial to three sectors (designers and architects, property owners, and property managers) in making decisions about the corridor setting when designing a shopping center. A corridor has a specific typology area; thus, well-established factors related to the corridor setting will significantly influence the sense of place of a shopping center.
1.2 The Importance of This Research

The keywords of this research are sense of place, environmental retail design, and corridor setting in shopping centers. There have been several similar topics discussed in previous research on the sense of place and environment retail design. Although the corridor is an essential element of a shopping center, there are few comprehensive studies that focus on the corridor design as one of the essential elements of a shopping center and an influence on visitors’ sense of place in the shopping centers.

Previous related literature has dominantly focused individually on the aspect of sense of place in definitive and explorative ways (Shamai, 1991; Cheng and Kuo, 2015; Dale et al. Najafi and Shariff, 2011; Hashemneshad, 2013). Furthermore, there are various studies that emphasize the landscape environment (Cheng and Kuo, 2015), community in a certain area (Cross, 1991) and correlates with the age of the respondents (Hay, 1998), physical setting (Stedman, 2003) and social setting (Kyle & Chick, 2007; Bell 1996).

From another perspective, the study of the retail environment commonly focuses on the existence of shopping centers and the interaction between the retail environment setting and the customers, which was discussed in a topic regarding the atmosphere’s effect on consumer behavior (Donovan and Rossiter, 1982; Fiore, et al., 2000; d’ Astous, 2000; Bitner, 1992; Turley and Milliman, 2003; Yavas 2003; Pullman & Gross, 2004; Kusumowidagdo, et al., 2012a; Ahmad, 2012).

Furthermore, other studies were concerned with corridor designs in different research locations, such as in a public market (Zacharias, 1997) and in a shopping complex in a city that is located underground (Zacharias, 2002). This research tries to fill the gap explained previously and focuses on the corridor design of the Indonesian shopping center, which is sensed comprehensively by visitors as the corridor users.

This study was conducted using both qualitative and quantitative methods to achieve more elaborate results. The main theme of this study is highlighting the factors that contribute to determining a sense of place in two shopping centers built a decade ago in the two largest cities in Indonesia, i.e., Jakarta and Surabaya.

1.3 The Research Question

Based on the fact and research gap stated previously, the research question for this study is: What are the factors that contribute to a sense of place in a shopping center’s corridors?

1.4 The Research Assumption

There are two factors, physical and social factors that contribute to a sense of place in shopping centre corridors. This research will extend those factors into detailed factors in context of shopping centre corridors as a place.

2 Theoretical Background

Studies on the correlation between people and their environment have been conducted by many researchers. One was conducted in 1945 by Merleau-Ponty, who stated that the human body is living body that makes possible any relationship and that humans are able to respond to their surroundings with all their senses. Experiencing and interacting within a space is proof of human existence in terms of their relationship with their surroundings (Manzo, 2003).

Specifically in a shopping environment, Kotler (1974) stated that there is a correlation between the
interactions with the shopping environment; the interactions involve visual, aural, olfactory, and tactile factors. However, this theory has been developed. It was discovered that the shopping environment is considered a stimulus to the customers’ response; it is located in the center of the shopping center, allowing visitors to search for products, make purchases, and impulse buy. (Mehrabian Russel, 1978., Donovan and Rositer, 1982, Turley and Milliman, 2000).

Focusing only on shopping centers in Indonesia, Kusumowidagdo et al. (2013a) discovered that visitors’ relationship to a shopping environment based on their senses could be detailed as the sense of identification with a shopping center, as an inclination to have light activities in the shopping center, as an interest in spending more time at the shopping center, as an interest in a low activity involvement, as a place attachment to shopping center, or as interest in actively participating at the shopping center’s activities. These relationships could be defined as the sense of place, a result of the environmental stimulus in shopping center.

An environmental stimulus can generate liveliness, arousal, excitement, joy, expansiveness, and a feeling of excitement into a specific environment that triggers reactions (Steel, 1985). Place setting as a stimulus can take the form of physical and social elements (Najafi & Mina, 2011; Bitner, 1992; Turley and Milliman, 2000).

The physical setting strongly correlates with the condition of the built environment, whereas social elements are associated with visitors and the employees.

Unlike the previous two factors, Baker (1986) and D’Astous (2000) have different contexts in terms of the components of a shopping environment: the ambient, design, and social factors. These three factors are able to develop the shopping environment into an acceptable environment or have the opposite effect. In fact, the three components stated previously can be categorized into two main settings. The design and the ambient factors are included in the physical setting, and the social factor is included in the social setting. The previous studies that have been stated previously, however, are still considered broad. In particular, the shopping center’s corridor as an indicator of physical and social elements is described in the following paragraph.

Physically, the uniqueness of the corridor shape or corridor legibility can influence visitors’ preference within the walking line (Zacharias, 2002). The elements of a corridor that influence visitors’ behaviors as the indicators of sense of place are materials, dimensions, and the finishing techniques. The quality of the finishes strongly determines the capability of the corridor in sustaining and maintaining the image for visitors (Baker, 1986; d’Astous, 2000; Kramer, 2008).

The selected finishing material colors and textures portray the quality and the character of a place. In addition, the quality of the place significantly influences visitors’ preferences (Baker, 1986; d’Astous, 2000; Zacharias, 2002).

A curvy-shaped corridor is considered more interesting for visitors than a monotonous straight shape (Wee and Tong, 2005). Moreover, curvy-shaped corridors are also preferred by visitors (Zacharias, 2002), particularly when the corridors have surprising elements (Kent, 1989). The dimensions of the corridors are important, particularly the width and the height. The visitors are also influenced by the corridors’ length (Zacharias, 2002). In addition to the dimensions of the corridor, a creative and dynamic ambience can be created by providing stalls or retail carts that sell interesting, colorful, and seasonal products (Wee and Tong, 2005). Inside decoration can also contribute to a lively ambience and trigger visitors’ moods (Tabak, et al.,
It shows the competence and expectance and can also function as signage decorations.

As stated by Baker (1996) and d’Astous (2000), indoor air quality (temperature, humidity and circulation), noise (level, pitch), scent, and cleanliness in a corridor can enhance the ambiance, therefore resulting in a pleasurable shopping process. Lighting also affects the shopping experience (Areni and Kim, 1994; Turley and Milliman, 2000; Wee and Tong, 2007). Another factor that could affect the shoppers is music, be it background or foreground (Yaleh and Spanenberg, 1990; Gulas and Schewe, 1994; Milliman, 1986; Smith and Curnow 1966; Herrington and Cappela, 1996).

