THE EFFECTS OF A VISUALLY WARM (VS COLD) RETAIL DESIGN ON THE STORE PATRONAGE INTENTIONS

By

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Abstract

Purpose/ Significance: One of the most significant developments in marketing pertains to the realization of how store environment impacts consumers' purchase decisions. However, the aspect of visual warmth and positive consequences of crowding despite their significance and reported effect, have scarcely gained the amount of attention they should in the present marketing literature. This study, however, attempts to fill this gap by building and testing a model based upon the principles of Grounded Cognition theory and the S-O-R Model by establishing visual elements of warmth as one of the antecedents of feeling crowded. And secondly, to study the impact of these upon the approach-avoidance behaviour in an in-store environment through a field experiment by performing a serial and parallel mediation analysis. Therefore, this study is significant in terms of the theoretical, methodological and managerial contribution and implications it entails.

Methodology/Research Design: Prior studies have done a comparison of the warm (vs cold) store design by creating a virtual retail space in a lab setting compromising on the ecological and external validity, however, in our study we carried out a field experiment closer to the natural settings. This allowed us to draw a more accurate outcome of the warmth effects.

Findings: Results of the study show that perception regarding retail crowding in consumers can be successfully manipulated by altering certain environmental and architectural elements related to the visual warmth in a retail setting. And as predicted, positive emotions were associated more with the warm environment as compared to the visually cold environment. Therefore, we are proposing that a positive side to consequences of crowding also exists which are exhibited in the form of increased consumer preference for brand and greater amount of money spent.

Future Implications: Findings of this research can be used as guidelines for designing retail stores interiors. Retail outlets making appropriate use of these insights are more likely to attract and sustain a higher level of footfall and desired approach behaviour in the consumers.

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1. Introduction

Marketing research, across the globe, has been fundamentally concentrated upon eliciting favourable responses from consumers and to this end, achieving it has become akin to a holy grail for the marketers. Therefore, one of the most significant developments in marketing pertains to the realization of how store environment impacts consumers' purchase decisions.

This revelation made marketers and researchers alike realize that for a consumer, the features of the product alone do not matter, but rather the place of consumption or where it is purchased is what counts. And it became such a powerful marketing tool that in some instances we can witness it even overshadowing the products and brands at display (Kotler, 1973). Since then, various design elements are fashioned in a manner to illicit specific cognitive and affective responses in the consumers (Tantanatewin & Inkarojrit, 2016; Bijandi, Sadeghi, & Fereshteh, 2001) and also alter the perceptions of crowding (Madzharov, Block, & Morrin, 2014).

One of the new surfaced architectural element in this regard is the visually warm (vs. cold) design. From an architectural standing, for a place to be regarded as warm, it is not pertinent or contingent upon increasing the tactile temperature of that place, rather it is the various design components including the interior colour, material, furnishings, textured walls and in some cases even the scent to regard a place as warm (Wastiels, Schifferstein, Heylighen, & Wouters, 2012; Reagan, 2012).

The literal connotation of the word "warm" refers to the tactile perception of an object's thermal quality, commonly regarded as the "physical warmth". Whereas, the figurative meaning in psychological and architectural perspective refers to more of an abstract concept of "social warmth", where a person or an environment is considered to be more welcoming and results in

eliciting positive judgements and compatible feelings about the person or the place in question (Williams & Bargh, 2008; Bargh & Shalev, 2012; Baek, Choo, Oh, & Yoon, 2018).

According to Fiske, Cuddy, & Glick (2006) warmth judgment has far reaching implications and carries more weight in formulating cognitive, affective and behavioural judgments about an individual. A person who is perceived as warm is regarded as someone who is social, trustworthy, generous and supportive, whereas, a 'cold' person is considered to be reserved, ambitious, selfish and treacherous (Bargh & Shalev, 2012). These notions find their basis in the theory of Grounded Cognition, which propagates that our concrete experiences (such as temperature) are grounded with abstract concepts (positive feelings) with which they are experienced (Barsalou, 2008).

Similar implications hold true for environment and space as well. A visually warm store (vs cold) store has been found to generate positive evaluations for the products as well as the brand retailer by the consumers (Zwebner, Lee, & Goldenberg, 2013; Baek, Choo, Oh, & Yoon, 2018).

Another interesting concept in this study pertains to establishing newfound antecedants and consequences of feeling crowding; which is defined as the state in which individuals experience a space to be more crowded and limited than it actually is and feel decresead levels of perceived control over their social environment due to seemingly high social density (Stokols, 1972; Eroglou & Machleit, 1986). In business literature, negative response has always been consistently highlighted as the 'only outcome' and as such has been used to define the consequneces of crowding. Negative relationship between crowding and consumer behaviour dominate the studies till date with the exception of few including (Tse, Sin, & Yim, 2002; Pons, Laroche, & Mourali, 2006; Huang, Huang, & Wyer, 2018), which are begininig to question this presumption of negative response as the only rationale oucome of crowding and are hinting towards a positive outcome as well.

In regard with these findings, we believe that the feelings of crowdedness in consumers can be successfully manipulated by introducing a spatial bias to a certain extent by altering certain environmental and architectural elements related to the visual warmth in a retail setting to generate desired positive consumer behaviour.

Therefore, we are proposing that a positive side to consequences of crowding also exist which are exhibited in the form of increased consumer preference for premium brands, greater amount of money spent on premium or luxury products and increased number of total purchased products (Madzharov, Block, & Morrin, 2014), enhanced store image (Tse, Sin, & Yim, 2002) and displaying confidence in the choice of retail outlet (Eroglou & Machleit, 1986).

Thus, the objectives of this particular study were twofold. First, we sought to establish and empirically demonstrate visual elements of warmth as one of the antecedents of feeling crowded and second, to study the impact of these upon the approach-avoidance behaviour of the consumers which were extremely perplexing and exciting to study.

1.1. Significance of the Study

This study is significant in terms of the theoretical, methodological and managerial contribution and implications it entails. As mentioned earlier, despite the renewal of interest in grounded cognition theory, we have only managed to scratch the surface yet. There is still a dearth of empirical studies testing conceptual models based upon grounded cognition theory.

Moreover, the current literature suffers from an inherent biasness towards only studying specific design elements like colour, scent, music, temperature and their impact on consumers' approach behaviours and emotions and negative consequences of crowding. Whereas, the aspect

of visual warmth and positive consequences of crowding despite their significance and reported effect, have scarcely gained the amount of attention they should in the present marketing literature.

Thus, the glaring absence of visual warmth and desirable aspects of crowding make the existing marketing frameworks regarding atmospherollogy and crowding incomplete. This study, however, attempted to fill this gap by building onto Baek, Choo, Oh, & Yoon (2018) and Huang, Huang, & Wyer (2018) works by establishing visual elements of warmth as one of the antecedents of feeling crowded and secondly, to study the impact of these upon the approach-avoidance behaviour which are the behavioural responses consumers' exhibit in an in-store environment (Donnovan & Rossiter, 1982).

Moreover, prior studies have done a comparison of the warm (vs cold) store design by creating a virtual retail space in a lab setting compromising on the ecological and external validity, however, in our study we carried out a field experiment closer to the natural settings. This allowed us to draw a more accurate outcome of the warmth effects. Through this manner we hoped to advance the current knowledge base in the form of a methodological contribution.

Furthermore, it is a significant study in the sense that not much work had been done prior to this research in terms of understanding the underlying contrivances of visual warmth, a gap this research aimed to fill. Also, although some studies prior to this have explored and sought to explain the relationship between social (or psychological) warmth and physical warmth and the effect of visually warm colours independently (Fenko, Schifferstein, & Hekkert, 2010; Mehta, Chae, Zhu, & Soman, 2011) and positive outcomes of crowding (Andrews, Luo, Fang, & Ghose, 2015), but no research had been done in order to study these variables of visual warmth in conjunction with perceived crowding. The effect of their congruency and interplay was yet to be explored and documented. Therefore, it was interesting to discover if these two variables when in

congruence, augmented the proposed relationships or not and the effect when they are not in accord with each other.

This study will make a meaningful contextual contribution by studying this phenomena in the context of an eastern-collectivist society and thus, hoped to ascertain if such relationships exist more in the context of a collectivist culture as compared to that of an individualistic, as collectivists are more attuned towards seeking emotional and physical warmth and also display higher tolerance levels for crowding (Vaske & Shelby, 2008). This study will hopefully garner a better understanding of this phenomenon.

1.2. Research Questions

The main contention of this paper is to study the interplay of "visually warm (vs cold)" store design in conjunction with positive outcomes of feeling crowded. Also, to understand the potential effects and implications of these factors upon the approach-avoidance behaviour of consumers.

Therefore, our research question is as follows;

How does a visually warm (vs cold) store design affects store patronage intentions with the effect being mediated by perceived crowding, preference for social interaction, brand attachment, and emotions?

1.3. Research Objectives

Following are the key research objectives of the study:

1. Explore the ways in which visually warm (vs. cold) store design augment the desired approach behaviours.
2. Explore the effect of visual warm design elements as antecedents to feeling crowded
3. Ascertain the effect of feeling crowded on consumers' attachment to brands as alternative to social connectedness
4. Explore the ways in which visually warm (vs. cold) store design effect emotions.

1.4. Key Definitions

The key definitions of the constructs used in this study are presented in Table 1.1.

Table 1.1.

Conceptual definitions of the constructs

Construct	Conceptual Definition
Visual Warmth (Cold)	"A place to be regarded as warm or cold due to various design components including the interior colour, material, furnishings, textured walls" (Wastiels, Schifferstein, Heylighen, & Wouters, 2012; Reagan, 2012).
Feeling Crowding	"Feeling crowded is explained as the state in which individuals experience space to be more crowded and limited than it actually is and feel decreased levels of perceived control over their social environment due to seemingly high social density" (Machleit, Kellaris, & Eroglou, 1994)
Preference for Social Interaction	"Preference for Social Interaction has been conceptualized as people choosing to interact with other people present in their surroundings" (Burger, 1995)
Brand Attachment - Brands as Alternatives to Social Connectedness	"Brand attachment is defined as the emotional attachment consumers develop for certain brands" (Thomson, MacInnis, & Park, 2005).
Emotions	"Emotions are conceptualized as a set of discrete affective temporary states that can be either positive or negative" (Yoo, Park, & MacInnis, 1998).

Construct	Conceptual Definition
Approach – Avoidance Behaviour	Orth & Wirtz (2014) define approach - avoidance behaviours as the intention of a consumer to approach a store, explore, browse through the store items, willingness to stay and interact with store personnel and patronage intentions.
Brand Loyalty	"Brand Loyalty can be explained as a deep seated commitment to rebuy a brand consistently in the future and to view it as a close to an ideal brand" (Thomson, MacInnis, & Park, 2005)

2. Literature Review

2.1. Grounded Cognition Theory

There has been a recent resurgence with respect to 'grounded cognition' theory which propagates that our concrete experiences (such as temperature) are grounded with abstract concepts (positive feelings) with which they are experienced. This happens as visual cues of warm design elements trigger explicit memory of an experience (stored associations) in the mind of an individual without even experiencing the physical warmth (Barsalou, 2008; Krishna, 2012).

Familiar situations or images, stimulate our brains and activates specific modalities stored in our memory so for instance when we receive a gift, we feel happy and smile i.e. a pattern has been established. Therefore, whenever a part of this situation will occur in this instance, the act of receiving a gift, the remainder part (smiling) will play itself out (Barsalou, 2008). Likewise, when people view an image of a fireplace, the stored associations related to it of feeling warm, comfort and relaxation will get triggered. Hence, the feeling of physical warmth manifests itself without even experiencing the physical warmth (Macrae, Raj, Best, Christian, & Miles, 2013; Baek, Choo, Oh, & Yoon, 2018).

