PACIFIC RIM PROPERTY RESEARCH JOURNAL
**2022**, VOL.28, NO.2, 78-103

*ECR and PhD's Article Series*

# A Critical Review of Retail Gravitation Theory and Determinants of Retail Performance

Yihan Guan [1]

[1] PhD candidate, The University of Auckland; yihan.guan@auckland.ac.nz

**Abstract**: This literature review aims to bring together the findings of previous studies on retail gravitation, providing a comprehensive and up-to-date understanding of the factors involved and their interrelationships. One motivation of the literature review is to develop a comprehensive conceptual framework that captures the complex interplay between different factors influencing retail gravitation. This literature review conducted an analysis of common themes and patterns across the relevant literature, synthesised findings and drew conclusions about factors influencing retail gravitation and their interrelationships. The resulting framework identified two main categories of factors influencing retail gravitation and subcategories. The effect of cooperation and competition is also included. The conceptual framework that captures the complex interplay among different factors could serve as a tool for future research in the field of retail.

**Keywords:** Retail gravitation; Accessibility; tenant mix;

## 1. Introduction

The retail industry is an integral part of the global economy and urban environments, playing a critical role in shaping the consumption landscape, employment opportunities, and city development. As a dynamic and complex field, understanding the various factors that influence retail gravitation is essential for retail participants to ensure the long-term success and sustainability of retail environments. To comprehensively grasp the intricate web of influences on retail gravitation, a systematic literature review is essential for drawing insights from a diverse body of academic research. This literature review seeks to provide a detailed, in-depth analysis of the factors influencing retail gravitation, spanning both supply and demand aspects, and considering the roles of different participants in shaping the retail landscape.

The literature review delves into the supply factors, which are primarily concerned with aspects related to individual store-level and retail cluster-level elements. This section seeks to unravel the myriad factors that contribute to the overall retail environment and customer experience. These factors are further explored

through the lens of different participants – retailers, property owners, and urban planners – and their respective roles and responsibilities. By investigating the individual store and retail cluster factors, we can gain a better understanding of the intricacies that define retail gravitation from the supply side. Meanwhile, the literature review also focuses on demand factors, which pertain to the demographic characteristics of the targeted population within the catchment area. This section delves into the nuances of how different demographic groups respond to various types of retail stores and offerings. By reviewing the interplay between demographic factors and retail performance, we can better understand the dynamics between retailers and their potential customer base. Furthermore, I will also explore the complex balance between cooperation and competition within retail clusters, and how tenant mix can influence retail performance.

This literature review aims to inspire a comprehensive understanding of the factors affecting retail gravitation by reviewing a wide array of academic research and drawing connections between supply and demand factors, as well as the roles of different participants. By providing a holistic perspective, this review seeks to contribute to the creation of successful and thriving retail environments that cater to the diverse needs of consumers and foster economic growth.

## 2. Theories of Retail Gravitation

Retail gravitation, also known as Reilly's Law of Retail Gravitation, is a concept in retail and marketing that helps explain how consumers choose between two or more shopping destinations. Developed by William J. Reilly in 1931, the theory uses principles from Newton's law of gravitation and applies them to consumer behaviour in retail settings (Reilly, 1931).

The Law of retail gravitation, initially conceptualised by Reilly (1931) to describe the relationship between two cities in terms of the proportion of trades attracted based on their distance and size, posits that larger and more attractive retail centres exert a greater "pull" or drawing power over consumers. This means that people are more likely to travel longer distances to shop at larger, more appealing shopping destinations, as factors such as size, variety, quality of goods, pricing, and overall shopping experience at a particular location contribute to this gravitational pull. However, in Reilly's model, all those attributes are measured by the size of the centre, which is reflected by the population of the centre in Reilly's model; this is the most significant limitation in Reilly's model. Meanwhile, Reilly's model only reflects the proportions of the trade from an intermediate location that can be attracted by two cities. Converse (1949) modified and extended Reilly's model and made a contribution to determining the boundary of retail gravitation between two retail areas. By adopting the idea of breaking-point, he developed the model to calculate the Breaking-point of the trade areas between two retail

areas. Even though Converse's new law of retail gravitation still uses the population and distance as the two simple variables, it added the 'inertia-distance' factor into the model that represents the inertia that consumers must overcome to visit a store even a block away. The adoption of the 'inertia-distance' factor shows the consideration of the relationship between the attraction of the retail area and the travel cost of arriving at the retail area. The more attractive retail areas and more accessible retail areas with lower travel costs will have a more competitive 'inertia-distance' factor. However, in Converse's model, the 'inertia-distance' factor is only derived from the data from 'fashion goods'. It is expected to comprise data from more categories to be generalisable to all retail categories. Huff (1964) recognised the limitation of previous retail gravitation laws and identified two important limitations of the previous two retail gravitation laws. Firstly, Huff (1964) identified that concept of Breaking point is not able to provide the graduated estimation, and the overlapping area of two trade areas cannot be described in Converse's model. Meanwhile, Huff also identified the limitation of the 'inertia-distance' factor, and the factor should be different for different purposes of shopping. Huff (1964) developed the new retail gravitation model to show the probability of a consumer travelling to a certain retail area. In Huff's model, the size of the retail area and the time proximity of the travel are adopted as two important variables in Huff's model. He tried to use the size of the retail area to show the variety of goods and services provided to consumers and the time proximity to show the time cost for the consumer to arrive at the retail area. Meanwhile, Huff added a parameter to estimate the effect of travel time on different types of shopping trips. In Huff (1968), it is identified as the spatial interaction factor that does not only reflect the sensitivity of shopping types to distance but also reflects the ease of the travel movement, which influences the distance-friction of travel. For example, he suggests that the reduced distance-friction could be caused by a new road built through the retail area.

Lakshmanan and Hansen (1965) modified Huff's retail gravitation model to estimate aggregate sales in shopping centres by allowing the effect size of the retail centre to vary. Bucklin (1967) added a store image dimension to the model, which includes attributes such as price, service quality, store ambience, selection, and brand equity. Nakanishi and Cooper (1974) introduced the multiplicative interaction (MCI) model, which suggests that a series of attributes of retail stores should be adopted in the model instead of using Huff's store size variable alone. The MCI model has been further expanded by various researchers, accounting for consumer heterogeneity, market heterogeneity, and longitudinal effects, resulting in more complex models that often require simulation for testing. The later research justified that the predisposition should not only include the size of the retail store and extend various factors into the component, such as the design factor, anchor tenant and image of the store (Akinjare et al., 2018; Lima, 2012;

Surjit, 2021).

## 3. The factors influencing retail gravitation

This section will review previous research that studied the factors that influence retail gravitation. From previously studied factors that influence retail gravitation, I would categorise those factors into two categories. The first category is on what the retailers or any other retail business participants supplied to customers, such as the products and services from retailers, the layout and environment provided jointly by retailers and retail property owners and the nearby infrastructures planned by city planners etc. The factors in the first category show how the retail participants would manage these factors to achieve a more influential retail gravitation. In the second category, the factors are more relevant to the characteristics of potential customers that could be attracted, such as the population and the characteristics of the population.

### 3.1. Conceptual framework

To develop a comprehensive understanding of the factors influencing retail gravitation, an extensive analysis of the relevant literature and previous research was conducted. This section presents the conceptual framework derived from this analysis, describing the primary categories of factors, their interrelationships, and the roles of different participants in shaping retail gravitation.