In addition to the corridor and its conditions, tenant spaces/retail that are located along the corridor also affect the shoppers’ comfort. Storefronts also have a significant influence on visitors (Zacharias, 2002). When an observer is on the side of a corridor, tenant spaces with the configuration of a facade storefront visually influence the visitor. Tenant spaces, with their design, finishing, proportions, have a visual connectivity that functions as a wall of the corridor. For example, the dimension of a store can visually have a comfortable effect on the aspect of product exploration for both visitors and tenants (Wee and Tong, 2005; Kramer, 2008). Storefront displays, including shapes with various colors and finishing, can surprise the visitors when walking along the corridor, and the right proportion will easily affect the visitors (Barr and Broudy, 1984; Wee and Tong, 2005). The color and setting of a window display can give information about choosing a store (Kusumowidagdo, 2009), reflect the image of a store and its product (Kramer, 2008), and identify the store (Kusumowidagdo, 2009; Kusumowidagdo, et al., 2012a). The ambience of the store also influences visitors’ behavior inside and outside the store (Kusumowidagdo, 2009; Kusumowidagdo, et al., 2012b).

In addition to the physical characteristics of a place, social characteristics can also influence visitors. Generally, visitors can be influenced by the presence of other visitors and their activities (Baker, 1986; d’Astous, 2000; Zacharias, 2001). Bell, et al., (1996) also stated that the existence of other visitors is important particularly in creating a crowd and increasing density. A crowd that forms at an event located in a shopping center or a cafe can be considered a positive thing (Bell, et al., 1996). Moreover, a crowd in public places can contribute to the other visitors’ desire to participate. Apart from the customers, employees/service personnel can affect the ambiance, particularly the number of employees, the appearance, and the behavior (Baker, 1986 and d’Astous, 2000).

In a broader perspective, in addition to physical and social elements, Ardoin (2006) stated that the socio-cultural and political economy can have an influence on someone’s sense of place. The socio-cultural condition can be determined as the public dimension and culture, where socio-culture is the background of a particular place (Hamon, 1992 and Basso, 1996). In the context of a shopping center, this could be the cultural condition of the society where the shopping center is built, including the geographical conditions that influence it. Meanwhile, in the political economic context, strength and identity can contribute to ideas or meanings to the people-place relationship (Ardoin, 2006).

Lastly, the economic factor significantly affects the economic condition and the shopping center concept of the proprietor.

3 Method

3.1 Research phase

This study employed a sequential exploratory method that involves two types of studies. According to
Creswell (2007), a sequential exploratory can be defined as an approach of two consecutive techniques. The first phase employed the qualitative method, and the second phase used the qualitative method. This type of research method was also applied by d’Astous (2000) and Bitner (1992) to determine the occupants’ perspective in shopping center.

The first study was categorized as grounded research. Therefore, grounded theory was performed, and it was developed by finding informants among the mall visitors who could provide a new perspective on the discourse regarding the sense of place because there are limited theories associated with the creation of a sense of place in the corridors of a shopping center in Indonesia. Grounded research should help to develop a new theory (Strauss and Corbin, 1998). The sample was taken from interviews with informants by conducting grounded research. The sample was comprised of informants who provided interviews. For the unit of analysis, this study selected the sense of place in the public space in the shopping center. The analysis concentrated on the concepts of relationships, relationship background, architectural and interior indicators, and social conditions. There were three main data collection techniques used in this study: interviews, focus group discussions, corridor design observations, study documents, and audio-visual recordings. Grounded research was conducted on forty-five people in the respective research objects. The main focus of the grounded research was to obtain indicators from the interior elements that support the presence of a sense of space in the shopping centers’ corridors that were included as the late 90’s type. The result of this grounded research was utilized on the second stage of this study.

In this phase, the informants are people interested in shopping center environmental research. They are between 18 and 35 years old and have variety of occupations. Age is limited to maintain the accuracy of the data collected, where age is strongly related with the existence of place experience, which creates the sense of place (Hay, 1998). Forty-five people were searched and selected using the snowball sampling technique and were asked several questions as seen at table 1.

**TABLE 1. Sample Question**

<table>
<thead>
<tr>
<th>No</th>
<th>Sample Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Why do you feel comfortable or enjoy the design of this shopping center?</td>
</tr>
<tr>
<td>2</td>
<td>How many times do you visit this shopping center? How often do you visit this shopping center in a month?</td>
</tr>
<tr>
<td>3</td>
<td>What makes you come here? Is it because of shopping needs, socialize, want to be seen in a famous and well-design place, to see new things, or feel obliged?</td>
</tr>
<tr>
<td>4</td>
<td>If your answer is shopping, are there features of corridor design that you like?</td>
</tr>
<tr>
<td>5</td>
<td>If your answer is socializing, what kind of design do you think can support your socializing activity?</td>
</tr>
<tr>
<td>6</td>
<td>If your answer is exploring new things, what kinds of corridor order that you like?</td>
</tr>
<tr>
<td>7</td>
<td>If you feel that the corridor design is different with other corridor, what kinds of differentiator elements that you like? Can you mention the elements?</td>
</tr>
<tr>
<td>8</td>
<td>If you have several activities at the same time, what kind of setting that you like?</td>
</tr>
<tr>
<td>9</td>
<td>Sense of place is at-home feeling and place preferences, as started from able to identify place to actively participate with events in the place. Are there any elements of interior design that can give you sense of place, easy orientation and at-home feeling? Can you mention the elements?</td>
</tr>
<tr>
<td>10</td>
<td>Besides design, there are social conditions that can support your comfortable feeling in shopping. What are they? Can you mention the social conditions?</td>
</tr>
</tbody>
</table>

The data for grounded research are analyzed by using content analysis as part of textual analysis, which is used to reduce the data from interview text and focus group record. Content analysis codes the grounded research result into indicators of corridors that create sense of place, and are used for second phase research / survey.

The second phase of this research is the survey, which takes a sample of the population to represent the entire population (Singarimbun & Effendi, 2008). In this study, the survey was used to assess some of the propositions with a real test of the respondents with the aim of finding the factors of a more compact arrangement of public space. In this stage, the primary
data were taken from the surveys of visitors, as many as 175 respondents for each object of research.