So warmth is explained as a positive physiological arousal evoked as a result of visual warmth stimuli which induces feelings of joy, comfort, sense of belongingness and trust among the individuals. Warmth has often been associated with emotions of happiness and pride (Aaker, Stayman, & Hagerty, 1986).

In IJzerman & Semin (2009) research, they demonstrate the presence of a bi-directional relationship between warmth and social proximity; feeling cold and feeling lonely.

2.2. Visually Warm/Cold Store Design

Interestingly enough from an architectural standing, for a place to be regarded as warm, it is not pertinent or contingent upon increasing the tactile temperature of that place, rather it is the various design components including the interior colour, material, furnishings, textured walls and in some cases even the scent to regard a place as warm (Wastiels, Schifferstein, Heylighen, & Wouters, 2012; Reagan, 2012).

Warmth experienced through the visual design elements of a retail space can induce the concept of physical warmth in consumers, a phenomenon which can be explained through the concept of 'grounded cognition'.

2.2.1. Warm (vs Cool) Colours

The visual environment of a space has several aspects to it including but not limited to the colour hue, brightness, scent, size and layout of the space. However, colour has emerged as being the most dominant visual cue of all. Every visual clue which is processed by our brains contains information regarding colour. Several studies have been carried out in order to assess the effect of warm (vs cool) colours on consumer behaviour in different settings and largely the findings have been consistent in determining that warm colours evoke warmth perceptions as predicted by the grounded cognition theory (Mehta, Chae, Zhu, & Soman, 2011).

The indoor colour has been found to have a profound effect upon perceived warmth of a retail space. Prior research shows certain colours of long wavelength including red, orange and yellow are perceived as warm and exciting and lead to consumers spending longer time in a retail space whereas, colours of short wavelength blue and violet have been found to be calm and cool

and demonstrates reliability (Hidayetoglu, Yildirim, & Akalin, 2012; Tantanatewin & Inkarojrit, 2016).

Colours are associated with different temperatures in line with conventional beliefs. An interesting study Gue´guen & Jacob (2014) over coffee cup colour showed that colour of the container alone was able to influence respondents' perception regarding the warmth of the beverage and as posited, coffee in the red coloured cup was evaluated as the warmest as compared to other coloured containers. Warm colour and material have been found to generate both physical warmth and emotional warmth leading to feelings of intimacy and friendly atmosphere (Taft, 1998; Fenko, Schifferstein, & Hekkert, 2010).

According to (Itten & Birren, 1970) the effect of colours needs to be understood not only in visual sense but also in psychological and symbolic form. The way we respond to colours is fascinating to say the least. Several studies established that in a physical context, warm colours have been found to affect the temperature estimates of a room. A room painted with bright orange or red, colour is perceived 3-4° C warmer in temperature as compared to the rooms with green or blue coloured walls. And to that effect, people standing in warm coloured rooms do not feel the drop in temperature as quickly as people in cool coloured rooms as was evident by the experiment carried out by (Choi, Chang, Lee, Riddle, & Chang, 2016) in their study. People did not even begin to feel cold until the temperature reached to 54 °F.

In another study, respondents were provided with coloured distilled water using odour-less colours and were asked to sniff it. A large number of the subjects reported a warming sensation when sniffing red coloured water and cooling sensation with blue coloured water (A. Michael, Galich, Relland, & Prud'hon, 2010).

Red as a warm colour has been found to inhibit the property of being ‘expansive’ in nature as it causes an individual to be more receptive towards an external stimuli and results in excitation in mood and emotional state. It is regarded as a colour which radiates warmth and hence, is used to depict light and active spaces (Truckenbrod, 1981). It provides the emotional background which will induce ideas and actions in people as colour red has been found to increase brain activity and stimulate production of adrenaline (Calkins, 2002). On the other hand, the colour green is found to have the ‘contractive’ power which results in an opposite behaviour and makes an individual less receptive to external stimuli (Goldstein, 1942).

2.2.2. Textured Material and Furnishings

Apart from colour, other design elements including the tactile texture of the material used, furnishings and even the scent independent of the thermal properties can affect the warmth perception of a space. People generally perceive flat and smooth surfaced walls, surfaces and floors as cooler to the touch, whereas, textured material are perceived to be warmer as the common belief prevails that rough surfaces retain heat.

In this regard, Wastiels, Schifferstein, Heylighen, & Wouters (2012) found out that glass and steel as materials are regarded as cool and finely textured elements like wood and brick are considered to be warm. Therefore, rooms built with brick or stone walls containing wood furnishings and other décor items such as carpets and rugs can create a scene of visual warmth for the people without increasing the thermal temperature of a place (Reagan, 2012).

2.3. Feeling Crowded

Business literature has largely remained inconsistent in defining and conceptualizing key terms related to crowding (Pons, Laroche, & Mourali, 2006). Therefore, concepts such as density

and crowding have been used interchangeably, despite having completely different theoretical underpinnings and implications. As a result of this ambiguity, multiple incoherencies have surfaced which contribute to the lack of clarity and integration of these concepts by the marketing discipline.

Therefore, before we embark upon understanding the concept of "feeling crowded", we first need to comprehend the concepts of density and crowding. Density as explained by (Stokols, 1972; Eroglou & Machleit, 1986; Eroglou & Machleit, 1990) refers to the physical number of people present per unit of space in a particular setting and there are two distinctive categories of it; social and spatial. Social density has been defined as as the number of people present in a given space and the physical proximity between them whereas, spatial density has been defined as the perceptual evaluation of the overall spaciousness of the environment. (Eroglou & Machleit, 1990; Hui & Bateson, 1991; Madzharov, Block, & Morrin, 2014). To put it in simple words, an environement will be deemed as socially dense due to the presence of high number of individuals in a given physical setting, however, in a spatially dense condition, lack of physical space will be responsible.

According to Meyers-Levy & Zhu (2007) various spatial and architectural arrangements in a retail setting such as congested aile spaces, overtowering shelves, lower ceilings are likely to illicit feelings of being spatially constraint within the consumers. This in result will affect the way they process stimuli and their subsequent behaviour in a given setting. Echoing similar sentiments, Levav & Hui (2009) posited that congested spatial elements in a retail setting can cause consumers to feel confined and repressed explained as feeling crowded and as a result it can generate negative attitude towards the store or the brand (Hui & Bateson, 1991).

Crowding, therefore, has been conceptualized as the partiular negative response and stressful outcome exhibited by individuals to a dense situation or an environement (Stokols, 1972; Eroglou & Machleit, 1986). However, interestingly enough, it is a pyschological construct. Therefore, whether an individual percieves a space to be crowded or not, depends upon various spatial, individual, social and situational factors and as such, his response to it can also differ (Whiting & Nakos, 2008). In a comparative crowding analysis carried out by Vaske & Shelby (2008) for wildreness areas, it was seen that eastern visitors reported high tolerance of crowding than their western counterparts, hinting towards differences in perceptions regarding crowding. In essence, we can say that density is an objecive measure, whereas, crowding has a subjective underlining to it.

Despite this, negative response has been consistently highlighted as the 'only outcome' and as such has been used to define the consequneces of crowding. This could mainly be attributed to the biasness permeating the literature available on crowding. Negative relationship between crowding and consumer behaviour dominate the studies till date with the exception of few including (Tse, Sin, & Yim, 2002; Pons, Laroche, & Mourali, 2006; Huang, Huang, & Wyer, 2018), which are begininig to question this presumption of negative response as the only rationale oucome of crowding and are hinting towards a positive outcome as well.

Even the hallmark study on crowding by Eroglou & Machleit (1986) suggest a positve outcome known as functional density of crowding. According to them, retail density may not always generate undesirable consequences if the perceived level of density is considered as functional by the individuals. As demonstrated by Tse, Sin, & Yim (2002) in their study pertaining to restaurants, consumers attributed high quality of food, reputation and low price to restaurants with high level of crowdedness. Hence, in some settings such as that of a restaurant and retail

outlets, lack of crowd may be deemed as bad for the brands and the retailers (Pons, Laroche, & Mourali, 2006; Whiting & Nakos, 2008) .

In liue with that, feeling crowded could be further explained as the state in which individuals experience space to be more crowded and limited than it actually is and feel decreased levels of perceived control over their social environment due to seemingly high social density. The feeling that there is a higher degree of social interferences by others and circumstances are more controlled by elements outside their control results in them feeling crowded and inhibited (Hui & Bateson, 1991; Machleit, Eroglu, & Mantel, 2000). As a consequence, in order to salvage their threatened personal space, individuals assert their control through indulging in various power-compensatory behaviours (Evans & Wener, 2007; Rucker & Galinsky, 2008; Madzharov, Block, & Morrin, 2014).

These power compensatory behaviours can be positive and are exhibited in the form of increased consumer preference for premium brands, greater amount of money spent on premium or luxury products and increased number of total purchased products (Madzharov, Block, & Morrin, 2014), enhanced store image (Tse, Sin, & Yim, 2002) and displaying confidence in the choice of retail outlet (Eroglou & Machleit, 1986).

Another way for consumers to reassert their control and regain their personal space is to avoid interacting with people present in their surroundings, evade maintaining eye contact all in order to deter unwanted interaction (Huang, Huang, & Wyer, 2018). However, a positive outcome of this behaviour is that they become more engrossed in the product or brand that they are purchasing and develop an attachment with them in order to satisfy their need for belongingness. Individuals diagnosed with autism are a prime example of this. They do not prefer social

interaction and shy away from them therefore, in order to fulfill their need to belong they develop attachments to inanimate objects such as their toys and keys (Lee, Odom, & Loftin, 2007).

As explained earlier, feelings of crowdedness manifest themselves when an individual experieneces a greater degree of social density. And multiple studies posit that there is a strong bi-directional relationship between temperature and spatial proximity. As temperature increases, people expereince feeling crowded although, true or actual spatial proximity remains the same (Ijzerman & Semin, 2010).

Moreover, in a study carried out using warm (vs. cool) scents by Zwebner, Lee, & Goldenberg (2013) consumers were observed experiencing greater degree of social density due to spatial bias i.e. the retail space appeared to be more crowded and limited even though actual temperature and social density remained unchanged. Respondents were observed to indulge in power-compensatory behaviour by purchasing more high-end luxury products of brands such as Gucci, Prada and Versace believing it will gain them more respect. This phenomenon has also been referred to as “temperature premium”.

In liue with these findings, we believe that the feelings of crowdedness in consumers can be successfully manipulated by introducing a spatial bias to a certain extent by altering certain environmental and architectural elements related to the dimension of perceived temperature in a retail setting to generate desired positive consumer behaviour.

2.4. Preference for Social Interaction

Burger (1995) in his study regarding solitutde, posits that absence of social interaction by people is generally considered as them physically isolating themselves from others. However,

more than often, people seeking solititude manage to isolate themselves in crowded situations as well by purposefully choosing not to interact with other people around them.

There are several reasons why people avoid social interations. According to Maeng & Tanner (2013), social crowding invokes feelings of stress and anxiety within people and as a result of it, they exhibit an inclination to be socially avoidant.. However, be it a result of social anxiety, lack of social skills or because they revel in solitutde, they all culminate down to achievement of positive well-being by people (Bates, 1964; Leary, Herbst, & McCrary, 2003).