The proposed conceptual framework began with a thorough examination of the texts, which revealed two primary categories of factors: supply factors and demand factors. Supply factors encompass elements related to what is offered to customers, such as types of products, services, and store environments. These factors can be further divided into individual store factors and retail cluster factors, which include aspects such as accessibility, tenant mix, and parking facilities (Bitner, 1992; Arentze & Timmermans, 2001; Teller & Elms, 2012).

Demand factors, on the other hand, involve characteristics related to the target population within the catchment area, such as demographics and customer preferences. Research suggests that different demographic groups have varying preferences and reactions to retail offerings (Carpenter & Moore, 2006; Siddiqui & Zaman, 2019).

Moreover, cooperation and competition were identified as important factor that influncesthe effects of supply and demand factors. Studies indicate that intense competition can diminish the impact of well-performing supply factors, while cooperation can enhance retail performance (Teller et al., 2016; Gnyawali & Park, 2011).

As shown in **Figure 1**, the conceptual framework categorises the various factors

influencing retail gravitation and highlights their interplay. The framework comprises two main categories: supply factors and demand factors. As we can see in **Table 1**, supply factors are further divided into individual store factors and retail cluster factors, while demand factors encompass aspects such as demographics and customer preferences. Cooperation and competition are also incorporated into the framework as moderators, illustrating their roles in shaping the effects of supply and demand factors on retail gravitation. By considering the roles of different participants, such as retailers, property owners, and urban planners, the framework provides a holistic understanding of the factors affecting retail gravitation.

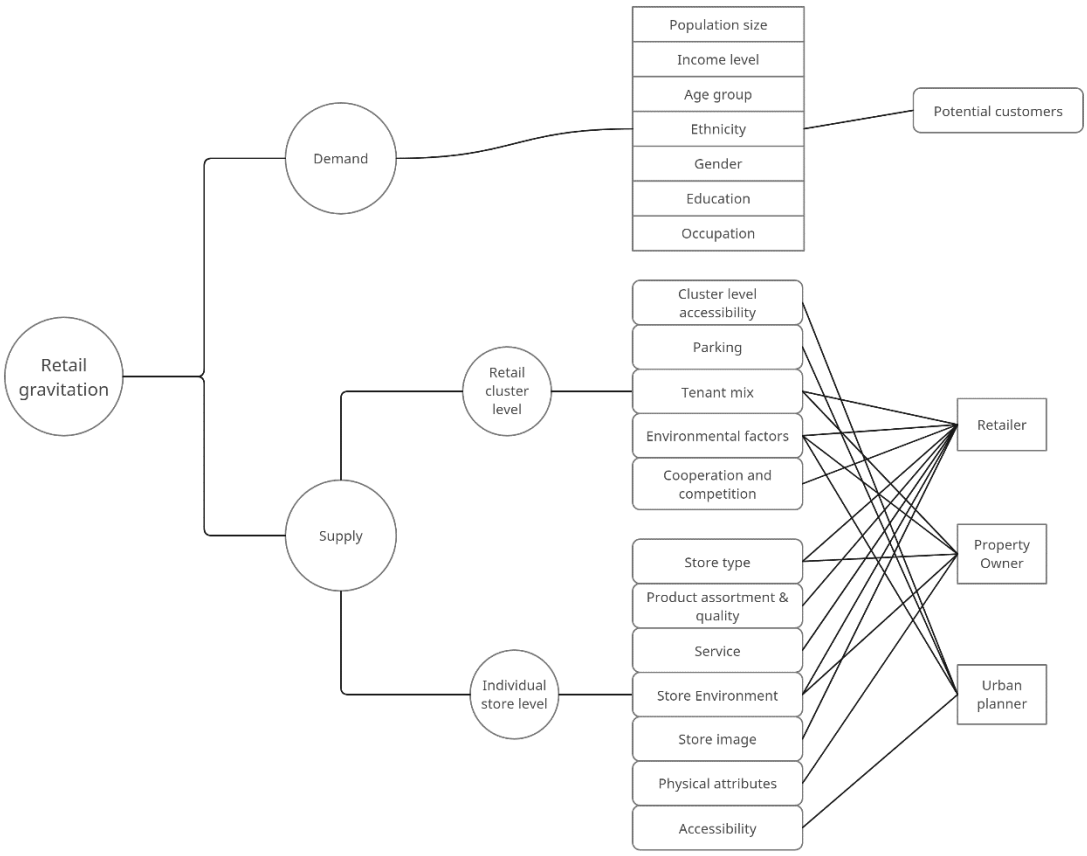


**Figure 1**. Conceptual framework of retail gravitation

**Table 1.** The summary of retail gravitation factors

| Category | Subcategory | Factors |
|---|---|---|
| Supply Factors | Individual Store | 3.2.1 Store Type |
| | | 3.2.2 Product Assortment & Quality |
| | | 3.2.3 Service |
| | | 3.2.4 Store Environment |
| | | 3.2.5 Store Image |
| | | 3.2.6 Physical Attributes |
| | | 3.2.7 Accessibility |
| | Retail Cluster | 3.3.1 Parking |
| | | 3.3.2 Cluster-level Accessibility |
| | | 3.3.3 Environmental Factors |
| | | 3.3.4 Tenant Mix |
| | | 3.3.5 Cooperation and Competition |
| Demand Factors | | 3.5 Population Size |
| | | 3.5 Income Level |
| | | 3.5 Age Group |
| | | 3.5 Ethnicity |
| | | 3.5 Gender |
| | | 3.5 Education |
| | | 3.5 Occupation |

### 3.2. Factors related to individual store level 'supply'

In terms of 'supply' factors, there are a number of individual store attributes that could influence retail gravitation. As concluded in **Table 2**, the factors include store type, product assortment and quality, service, store environment, store image, physical attributes, and accessibility.

#### 3.2.1. Store Type

Olszewski et al. (2018) suggested that retail store types significantly influence consumer attraction and sales performance, thereby affecting retail property values. Abrishami and Kumar (2018) confirmed that different retailer types attract varying numbers of customers. Semeijn et al. (2004) explored the impact of product attributes on consumer evaluations of stores, considering the varying attractiveness of different store types. Darley and Lim (1993) proposed that consumer store preferences depend on the types of products offered. Yavas and Babakus (2009) supported this by investigating retail store preferences among different customer segments and examining factors contributing to store attractiveness for each segment, providing insights into various store types appealing to distinct consumer groups.

#### 3.2.2. Product Assortment and Quality

Hansen and Solgaard (2004) posited that product assortment significantly motivates store visits, a claim supported by relevant research (Brown, 2004; Mittal and Jhamb, 2016; Taylor, 2003). Dhar et al. (2001) argued that the breadth and depth of product offerings, represented by the number of brands and stock units, positively influence customer visits. Numerous studies emphasised the importance of product quality in customers' retail store selection. Kumar (2016) maintained that extensive product variety and quality meeting consumer expectations increase store visits. Wel et al. (2012) concurred that product variety and quality affect customers' intentions to visit stores.

#### 3.2.3. Service

Wel et al. (2012) suggested that the service provided by stores influences customers' retail store selection. Lee and Yang (2013) examined the role of service quality from both interpersonal and self-service technology aspects, concluding that both aspects significantly relate to customers' visit intentions. Sharma (2015) investigated the relationship between perceived service quality and customers' visit intentions, demonstrating a positive effect between the two factors.