Hair et al. (2007) required the minimum number of respondents in a study to be at least ten times the number of indicators on the questionnaire. In this research, there were 16 items to be studied; hence, it required 160 respondents for each designated object. During the data collection, there were 175 respondents. Thus, the minimum requirement for the number of respondents was fulfilled. The criteria of the respondents were same as the previous stage:

They were 18 to 35 years old, interested in shopping center environmental research, particularly the corridor, and a regular visitor (at least once per month).

A self-administered questionnaire with a Likert scale was distributed to visitors to obtain a grouping of a trial of sixteen elements as indicators of sense of place in a shopping center. Sample questions for quantitative phase can be found in the appendix 1.

The second phase research is survey research with factorial analysis. The survey result is analyzed by using factorial analysis. Factorial analysis is multivariate statistic technique to test relationship of interdependent variables.

3.2 Research objects

Research objects were selected to represent the context of shopping centers with locations in the cities of Surabaya and Jakarta, which are the two biggest cities in Indonesia with the highest rate of growth of shopping centers. Both shopping centers’ areas have a regional category of over 100,000 m² (Levy and Weitz, 2000) and have characteristics similar to other shopping centers constructed since 1998; they are similar in spatial character (Kusumowidagdo, et al., 2013b). Gandaria City Shopping Center and Ciputra World superblock are part of the complexes in both Jakarta and Surabaya. Gandaria City is located in South Jakarta, and Ciputra World is located in the center of Surabaya, as shown in figures 1 and 2.

![FIGURE 1 (left). The exterior of Gandaria City](image)

![FIGURE 2 (right). The exterior of Ciputra Jakarta World, Surabaya](image)

3.2.1 Description of Gandaria City Corridor

Same as Ciputra World corridor, the dimension of stores are varied, with the front dimension is between 4-12 meters, and the inside space is between 4 to 30 meters (for main tenants). To control the storefront condition, the management provides design guidelines. The storefront displays are quite interesting. Glass material is standardly used, except for some stores that are permitted to use different material. Material and
storefront shape mirror the character and product of each store.

Corridor dimension is around 3-6 meters, and the height between floors is around 4-7 meters. There are retail outlets in the corridor. The shape of retail outlet is decided by the tenant, and the dimension is around 1-2 m². Besides retail outlets, there is casual lease area with bigger dimension, around 4 m² or more. The wall of corridor is the tenants’ corridor, except for specific areas, by using marble and gypsum for the material with paint for finishing.

Music used in the background is instrumental and pop music. The noise level for the corridor is around 63.48 dB. To support the ambience, the lightings used are artificial natural, and diffuse lighting. In daylight, the illumination level between the lowest corridors is 23.3 lux, which is side by side with thematic corridor with night-time ambience. The highest illumination level in the area which is located near skylight reaches 1012 Lux. The average illumination level is 178.36 Lux. Artificial temperature is conditioned at 24 °C, while at the measured real temperature is around 27.9 °C. The humidity is measured 67.31 %.

Art works in the corridor locations give elements of surprise for the visitor and break the monotonous feeling. The combination between floor material and pattern give nice combination for texture or tactile elements visually.

3.2.2 Description of Ciputra World Corridor

The dimensions of stores in the corridor are varied. The theme and product dimension influence the order for windows display. For fashion product, mannequins are still used to display the clothes, while products with smaller dimension use geometrical shapes as their props.

For the dimension, corridor width at Ciputra World is ranged from 4 -13 meters. The height between floors, for ground floor and first floor, is between 5.5 -6 meters, while the height between other floors is 5 meters.

Instrumental background music is played to support the environment. Overall, the noise level is around 72.4 dB. The artificial temperature or weather is conditioned at 24 °C, where at real condition is around 35 °C. The corridor humidity reaches 85.05 %.

Crowd density during peak hour is around 0.80-1 m²/person, and around 3-4 m²/person outside peak hour.

4. Study 1 Findings: Indicators of Corridor Setting

The grounded research phase is summarized through several indicators, including a comfortable setting. The other indicators include corridor dimension, visibility, a store’s harmony, a store’s window display, lighting, temperature, colors, the shape of a corridor, background
music, the cleanliness of shopping center, floor materials, ceiling, crowd, lifestyle, ethnicity and segmentation (Kusumowidagdo, et al., 2015), in described below.

4.1 Corridor Dimension

The corridor dimension affects the comfort level of the visitors when learning about product information, reviewing product displays, and experiencing the ambience of a shopping center. The dimensions of a corridor are strongly influenced by the width and height of the corridor. Visitors believe a satisfactory corridor dimension will affect coziness, as stated in the opinions below.

Oh, there is something else. The corridors are more spacious, so that we don’t have to bother about other people and people can’t really stare. This makes us feel more comfortable. Because of the width, it makes for a nicer visit. We can walk more freely and feel more comfortable.

The width of the corridors in Gandaria City measures 3.5-6 meters and in Ciputra World measures at 4-11 meters. The height of corridors in Gandaria City is recorded as 3.5-6 meters and in Ciputra World is recorded as 4-7 meters.

The importance of the corridor dimensions is similar to the findings of design features, as studied by Baker (1986), Zacharias (2002), Wee and Tong (2007), as well as from Kramer (2008).

4.2 Visibility

Visibility is an important factor when visitors browse a shopping center from both the same side of the corridor and from the opposite side. Curved corridors provide a higher effect for visibility. The statements from the informant are stated as follows:

Perhaps for me the thing that characterizes the shopping center and makes it more comfortable is Ciputra World’s corridor dimension that is larger than other shopping malls. The second thing is the view that can be accessed from all directions. Compared to other shopping centers from the 1998 era, the visibility point in a shopping center that applies a single corridor has a better visual access than shopping centers with a double corridor, which have more visual barriers from all directions.

4.3 Store harmony

The harmony of tenants factor contributes to the visual wholeness that results in good aesthetics. Harmony is achieved by synchronizing the building materials used by the tenants as well as their dimension. Some informants feel there is coherence from the shapes and materials found in the storefront of the tenant spaces.

Compared to other malls, which are mostly linear, the tenant design here feels smarter and more focused. Moreover, the tenant design appears more orderly and overall there is harmony.

In both research objects, store harmony is achieved by applying a standardized design and criteria to all tenants. The standardized design and criteria aim to ensure the unity and consistency with the thematic approach and technical design of the storefronts that could maximize the product appearance and the tenants’ images. In addition to regulating the conditions (structure, air conditioner, electric, heat detector, smoke...
detector, sprinklers and exhaust and inlet lines), the standard guidelines also standardize the materials and measurements for tenants’ construction on different floors and under various conditions. There are also design regulations and an approval procedure for the designs that will be implemented. The harmony in a store that supports the shopping environment is also highlighted by Baker (1986) and by Zacharias (2002).