In a crowded situation where people feel that their personal space is being threatened, in order to salvage their threatened personal space, they assert their control through indulging in various power-compensatory behaviours (Evans & Wener, 2007; Rucker & Galinsky, 2008; Levav & Hui, 2009; Madzharov, Block, & Morrin, 2014).

One of such adaptive strategies is turning inwards and avoiding social contact in all forms. They will avoid interacting with people present in their surroundings, evade maintaining eye contact (Evans & Wener, 2007) in order to deter unwanted interaction as a result of social avoidance (Sommers, 2009).

In another study, commuters on crowded subway trains were found to be more immersed in their cell phones rather than their physical environment as an effort to retain their lost personal space (Andrews, Luo, Fang, & Ghose, 2015).

However, as a result of avoiding social interation, their basic need to belong remains unfulfilled. Therefore, in order to satisfy this need, consumers develop an attachment with the brands and become more engrossed in the product that they are purchasing in order to satisfy their need for belongingness as demonstrated by Huang, Huang, & Wyer (2018) in their recent study.

2.5. Brand Attachment - Brands as Alternatives to Social Connectedness

As mentioned earlier, the present literature on crowding has largely focused upon evaluating negative effects of crowding upon consumer behaviour in retail setting, however, the assumptions underlying our research are in stark contrast to that. We are proposing a counterintuitive approach by suggesting a positive relationship between feelings of crowdedness and desired consumer responses. One such proposition is with regard to consumers developing attachment to brands not as substitutes but rather as alternatives to social connectedness as a consequence of social avoidance (Eroglou & Machleit, 1990; Hui & Bateson, 1991; Sommers, 2009; Huang, Huang, & Wyer, 2018).

Brand attachment is defined as the strength of the bond connecting one self with the brand exemplified by brand–self connection; characterizing brand as a part of one-self and brand prominence; ease and frequency brand related thoughts and feelings are brought to mind (Park, MacInnis, Priester, Eisingerich, & Iacobucc, 2010).

As explained earlier, feelings of crowdedness manifest themselves when individuals experienece a greater degree of social density and as a consequence, they feel that their personal space is being threatened. In order to salvage their threatened personal space, they assert their control through indulging in various power-compensatory behaviours (Evans & Wener, 2007; Rucker & Galinsky, 2008; Levav & Hui, 2009; Madzharov, Block, & Morrin, 2014).

According to Thomson, MacInnis, & Park (2005), when people experience stress or anxiety in the external environement, they often resort to seek comfort from the attachment object. Individuals diagnosed with autism are a prime example of this. They do not prefer social interaction and shy away from them therefore, in order to fulfill their need to belong they develop attachments to inanimate objects such as their toys and keys (Lee, Odom, & Loftin, 2007).

Similarly as consumers' desire to intearct socially diminshes, they turn inwards and adopt various adaptive strategies such as becoming more enamored with using their mobile phones rather than their physical surroundings. In a study by Andrews, Luo, Fang, & Ghose (2015) consumers on a crowded subway reported higher interest in mobile ads as compared to those on non-crowded subways as they seved as a welcome relief from social interaction.

When their personal and physical space feels invaded, consumers develop attachment to non-human objects such as brands in order to avoid any unwanted social interaction and unwanted gazes and at the same instance, manage to fulfill their need to belong (Fournier S. , 1998; Evans & Wener, 2007; Park, Eisingerich, & Park, 2013).

2.6. Emotions

Emotions are conceptualized as a set of discrete affective temporary states that can be either positive or negative (Yoo, Park, & MacInnis, 1998). And the existing literature chronicles an interesting shift in the dimensions of consumers' emotions in the retail context especially when it comes to atmospherics and design elements. According to Julie Baker & Grewal (1992) the store environment serves as a potent and highly effective marketing tool. Colour of the store alone has been realized as a powerful factor in physically attracting consumers to the retail outlet by causing pleasure (Lin, 2004).

In fact, it will be safe to state that in many cases, the primary goal of creating a specific retail environment is to elicit certain emotional responses in consumer which will in turn lead to a desired behavioural action (Kotler, 1973). Therefore, the need to study specific emotional reactions with regard to in-store design elements is even more significant now, particularly, in lieu with the continuously evolving retail dynamics.

Studies show that as a consumer walks into a retail space, various design elements such as colour, lightening, music, scent and temperature trigger different emotional reactions in him or her. Ambient designs have been able to arouse emotions of pleasure as identified by (Y.Lin & Worthleyb, 2012). Warm temperature, lights and colours communicate a feeling of comfort and energy which diminish the negative emotional reactions such as feeling tensed or rushed. In fact, a study by Quartier, Vanrie, & Cleempoel (2014) demonstrated that with ambient conditions, shoppers are more likely to spend more time shopping and increased level of in-store spending. Moreover, the willingness to visit again also increases substantially.

One of the hallmark studies regarding emotions is by Mehrabian & Russell (1974). Their proposed framework (PAD) specified human emotions in three categories namely; pleasure, arousal and dominance. Pleasure has been defined as a feeling, which is akin to liking and the extent to which a consumer feels good. Arousal is conceptualized as an emotional state which varies across a continuum of excitement and stimulation. Whereas, dominance is referred to as the degree of control a consumer feels he has over his decisions with regard to the store environment. According to Mehrabian & Russell (1974), the environmental stimuli including colour, light, heat and sound trigger a behavioural response in people through the medium of the above three primary emotional responses. This particular model has since then been used extensively by various researchers regardless of academic disciplines to evaluate and gauge the emotional responses of people. In the context of retail, the emotional states related to arousal and pleasure have been found of utmost significance.

Sherman, Mathur, & Smith, (1997) identified pleasure as the emotion which directly corresponded to the amount of time a consumer spent in a retail outlet and the affinity felt for the store and arousal with the amount of money spent and items purchased. Indoor colour has also

been recognized as a medium of evoking specific emotional responses amongst the consumers Warm and cool-coloured walls were able to elicit emotional responses in the subjects (Yildirima, Akalin-Baskayab, & Hidayetogluc, 2007).

Interestingly, the relationship between store design elements and emotional reactions is not exactly simple. Studies show that processing styles of consumers have been found to moderate the relationship between emotional responses and environment. Therefore, it is extremely critical to identify consumers' psychological processing ability when exploring the effects of environmental stimuli on their emotions and behaviour (Wolak & Marcus, 2006; Lin, 2004). Cognition precedes emotions when in-store environmental cues are being processed by consumers, and is then again affected by that emotion later in the process stage.

2.7. Approach - Avoidance Behaviours

Approach – Avoidance behaviours are defined as the behavioural responses consumers' exhibit in an in-store environment (Donnovan & Rossiter, 1982). The intention of a consumer to approach a store, explore, browse through the store items, willingness to stay and interact with store personnel and patronage intentions Orth & Wirtz (2014) are all defined as desired approach behaviours. Whereas, Avoidance behaviours will manifest itself in the opposite manner. A consumer will exhibit them through dissatisfaction, feeling bored or anxious, reluctance to return to a store or spend time exploring and unfriendliness to the others (Donnovan & Rossiter, 1982).

There are several studies which have demonstrated how emotions play a key role in translating these behaviours into actions. Pleasant environment is therefore, linked to approach behaviour and unpleasant environment to avoidance behaviour. The emotional state of pleasure induced by in-store design elements is found to increase satisfaction among shoppers which in return enhances the approach behaviours (Bitner, 1992).

In a study carried out using scents, warm (vs cool) resulted in consumers experiencing greater degree of social density i.e. the retail space appeared to be more crowded and limited and therefore, respondents were observed to indulge in power-compensatory behaviour by purchasing more high-end luxury products of brands such as Gucci, Prada and Versace believing it will gain them more respect. This phenomenon has also been referred to as "temperature premium" (Zwebner, Lee, & Goldenberg, 2013). In this particular case, we can clearly observe how warm scents alone were successful in evoking desired approach behaviour.

Moreover, warm indoor colours of long wavelength such as red and orange are perceived as exciting and warm by consumers, this directly affects the emotional state of arousal leading to consumers spending longer time in a retail space (Donovan, Rossiter, Marcoolyn, & Nesdale, 1994; Tantanatewin & Inkarojrit, 2016).

2.8. Gender

Gender has been a strong determinant of perception. Space is perceived differently by both men and women and they react in a different manner to indoor colours, warmth, scents and other in-store design elements. Gender has also been identified to result in varied behavioural responses (Yildirima, Akalin-Baskayab, & Hidayetogluc, 2007).

Putrevu (2001); Coley & Burgess (2003), in their study found men to have a penchant for cognitive processing style and use logic and rationale while processing advertising information. Whereas, women were observed to have a propensity to engage in affective processing style and relied more on their emotions and feelings.

Another interesting finding revealed that women by their very nature are more attuned towards deciphering non-verbal cues and are visually oriented. They are romantic as well and as

such, we posit they will be more attracted towards visually warm store designs for it signifies feelings of social warmth, comfort and closeness; attributes we traditionally associate with female gender (Yildirima, Akalin-Baskayab, & Hidayetogluc, 2007).

However, that is not to say that they are easy to impress. In fact, Dubé & Morgan (1996) in their study revealed that female consumers are far more critical of store atmospherics as compared to male consumers. This can be attributed to the differences in their lifestyles, notions about décor and partiality for tidiness which may contribute them to be more critical. Women also tend to spend more time in store, exploring and mingling i.e. desired approach behaviour as compared to men (Sommer, Wynes, & Brinkley, 1992; Richard, Chebat, Yang, & Putrevu, 2010). Based on our literature review, we posit the following hypotheses:

H1: A visually warm (vs. cold) store design will increase perception of feeling crowded.

H2: Feeling crowded will have a positive impact on brand attachment

H3: A visually warm (vs. cold) store design can increase desired approach behaviour

H4: The effect of feeling crowded on approach-avoidance behaviour is mediated by brand attachment.

H5: The effect of visually warm (vs. cold) store design on approach-avoidance behaviour is mediated by feeling crowding and brand attachment.