#### 3.2.4. Store Environment

Baker et al. (2002) conducted a study to determine how store environment elements, such as merchandise and store layout, affect consumer purchase behavior, revealing that merchandise quality and store layout play crucial roles in attracting consumers and promoting sales. Levy and Weitz (2012) emphasised the importance of store layout in retail management, stating that an efficient layout aids customer navigation and maximises product exposure. Martineau (1958) stressed the significance of store atmosphere, suggesting that factors like layout, design, colour, and lighting contribute to a unique store personality that influences consumer perceptions and behaviour. Kotler (1973) introduced the concept of "atmospherics," referring to the conscious design of retail spaces to generate

specific emotional effects that enhance the purchasing environment, highlighting the importance of individual store attributes in shaping consumer experiences. Hoffman and Turley (2002) identified the importance of atmospherics in providing service products. Chang et al. (2015) argued that store atmosphere positively influences customer satisfaction, directly impacting revisit intentions. Seiders et al. (2007) further posited that well-designed store layouts maximising available space enhance shopping experiences and increase customer satisfaction. Deka (2019) also emphasised the importance of store ambience for retail stores.

#### 3.2.5. Store Image

Pan and Zinkhan (2006) defined store image as the way shoppers perceive stores, with early studies suggesting that the closer a store's image aligns with consumer needs, the greater the likelihood of consumers visiting and shopping there (Monroe and Guiltinan, 1975; Assael, 1987). Bloemer and De Ruyter (1998) investigated the relationship between store image, store satisfaction, and store loyalty, concluding that store image significantly influences consumer satisfaction and ultimately leads to store loyalty. Hunter (2006) examined the relationship between store image and store visits, finding a positive correlation between the two factors. Hosseini and Jayashree (2014) recognised the importance of store image, suggesting that it influences customer perceptions. Shamsher (2016) posited that store image affects store choice, purchase decisions, and store loyalty, ultimately influencing revisit intentions.

#### 3.2.6. Physical Attributes

Store area significantly impacts the retail environment, affecting customer perceptions and store performance (Birtwistle and Shearer, 2001). Retail store size influences the space available for developing layout designs, with larger sizes offering more layout possibilities (Olszewski et al., 2018; Richard et al., 1996). Property age can also affect customer perceptions, as older properties may appear less appealing or outdated (Newman & Patel, 2004). Consequently, property age influences retail attractiveness and directly affects property value (Hui et al., 2007; Kim, 2011; Liang & Wilhelmsson, 2011). The physical attributes can influence customers' perceptions and behaviours and consequently influence the image and visits of the store (Zeithmal et al., 2017). Breytenbach (2014) argued that the need for refurbishment arises not only from physical deterioration but also from changing consumer preferences, suggesting that refurbishment reflects retail properties redesigned to meet current trends and appeal to consumers.

#### 3.2.7. Accessibility

Netzell (2013) studied the effect of accessibility on retail property by measuring accessibility as an integration value, finding that accessibility positively affects retail property. In this study, integration value is categorised into global and local integration values. Global integration value represents accessibility within an

entire city, while local integration value reflects accessibility within a specific area, such as a retail cluster. Global integration value indicates the accessibility of a retail cluster's location, while local integration value reveals the relative ease of reaching individual stores compared to others within the same retail cluster. Netzell (2013) tested the effect of local integration value, and the results demonstrated its significant role in retail stores.

**Table 2.** Individual store-level supply factors

| Factors | Description | Relevant Literature |
|---|---|---|
| Store Type | Different types of retail stores attract different consumer groups and influence sales performance and retail property value. | Olsezwksi et al. (2018), Abrishami and Kumar (2018), Semeijn et al. (2004), Darley and Lim (1993), Yavas and Babakus (2009) |
| Product Assortment & Quality | The breadth and depth of product offerings, variety, and quality significantly influence customer visits and store selection. | Hansen and Solgaard (2004), Brown (2004), Mittal and Jhamb (2016), Taylor (2003), Dhar et al. (2001), Kumar (2016), Wel et al. (2012) |
| Service | Both interpersonal service quality and self-service technology quality are significantly related to customers' intention to visit retail stores. Perceived service quality also has a positive effect on customers' intention to visit. | Wel et al. (2012), Lee and Yang (2013), Sharma (2015) |
| Store Environment | Store environment elements, such as merchandise quality, store layout, design, color, and lighting, affect consumer purchase behavior, store personality, and atmospherics. Efficient store layout and design enhance the shopping experience and increase customer satisfaction. | Baker et al. (2002), Levy and Weitz (2009), Martineau (1958), Kotler (1973), Hoffman and Turley (2002), Chang et al. (2015), Seiders et al. (2007), Deka (2019) |
| Store Image | Store image affects consumer perceptions, store satisfaction, and loyalty. A positive relationship exists between store image and store visits. Store image also influences store choice, purchase decisions, and revisit intentions. | Pan and Zinkhan (2006), Monroe and Guiltinan (1975), Assael (1987), Bloemer and De Ruyter (1998), Hunter (2006), Hosseini and Jayashree (2014), Shamsher (2016) |
| Physical Attributes | Store area and property age affect retail attractiveness and property value. Larger store sizes offer more possibilities for layout, while older properties may appear less appealing. Refurbishment and renovation can rejuvenate store image and improve customer experience. | Britwistle and Shearer (2001), Olszewski et al. (2018), Richard et al. (1996), Newman & Patel (2004), Hui et al. (2007), Kim (2011), Liang & Wilhelmsson (2011), |

| | | |
|---|---|---|
| | | Hassan & Rahman (2014), Breytenbach (2014) |
| Accessibility | Accessibility, measured as global and local integration values, positively affects retail property. Global integration value reflects accessibility within the entire city, while local integration value shows the ease of reaching individual stores within a retail cluster. Local integration value plays a significant role in retail stores. | Netzell (2013) |

## 3.3. Retail cluster level 'supply'

According to Reilly's Law of Retail Gravitation and subsequent theories such as Huff's Model and the Multiplicative Interaction Model by Nakanishi and Cooper (1974), the characteristics of a retail cluster influence the entire cluster's retail gravitation and, consequently, the gravitation of individual stores. As concluded in **Table 3**, several studies have identified the importance of retail cluster attributes from various perspectives.

### 3.3.1. Parking

First, the number of parking spaces in a retail area is considered an important factor for retail stores. Parking characteristics significantly influence customers' choice of shopping destination (Van der Waerden et al., 1998). Andreu et al. (2006) assert that parking facilities play a crucial role in customers' impressions of retail areas. Mingardo and Meerkerk (2011) also found a positive and significant relationship between retail turnover and parking capacity for regional shopping centers. The number of parking facilities in a retail area improves convenience for customers, thereby enhancing the area's attractiveness (Arentze and Timmermans, 2001).

### 3.3.2. Retail Cluster-Level Accessibility

Teller and Elms (2012) investigated factors affecting customer visits to retail agglomerations, finding that cluster-level attributes such as accessibility and tenant variety significantly influenced consumer decisions to visit retail clusters. Ghosh and McLafferty (1987) examined the impact of location on retail success, concluding that strategic locations within retail clusters contribute to better visibility, accessibility, and consumer traffic, ultimately enhancing retail performance. Reimers and Clulow (2004) identified accessibility as a critical retail cluster attribute, noting that accessible retail clusters attract more customers and foster vibrant retail environments. As previously mentioned, the measurement of accessibility by integration value can be categorised into global and local integration values. Adebayo et al. (2019) tested the value of both global and local

integration for retail stores, finding that global integration is valuable for retail stores, indicating the importance of accessibility for customers from different parts of the city. This finding supports the significance of cluster-level accessibility in influencing retail performance. At the same time, Wee and Tong (2005) stated that retail stores located close to public transportation could attract more people to the centre. Ertekin et al. (2008) also suggested that retail stores could attract consumers from larger areas due to the higher accessibility to alternative transportation systems. Ruhiiga (2012) identified that public transport plays a critical role in forming the shopping behaviour of households.