4.4 Store display

Store display is defined as the setting of a retail that forms from the interior design of the designated store. It integrates the floor plan, product arrangement, and the ambience based on the store’s characteristics. The supporting statement based on the respondents is explained in the paragraph as follows.

Apart from the window display, the condition of the interior is influencing to attract the visitors to come and look around inside the store. It is delighted when seeing the store is interesting. An appropriate store display could also affect the behavior of the visitors, be it in the corridor or in the store (Kusumowidagdo, 2009; Kusumowidagdo, 2011; Kusumowidagdo et al 2012a; Kusumowidagdo, 2012b).

4.5 Windows display

A store’s window display plays a significant role in conveying its image. A positive image will be perceived as an experience in the shopping center environment. A window display’s purpose is to showcase new products and be an informative arrangement. One element that provides identity to a corridor is the window display. Several opinions in the interview process express this point.

The corridors in the mall are wide and the stores’ windows are made of transparent glass. Therefore customers feel more welcome to browse around the stores.

Every time I walk along the corridors on each floor, it is always interesting to see the tenants (storefronts) as I walk past them. Each has its own uniqueness and is very detailed in the design... The interior design (each interior element) of each tenant conveys an image for the products (they introduce the products through their interior designs)... very good and interesting... because not all mall tenants in Surabaya are like that... What is noticeable in the corridor, apart from the tenants, are the products to see.

It has been shown by several studies that a well-designed window display can enhance the shopping environment (Barr and Broudy, 1984; Wee and Tong, 2005; Kusumowidagdo, 2009; Kramer, 2008; Kusumowidagdo, et al. 2012a; Kusumowidagdo, et al. 2012b).

4.6 Lighting

In the fourth factor, lighting helps to create more a spacious look for the place and enables customers to more easily locate a product. Good lighting provides a boost to the spirit of conducting activities for visitors in the corridor areas. An informant below voices the same opinion.

It is true that lighting provides a more organized effect, in addition to suggesting a larger dimension, and it is helped by the dominant use of glass. It brings out a more orderly look, a more vibrant ambience and with brighter lighting, everything looks glitzier than Galaxy Mall or Tunjungan Plaza, which are not as fancy because
of their dimmer lights.

In both research objects, the corridor of Gandaria City has an intensity span of 60 - 77.1 lux, whereas the Ciputra World’s corridor has an intensity of 120 - 252 lux. The intensity span happens because illumination from the ceiling of the atrium is at a controlled condition that is affected by the tenants’ lighting. According to the measurements, both corridors have fulfilled the minimum requirements to accommodate the circulation activities.

Areni and Kim (1994), Turley and Milliman (2000) and Wee & Tong (2005) stated in their study that appropriate lighting application is one of the comfort factors of a corridor.

4.7 Temperature of shopping center

The next factor is the temperature of the shopping center. The right temperature can provide a thermally comfortable feeling. During the data collection period, in several spots in the shopping centers, the afternoon (3-4 p.m.) temperature of Ciputra World was recorded at 27.1° -27.8° Celsius, whereas Gandaria City had a slightly higher temperature, 27° -28.8° Celsius. With a deviation of 4° Celsius, the temperature of the corridor is perceived as comfortable. The temperature is deemed comfortable for Gandaria City, which has a humidity level of 65-66%, and for Ciputra World, which has a humidity level of 57-78%.

A comfortable temperature is considered important considering both shopping centers are located in Surabaya and Jakarta, two cities that have a daily temperature of 30° -35° Celsius with a humidity level of almost 80%.

I want to add that the temperature is just right—not too cold for the size of the place, and there is also a corridor adorned with a nighttime ambience, which appears wide because of its high-budget dimension.

Baker (1986) has the same perspective regarding this issue. It is known that thermal comfort gives people pleasure during shopping.

4.8 The use of colors

The choice of colors has an effect on the perception of the breadth of the corridor area and, along with lighting, can determine visitors’ shopping rhythm. The selection of colors is described as the colors on the surface of materials used in the interior spaces overseen by the management, in this case floors and ceilings. Vibrant colors are preferred by the informants and participants.

The colors and interior elements of Ciputra World suggest elegance. The floor surfaces are vibrant and shiny. The ceilings are also bright in color.

Both research objects use vibrant colors in the interior design. Ciputra World shopping center is dominated by a white hue on the floors and ceilings. The shiny and reflective floor surfaces provide a vibrant ambience. The interior of Gandaria City shopping center also displays bright colors that combine cream and white hues. As studied by Baker (1986), color applications strongly influence the shopping center’s ambiance.

4.9 Corridor shape

Another important corridor setting factor is the shape of the corridor. A corridor shape that is easy to recognize provides orientation. Visitors
prefer curved corridors because older shopping centers, which were primarily built before 1998, have linear corridors, which are deemed monotonous. Below is an opinion from an informant.

*CWS provides something different for the people of Surabaya with a different layout, oval and linear corridors, surprising and unique combinations that give out a different flavor, a meandering circulation model as well as wall elements with lighting that offer a dramatic ambience.*

Both centers studied have curvaceous corridors. However, Gandaria City still has several parts that include linear corridors. According to Zacharias (2002) and Kent (1989), the corridor’s shape is crucial in creating the ambiance of a shopping center.

4.10 Background music

Background music is one of the influential factors because music can facilitate various feelings, from relaxed to spirited. The choice of music in both Gandaria City and Ciputra World shopping centers is instrumental music. Music provides a conducive atmosphere to enjoy the shopping environment, as mentioned by these informants.

>The ambience is enhanced by the music. Good music makes us feel welcome. It doesn’t have to be the latest trend in music. The most important thing is that the music flows smoothly and is relaxing. But if the music is too loud it might make the atmosphere too noisy.

There have been several studies conducted by Smith and Curnow (1966), Yalch and Spangenberg (1990), Gulas and Schewe (1994), Milliman (1986), and from Herrington and Cappela (1996) concerning the effect of background music in a shopping center. It is scientifically shown that appropriate background music has a significant effect on visitors’ behavior.

4.11 Cleanliness of corridor

The cleanliness of corridor is one of the efforts necessary to create a comfortable space. Cleanliness factors include the sanitation of interior surfaces and the placement of disposal equipment. Cleanliness is an important point for visitors, which can be concluded from the interview process and focus group discussion.