H6: The effect of visually warm (vs. cold) store design on approach-avoidance behaviour is mediated by feeling crowding, preference for social interaction and brand attachment

H7: The effect of visually warm (vs. cold) store design on approach-avoidance behaviours of the consumers is mediated by positive emotions

H8: The effect of visually warm (vs. cold) store design on approach-avoidance behaviours of the consumers is mediated by negative emotions

2.9. Conceptual Framework

The following figures explain the conceptual models of our paper:

2.9.1. Conceptual Model 1 & 2

Figure 2.1. - Conceptual Model 1

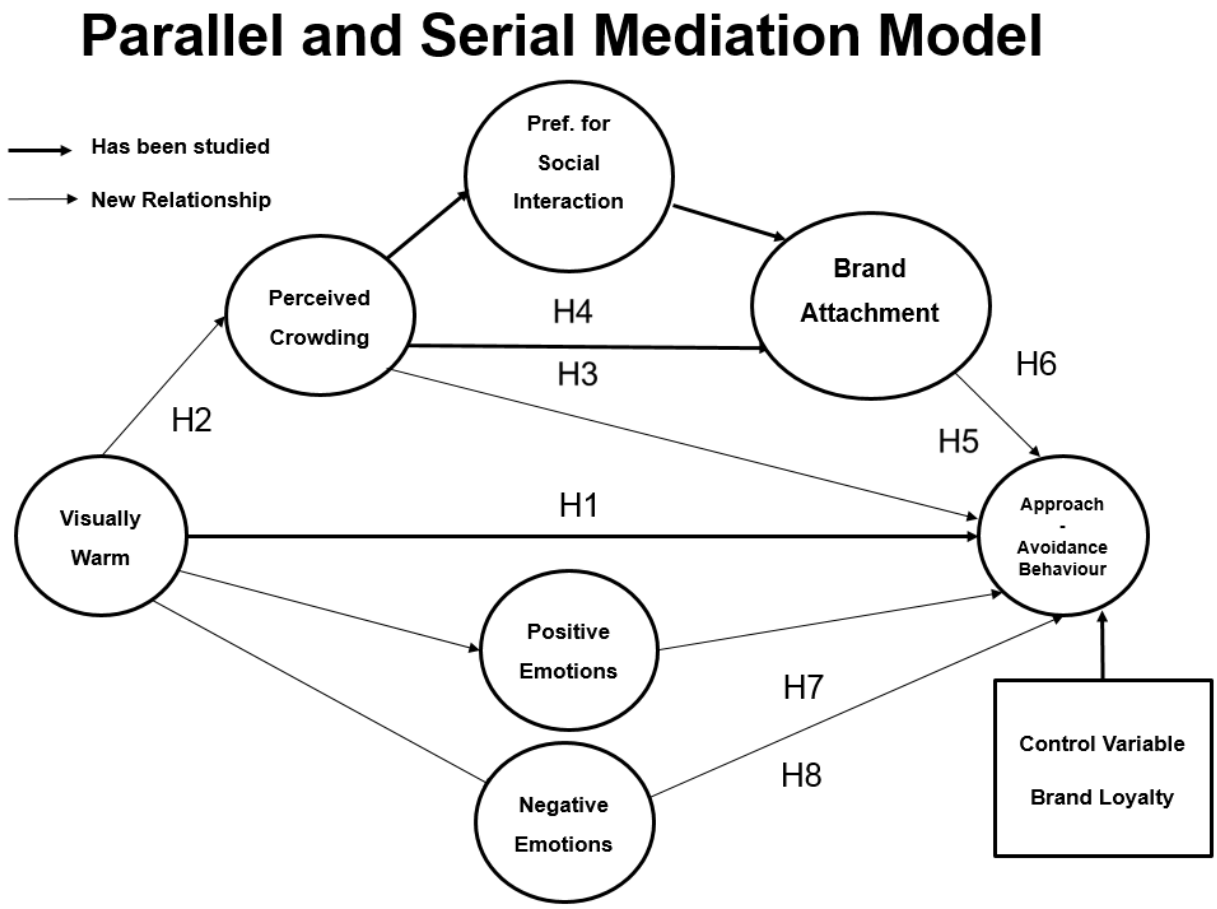
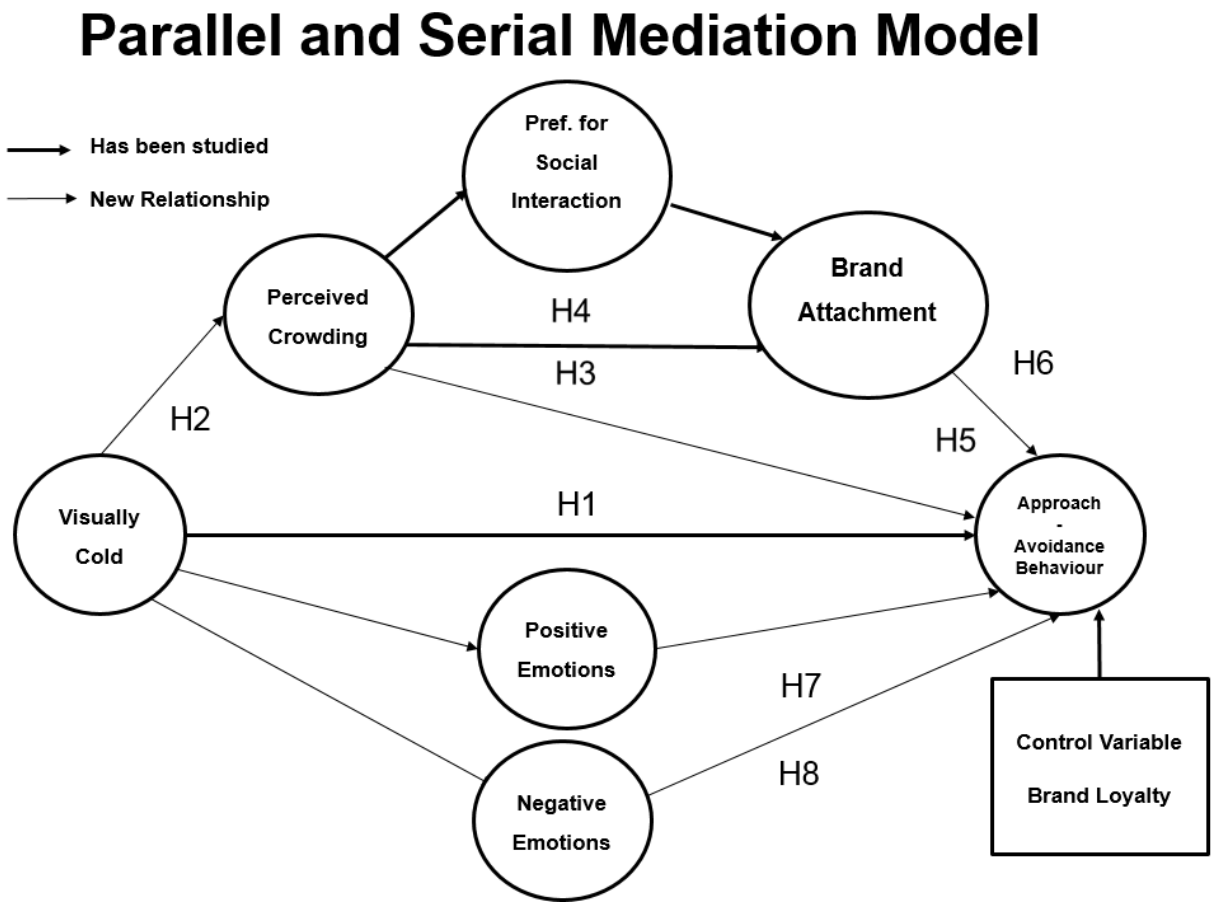


Figure 1.2. - Conceptual Model 2



3. Methodology

Research methodology is an over encompassing concept and research methods; the means through which we gather and interpret data, form only a small part of it. We as researchers, not only need to choose the specific research methods we would be using to gather data but also, have to consider the rationale for using a particular method or technique in the context of our study (Kothari, 2004). Therefore, this chapter will outline the research approach, sampling and data collection techniques, instruments adopted for measuring concerned constructs and various statistical tools employed for analysis and inferences.

3.1. Research Approach and Design

As mentioned earlier, research methodology differs from problem to problem, therefore, it is necessary that every researcher designs his or her own methodology according to their research problem. Therefore, based on the objectives of this study, we adopted an empirical research approach using a field experimentation design, a structured form of enquiry which takes place in a real-life setting. This method of research was appropriate in this particular context as we were seeking evidence to invariably conclude that certain variables affect other variables in a given manner.

Field experiments attempt to emulate the conditions of the natural everyday environment of the participants, with the underlying objective of enhancing external validity or generalizability of the research findings. This approach has an advantage as it allows us to observe people in their natural settings and is therefore, a better representation. Moreover, it allows us to draw causal conclusions and verify, if one or more factors bring about a change in the desired outcomes. In

addition to this, evidence gathered through experiments is currently considered as the strongest support for a given hypothesis (Kothari, 2004).

Roe & Just (2009) ; Shadish & Cook (2002) also discussed the merits of using natural settings in experimental conditions. According to them, if a researcher is able to conduct a study in a setting which is similar to or is of direct interest with minimal disturbances then the infrences drawn from such experiment can be regarded as closer to the truth. Through field experiments real world complexity can be emulated and results drawn are more or less equal to those acquired from the real world setting (G.Witmeraf, H.Bailey, W.Knerr, & C.Parsons, 1996).

3.2. Sampling

Quantitative research is infatuated with alluding to generalizability and reliability (Delice, 2010). Therefore, selecting a sample which is a true representation of the population is extremely crucial in such studies.

In this particular study, we attempted to understand how visually warm and cold retail design elements play with consumers' crowding perceptions, brand attachment, emotions and approach/avoidance behaviour in a fashion retail setting. Hence, the consumers of fashion retail stores formulated the key population of this study, in particular all those who have visited or shopped at the retail outlets of Khaadi and Sapphire specifically. Consequently, keeping in lieu, the nature of the study and the research design, consumers visiting the two retail outlets in Packages Mall in Lahore were contacted.

3.2.1. Sampling Technique

The study was carried out in two phases; pilot study and field experiment and for both studies "Purposive sampling technique", was employed for recruiting voluntary 'knowledgeable

respondents'; people who have in-depth knowledge about a particular issue due to their position, expertise or experience (Cohen, Manion, & Morrison, 2007). Therefore, this particular, non-probability sampling technique is appropriate in instances where a study such as ours requires respondents to have certain experience and knowledge regarding the subject matter or environment. In our case, it was pertinent to select only those respondents who had experienced visually warm or cold retail store environment to meet the study objectives.

Therefore, unit of analysis for this study were individuals and the target respondents were those who were either present within the required retail environment or had just exited the retail outlets after spending a certain amount of time in the outlet. This approach is in line with earlier studies of similar study objectives and approach (Sherman, Mathur, & Smith, 1997; Li, Kim, & Lee, 2009). For both the studies, actual customers were purposively selected on voluntary basis.

3.2.2. Determining Sample Size

Sample size depends upon a multitude of factors ranging from the study design, population size to the effect size and the apha level. Therefore, we considered various factors when deciding upon our sample size. According to Cohen, Manion, & Morrison (2007) a sample size of at least 50 in experimental studies and around 100 samples for each major sub-group in the case of a survey research is suitable.

In liue with this, the sample size calculator for structutal equation modeling developed by (Soper, 2019), was used to calculate the required minimum sample size. Based on desired alpha level of 0.05, effect size of 0.15 and statistical power level of 0.8, the mimimum sample size was estimated to be 119. Keeping all these considerations in retrospect, the final sample size for this

study was 204 gathered in Packages Mall with at least 100 samples for both major groups pertaining to the warm and cold condition.

Furthermore, post hoc power analysis was conducted to determine the achieved power. In order to do so, we used the General Power Analysis program (Erdfelfer, Faul, & Buchner, 1996) known as GPower[2], developed by (Faul, Erdfelder, Buchner, & Lang, 2009). According to the results, a sample of 100 for both groups was able to achieve the desired power level of 0.80, alpha level of 0.05 and a medium effect size of 0.15 deemed acceptable by (Hair, Black, Babin, & Anderson, 2013).

3.3. Pre-test

In order to ensure, the validity and reliability of the study, we conducted a pre-test on a small sample of respondents; comprising of customers in the actual store environment, representing our field population of interest.

For the two test conditions, we selected two retail stores for visual manipulation as was done by (Baek, Choo, Oh, & Yoon, 2018). To achieve this, two common retail clothing brands Khaadi and Sapphire were used.

These stores were selected based on two criterion; first they should be warm or cold oriented on temperature dimension based on characteristics prescribed by prior researches and the second criterion was related to external validity that the elements be currently in use by retailers and such that retail managers would consider them to be commercially viable alternatives (Spangenberg, Sprott, Grohmann, & Tracy, 2006).