#### 3.3.3. Tenant Mix of Retail Cluster

The tenant mix within a retail cluster is another crucial factor influencing retail gravitation. The combination of products and services providers within the retail cluster is considered as tenant mix (Bruwer, 1997; Kirkup and Rafiq, 1994). According to retail agglomeration theory, comparison shopping is essential for customers when selecting a shopping destination. Hotelling (1929) first introduced the concept of the principle of minimum differentiation, suggesting the clustering of homogeneous retailers. As products can differ, customers may prefer certain products due to minor differences. Customers must search for the product that best suits their preferences. The clustering of homogeneous products and services provides a comparison shopping experience in one location, saving customers travel costs and search time. Stokvis and Cloar (1991) supported this argument by suggesting that retail centre failures could be attributed to insufficient information for customers and a lack of comparison shopping experiences. Fujita (1989) also posited that retailers selling similar products and services may find it more profitable to agglomerate as this enlarges total activity.

Meanwhile, Greenspan (1987) argued that a good tenant mix should include a variety of retailers that work together to improve the entire trade area or shopping centre's performance. The author also maintained that a complementary tenant mix is key to retail area success. Retailers offering different types of products and services also benefit from agglomeration, as they could provide multipurpose shopping experiences for customers so that customers could save time and travel costs (Ingene and Ghosh, 1990). Fischer & Harrington Jr (1996) stated that higher product heterogeneity increases sales by expanding total consumer search. Claycombe (1991) agreed that a higher variety of products and services is advantageous since customers pay for transportation costs incurred on a shopping trip basis. Thus, customers are more willing to visit places with multiple shops that cater to their needs, reducing search and transportation costs. Fujita and Thisse (2002) suggested that from the agglomeration theory, the variety of tenant mix is a critical factor in improving retail performance. Zhang et al. (2020) identified the importance of tenant mix in retail stores by suggesting the positive

effects of the variety of tenants.

Yuo et al. (2004) confirmed both the more retail categories, the higher value of retail stores and the more concentration in retail categories, the higher the value. However, the authors suggested that it needs to concentrate on 'core' or 'anchor' categories but also include many other categories. It implies that the tenant mix needs to provide the comparison shopping experience on 'core' types and multipurpose shopping experience on other types simultaneously.

#### 3.3.4. Environmental Factors of Retail Cluster

The environmental factors of individual stores were reviewed in the previous section; however, the environmental factors of retail clusters also significantly impact the performance of each individual retailer within the cluster. Teller and Reutterer (2008) identified factors influencing the attractiveness of retail agglomerations from various aspects. One crucial aspect of retail agglomeration is the environmental factors, with atmosphere considered a significant factor. As previously discussed, Kotler (1973) defined atmospherics as the intentional control or manipulation of environmental cues. Atmospherics is also crucial for the entire retail cluster. Bitner (1992) emphasised the importance of the surrounding physical environment for retail stores, implying that the overall environmental factors are essential for store performance. Wakefield and Baker (1998) posited that the physical environment influences customers' decisions to visit and remain at a mall. Turley and Milliman (2000) determined that atmospheric factors have significant effects on customer behavior, including their intention to visit the shopping area. Chebat and Michon (2003) found that atmospheric factors of shopping malls play a crucial role in shaping shoppers' evaluations of the malls. Michon et al. (2005) suggested that the ambient factor positively influences shoppers' perceptions in medium-density retail areas. Chebat et al. (2010) argued that the atmosphere in a retail context refers to the ambiance and aesthetics of the retail center's environment, playing an essential role in shaping customers' perceptions.

#### 3.3.5. Cooperation and competition

In the theories of retail agglomeration and retail externality introduced before, the agglomeration of retailers would improve the overall performance of the retail cluster, and some tenants would draw a significant attractiveness while other tenants could benefit from by attractiveness. At the same time, the agglomeration of retailers, especially retailers who provide similar types of goods and services, would intensify the competition. Competition and cooperation play crucial and unique roles in retail markets, significantly influencing the performance and attractiveness of retail clusters. While retail agglomeration and externality theories suggest that clustering retailers leads to improved overall performance, it also intensifies competition, particularly among those providing similar goods

and services. Striking the right balance between cooperation and competition is essential for optimising retail performance, as it affects customer spending, repeat sales, and individual store success.

Oppewal and Holyoake (2004) suggested that even though cooperation in the retail cluster benefits retailers, however, they would also compete for the money spent and time spent by customers who visit the retail cluster, which could be considered as retailers competing for limited 'resources'. Retailers may be struggling to win the share of money and time spent by visitors by making efforts on some activities such as sales discounts and promotional events (Teller & Schnedlitz, 2012). Teller and Alexander (2014) suggested that the benefit of retail agglomeration would be shared among retailers; the proportion of the share that an individual retailer can achieve would be based on the capability of each store. Teller et al. (2016) identified that competition in the retail cluster would have a negative impact on individual stores' performance; meanwhile, the cluster would positively benefit the individual store through cooperation. Therefore, it is important to find out the balance between cooperation and competition to prevent intensive agglomeration, which may be caused an excessively negative impact by the competition (Gnyawali & Park, 2011). The combination of cooperation and competition in the retail cluster would influence retail performance in both positive and negative ways. In conclusion, cooperation in the retail cluster refers to retail agglomeration and externality, which provide multi-purpose and comparison-shopping experiences and improve attractiveness. Such agglomeration would increase the performance of retail stores. However, the agglomeration would increase the competition among retail stores, which could be harmful to some stores because high competition may negatively influence retail performance.

A balance between cooperation and competition is essential for optimal retail performance. Deviation from this balance, through lack of or over-agglomeration, negatively impacts value. Xu et al. (2022) found that deviations from the tenant mix equilibrium also negatively affect retail rent. Tenant mix characteristics significantly contribute to cooperation and competition balance, influencing customer spending and repeat sales (Doury, 2001). Excessive competition can hurt sales performance without harming retail gravitation, and tenant mix reflects the degree of balance between cooperation and competition. Yiu and Xu (2012) conducted a study on the relationship between the shopping mall's tenant mix and the size of the shopping mall. The result shows that the number of tenant is not 'the more species, the better'. This result is consistent with that intensified number of tenants would cause more competition which may not benefit the retail cluster.