*I think the corridor is clean, I like it, and trash bins are easy to find. The image of clean place contributes to my comfort in exploring products in window displays.*

The findings of the cleanliness indicator are also stated by Baker (1996), who found that cleanliness is a part of expected ambiance in a shopping center.

4.12 Floor pattern

The floor pattern is one of the factors that visitors look for in a corridor. The patterns prevent the corridor circulation from being monotonous and bring an element of surprise to the corridor. Patterns can be formed from the combination of floor materials, the color of materials and the texture of materials. The use of different patterns can be applied along the corridor and at the intersections of the corridors.

>The use of numerous materials on the floor, such as several kinds of granite, stainless steel to make graceful patterns in the corridor brings out a sense of luxury, purity and uniqueness to the corridor.*
Several types of floor ornaments are also applied in the Gandaria City and Ciputra World shopping centers. The implementation of floor ornaments in a shopping center is included as the aesthetic indicator in the form of interior accessories.

4.13 Ceiling ornaments

In addition to floor ornaments, ceiling ornaments are also important. With the application of patterns, a monotonous look can be avoided. The ceilings showcase a lace-like decoration and there are also some fracture-like patterns. The floor area is differentiated with parquet material, while in the past onyx or marble was used. In addition to the management by the mall, attractive window displays of the tenants are also inviting.

The ornaments are placed on the ceiling along the corridor and in the intersections between corridors. In Ciputra World and in Gandaria City, patterns on the floor are used to give orientation and provide surprises. The ceiling ornaments applied are important in creating image of the shopping centers’ ambiance (Baker 1986).

4.14 Density

In addition to the factors mentioned above, density is also important to consider. The density is considered good when it can achieve a comfortable condition in terms of personal territory and crowd condition in the location.

The crowd is ok. Even when it is swamped with people, it never feels too crowded, the size is adequate, and the lifestyle is ok—modern-urban. Lifestyle can be seen from the style of the people and the gadgets they use in between activities.

The density in the Gandaria City ranges from 0.5 people per 3 square meters on weekdays to approximately 1 person per 1 square meter. The density is still considered adequate even for the social distance in the Gandaria City shopping center, which ranges in diameter from 114.67 meters-210 meters for each person.

Meanwhile, the density in Ciputra World ranges from 0.5 people per 3 square meters on weekdays to approximately 2 people per 3 square meters. The density is considered acceptable for the social distance in the Ciputra World shopping center, which spans from 101.33 meters-183.33 meters.

The density point and number of visitors are considered crucial points, as stated by Baker (1986), d’Astous, (2000), and Zacharias, (2001)

4.15 Lifestyle

The lifestyle of other visitors has an influence on the style of clothes visitors wear and the activities they do. The preferred clothing styles are elegant, casual and professional. The activities visitors do include relaxing and enjoying the ambience and playing with their gadget.

When I go shopping, I don’t really like having to jostle my way in the crowd in sweltering heat. The condition of Ciputra World, which is cool and has a vast space, really suits my taste. Visitors appear neat (for instance in their work attire) or smart-casual, or in their Sunday best. This is probably linked to the kind of activities they do here.
According to Baker (1986) d’Astous (2000), and Zacharias (2002), lifestyle is included as one of the supporting factors of the people-place interactions; hence, it will create a shopping environment that is related to behavior similarities.

### 4.16 Ethnicity and segmentation

The ethnicity and segment of visitors are several factors that are considered important in conducting comfortable activities. In both shopping centers, target decisions based on segmentation will help their imaging, in addition to the type of visitors.

*This is true for the people who come here. Visitor segmentation here is mostly middle-up, which is quite different from the conditions in Pasar Turi and Pasar Atum where people have to push around to move and the stench of sweat is everywhere. I like it here because it is extremely clean.*

*In addition, actually, when I go for a stroll I would also like to watch people with a certain kind of lifestyle, at least people with the same segmentation as me.*

Ethnicity and segmentation strongly affect visitors’ behavior. According to Baker (1986), d’Astous (2000), and Zacharias (2002), behavior is one thing that has to be considered in creating a shopping environment.

The indicators of corridor setting in illustration can be seen at appendix 2.

### 5. STUDY 2 FINDINGS: FACTORS OF CORRIDOR SETTING

In the next stage, factor analysis was used to statistically analyze all interior elements as the indicators of a corridor that can create the sense of place. The indicators of the corridor’s sense of place in Gandaria City are the dimensions of the corridor, visibility, the harmony of stores, stores’ window display, lighting, temperature, colors, the shape of the corridor, the background music, the cleanliness of shopping center, floor materials, ceiling, crowd, lifestyle, ethnicity and segmentation, which are displayed in the Figure 5 below.

![Figure 5](image-url)

*FIGURE 5. The diagram of interior elements that create sense of place in Gandaria City.*

The indicators displayed in figure 5 above were grouped into more compact factors after the study 2 process, i.e., surveying the 175 visitors of Gandaria City. The results were statistically analyzed using factor analysis. In Gandaria City, there are three factors, corridor legibility, social image and interaction and store design, as shown in table 2 below.
TABLE 2. Result of factor analysis in Gandaria City’s corridors

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Loading factors</th>
<th>Rotation Sums of Squared Loadings Total (Eigenvalue)</th>
<th>Name of Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visibility</td>
<td>.752</td>
<td>5.328</td>
<td>Factor 1 Corridor Legibility</td>
</tr>
<tr>
<td>Lighting</td>
<td>.741</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corridor dimension</td>
<td>.721</td>
<td></td>
<td></td>
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<tr>
<td>Corridor shape</td>
<td>.716</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceiling ornament</td>
<td>.715</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The use of colour</td>
<td>.709</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor pattern</td>
<td>.705</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>.702</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleanliness</td>
<td>.370</td>
<td>3.703</td>
<td>Factor 2 Social Image and Interaction</td>
</tr>
<tr>
<td>Background music</td>
<td>.250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifestyle</td>
<td>.683</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>.687</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic and segment</td>
<td>.552</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Store display</td>
<td>.662</td>
<td>2.911</td>
<td>Factor 3 Store Design</td>
</tr>
<tr>
<td>Store harmony</td>
<td>.649</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows display</td>
<td>.548</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The first factor is corridor legibility with an eigenvalue of 5.328. Items that influence the corridor are include good view towards all directions, comfortable lighting conditions, corridor dimensions, shape of corridor, ceiling ornaments, the use of colors, floor pattern, and suitable temperature.