[2] This tool has been cited 11329 times by published paper as of August, 2019.

The store design elements regarding the colours, materials and furnishings conferred to both warm and cold settings as prescribed by (Fenko, Schifferstein, & Hekkert, 2010; Wastiels, Schifferstein, Heylighen, & Wouters, 2012). For visually warm store design, colours like bright red, orange and yellow were used and for cold condition, blue, violet and grey (Gue´guen & Jacob, 2014) as for surface materials, bricks and wood would be used for warm and steel, marble and glass as cold material. All the other elements such as store size, dimensions, product categories and layout were kept same for both store conditions. Table 3.1 provides a list of the of the criterion variables on the basis of which we chose the two retail stores

Table 3.1.

Retail Store Selection Variables

Variables	Khaadi	Sapphire
Store Location	Packages Mall (3rd Floor)	Packages Mall (3rd Floor)
Store Size	24,000 sq. feet	24,000 sq. feet
Store Timings	Sun-Fri (11 am – 11 pm)	Sun-Fri (11 am – 11 pm)
Product Categories	Clothing, Home, Accessories	Clothing, Home, Accessories
Target Market	SEC A and B	SEC A and B
No. of Sales personnel	12-14	12-14
Store Colours	Red, Yellow and Orange	Blue, Violet and White
Surface Material	Wooden Flooring	Marble Tiles
Wall Material	Brick (textured) walls	Matt (smooth surfaced) walls

Based upon these factors, Khaadi and Sapphire met both criterions. Khaadi is known for its visually warm design elements with brightly painted walls in the colours of orange, yellow and red, wooden flooring and red brick walls. Whereas, the store design of Sapphire falls under the category of a visually cold store environment with its pale blue and violet colour scheme, white marble tiles covering the floors and plain white walls[3]. As our study focused on identifying the effect of a warm (vs cold) store design elements in a female specific context, therefore, taken together, these brands characteristics closely matched the given research context.

Pre-test survey consisted questions pertaining to the visually warm (vs cold) design elements of the store and demographics. This helped us to examine whether the two retail stores selected; Khaadi and Sapphire using visual design elements such us colour, material and furnishings create perception of a warm (vs cold) retail space or not, and also, if that perception evokes feelings associated with physical warmth (vs. coldness) in the respondents.

Respondents were intercepted while they were present within two stores or as they were exiting the stores. The data was collected on different days of the week, and on different times. We approached the respondents regardless of evidence of shopping, age or gender and were asked if they would be willing to fill out a brief questionnaire. Once the process was completed, they were debriefed and thanked for their time and cooperation. This particular method is in lieu with earlier studies of similar context (Sherman, Mathur, & Smith, 1997; Li, Kim, & Lee, 2009).

[3] Please refer to Appendix B

3.4. Field Experiment

After we verified the success of our manipulations regarding warm (vs cold) store, we followed through with our main study which was a field experiment. It focused on identifying the impact visual warmth has on consumer emotions, feeling crowded and using retail brands as an alternative to social connectedness within a particular retail environment. The interacting effect of crowding with visually warm (vs cold) store design was observed to unravel interesting insights. Therefore, in this study we attempted to explore how feeling crowded and consumer emotions get affected when a consumer experiences visual warmth and also, whether visual warmth enhances the positive effect of feeling crowded and emotions on approach – avoidance behaviours of the participants.

3.4.1. Field Experiment - Experiment Design and Analysis

In this study, again actual store environment was used to test the hypotheses. And to assure variations in the crowding conditions, data was collected over several days at different times of the day. To achieve this, two common retail clothing brands from pre-test; Khaadi and Sapphire were used.

Khaadi is known for its visually warm design elements with brightly painted walls in the colours of orange, yellow and red, wooden flooring and red brick walls. Whereas, the store design of Sapphire falls under the category of a visually cold store environment with its pale blue and violet colour scheme, white marble tiles covering the floors and plain white walls. As our study is focusing on identifying the effect of a warm (vs cold) store design elements in a female specific context, therefore, taken together, these brands characteristics closely match the given research context.

Data was collected intermittently during the experiment. In particular, data was collected on the alternative weekdays and weekends at different time periods for both retail outlets in order to allow for crowd variations (Spangenberg, Sprott, Grohmann, & Tracy, 2006).

The participants in the field experiment were actual shoppers, who served as the experimental participants. Respondents were intercepted while they were present within two stores or as they were exiting the stores. The respondents were approached regardless of evidence of shopping, age or gender and were asked if they would be willing to fill out a brief questionnaire containing questions related to all the variables and basic demographic information. Once the process was completed, they were debriefed and thanked for their time and cooperation. This particular method is in lieu with earlier studies of similar context (Sherman, Mathur, & Smith, 1997; Li, Kim, & Lee, 2009). Questions related to the manipulation checks were placed at the end of the questionnaire in order to mitigate the demand effects within the respondents when answering

3.5. Instruments

The measures we selected in order to collect responses from the participants are those which have been used extensively in prior literature and various studies pertaining to retail context and have been validated. A total of seven variables were used in this research and a brief summary of all of them is provided in the table below.

Table 3.2.

Scales and their developers

Variable Name	Nature of Variable	Number of Items	Author(s)
Visual Warmth	Independent	3	(Baek, Choo, Oh, & Yoon, 2018)
Feeling Crowded	Mediator	6	(Machleit, Kellaris, & Eroglou, 1994)
Preference for Social Interaction	Mediator	3	(Burger, 1995)
Brands Attachment	Mediator	10	(Thomson, MacInnis, & Park, 2005)
Retail based Emotions	Mediator	10	(Yoo, Park, & MacInnis, 1998)
Approach/Avoidance Behaviour	Dependent	5	(Orth and Writz, 2014)

3.5.1. Measurement of Variables

3.5.1.1. Visual Design Elements

Visual design elements were measured by three items adapted from Baek, Choo, Oh, & Yoon (2018)'s study to gauge the warmth perception of colour of the walls, material of the walls and the surface of the floor on a 7-point semantic differential response scale with 1 = cold and 7 = warm.

3.5.1.2. Perceived Retail Crowding (PRC) Scale

The first mediator, 'Feeling crowded' was gauged by the six items of the perceived retail crowding (PRC) scale introduced by Machleit, Kellaris, & Eroglou (1994) in their study. Keeping in mind the context and nature of the study objectives, out of the original seven items, only six were taken for this particular study. Items such as 'The store seemed very crowded to me', 'The store seemed a little too busy', 'There were a lot of shoppers in this store', 'I would feel cramped shopping in this store' and two reverse coded ones including; 'The store seemed very spacious' and 'The store had an open feeling to it'. Respondents were asked to indicate their level of agreement on a 7-point response scale ranging from 1 = Strongly Disagree to 7 = Strongly Agree.

3.5.1.3. Preference for Social Interaction

Preference for Social Interaction was gauged by three items adapted from the original 12 items of Social Avoidance scale developed by (Burger, 1995). The original scale had 24 alternative statements pertaining to preference for social interaction and the other half related to social avoidance. As we wanted to analyse consumers' preference for social interaction while they were in the process of shopping in a particular retail store, therefore, we adapted only the three most relevant to our context from the original study. This scale was also used by (Huang, Huang, & Wyer, 2018) in their crowding perception related study.

The three items we adopted were 'Right now I do not have a strong desire to get away by myself', 'Right now I have a strong need to be around other people' and 'I enjoy being around people'. Respondents were asked to record their responses on a 7-point agreement scale, ranging from 1 = Strongly Disagree to 7 = Strongly Agree.

3.5.1.4. Brand Attachment (Brands as Alternative to Social Connectedness)

In order to assess the variable; brands as alternative to social connectedness, measures for Brand Attachment were adapted from the scale introduced by (Thomson, MacInnis, & Park, 2005). Original items from the literature were adapted according to the context and purpose of this study on a 7 point semantic scale of 1 = Not at all to 7 = Very Well. The original items had 10 one word items depicting various nuances of brand attachment, however, we adapted them to sentences in order to bring clarity and improve understanding of our respondents.

The original scale had items like affection, friendly, loved, peaceful, passionate, delighted, captivated, bonded, connected and attached. We adapted them to a sentence structure as following; 'I feel affection for the products sold at Khaadi/Sapphire', 'Products sold at Khaadi/Sapphire feel like friends to me', 'I feel love towards the products sold at Khaadi', 'Products sold at Khaadi make me feel peaceful', 'I am passionate about the products sold at Khaadi', Products sold at Khaadi make me feel delighted', 'I am captivated by the products sold at Khaadi', 'I am personally connected to products sold at Khaadi', 'I feel a bond between me and the products sold at Khaadi' and 'I am emotionally attached to the products sold at Khaadi'.

3.5.1.5. Retail-based Emotions

In order to assess "emotions", a retail based emotions scale developed by Yoo, Park, & MacInnis (1998), was used and respondents were asked to indicate the extent to which they experienced these emotions on a seven point Likert scale with 1 = not at all and 7 = very much as response scales. The original scale had divided emotions under two categories; positive and negative emotions. Emotions such as pleased, attractive, excited, contented, pride, and satisfied

were regarded as positive emotions, whereas, emotions such as ignored, anxious, nullified, displeased and angry.

As was the case with the brand attachment scale, this scale too was adapted and modified into sentence structure to increase respondents' clarity and understanding. The adapted items were as follows; 'I felt pleasure while shopping in Khaadi/Sapphire store', 'I felt attractive while shopping in Khaadi/Sapphire store', 'I felt excitement while shopping in Khaadi store' and so forth.

3.1.5.6. Approach/Avoidance Behaviour

For Approach-Avoidance behaviour, five item measures from Orth & Wirtz's (2014) adaptation and one item from Donovan and Rossiter's (1982) adaptation of the original Mehrabian and Russell scale (1974) were used.

The included items from Orth and Writz's (2014) were; 'I would enjoy shopping in this store', 'I like this store's environment', 'I would like to spend time browsing in this store' and two reverse coded ones; 'I would avoid visiting this store' and 'I want to avoid looking around or exploring the store'. The one item adopted from the original Mehrabian and Russell scale (1974) was 'This is the place where I might end up spending more money than I originally set out to spend'. Respondents were asked to record their responses on a 7-point agreement scale, ranging from 1 = Strongly Disagree to 7 = Strongly Agree.

3.1.5.7. Brand Loyalty

The control variable; Brand Loyalty was measured using three items from (Thomson, MacInnis, & Park, 2005)'s adaptation of the original items introduced by (Sirgy, Johar, Samli, & Claiborne, 1991) on a 7-point semantic differential scale to answer the following three questions;

following three questions: “How often have you bought this brand in the past?” on a scale of 1 = never to 7 = always, “How would you characterize your loyalty toward this brand?” on a scale of 1 = very weak to 7 = very strong, and “How does this brand compare to your ‘ideal’ brand?” on a scale of 1 = It is very far from my ideal brand to 7 = It is very close to my ideal brand.

3.5.2 Scales and Items

Table 3.3.