**Table 3.** Retail cluster-level supply factor

| Factor | Description | Relevant Literature |
|---|---|---|
| Parking | The number of parking facilities in the retail area affects convenience and store attractiveness | Waerden van der et al. (1998); Andreu et al. (2006); Mingardo and Meerkerk (2011); Arentze and Timmermans (2001) |
| Cluster-level Accessibility | Accessible retail clusters attract more customers and create vibrant retail environments | Teller and Elms (2012); Ghosh and McLafferty (1987); Reimers and Clulow (2004); Adebayo et al. (2019) |
| Tenant Mix | A complementary tenant mix in a retail cluster enhances comparison shopping experience | Hotelling (1929); Stokvis and Cloar (1991); Fujita (1989); Greenspan (1987); Fischer & Harrington Jr (1996); Claycombe (1991) |
| Environmental Factors | The atmosphere and overall environment of the retail cluster affect customer perceptions | Teller and Reutterer (2008); Kolter (1973); Bitner (1992); Wakefield and Baker (1998); Turley and Milliman (2000); Chebat and Michon (2003); Michon et al. (2005); Chebat et al. (2010) |
| Cooperation and Competition | The balance between variety of offerings within same category and intensified competition | Gnyawali & Park (2011); Oppewal and Holyoake (2004); Teller et al. (2016) |

### 3.4. The role of participants

The individual store level and retail cluster level factors presented above can be categorised into three categories based on the involvement of different participants: retailers, property owners, and urban planners. This categorisation acknowledges the varying roles and responsibilities of these participants in shaping the retail environment and customer experience.

Firstly, retailers play a crucial role in determining factors such as store type, product assortment and quality, service, store image, and store environment (Mingardo & Meerkerk, 2011; Chebat & Michon, 2003). Retailers' decisions regarding these factors directly impact the store's attractiveness to consumers and the overall retail performance. By selecting the appropriate store type and offering a diverse range of high-quality products, retailers can cater to different customer segments and preferences (Adebayo et al., 2019). Additionally, providing excellent service and creating a positive store image can enhance customer satisfaction and loyalty, ultimately driving store traffic and sales (Bitner, 1992; Wakefield & Baker, 1998). Retailers also contribute to the store environment by

focusing on aspects like merchandise quality, store layout, design, color, and lighting, which create a unique store personality that influences consumer perceptions and behavior (Kotler, 1973).

Secondly, property owners are responsible for managing the physical attributes of retail properties, such as store area, layout, design, and property age (Teller & Reutterer, 2008). Property owners can influence customer perceptions and retail attractiveness by ensuring that their properties are well-maintained, up-to-date, and efficiently designed (Teller & Elms, 2012). Refurbishments and renovations can rejuvenate a store's image, improve customer experiences, and attract more footfall (Reimers & Clulow, 2004). Property owners also play a role in shaping the tenant mix within retail clusters, contributing to the overall success and vibrancy of the retail environment (Greenspan, 1987). They have a stake in factors like parking, retail cluster level accessibility, and public transportation, which enhance the convenience and attractiveness of retail destinations (Waerden van der et al., 1998).

Lastly, urban planners are instrumental in creating accessible, well-connected retail clusters that cater to the needs of the local community (Ghosh & McLafferty, 1987). By planning for adequate parking facilities, public transportation options, and overall accessibility at the retail cluster level, urban planners can enhance the convenience and attractiveness of retail destinations (Teller & Elms, 2012). Furthermore, urban planners can contribute to the environmental factors of retail clusters by ensuring that the surrounding areas are well-designed, aesthetically pleasing, and offer a pleasant atmosphere that encourages customers to visit and spend time in the retail environment (Turley & Milliman, 2000). They can also influence the tenant mix of retail clusters by encouraging a balance of homogenous and heterogeneous retailers, which provides customers with comparison shopping experiences and encourages retail agglomeration (Hotelling, 1929; Fischer & Harrington Jr, 1996).

Ultimately, this categorisation highlights the interconnected roles of retailers, property owners, and urban planners in creating successful and thriving retail spaces that meet the needs of consumers and contribute to the overall vitality of urban environments. By considering the factors described in the previous text, this categorisation provides a comprehensive understanding of how these participants work together to shape the retail landscape.

### 3.5. Factors related to ‘demand’

As shown in **Table 4**, the factors related to ‘demand’ are factors related to the demographic characteristics of the targeted population. The targeted population within the catchment area would reflect the potential of the demand that could be attracted by retail gravitation. Since the population would constitute the base of

potential customers, the higher number of potential customers would increase the potential number of customers attracted by retail gravitation. Tanwar et al. (2011) suggested that the size of the population in the catchment area is extremely important to both retail property developers and retailers. Meanwhile, demographic characteristics would cause different preferences that change the effect of retail gravitation.

The different demographic groups would react differently to different types of retail stores (Carpenter & Moore, 2006). This suggests that different demographic groups would have different characteristics, and these characteristics would influence customer preference. Slama and Tashchian (1985) identified that income level, ethnicity and gender would influence retail performance. Ke and Wang (2016) supported that income level influences retail performance. It could suggest that income level influences the affordability of products and services and then influence the visits to retail stores. Roy (1994) shows that the 40-60 years old group is the most frequent visitor group of the recreational type of stores. It suggests that the different age groups would react differently to what products and services are supplied by the retail stores. Shim and Eastlick (1998) show that ethnicity is one of the important factors that influence the foot traffic of regional shopping centres. Kuruvilla and Joshi (2010) suggested that gender, income, education level and occupation would significantly influence shopping behaviour. Siddiqui and Zaman (2019) identified that the different age groups have different reasons for visiting stores, which makes the same store appeals differently to different age group.

The retail store planner and operators need to consider the demand factors to improve their retail performance. The retail store characteristics should match the demographic profile of the stores' catchment area (Simkin, 1990). Morrison and Abrahamse (1996) suggested that developers need to analyse the demographic factors when selecting the retail store site. Ojuok (2016) also stated that it is critical for developers and retailers to gain knowledge of demographic factors and purchasing power. Lugomer and Lansley (2016) also exposed the value of demographics within the catchment area and suggest the importance of it for retail planners. The previous studies showed the importance of demographic factors for retailers to correctly manage the stores and attract customers in the right way. This shows the interaction of demand factors with previously mentioned supply factors, the demand factors would influence what are supplied by retailers.

**Table 4.** Demand factors

| Factor | Description | Relevant Literature |
|---|---|---|
| Population Size | The size of the population in the catchment area is crucial for retail property developers and retailers (Tanwar et al., 2011). A larger potential customer base increases the number of customers attracted by retail gravitation. | Tanwar et al. (2011) |
| Income Level | Income level influences retail performance (Ke and Wang, 2016). Higher income levels affect the affordability of products and services, which influences visits to retail stores (Slama and Tashchian, 1985). | Slama and Tashchian (1985); Ke and Wang (2016) |
| Age Group | Different age groups react differently to various types of retail stores and products/services offered (Carpenter & Moore, 2006). For example, the 40-60 years old group is the most frequent visitor group for recreational stores (Roy, 1994). Siddiqui and Zaman (2019) show that different age groups have different reasons for visiting stores. | Carpenter & Moore (2006); Roy (1994); Siddiqui and Zaman (2019) |
| Ethnicity | Ethnicity impacts foot traffic in regional shopping centers (Shim and Eastlick, 1998). Different ethnic groups may have distinct preferences that affect retail gravitation. | Shim and Eastlick (1998) |
| Gender | Gender significantly influences shopping behavior (Kuruvilla and Joshi, 2010). Retailers need to consider the demographic profile of their catchment area, including gender, to improve retail performance (Simkin, 1990). | Kuruvilla and Joshi (2010); Simkin (1990) |
| Education | Education level significantly influences shopping behavior (Kuruvilla and Joshi, 2010). Retailers should consider the education level of their target audience when developing their retail strategy. | Kuruvilla and Joshi (2010) |
| Occupation | Occupation significantly influences shopping behavior (Kuruvilla and Joshi, 2010). Retailers need to consider the occupations of their target audience when developing their retail strategy. | Kuruvilla and Joshi (2010) |

## 4. Conclusions

In conclusion, this literature review provides a comprehensive and in-depth analysis of the multifaceted factors that influence retail gravitation. By examining both supply and demand factors, as well as the roles and responsibilities of different participants, we have gained a holistic understanding of the intricate relationships that shape the retail landscape. This knowledge can be instrumental in informing decision-making processes for retail participants, ultimately leading to the creation of successful and thriving retail environments that cater to the diverse needs of consumers and contribute to the overall vitality of urban environments.