The second factor is the social image and interaction with an eigenvalue of 3.703. Items that influence the corridor include cleanliness, background music, visitor lifestyle, density and visitor ethnicity or segmentation.

Store design is the third factor with an eigenvalue of 2.911. This comprises the following indicators included storefronts with attractive display, interesting window display, and harmony of store designs.

Below, the figure 6, is the model of the three factors of corridor’s setting in Gandaria City that resulting visitors’ sense of place.

FIGURE 6. Model of the important factors of corridor setting in Gandaria City Shopping Centre

Next is the study of Ciputra World’s location in Surabaya. The indicators of the corridor at Ciputra World, as well as at Gandaria City, are the dimension of corridor, visibility, harmony of stores, store’s window display, lighting, temperature, colors, shape of corridor, background music, cleanliness of shopping center, floor materials, ceiling, density, lifestyle, ethnicity and segmentation, that are displayed in the figure 7 below.

FIGURE 7. The diagram of interior elements that create sense of place in Ciputra World
The indicators displayed in the above figure 5 were grouped to more compact factors after the study process, surveying the 175 visitors of Ciputra World. In Ciputra World, based on the table below we can see the categories of the indicators, that were obtained from the factor analysis by examining the loading value.

From table 3 below, it can be concluded that there are four factors, including visual harmony of the corridor, corridor legibility, place ambience as well as social image and interaction.

TABLE 3. Result of factor analysis in Ciputra World’s corridors

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Loading factors</th>
<th>Rotation Sums if Squared Loading Total (Eigenvalue)</th>
<th>Name of factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Store harmony</td>
<td>.775</td>
<td>3.353</td>
<td>Factor 1 Visual harmony</td>
</tr>
<tr>
<td>Store display</td>
<td>.754</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows display</td>
<td>.705</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corridor dimension</td>
<td>.668</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visibility</td>
<td>.575</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor pattern</td>
<td>.779</td>
<td>2.433</td>
<td>Factor 2 Corridor Legibility</td>
</tr>
<tr>
<td>Lighting</td>
<td>.709</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceiling ornament</td>
<td>.532</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corridor shape</td>
<td>.515</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The use of colour</td>
<td>.487</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Background music</td>
<td>.816</td>
<td>2.165</td>
<td>Factor 3 Place Ambience</td>
</tr>
<tr>
<td>Temperature</td>
<td>.698</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleanliness</td>
<td>.667</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifestyle</td>
<td>.833</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>.686</td>
<td>2.00</td>
<td>Factor 4 Social image and Interaction</td>
</tr>
<tr>
<td>Ethnic and Segmentation</td>
<td>.661</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The first factor is the visual harmony factor with an eigenvalue of 3.353. Items that affect the corridor include harmony of store design, storefronts with attractive display, interesting window display, dimension or size of corridor, good visibility towards all directions.

The second factor is the corridor legibility factor with an eigenvalue of 2.433. The items that influence the corridor include floor pattern, lighting condition, ceiling ornament, interesting corridor shape and the use of colors.

Third is the place ambience factor with an eigenvalue of 2.165. The influential items towards the corridor include background music, suitable temperature and cleanliness of shopping center.

The fourth factor is the social image and interaction with an eigenvalue of 2.000 and consists of these items include visitor lifestyle, density, and visitor ethnicity or segmentation.

Below, the figure 8, is the model of the three factors of corridor’s setting in Ciputra World that resulting visitors’ sense of place.

5. DISCUSSION

5.1 The comparison of corridors in Gandaria City and Ciputra World

In the corridors of the Gandaria City shopping center, significant factors that create its public space setting include corridor legibility, social image, interaction and tenant spaces. In Ciputra World, the factors are the visual harmony of the corridor, corridor legibility, corridor ambience, social image and interaction. There are some similarities and differences...
between the two research objects.

These findings have a different amount of factors than the previous research that was performed by Najafi and Mina (2011). They stated that the factors for creating sense of place in a shopping center are physical and social. In fact, the findings on both studied objects consist of the physical and social factors. In the Gandaria City, corridor legibility and tenant spaces are categorized as the physical factor, and the social image and interactions are categorized as the social factor. On the other research objects, corridor legibility, corridor ambiance, and visual harmony, are included as the physical factor, whereas the social image and interaction are included as the social factor.

There have been both similar and different forming factors observed from sense of place in the designated shopping centers. However, those findings do not contradict the main findings of this study. Any factor differences or similarities show that sense of place of a shopping center’s corridor has the same contributing factors.

Any design could show each of the specialties that provide different interpretations of the important factors in a shopping center. Moreover, the same factors could be created with many different indicators. Any differences obtained from the observations were known to be influenced by the different perception of socio-cultural factors, i.e., the geographic and the local culture, of both research objects. In addition to the economic concept was the shopping center concept of the objects studied, although the selection was based on the similarities found. Ardoin (2006) also stated that there are other factors in addition to physical and social factors, i.e., political economy factors.

The similarities between the two corridors are the corridor legibility factor and the social image and interaction factor. Visitors’ ability to recognize the corridor and its existence will ease them for place identification and elevate their sense of place to a higher level.

In the design implementation, the design factors applied can differ with each shopping center based on the existing design and concept. Zacharias (2002) also stated that corridors’ legibility is a critical factor.

The authenticity of the corridor characteristic in Gandaria City is formed by the application of a single corridor concept with good visibility without any visual barriers and the corridor’s curvy shape. This concept is supported by the shopping center management to create a functional yet attractive corridor. On the contrary, the authenticity of the corridor’s characteristics in Ciputra World is formed with the aim of providing a spacious ambience and to follow the maritime thematic concept of the mall. The spaciousness is achieved with the application of reflective materials with white, shiny surfaces, comfortable lighting conditions, and the use of an all-white shade. The maritime thematic concept is visible in the curved shape of the corridor and ceiling ornaments. It could be concluded that both corridors have their own legibility.