Operational Definition and Scale Items

Operational Definition	Scale Items
Visual Warmth - (Baek, Choo, Oh, & Yoon, 2018)	Colour of the walls (Warm vs. Cold) Material of the wall (Textured vs. Non Textured) Surface of the floor (Wooden vs. Tiles)
Feeling Crowded – Perceived Retail Crowding (PRC) Scale (Machleit, Kellaris, & Eroglou, 1994)	This store seemed very crowded to me. This store seemed a little too busy There were a lot of shoppers in this store The store seemed very spacious I would feel cramped shopping in this store The store had an open feeling to it
Preference for Social Interaction - (Burger, 1995)	Right now I do not have a strong desire to get away by myself Right now I have a strong need to be around other people I enjoy being around people

Operational Definition	Scale Items	
Brand Attachment - (Thomson, MacInnis, & Park, 2005)	Affectionate Friendly Loved Peaceful Passionate	Delighted Captivated Connected Bonded Attached
Retail based Emotions- (Yoo, Park, & MacInnis, 1998)	Positive Emotions Pleased Attractive Excited Contented Pride Satisfied	Negative Emotions Ignored Anxious Nullified Displeased Angry
Approach Behaviours (Orth & Wirtz, 2014) Approach – Avoidance Behaviour (Donnovan & Rossiter, 1982)	I would enjoy shopping in this store. I like this store' environment. I would avoid visiting this store. I would like to spend time browsing in this store. I want to avoid looking around or exploring the store. Is this the place where you might end up spending more money than you originally set out to spend?	
Brand Loyalty - (Thomson, MacInnis, & Park, 2005)	How often have you bought this brand in the past? How would you characterize your loyalty toward this brand? How does this brand compare to your ‘ideal’ brand?”	

4. Data Analysis

4.1. Introduction

This chapter will explain the various statistical techniques and procedures used for the purpose of hypothesis testing. However, before embarking upon the more significant task of performing multi-variate analysis, we performed few tests as part of rigorous statistical process.

These tests were part of our preliminary data analysis and as such included assessments pertaining to identifying and treating missing data, normality, multicollinearity, and cooks distance to identify influential observations. We also adopted methods to reduce the likelihood of common method variance (CMV). In order to assess normality, two indicators of skewness and kurtosis were used, whereas, for multicollinearity, variance inflation factor and tolerance level were measured. Lastly, for common method variance, two tests including Harmon's single-factor and Common Latent Factor were performed.

After performing these tests, descriptive statistics were computed to develop a respondents' profile including details pertaining to age, gender, education and monthly income amount. Minimum, maximum, mean and value of standard deviation was also calculated for all major predictor and outcome variables. Last of all, correlations of variables were computed using Pearson's Correlation method.

The final part of this chapter of this chapter deals with multivariate analysis. We conducted "Multi-Group" analysis using chi-square difference test to find out if measurement invariance holds for the two groups or not and whether, the results are different for visually warm and cold retail design. This test was performed in order to confirm the reasoning behind running two separate models.

After the chi-square difference test, Exploratory Factor Analysis (EFA) was performed in order to eliminate factors which failed to report high factor loadings and were thus, not pertinent in our particular research context. We also conducted Confirmatory Factor Analysis; to test the measurement model and to assess the convergent validity (AVE), construct reliability (CR) and discriminant validity of the constructs for this particular study. After these, we moved to formulation and testing of Structural Equation Models; for conducting path analysis and hypothesis testing.

4.2. Pre-Test

Before carrying out the main field experiment, a small pre-test was performed in order to assess whether the two stores selected based on the design elements determined by previous studies, successfully generated the perception of visual warmth (vs. cold) or not. It was a single factor; store visual warmth condition between-subject design. The participants for the pre-test were the customers shopping in the two retail stores. 22 respondents participated in this study and were asked to rate the perception of store colours, wall and surface material on a scale of 1 = cold and 7 = warm.

A series of independent t-tests were performed for analysis for the various design elements including colour and material. The results confirmed the manipulation checks. Individuals shopping in warm condition (Khaadi) perceived the colour and the material of the store to be significantly warmer than that of the cold condition (Sapphire).

Based upon these result, we can see that the manipulations of warm (vs. cold) store design worked and therefore, we proceeded with the main field experiment using the pretested stimuli.

4.3. Preliminary Data Analysis

4.3.1. Chi-Square Difference for Multi-Group Analysis

Before carrying out any analysis, we wanted to ensure that the two groups; warm and cold are inherently different at the model and the path level. Hence, in order to ensure that the two groups are different, a test of chi-square difference was carried out.

To perform the chi-square test, we used ‘store’ as the grouping variable and split the data along the values of the grouping variable; 1 for Khaadi and 2 for Sapphire. The model was then tested with each set of data i.e. for Khaadi and Sapphire.

As we can see in the table 4.1 below, the p-value is highly significant for the chi-square difference test, that the groups are not invariant meaning that there is difference between groups (Gaskin, 2016).

Table 4.1.

Chi-square difference for the unconstrained and fully constrained model

	Chi-Square	df	p-value	Invariant
Overall Model				
Unconstrained	232.243	21	0.000	
Fully constrained	464.239	33	0.000	
Number of groups		2		
Difference	231.996	12	0.000	NO

Note: df = degrees of freedom

4.4. Visually Warm Model Analysis

4.4.1. Treatment of Missing Data

Missing data can cause several problems such as reduction in the sample size or biased results. Therefore, before proceeding with the analysis, we examined the data for the extent of

missing values. This is crucial in order to decide upon the remedy for treatment of data. According to (George & Mallery, 2010), it is acceptable to replace missing values with the mean score of all other subjects for that variable, if the missing values comprise up to 15% of the data without any damage to the results. However, this holds true only for the continuous variables.

In our case, data was missing for three variables pertaining to demographics including age, monthly income and education presented in table 4.2. All three variables were continuous and series mean is the most widely used method for imputation of missing values, therefore, we adopted this method.

For the variables, 'age' and 'education', series mean method was adopted, whereas, for 'monthly income' median of nearby points method was used. Median of nearby points replaces the missing value with the median of the surrounding values and this was used for the income variable as the imputation method.

Table 4.2.

Missing Values

Case Number of Non-Missing Values				
	Result Variable	**No of Replaced Missing Values**	**No of Valid Cases**	**Creating Function**
1	Age_1	5	103	SMEAN(Age)
2	Education_1	10	103	SMEAN(Education)
3	Monthly Income_1	34	103	MEDIAN(Monthly Income)

4.4.2. Normality Assessment

Normality refers to the degree to which a given data ascribes to normal distribution. And in order to assess the normality of the variables, skewness and kurtosis values are usually estimated. Skewness measures the symmetry of the distribution with respect to the normal

distribution. If the estimated values of skewness are within the range of -2 and +2 (Field, 2009; George & Mallery, 2010), then normality of the data is established. In this particular case, the skewness values of all variables are within the prescribed range meaning that the data follows normal distribution.

Another measure used in order to establish normality of the data, is to check for kurtosis. It refers to the presence of outliers in the distribution of data and is graphically represented by peak-ness or flatness of a distribution. Data with outliers depict large values of kurtosis and a peaked distribution, whereas, data without any outliers have low kurtosis and a flatter distribution. The desired range for kurtosis is of +7 and -7 (Byrne, 2010; Hair, Black, Babin, & Anderson, 2013). The values in the table 4.3 below show that kurtosis of all the variables is well within the prescribed range meeting the criteria, therefore, we can say that there are no issues of normality.

Table 4.3.

Tests of Normality

	Skewness		**Kurtosis**	
	Statistic	**Std. Error**	**Statistic**	**Std. Error**
Visually Warm	-1.244	.238	1.502	.472
Feeling Crowded	-.980	.238	.360	.472
Pref. for Social Interaction	.563	.238	-.070	.472
Brand Attachment	-.711	.238	.853	.472
Emotion	-1.008	.238	1.554	.472
Approach/Avoidance Behaviour	-1.146	.238	1.017	.472

Note: Std. Error = Standard Error

4.4.3. Multicollinearity Assessment

Multicollinearity refers to the extent one variable can be explained by the other variables present in the data during the analysis. In the case of high multicollinearity, the interpretation becomes extremely complex and uncertain as it is difficult to ascertain any effect in the presence of existing interrelationships (Hair, Black, Babin, & Anderson, 2013). Therefore, in order to assess presence of multicollinearity, we have calculated two statistics; Variance Inflation Factor (VFI) and Tolerance level. VIF is calculated as "l/Tolerance". If a VIF value is 5 or lower and the Tolerance level is 0.2 or above, then multicollinearity does not exist (Wong, 2019). Looking at the results as shown in the table 4.4, all of the indicators' VIF values are lower than 5 and their Tolerance values are higher than 0.2, so there is no collinearity problem.

Table 4.4.

Collinearity Test

Model	Collinearity Statistics	
	Tolerance	**VIF**
Visual Warmth	.603	1.658
Feeling Crowded	.440	2.275
Pref. for Social Interaction	.780	1.282
Brand Attachment	.631	1.585
Emotions	.635	1.574
Brand Loyalty	.705	1.419

Note: VIF = Variance Inflation Factor

4.4.4. Cooks Distance Analysis

Cooks distance is used for assessing influence of a single observation or a set of observations in the linear regression model (Cook, 1979) . In essence, it measures the degree of influence a predictor variable (independent variable) has on the predicted value of an outcome (dependent variable). Thus, it is regarded as a measure of influence. According to the accepted

standard, if any D_i value is above 1, then it indicates it as an influential value. All cooks values for our data are below 0.1 except one observation which is again less than 0.45, quite below the accepted cut-off point. Therefore, there is no need to delete any observation from our data set. For Cooks distance chart of Khaadi, please refer to appendix; Chart A.

4.4.5. Common Method Variance

Common Method Variance or Common Method Bias occurs when variations in the responses are caused by the instrument or the measurement method, rather than the actual predispositions of the respondents which the instrument is supposed to identify. Hence, CMV can result in either inflation or deflation of the observed relationships, resulting in both Type I and Type II errors, threatening the validity of the inferences drawn from the results (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Therefore, it is extremely critical to address this issue.

There are various ways to deal with CMV *ex ante* and *ex post*. We insured to minimize the threat of CMV in the research design stage by using different scale endpoints and formats for the independent and dependent variables. Moreover, we also ensured our respondents of anonymity and confidentiality so that they respond with honesty (Chang, Witteloostuijn, & Eden, 2010).

From the *ex post* approaches, having a complex model with mediation effects should minimize the presence of CMV, as suggested by (Chang, Witteloostuijn, & Eden, 2010). Complex relationships or adding interactions which are difficult for respondents to visualize substantially decreases the presence of CMV. Despite of all these measure, we still performed multiple statistical remedies to account for CMV beginning with a diagnostic test known as Harman's single-factor analysis.

Harman's single-factor analysis checks whether the variance present in the data could be attributed to a single factor or not. In order to perform this test, all the variables present in the data are loaded onto a single factor through factor analysis. If around 50% of the variance is attributed to it, then common method variance maybe a problem. In the table 4.5 below, we can see that only 25.18% of the total variance can be explained by a single factor, which is substantially less than the cut-off point. Hence, according to this particular test, CMV may not be a problem.

However, Podsakoff, MacKenzie, Lee, & Podsakoff, (2003) and Chang, Witteloostuijn, & Eden, (2010) believe that relying on Harman's test alone is not sufficient and is more likely an incomplete claim as this test is not sophiticated or senitive enough. Therefore, we performed another statistical technique of Common Latent Factor test.

In this particular test, a latent contruct (CLF) was added to the hypothesized model with all of the questionnaire items loaded onto their respective theoretical constructs, as well as on the CLF. The paths were contrained and the variance of the factor was set to 1. After running the analysis, the factor loadings of the CLF model presented in table 4.6 were compared with the factor loadings of the original measurement model (without CLF). If the difference between the two is less than 0.2 then that means that there is no concern of CMV (Gaskin, 2016).

Table 4.5.