This review has explored the various factors affecting retail gravitation, including individual store factors, retail cluster factors, and demand factors. In doing so, I have recognised the interconnected roles of retailers, property owners, and urban planners in shaping the retail environment and customer experience. The delicate balance between cooperation and competition within retail clusters has also been highlighted, emphasising the importance of finding the optimal tenant mix to maximise retail performance. By synthesising the insights gleaned from an extensive body of academic research, this literature review has underscored the complex interplay between supply and demand factors and the impact of different participants on retail gravitation. This review not only serves as a valuable resource for understanding the current state of knowledge on retail gravitation but also provides a solid foundation for future research in this domain.

One important contribution of this literature review is synthesising findings from previous studies on retail gravitation, providing a comprehensive understanding of the involved factors; meanwhile it develops a comprehensive conceptual framework that captures the complex interplay between different factors influencing retail gravitation. The framework is novel as it captures the complex interplay among different factors influencing retail gravitation and organises them into main categories and subcategories. This new framework provides valuable insights for future studies in the field of retail

As the retail industry continues to evolve in response to emerging trends, technological advancements, and changing consumer preferences, future research endeavours should aim to explore new factors that may influence retail gravitation, as well as the dynamic interrelationships between these factors. Ultimately, this literature review has demonstrated the importance of a comprehensive understanding of the factors influencing retail gravitation for the development and management of successful retail environments.

**Supplementary Materials:** Not applicable

**Funding:** This research was partially supported by the University of Auckland conference grant

**Data Availability Statement:** Not applicable

**Acknowledgements:** I would like to acknowledge the Pacific Rim Real Estate Society (PRRES) for the PRRES PhD Commendable Prize and comments received at the 2023 Pacific Rim Real Estate Society Conference for this work. I would also like to acknowledge my supervisors, Dr William Cheung and Associate Professor Edward Yiu, for their supervision.

**Disclosure statement:** The author declares no conflict of interest

## References

(Abrishami & Kumar, 2018) Abrishami, S., & Kumar, P. (2018). Using real-world store data for foot traffic forecasting. Paper presented at the 2018 IEEE International Conference on Big Data (Big Data), 1885-1890.

(Akinjare et al., 2018) Akinjare, O. A., Ayedun, C. A., Oluwatobi, A. O., Ibhahulu, O. K., Orlu-Makele, T. O., Bamisaye, M. O., & Akinjare, V. A. (2018). Rent determinants for retail shopping malls in southern nigeria. International Journal of Mechanical Engineering and Technology, 9(8), 506-514.

(Ando & Modigliani, 1963) Ando, A., & Modigliani, F. (1963). The" life cycle" hypothesis of saving: Aggregate implications and tests. The American Economic Review, 53(1), 55-84.

(Andreu, Bigné, Chumpitaz, & Swaen, 2006) Andreu, L., Bigné, E., Chumpitaz, R., & Swaen, V. (2006). How does the perceived retail environment influence consumers' emotional experience? evidence from two retail settings. Int.Rev.of Retail, Distribution and Consumer Research, 16(5), 559-578.

(Arentze & Timmermans, 2001) Arentze, T. A., & Timmermans, H. J. (2001). Deriving performance indicators from models of multipurpose shopping behavior. Journal of Retailing and Consumer Services, 8(6), 325-334.

(Assael, 1984) Assael, H. (1984). Consumer behavior and marketing action Kent Pub. Co.

(Baker, Parasuraman, Grewal, & Voss, 2002) Baker, J., Parasuraman, A., Grewal, D., & Voss, G. B. (2002). The influence of multiple store environment cues on perceived merchandise value and patronage intentions. Journal of Marketing, 66(2), 120-141.

(Birtwistle & Shearer, 2001) Birtwistle, G., & Shearer, L. (2001). Consumer

perception of five UK fashion retailers. Journal of Fashion Marketing and Management: An International Journal, 5(1), 9-18.

(Bitner, 1992) Bitner, M. J. (1992). Servicescapes: The impact of physical surroundings on customers and employees. Journal of Marketing, 56(2), 57-71.

(Bloemer & De Ruyter, 1998) Bloemer, J., & De Ruyter, K. (1998). On the relationship between store image, store satisfaction and store loyalty. European Journal of Marketing, 32(5/6), 499-513.

(Breytenbach, 2014) Breytenbach, A. (2014). Black consumers' shopping patronage and perceptions of the riverside mall's attractiveness (Unpublished doctoral dissertation). The University of Pretoria, South Africa.

(Brown, 2004) Brown, J. D. (2004). Determinants of loyalty to grocery store type. Journal of Food Products Marketing, 10(3), 1-11.

(Bruwer, 1997) Bruwer, J. d. W. (1997). Solving the ideal tenant mix puzzle for a proposed shopping centre: A practical research methodology. Property Management, 15(3), 160–172.

(Bucklin, 1967) Bucklin, L. P. (1967). The concept of mass in intra-urban shopping. Journal of Marketing, 31(4), 37-42.

(Carpenter & Moore, 2006) Carpenter, J. M., & Moore, M. (2006). Consumer demographics, store attributes, and retail format choice in the US grocery market. International Journal of Retail & Distribution Management. 34(6), 434-452.

(Chang et al., 2015) Chang, H. J., Cho, H. J., Turner, T., Gupta, M., & Watchravesringkan, K. (2015). Effects of store attributes on retail patronage behaviors: Evidence from activewear specialty stores. Journal of Fashion Marketing and Management, 19(2), 136-153.

(Chebat & Michon, 2003) Chebat, J., & Michon, R. (2003). Impact of ambient odors on mall shoppers' emotions, cognition, and spending: A test of competitive causal theories. Journal of Business Research, 56(7), 529-539.

(Claycombe, 1991) Claycombe, R. J. (1991). Spatial retail markets. International Journal of Industrial Organization, 9(2), 303-313.(Converse, 1949)

Converse, P. D. (1949). New laws of retail gravitation. Journal of Marketing, 14(3), 379-384.

(Darley & Lim, 1993) Darley, W. K., & Lim, J. (1993). Store-choice behavior for pre-owned merchandise. Journal of Business Research, 27(1), 17-31.

(Dawson, 2012) Dawson, J. A. (2012). Retail geography (RLE retailing and distribution) Routledge, USA.

(Deaton & Muellbauer, 1980) Deaton, A., & Muellbauer, J. (1980). An almost ideal demand system. The American Economic Review, 70(3), 312-326.

(Deka, 2019) Deka, P. K. (2019). Store ambience and consumer choice of retail store format. Journal of Management in Practice (Online Only), 4(1), 1-14.

(Dhar et al., 2001) Dhar, S. K., Hoch, S. J., & Kumar, N. (2001). Effective category management depends on the role of the category☆. Journal of Retailing, 77(2), 165-184.