In both shopping centers, the social image and interaction factor can be observed from the visitors’ lifestyle, the crowd, and the ethnicity and segmentation of visitors, which is suitable for the visitors of Ciputra World and Gandaria City, which are upper-middle segments. This social factor is aligned with the opinions of Baker (1996) and d’Astous (1996), who stated that other visitors influence social interaction. However, in this research, service personnel from the shopping center and tenant spaces are not considered social factor contributors because the object of this research is to emphasize the corridor. Other, similar studies were conducted on the store environment (Baker, 1996 and
The differences between the two shopping centers show the advantage of each research object, which are the particular aspects that determine the sense of place. Tenant spaces in Gandaria City represent an important factor, which, in the design implementation, attracts the attention of management with its standard design. The tenant design is perceived to be able to provide full information about the store with a good storefront display, an attractive window display, and a coherent store design. The strength of the tenant space in terms of encouraging people and place interaction is also stated in previous studies by Zacharias (2002), Kusumowidagdo (2009), and Kusumowidagdo, et al (2011).

In Ciputra World, meanwhile, the important factors are visual harmony and corridor ambience. The visual harmony that stands out in the minds of visitors as they experience visual connectivity comprises the harmony of the store design, storefronts, window displays, corridor dimensions and a good view in all directions. Corridor ambience is perceived to support the shopping process and consists of background music, a suitable temperature and cleanliness.

Several ambiance indicators that have been established by Baker (1986) but were not discovered in this research are noise and scent. Based on the observation, the noise level is within the acceptable limit, and no scent applied to either shopping center.

If the explanation above is about the discussion of factors of corridor separately, then the explanation in this subchapter will conclude about the factors of corridor order which have roles on the shaping of sense of place comprehensively at two shopping centres. This subchapter is expected to give contribution. For the designers, the design implication that can be implemented is the formulation of factors for the shopping centres, especially for the level of public spaces, for the corridor in detail.

5.2 The comprehensive factors of corridor that create sense of place

The factors of corridor order that influence sense of place, which are the conclusion of the study at two research objects, are corridor legibility, visual harmony, place environment, design of tenants’ area, and social image and interaction. The factors are explained furthermore:

1. Corridor legibility
Corridor legibility is the originality of corridor that can be seen from its spatial characteristic and differentiates that corridor from corridors at other shopping centres. Corridor legibility consists of surprising aspects as the uniqueness or main identity to make the visitors easy to understand the orientation of shopping centre. Corridor legibility can be in form of corridor shape, flooring material, ceiling ornaments, and colours implementation. Specifically, corridor legibility also found in research of Kent (1989), Zacharias (2002), Wee and Tong (2005), and Zacharias (2007).

2. Visual harmony
Visual harmony is visual wholeness of a composition of corridor design. Visual wholeness can be sensed by well-ordered design of tenants’ areas and visibility. The design for tenants’ areas can be contributed from material choice, shape and size of its interior elements. A good visibility is achieved from visually designed area which is free from obstructions such as retails, and appropriate planning for column placement. Well-organized visual harmony will make the visitors easily to
understand shopping centres. Visual harmony is also suggested by Wee and Tong (2005) and Kramer (2008).

3. Corridor ambiance

Corridor ambiance is interior aspects that can shape shopping environment such as well-set temperature, background music, and cleanliness. Place ambiance will support a good mood for shopping. Place ambiance is also found in a research conducted by Smith and Curnow (1966), Barr and Broudy (1984), Milliman (1986), Yalch and Spangenberg (1990), Gulas and Schewe (1994), Areni and Kim (1994), Herrington and Cappela (1996), Baker (1996), Turley and Milliman (2000), Wee and Tong (2005), D’Astous (2007), and Kramer (2008).

4. Tenant store design

Design for tenants’ areas is design for tenants’ outlets that is well-arranged starting from the storefront and window display to its inside interior. Well-designed tenants’ areas will make the visitors possible to initiate their orientation and therefore actively participate in the tenants’ areas, look for product information, explore products variety, begin purchase initiative, and join the store programs. Design for tenants’ areas is also suggested by Barr and Broudy, (1984); Baker (1996), D’Astous (2007); Wee and Tong (2005); and Kramer (2008).

4. Social image and interaction

Social image and interaction consist of two aspects; social image and social interaction. Social image is images recorded or resulted from visitors’ lifestyle, ethnic and segment. Social interaction is activity and friendliness seen among the visitors’ interaction. Crowd and density aspects are also included in social interaction. Social image and interaction are also found in a research conducted by Baker (1996) and D’Astous (2007).

The above factors are illustrated as follows in figure 9.

FIGURE 9. The construction of important factors of corridor setting

Based on the research assumption above, this current research also supports the research conducted by Najafi and Mina (2012); Bitner (1992); Turley and Milliman (2000), which reveals that sense of place is influenced by physical and social setting. The current research is the extension of the theory discussed in that previous research in the context of shopping centre corridor. The physical factors explained above are corridor legibility, visual harmony, and designs for tenants’ areas. The invention of social image and interaction aspects can be categorized as social factor.

6. CONCLUSION

There are several conclusions of this research:

1. The factors which have influence to the sense of place for a corridor are corridor legibility, visual
harmony, corridor environment, design for tenants’ areas, and social image and interaction. The existence of these five factors are expected to contribute to the visitors’ awareness towards the easy orientation and comfortable when having activities at the shopping centre.

2. Those factors will contribute to the sense of place by considering specific conditions, which are time, sociocultural, and geographical condition. Time, era and period influence human’s perception about shopping centres and the trend of special character of shopping centre. Global culture influences changes in society’s lifestyle, as well as also influenced by the condition of city development. Attachment to the shopping centres, either for recreational functional or for demanding functional. Geographical condition can also inspire shape and theme for physical order of interior public area. Besides geographical condition, social condition can also be influenced by social character in each area, such as with special events or tenants’ varied area in each shopping centre.

7. DESIGN IMPLICATION AND FURTHER RESEARCH

This research is expected to have scientific contributions that can be implemented in several aspects, under the scope of academic aspect and practical aspect. For the academic aspect, the implementation is expected on the aspect of design education and design research, in order to contribute in the theories about commercial area, in relation with interior design education especially about the topics of store areas, shopping centre areas, and public areas at different architecture. For the research aspect, the implementation is expected to become the foundation for other researchers focus on sense of place, public areas, and shopping centres. Thus, in broad sense, these three topics can be accessed from multidisciplinary perspectives in order to expand this topic as future research.

The practical contribution of this research is as reference for the management of shopping centres and designers of shopping centre. For the management of shopping centres, the practical aspects are factors of corridor order. It is suggested for future research to conduct practical research in the aspect of management and design by focusing on corridor at different shopping centres, to map its strengths and weaknesses, and to compare and contrast it with other shopping centres. For the designer, the implication for design that can be implemented is the formulation of factors that can be considered to be implemented at shopping centres, especially at the corridors, and to create the uniqueness of design by using those factors.