Harmon's single-factor Test

Total Variance Explained						
Factor	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	9.218	27.112	27.112	8.562	25.182	25.182
2	3.555	10.456	37.568			
3	3.166	9.311	46.879			
4	2.405	7.075	53.954			
5	2.138	6.289	60.243			
6	1.855	5.457	65.700			
7	1.209	3.556	69.257			
8	1.100	3.237	72.493			
9	.936	2.754	75.247			
10	.842	2.477	77.724			
11	.760	2.235	79.959			
12	.704	2.071	82.031			
13	.622	1.829	83.860			
14	.552	1.624	85.484			
15	.544	1.600	87.084			
16	.440	1.294	88.378			
17	.425	1.250	89.628			
18	.412	1.213	90.840			
19	.378	1.113	91.953			
20	.354	1.040	92.993			
21	.322	.946	93.939			
22	.290	.853	94.792			
23	.260	.764	95.556			
24	.237	.698	96.254			
25	.195	.574	96.828			
26	.187	.550	97.377			
27	.167	.492	97.869			
28	.144	.423	98.292			
29	.131	.384	98.677			
30	.113	.332	99.009			
31	.103	.302	99.310			
32	.087	.255	99.565			
33	.082	.241	99.807			
34	.066	.193	100.000			

Table 4.6.
Common Latent Factor Method

Relationship		With CLF	Without CLF	Change (Without CLF – With CLF)
		Estimate	Estimate	
VDE3	VDE	0.815	0.877	0.062
VDE2	VDE	0.901	0.955	0.054
VDE1	VDE	0.822	0.877	0.055
BA6	BrAtt	0.675	0.771	0.096
BA5	BrAtt	0.718	0.808	0.09
BA4	BrAtt	0.687	0.779	0.092
BA3	BrAtt	0.692	0.784	0.092
BA2	BrAtt	0.81	0.888	0.078
BA1	BrAtt	0.736	0.811	0.075
E1	Emo	0.728	0.798	0.07
E2	Emo	0.678	0.727	0.049
E3	Emo	0.766	0.828	0.062
E4	Emo	0.813	0.878	0.065
E6	Emo	0.663	0.752	0.089
C3	CR	0.435	0.543	0.108
C2	CR	0.765	0.836	0.071
C1	CR	0.868	0.913	0.045
APAV1	ApAv	0.796	0.882	0.086
APAV2	ApAv	0.787	0.874	0.087
APAV6	ApAv	0.56	0.676	0.116
BL1	BL	0.522	0.650	0.128
BL2	BL	0.996	0.915	-0.081
BL3	BL	0.564	0.722	0.158
PFI2	PFI	0.718	0.766	0.048
PFI3	PFI	0.6	0.660	0.06
RE7	NegEmo	0.597	0.631	0.034
RE8	NegEmo	0.532	0.573	0.041
RE9	NegEmo	0.631	0.794	0.163
RE10	NegEmo	0.564	0.684	0.12

Note: VDE = Visual Design Elements, BA = Brand Attachment, E = Emotions, C = Feeling Crowded, APAV = Approach-Avoidance Behaviour, BL = Brand Loyalty, PFI = Preference for Social Interaction and RE = Negative Emotions

4.4.6. Descriptive Statistics and Correlations

4.4.6.1. Univariate Analysis

In order to have a better understanding of our sample's demographic characteristics, we performed series of tests to summarize the information and to develop our respondents'' profile.

Table 4.7 summarizes the demographic characteristics of our sample. According to the results, it is primarily a female sample as around 76% of the total respondents were female and only 24% were male. This is not surprising considering both retail stores target market mostly comprises of female consumers.

Out of the total 103 respondents, 34% of the subjects were less than the age of 24 years, 36% were between the age of 25 and 30 years, 23% between 31 and 40 years, 9% between 41 to 59 years and only 1% above 60 years of age.

An overwhelmingly portion of the total sample around 57% had completed 16 years of formal education (Bachelors), whereas, 29% had a Master degree. And around 43% of the sample reported monthly income level of Rs. 50,000 to Rs. 99,999, 25% between Rs. 100,000 to Rs. 149,000 and 18.4% above Rs. 150,000.

High female representation, education level and income shows it is a quite a close representation of the actual population of these particular retail stores.

Table 4.7.

Sample Demographic Characteristics

Demographic Characteristics	Frequency	Percent
Gender		
Male	25	24.3
Female	78	75.7
Age		
18-24 years	34	33
25-30 years	36	35
31-40 years	23	22.3
41-59 years	9	8.7
60 years and above	1	1
Education		
Matriculation/O Levels	1	1
Intermediate / A-Levels	13	12.6
Bachelors	59	57.3
Masters	30	29.1
Monthly Household Income		
Less than Rs. 25,000	4	3.9
Rs. 25,000 to Rs. 49,999	9	8.7
Rs. 50,000 – Rs. 99,999	45	43.7
Rs. 100,000 – Rs. 149,999	26	25.2
Rs. 150,000 and above	19	18.4

4.4.6.1.1. Variable Means

The variables were all measured on a seven point Likert scale ranging 1 = strongly disagree to 7 = strongly agree. The mean value reported for Visually Warm in table 4.8 was (M= 5.125, SD =1.193), which means that the colour, material and texture of Khaadi was perceived warmer. Feeling Crowded reported a high mean of (M = 6069, SD = 1.262), depicting that the consumers of Khaadi perceived a higher degree of crowdedness. Whereas, preference for social interaction had a low mean value (M=1.811, SD=0.802) depicting respondents shopping in Khaadi did not feel the need to interact socially, followed by Brand Attachment which reported a mean of (M=5.700, SD=.990) illustrating greater degree of brand attachment for Khaadi consumers. Positive Emotions reported a mean of (M=4.805, SD=1.052) and negative emotions (M=3.963, SD=.792) and our outcome variable i.e. Approach/Avoidance Behaviour reported a high mean value out of all the variables (M=5.895, SD=1.002). Whereas, our control variable of Brand Loyalty reported a high mean value (M=3.271, SD=.886).

Table 4.8.
Descriptives

	Minimum	**Maximum**	**Mean**	**Std. Deviation**
Visually Warm	1.00	6.44	5.135	1.193
Feeling Crowded	2.00	7.00	6.069	1.262
Preference for Social Interaction	1.00	7.00	1.811	.802
Brand Attachment	2.00	7.00	5.700	.990
Positive Emotions	1.20	7.00	4.805	1.052
Negative Emotions	1.95	4.95	3.963	.792
Approach/Avoidance Behaviour	2.33	7.00	5.895	1.002
Brand Loyalty (Control Variable)	1.00	7.00	3.271	.886

Note: Std Deviation = Standard Deviation

4.4.6.2. Appropriateness of Data (Adequacy) -Keiser-Meyer-Olkin (KMO) and Bartlett's Test:

Two tests; KMO measure and Bartlett's test of sphericity, as shown in Table 4.9 below were undertaken to evaluate whether, computing factor analysis would be appropriate for this study or not.

The Keiser-Meyer-Olkin's (KMO) measure of Sampling Adequacy value is calculated to see if the sample is adequate enough to yield distinct and reliable factors. A value above 0.65 is considered acceptable, and the KMO value of 0.74 means that our sample is sufficient to perform factor analysis and it would be useful (Kaiser & Rice, 1974).

The Bartlett's test tells us if our correlation matrix is appropriate for factor analysis or not. A statistically significant value tells us that we can reject the null hypothesis here that the correlation matrix is an identity matrix meaning that there is a certain correlation between the variables. In our case, p-value is 0.000 which is less than 0.001, this proves that there is relationship among variables. Hence, data reduction is possible.

Table 4.9.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.740
Bartlett's Test of Sphericity	Approx. Chi-Square	2564.559
	df	741
	Sig.	.000

Note: df = degrees of freedom and Sig = Significance

4.4.7. Bivariate Analysis

4.4.7.1. Bivariate Correlations

Visual warmth has a strong positive relationship with crowding ($r = 0.606$, $p < 0.01$), and approach/avoidance behaviour ($r = 0.639$, $p < 0.01$) respectively, while both brand attachment ($r = 0.331$, $p < 0.01$), and positive emotions ($r = 0.308$, $p < 0.01$) share a moderate positive relationship with it. However, a weak negative relationship exists with preference for social interaction ($r = -0.253$, $p < 0.01$). In the case of crowding, it has a significant and strong positive relationship with brand attachment ($r = 0.563$, $p < 0.01$), and approach/avoidance behaviour ($r = 0.756$, $p < 0.01$). Positive emotions have a strong positive correlation with approach/avoidance behaviour ($r = 0.621$, $p < 0.01$), whereas, negative emotions have a weak positive correlation of 0.120. Complete correlations among all variables are presented in Table 4.10.

Table 4.10.
Pearson Correlation of Main Variables

	VW	**CR**	**PFI**	**BA**	**PE**	**NE**	**Ap-Av**	**BL**
Visual Warmth	--							
Feeling Crowded	.606**	--						
Preference for Social Interaction	-.253**	-.156	--					
Brand Attachment	.331**	.563**	-.009	--				
Positive Emotions	.308**	.484**	-.127	.410**	--			
Negative Emotions	.161	-.011	-.368**	-.083	.316**	--		
Approach/Avoidance Behaviour	.639**	.756**	-.051	.621**	.619**	.120	--	
Brand Loyalty	.067	.111	.328**	.268**	.356**	.190	.213*	--

Note: VW = Visual Warmth, CR = Feeling Crowded, PFI = Preference for Social Interaction, BA = Brand Attachment, PE = Positive Emotions, NE = Negative Emotions, Ap-Av = Approach/Avoidance Behaviour and BL = Brand Loyalty
*. Correlation is significant at the 0.05 level (2-tailed), **. Correlation is significant at the 0.01 level (2-tailed)

4.4.8. Multivariate Analysis

4.4.8.1. Measurement Model – Confirmatory Factor Analysis

In order to construct and evaluate the measurement model, a series of Confirmatory Factor Analysis were performed using AMOS (Version 21) software. This was done primarily to gauge if the respondents were successful in distinguishing all constructs from one another in a hypothesized model.

For this purpose, an eight factor measurement model was constructed including visual design element, feeling crowded, preference for social interaction, brands as alternative to social connectedness, positive emotions, negative emotions, approach/avoidance behaviour and a control variable of brand loyalty.

During the analysis, in order to achieve model fit, items with factor loadings below 0.5 were dropped from the model from each construct as can be seen in table 4.11. For Visual Design Elements (VDE) all three items were retained as their factor loadings were above the cutoff point of 0.5. For ‘feeling crowded’ construct, three of the original six items were retained.

In the case of preference for Social Interaction (PSI), two of the original three items were retained. For Brand Attachment (BA), six out of the original ten items had appropriate factor loadings. For Positive Emotions (PE), five of the original six items were retained and for negative emotions (NegEmo); three of the original four items had appropriate factor loadings. Lastly, for our dependent variable; Approach/Avoidance Behaviour (ApAv), three of the original six items were retained.

After eliminating all items with low factor loadings, modification indices were considered to improve the model fit.

Table 4.11.