(Doury, 2001) Doury, N. (2001). Successfully integrating cinemas into retail and leisure complexes: An operator's perspective. Journal of Retail & Leisure Property, 1(2), 119-126.

(Ertekin et al., 2008) Ertekin, O., Dokmeci, V., Unlukara, T., & Ozus, E. (2008). Spatial distribution of shopping malls and analysis of their trade areas in istanbul. European Planning Studies, 16(1), 143-156.

(Fischer & Harrington Jr, 1996) Fischer, J. H., & Harrington Jr, J. E. (1996). Product variety and firm agglomeration. The Rand Journal of Economics, , 281-309.

(Fujita, 1989) Fujita, M. (1989). Urban economic theory. Cambridge Books.

(Fujita & Thisse, 2002) Fujita, M., & Thisse, J. (2002). Agglomeration and market interaction. Available at SSRN 315966.

(Ghosh & McLafferty, 1987) Ghosh, A., & McLafferty, S. L. (1987). Location strategies for retail and service firms, Lexington Books.

(Gnyawali & Park, 2011) Gnyawali, D. R., & Park, B. R. (2011). Co-opetition between giants: Collaboration with competitors for technological innovation. Research Policy, 40(5), 650-663.

(Greenspan, 1987) Greenspan, J. (1987). Solving the tenant mix puzzle in your shopping center. Journal of Property Management, 53(4), 27-31.

(Hansen & Solgaard, 2006) Hansen, T., & Solgaard, H. S. (2006). New perspectives on retailing and store patronage behavior: A study of the interface between retailers and consumers (Vol. 4). Springer Science & Business Media.

(Hoffman & Turley, 2002) Hoffman, K. D., & Turley, L. W. (2002). Atmospherics, service encounters and consumer decision making: An integrattve perspective. Journal of Marketing Theory and Practice, 10(3), 33-47.

(Hosseini, Jayashree, & Malarvizhi, 2014) Hosseini, Z., Jayashree, S., & Malarvizhi, C. (2014). Store image and its effect on customer perception of retail stores. Asian Social Science, 10(21), 223.

(Hotelling, 1929) Hotelling, H. (1929). Stability in competition. The Economic Journal, 39(153), 41-57.

(Huff, 1964) Huff, D. L. (1964). Defining and estimating a trading area. Journal of Marketing, 28(3), 34-38.

(Huff & Jenks, 1968) Huff, D. L., & Jenks, G. F. (1968). A graphic interpretation of the friction of distance in gravity models. Annals of the Association of American Geographers, 58(4), 814-824.

(Hui, Yiu, & Yau, 2007) Hui, E., Yiu, C. Y., & Yau, Y. (2007). Retail properties in hong kong: A rental analysis. Journal of Property Investment & Finance, 25(2), 136-146.

(Hunter, 2006) Hunter, G. L. (2006). The role of anticipated emotion, desire, and intention in the relationship between image and shopping center visits. International Journal of Retail & Distribution Management, 34(10), 709-721.

(Ingene & Ghosh, 1990) Ingene, C. A., & Ghosh, A. (1990). Consumer and producer behavior in a multipurpose shopping environment. Geographical Analysis, 22(1), 70-93.

(Ke & Wang, 2016) Ke, Q., & Wang, W. (2016). The factors that determine shopping centre rent in wuhan, china. Journal of Property Investment & Finance, 34(2), 172-185.

(Kim, 2011) Kim, J. (2011). A study of retail property prices in seoul. (unpublished doctoral dissertation), The University of New South Wales Sydney, Australia.

(Kirkup & Rafiq, 1994) Kirkup, M., & Rafiq, M. (1994). Managing tenant mix in new shopping centres. International Journal of Retail & Distribution Management.

(Kumar, 2016) Kumar, P. (2016). Store decision criteria and patronage behaviour of retail consumers. International Journal of Management Research and Reviews, 6(12), 1692.

(Kuruvilla & Joshi, 2010) Kuruvilla, S. J., & Joshi, N. (2010). Influence of demographics, psychographics, shopping orientation, mall shopping attitude and purchase patterns on mall patronage in India. Journal of Retailing and Consumer Services, 17(4), 259-269.

(Lakshmanan & Hansen, 1965) Lakshmanan, J. R., & Hansen, W. G. (1965). A retail market potential model. Journal of the American Institute of Planners, 31(2), 134-143.

(Lee & Yang, 2013) Lee, H., & Yang, K. (2013). Interpersonal service quality, self-service technology (SST) service quality, and retail patronage. Journal of Retailing and Consumer Services, 20(1), 51-57.

(Liang & Wilhelmsson, 2011) Liang, J., & Wilhelmsson, M. (2011). The value of retail rents with regression models: A case study of Shanghai. Journal of Property Investment & Finance, 29(6), 630-643.

(Lima, 2012) Lima, R. (2012). Proposals to increase foot traffic at sonae sierra shopping centers, MA Dissertation, Nova School of Business & Economics. http://hd1.handle.net/10362/9545

(Lugomer & Lansley, 2016) Lugomer, K., & Lansley, G. (2016). The impact of local demographics on retail centre health in england and wales. Paper presented at the.

(Mankiw, 2014) Mankiw, N. G. (2014). Principles of economics. Cengage Learning.

(Martineau, 1958) Martineau, P. (1958). The personality of the retail store.

(Michon, Chebat, & Turley, 2005) Michon, R., Chebat, J., & Turley, L. W. (2005). Mall atmospherics: The interaction effects of the mall environment on shopping behavior. Journal of Business Research, 58(5), 576-583.

(Mingardo & Van Meerkerk, 2012) Mingardo, G., & Van Meerkerk, J. (2012). Is parking supply related to turnover of shopping areas? the case of the netherlands. Journal of Retailing and Consumer Services, 19(2), 195-201.

(Mittal & Jhamb, 2016) Mittal, A., & Jhamb, D. (2016). Determinants of shopping mall attractiveness: The Indian context. Procedia Economics and Finance, 37, 386-390.

(Monroe & Guiltinan, 1975) Monroe, K. B., & Guiltinan, J. P. (1975). A path-analytic exploration of retail patronage influences. Journal of Consumer Research, 2(1), 19-28.

(Morrison & Abrahamse, 1996) Morrison, P. A., & Abrahamse, A. F. (1996). Applying demographic analysis to store site selection. Population Research and Policy Review, 15, 479-489.

(Nakanishi & Cooper, 1974) Nakanishi, M., & Cooper, L. G. (1974). Parameter estimation for a multiplicative competitive interaction model—least squares approach. Journal of Marketing Research, 11(3), 303-311.

(Netzell, 2013) Netzell, O. (2013). The effect of accessibility on retail rents: Testing integration value as a measure of geographic location. Journal of Property Research, 30(1), 1-23.

(Newman & Patel, 2004) Newman, A. J., & Patel, D. (2004). The marketing directions of two fashion retailers. European Journal of Marketing, 38(7), 770-789.

(Ojuok, 2016) Ojuok, P. O. (2016). No title. Factors that Influence Tenants

Preference of Shopping Mall in Kenya, a Case of Thika Road Mall, Nairobi.

(Olszewski et al., 2018) Olszewski, K., Decyk, P., Gałaszewska, K., Jakubowski, A., Kulig, M., Modzelewska, R., & Żywiecka, H. (2018). Hedonic analysis of office and retail rents in three major cities in poland. Recent Trends in the Real Estate Market and its Analysis (First), SGH Publishing House, , 383-391.