The context of this research is shopping centres in Indonesia in the era of after following 1998, located in Indonesia, and the respondents are visitors 18-33 years old. For further research, this research can be expanded to the context of a shopping center of a different era, different geographical location, and different age of the respondents.

8. ACKNOWLEDGEMENT

This research is part of a dissertation research that nearing its final stage, as a requirement of doctoral degree at the Doctoral of Art and Design Program of Bandung Institute of Technology, Indonesia. This research was facilitated with the aid of a 2013 Doctoral Dissertation Grant and Doctoral Scholarship from the
Minister of Education and Cultural Affairs, Directorate of Higher Education. The researcher expresses her gratitude for the financial aid, and to the manuscript reviewers for their advices and suggestions.

REFERENCES


Appendix 1. Questionnaire

### FACTORS OF CORRIDOR SETTING THAT CREATE SENSE OF PLACE

<table>
<thead>
<tr>
<th>Name/Phone Number</th>
<th>Age</th>
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Tick the right number that represents yourself.

#### Educational Background

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<td>Junior High School / other</td>
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</tr>
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<td>Academy / other</td>
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<tr>
<td>Bachelor / Graduate / Postgraduate</td>
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#### Status

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<tr>
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#### Monthly Income

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</tr>
<tr>
<td>Rp. 1,000,000.0-Rp. 5,000,000</td>
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</tr>
<tr>
<td>Rp. 5,000,001-Rp. 10,000,000</td>
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</tr>
<tr>
<td>Rp. 10,000,001-Rp.15,000,000</td>
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</tr>
<tr>
<td>Above Rp. 15,000,000</td>
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#### Have you visited this mall previously?

<table>
<thead>
<tr>
<th>answer</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>2</td>
</tr>
</tbody>
</table>

#### Write down your occupation...

<table>
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<th>Occupation</th>
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</tr>
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<tbody>
<tr>
<td>Student / College Student</td>
<td>1</td>
</tr>
<tr>
<td>Civil servant</td>
<td>2</td>
</tr>
<tr>
<td>Private sector</td>
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<td>Housewife</td>
<td>4</td>
</tr>
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<td>Entrepreneur</td>
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<td>Others</td>
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#### Relation Type

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<td>Socializing</td>
<td>3</td>
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<tr>
<td>Learning new things</td>
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</tr>
<tr>
<td>Not by will / following only / undesired</td>
<td>5</td>
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<td>Others (write down your relation type)</td>
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#### Level of Sense of Place

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<th>Level of Sense of Place</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can identify the mall</td>
<td>1</td>
</tr>
<tr>
<td>Want to have activities in the mall</td>
<td>2</td>
</tr>
<tr>
<td>Light participate in the mall events / sale / competition in the mall</td>
<td>3</td>
</tr>
<tr>
<td>Want to spend more time in the mall</td>
<td>4</td>
</tr>
<tr>
<td>Feel tie to some places in the mall</td>
<td>5</td>
</tr>
<tr>
<td>Actively participate in the mall</td>
<td>6</td>
</tr>
</tbody>
</table>

#### Indicators of Shopping Centre Corridor that Create Sense of Place

Circle the number that best represents your opinion, where: *“Does not have influence to sense of place” 1 and 5 is for “Very influential to sense of place”*

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comfortable corridor dimension</td>
<td>1</td>
</tr>
<tr>
<td>Nice view in every direction</td>
<td>2</td>
</tr>
<tr>
<td>Harmonious outlets design</td>
<td>3</td>
</tr>
<tr>
<td>Design of outlets interior</td>
<td>4</td>
</tr>
<tr>
<td>Inviting windows display</td>
<td>5</td>
</tr>
<tr>
<td>Comfortable lighting condition</td>
<td>6</td>
</tr>
<tr>
<td>Comfortable temperature</td>
<td>7</td>
</tr>
<tr>
<td>The use of bright colors</td>
<td>8</td>
</tr>
<tr>
<td>Supporting corridor shape</td>
<td>9</td>
</tr>
<tr>
<td>Supporting background music</td>
<td>10</td>
</tr>
<tr>
<td>Supporting cleanliness of the corridor</td>
<td>11</td>
</tr>
<tr>
<td>Appropriate materials for floor</td>
<td>12</td>
</tr>
<tr>
<td>Nice ornaments on the ceiling</td>
<td>13</td>
</tr>
<tr>
<td>Crowd density that gives free of sense</td>
<td>14</td>
</tr>
<tr>
<td>Lifestyle of visitors that make the environment more interesting</td>
<td>15</td>
</tr>
<tr>
<td>Ethnic or appropriate targeted visitor segment</td>
<td>16</td>
</tr>
</tbody>
</table>

#### Other comments and opinions from the respondents

<table>
<thead>
<tr>
<th>Resp. Signature</th>
<th>Surveyor Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 2. Indicators of Corridors Setting

1. Corridor Dimension
2. Visibility
3. Store Harmony
4. Store Display
5. Windows Display
6. Lighting
7. Temperature of Shopping Centre
8. The Use of Colour
9. Corridor Shape
10. Background Music
11. Cleanliness of Corridor
12. Floor Pattern
13. Ceiling Ornaments
14. Density
15. Lifestyle
16. Ethnicity and Segmentation
購物中心走廊設置設計的重要因素：

印尼購物中心的研究

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摘 要

作為公共空間，走廊的存在和作用在創造購物活動的便利性及購物體驗的舒適性極為重要。本研究旨在進一步檢視能提供方向識別，以實現在購物中心內建構場所感目的之走廊設置因子。

這些研究發現業主、管理者、建築師和商場的室內設計師都很重要。

本研究使用順序探索方法(sequential exploratory method)在 Gandaria 市和西普拉世界的印尼商場中進行探索。這項研究始於一項以 45 位資料提供者為基礎的研究，之後再透過訪談、關鍵群體討論和設計觀測來進行數據採樣。研究結果包括走廊設置的指標要素及構成研究調查階段的投入。調查階段採用定量方法與因子分析進行了分析，這項調查計包括了 350 位到這兩個購物中心的訪客。

這項研究對 Gandaria 市和西普拉世界產生了不同的結果。在 Gandaria 市中，創造場所感的走廊設置因子是走廊的易讀性，社會形象和互動，以及店面的設計，而在世界西普拉中，走廊設置的因子是視覺上的和諧、走廊的易讀性以及隨著社會形象和互動的走廊氛圍。

關鍵字：走廊設置、商場設計