(Oppewal & Holyoake, 2004) Oppewal, H., & Holyoake, B. (2004). Bundling and retail agglomeration effects on shopping behavior. Journal of Retailing and Consumer Services, 11(2), 61-74.

(Pan & Zinkhan, 2006) Pan, Y., & Zinkhan, G. M. (2006). Determinants of retail patronage: A meta-analytical perspective. Journal of Retailing, 82(3), 229-243.

(Parsons & Ballantine, 2004) Parsons, A. G., & Ballantine, P. W. (2004). Market dominance, promotions, and shopping mall group performance. International Journal of Retail & Distribution Management, 32(10), 458-463.

(Reilly, 1931) Reilly, W. J. (1931). The law of retail gravitation WJ Reilly.

(Reimers & Clulow, 2004) Reimers, V., & Clulow, V. (2004). Retail concentration: A comparison of spatial convenience in shopping strips and shopping centres. Journal of Retailing and Consumer Services, 11(4), 207-221.

(Roy, 1994) Roy, A. (1994). Correlates of mall visit frequency. Journal of Retailing, 70(2), 139-161.

(Ruhiiga, 2012) Ruhiiga, T. M. (2012). Public transport and the decline of the traditional retail sector in south africa. Journal of Human Ecology, 39(1), 49-60.

(Seiders et al., 2007) Seiders, K., Voss, G. B., Godfrey, A. L., & Grewal, D. (2007). SERVCON: Development and validation of a multidimensional service convenience scale. Journal of the Academy of Marketing Science, 35, 144-156.

(Semeijn, Van Riel, & Ambrosini, 2004) Semeijn, J., Van Riel, A. C., & Ambrosini, A. B. (2004). Consumer evaluations of store brands: Effects of store image and product attributes. Journal of Retailing and Consumer Services, 11(4), 247-258.

(Shamsher, 2016) Shamsher, R. (2016). Store image and its impact on consumer behaviour. Elk Asia Pacific Journal of Marketing and Retail Management, 7(2), 1-27.

(Sharma, 2015) Sharma, D. (2015). Examining the influence of service quality on customer satisfaction and patronage intentions in convenience store industry. International Journal of Business and Globalisation, 15(2), 152-170.

(Shim & Eastlick, 1998) Shim, S., & Eastlick, M. A. (1998). The hierarchical influence of personal values on mall shopping attitute and behavior. Journal of Retailing, 74(1), 139-160.

(Siddiqui & Zaman, 2019) Siddiqui, S. M. F. A., & Zaman, S. U. (2019). Consumer demographics and modern formats of retailing: A cross-sectional study of impulse buying and reasons for visit mart in karachi pakistan.

(Simkin, 1990) Simkin, L. P. (1990). Evaluating a store location. International Journal of Retail & Distribution Management, 18(4).

(Slama & Tashchian, 1985) Slama, M. E., & Tashchian, A. (1985). Selected socioeconomic and demographic characteristics associated with purchasing involvement. Journal of Marketing, 49(1), 72-82.

(Solow, 1957) Solow, R. M. (1957). Technical change and the aggregate production function. The Review of Economics and Statistics, , 312-320.

(Stokvis & Cloar, 1991) Stokvis, J. R., & Cloar, J. A. (1991). CRM: Applying shopping center techniques to downtown retailing. Urban Land, 50(4), 7-11.

(Surjit, 2021) Surjit, R. (2021). A study on impact of theme based window displays on increasing foot traffic of apparel retail outlet. Paper presented at the Proceedings of the First International Conference on Combinatorial and Optimization, ICCAP 2021, December 7-8 2021, Chennai, India.

(Tanwar, Kaushik, & Kaushik, 2011) Tanwar, S., Kaushik, N., & Kaushik, V. K. (2011). Retail malls: New mantra for success. Sri Krishna International Research & Educational Consortium, 2, 103-113.

(Tay Richard, Lau Clement, & Leung Marie, 1996) Tay Richard, S., Lau Clement, K., & Leung Marie, S. (1996). Rent determination for differentiated retail space in shopping centres Lincoln University. Commerce Division.

(Taylor, 2003) Taylor, R. (2003). Top of mind: Saving america's grocers. Brandweek, 44(18), 22-23.

(Teller & Alexander, 2014) Teller, C., & Alexander, A. (2014). Store managers–the seismographs in shopping centres. European Journal of Marketing, 48(11/12), 2127-2152.

(Teller, Alexander, & Floh, 2016) Teller, C., Alexander, A., & Floh, A. (2016). The impact of competition and cooperation on the performance of a retail agglomeration and its stores. Industrial Marketing Management, 52, 6-17.

(Teller & Elms, 2012) Teller, C., & Elms, J. R. (2012). Urban place marketing and retail agglomeration customers. Journal of Marketing Management, 28(5-6), 546-567.

(Teller & Reutterer, 2008) Teller, C., & Reutterer, T. (2008). The evolving concept of retail attractiveness: What makes retail agglomerations attractive when customers shop at them? Journal of Retailing and Consumer Services, 15(3), 127-143.

(Teller & Schnedlitz, 2012) Teller, C., & Schnedlitz, P. (2012). Drivers of agglomeration effects in retailing: The shopping mall tenant's perspective. Journal of Marketing Management, 28(9-10), 1043-1061.

(Thøgersen, 2004) Thøgersen, J. (2004). A cognitive dissonance interpretation of consistencies and inconsistencies in environmentally responsible behavior. Journal of Environmental Psychology, 24(1), 93-103.

(Van der Waerden, Borgers, & Timmermans, 1998) Van der Waerden, P., Borgers, A., & Timmermans, H. (1998). The impact of the parking situation in shopping centres on store choice behaviour. GeoJournal, , 309-315.

(Wakefield & Baker, 1998) Wakefield, K. L., & Baker, J. (1998). Excitement at the mall: Determinants and effects on shopping response. Journal of Retailing, 74(4), 515-539.

(Wee & Tong, 2005) Wee, K. N. L., & Tong, K. W. (2005). The 4 rs of asian shopping centre management Marshall Cavendish International.

(Wel, Hussin, Omar, & Nor, 2012) Wel, C. A. C., Hussin, S. R., Omar, N. A., & Nor, S. M. (2012). Important determinant of consumers' retail selection decision in malaysia. World Review of Business Research, 2(2), 164-175.

(Xu, Yiu, & Cheung, 2022) Xu, Y., Yiu, C. Y., & Cheung, K. S. (2022). Retail tenant mix effect on shopping mall's performance. Marketing Intelligence & Planning, 40(2), 273-287.

(Yavas & Babakus, 2009) Yavas, U., & Babakus, E. (2009). Retail store loyalty: A comparison of two customer segments. International Journal of Retail & Distribution Management, 37(6), 477-492.

(Yiu & Xu, 2012) Yiu, C. Y., & Xu, S. Y. (2012). A tenant-mix model for shopping malls. European Journal of Marketing.

(Yuo, Crosby, Lizieri, & McCann, 2004) Yuo, T., Crosby, N., Lizieri, C. M., & McCann, P. (2004). Tenant mix variety in regional shopping centres: Some UK empirical analyses.

(Zeithaml, Bitner, & Gremler, 2006) Zeithaml, V. A., Bitner, M. J., & Gremler, D. D. (2006). Services marketing: Integrating customer focus across the firm. McGraw-Hill/Irwin.