Latent Constructs with Standardized Factor Loadings

Construct	Items	Factor Loadings
Visual Design Elements	VDE1	.877
	VDE2	.955
	VDE3	.877
Feeling Crowded	C1	.913
	C2	.836
	C3	.543
Preference for Social Interaction	PSI1	.766
	PSI2	.660
Brand Attachment	BA1	.811
	BA2	.888
	BA3	.784
	BA4	.779
	BA5	.808
	BA6	.771
Positive Emotions	E1	.798
	E2	.727
	E3	.828
	E4	.878
	E6	.752
Negative Emotions	RE7	.631
	RE8	.573
	RE9	.794
	RE10	.684
Approach/ Avoidance Behaviour	APAV1	.882
	APAV2	.874
	APAV6	.676
Brand Loyalty	BL1	.650
	BL2	.915
	BL3	.882

Note: VDE = Visual Design Elements, BA = Brand Attachment, E = Emotions, C = Feeling Crowded, APAV = Approach-Avoidance Behaviour, BL = Brand Loyalty, PFI = Preference for Social Interaction and RE = Negative Emotions

4.4.8.2. Model Fit Analysis

4.4.8.2.1. Absolute Fit Indices

One measure of Absolute Fit Indices is Root Mean Square Error of Approximation (RMSEA). It shows how well our estimated model fits the population, apart from the sample used. Lower RMSEA values indicate a better fit and according to the given standard, an RMSEA value below 0.08 is considered to indicate better fit (Hair, Black, Babin, & Anderson, 2013). Hence, our RMSEA value of 0.069 indicates a good fit.

Another Goodness of Fit measure we look at is known as "Normed Chi-square' or CMIN/df. This measure in essence is simply a ratio of chi-square with respect to degrees of freedom of a model. The accepted standard requires this to have a ratio of 3:1 or less ti indicate a good model fit. The chi-square ($\chi 2$) value of our model is coming out to be 514.866. The CMIN/df value computed is 1.484 which is well within the accepted range of 1-3. This shows that our model fit is appropriate.

4.4.8.2.2. Incremental Fit Indices

Incremental Fit Indices differ from Absolute Fit indices in the sense that they assess how well a model fit is in comparison to some alternative baseline model. This alternative baseline model is usually one which assumes that all variables in a given model are uncorrelated with each other and there aren't any multiple item factors. Thus, the baseline model can be improved using any form of specifications. The incremental fit indices then compare the estimated model with this baseline model and report the improvements made in the model due to specification.

Our IFI value computed is 0.907 which points out to a good model fit. Another one of the most widely reported incremental fit indices is Comparative Fit Index (CFI). A value above 0.9 is

associated with a good fit. And as can be seen from the table 4.12 below, the CFI value for our model is coming out to be 0.904 which is above the prescribed standard.

Table 4.12.

Model Fit Indices

Model Fit Indices	Recommended	Actual	Reference
Absolute Fit Indices			
Chi-square *(χ2)*	-	514.866**(347)	
CMIN/df	1 - 3	1.484	
RMSEA	<0.08	.069	
Incremental Fit Indices			
IFI	> 0.90	0.907	
CFI	> 0.90	0.904	(Hair et al, 2013, p.587)

Note: df = degrees of freedom, RMSEA = Root Mean Square Error of Approximation, IFI = Incremental Fit Index and CFI = Comparative Fit Index
** p < 0.01, * p < 0.05

4.4.8.3. Reliability and Validity Analysis

From the table 4.13, we can see that the reliability and validity measures of all constructs are coming out to be appropriate and meet the prescribed standard based on Fornell and Larcker's (1981) validity determination criteria. The construct reliability (CR) for all variables is above 0.7. Hence, we can conclude that all constructs are measuring exactly what they were supposed to.

The convergent validity indicates the degree of correlation between the items of a particular construct. The AVE values again of all variables are above 0.5 and the discriminant validity (Maximum Shared Variance) values are less than then AVE, hence, we can safely conclude that in the case of Khaadi (Visually Warm) all eight hold both validity and reliability.

Table 4.13.

Reliability and Validity of Latent Constructs

Variables	**Items**	**Reliability (CR > 0.70)**	**Convergent Validity (AVE > 0.50)**	**Discriminant Validity MSV < AVE**
Visual Warmth	3	0.930	0.817	0.360
Feeling Crowded	3	0.818	0.609	0.466
Preference for Social Interaction	2	0.701	0.511	0.139
Brand Attachment	6	0.918	0.653	0.314
Positive Emotions	5	0.897	0.637	0.361
Negative Emotions	4	0.768	0.500	0.139
Approach/Avoidance Behaviour	3	0.855	0.666	0.466
Brand Loyalty	3	0.811	0.594	0.104

4.4.8.4. Hypotheses Testing (Serial and Parallel Mediation)

For hypotheses testing, Process Macro developed by (Hayes, 2018) was employed and a custom dialog builder tool was used to build and customize our model. This particular tool was used for two reasons; first our model was a blend of serial and parallel mediation and the existing default models did not have one which met our specifications and secondly, we wanted to estimate only few specific indirect paths. Therefore, we had to build our own specific model.

Although parallel mediation models are fairly common, serial mediation models are not as prevalent. While estimating a serial mediation model, we are attempting to investigate the direct and indirect effect of visual warmth (X) on approach-avoidance behaviour(Y), through a process in which visual warmth (X) would trigger perception of feeling crowded (M_1), which in turn would reduce preference for social interaction (M_2), and increased brand connectedness (M_3), translating into desired approach behaviour (Y) of consumers as the outcome variable.

Visual warmth was identified as the independent variable and Approach-Avoidance behaviour as the dependent variable. The remaining five mediators were entered in the order they effect each other. The following equations representing the five mediator model are as follows;

$$M_1 = \propto + \alpha_1 X_1 + eM_1$$

$$M_2 = \propto + d_{21} M_1 + eM_2$$

$$M_3 = \propto + d_{31} M_1 + d_{32} M_2 + eM_3$$

$$M_4 = \propto + a_2 X + eM_4$$

$$M_5 = \propto + a_3 X + eM_5$$

$$Y = \propto + C'X + b_1 M_1 + b_2 M3 + b_3 M4 + b_4 M5 + ey$$

Our model assumes causal relationship between the first three mediators. The theory proposes that consumers' crowding perception will decrease their preference for social interaction, which in return will influence their brand attachment. As consumers perceive their space to be more crowded than it actually is due to seemingly high social density, they will engage in power-compensatory behaviours and will attempt to reassert their control and regain their personal space by avoiding interaction with people present in their surroundings like evading eye contact in order to deter unwanted interaction (Huang, Huang, & Wyer, 2018).

However, a positive outcome of this behaviour is that they become more engrossed in the product or brand that they are purchasing and develop an attachment with them in order to satisfy their need for belongingness.

This increased brand attachment would then manifest itself in the form of increased consumer preference for premium brands, greater amount of money spent on premium or luxury products and increased number of total purchased products (Madzharov, Block, & Morrin, 2014), enhanced store image (Tse, Sin, & Yim, 2002) and displaying confidence in the choice of retail outlet (Eroglou & Machleit, 1986).

OLS based regression results were calculated and the SPSS output (attached in Appendix D) was used for hypotheses testing. Table 4.14 and 4.15 show the path coefficients and indirect effect coefficients along with, the t-values and p-values at 95% confidence interval.

4.4.8.4.1. Path Analysis

H1: A visually warm store design will increase desired approach behaviour

Hypothesis 1 stated that a visually warm store design will increase the desired approach behaviour in the consumers and as we can see in table 4.14, we have a statistically significant and positive beta value ($\beta = 0.528$, $p < 0.01$) lending support to our first hypothesis. Moreover, controlling for the effect of Brand Loyalty, the effect is still coming out to be statistically significant.

H2: A visually warm store design will increase perception of feeling crowded.

Hypothesis 2 stated that the visually warm store design will significantly increase the perception of feeling crowded. Results of our analysis present in Table 4.14 show that as hypothesized visually warm design elements will significantly increase the perception of feeling crowded ($\beta = 0.636$, $p < 0.01$) and our results offer strong support for this claim.

H3: Feeling crowded will have a positive impact on brand attachment

Hypothesis 3 sought to analyse the effect of perceived crowding on brand attachment and the results show that perceived crowding will significantly increase brand attachment ($\beta = 0.424$, $p < 0.01$) in consumers. As hypothesized, as consumers would perceive the store to be more crowded than it actually is, they will feel their personal space is being threatened and would thus, engage in power compensatory behaviours which would then manifest itself in the form of seeking comfort from object attachment and in this particular case, it is the brand.

4.4.8.4.2. Mediation Analysis

In the following section, we will discuss the hypotheses results pertaining to both serial and parallel mediations.

H4: The effect of a Visually Warm store design on Approach-Avoidance Behaviour is mediated by Feeling Crowded.

Hypothesis 4 sought to test feeling crowding as the mediator between visual warmth and approach-avoidance behaviour. Prior literature posits that the direct effect of a visually warm store design will increase the perception of feeling crowded ($\beta = 0.636$, $p < 0.01$) whereas, the direct effect of perceived crowding will increase desired approach behaviour ($\beta = 0.252$, $p < 0.01$). Results of our analysis present in Table 4.15 show that the direct effect of visual warmth on approach-avoidance behaviour is significant ($\beta = 0.2361$, $p < 0.01$) and the indirect effect from visual warmth to approach-avoidance behaviour through feeling crowded was statistically significant (Indirect Effect = 0.1605, Boot CI [.0642, .2733]) lending support to hypothesis 4.

H5: The effect of a Visually Warm store design on Approach-Avoidance Behaviour is mediated by Feeling Crowded and Brand Attachment.

We next sought to determine in hypothesis 5 whether the effect of a visually warm store design on approach-avoidance behaviour is mediated by feeling crowded and brand attachment or not. The direct effect of visual warmth on approach-avoidance behaviour is significant ($\beta = 0.2361$, $p < 0.01$) and the mediation results as presented in Table 4.15 show significant positive indirect effect = 0.646, Boot CI [.017, .1294], as zero is outside of our confidence interval.

H6: The effect of a Visually Warm store design on Approach-Avoidance Behaviour is mediated by Feeling Crowded, Preference for Social Interaction and Brand Attachment.

In hypothesis 6, we attempted to determine if the effect of a visually warm store design on approach-avoidance behaviour is mediated by feeling crowded, preference for social interaction and brand attachment or not. The direct effect of visual warmth on approach-avoidance behaviour is significant ($\beta = 0.2361$, $p < 0.01$) and our indirect path analysis results in table 4.15 show the indirect effect was statistically insignificant (Indirect Effect = -0.0002, Boot CI [-.0075, .0049]). As zero lies in the confidence interval, therefore, we cannot claim the indirect effect to be statistically different from zero.

H7: The effect of a Visually Warm store design on Approach-Avoidance Behaviours of the consumers is mediated by Positive Emotions.

We next sought to determine in hypothesis 7 whether the effect of a visually warm store design on approach-avoidance behaviour is mediated by positive emotions or not. Visual warmth is a significant predictor for positive emotions ($\beta = 0.252$, $p < 0.01$) and positive emotions significantly increase the desired approach behaviour in consumers ($\beta = 0.267$, $p < 0.01$) and the direct effect of visual warmth on approach-avoidance ($\beta = 0.2361$, $p < 0.01$).

Results of mediation presented in Table 4.15 show that the standardized indirect effect from visual warmth to approach-avoidance behaviour through positive emotions was statistically significant (Indirect Effect = 0.0675, Boot CI [.0139, .1645]) offering support to our hypothesis.

H8: The effect of visually warm store design on approach-avoidance behaviours of the consumers is mediated by negative emotions

Last but not the least, our hypothesis 8 sought to assess the final serial mediation testing whether the effect of visually warm store design on approach-avoidance behaviour is mediated by negative emotions or not. The direct effect of visual warmth on approach-avoidance behaviour is significant ($\beta = 0.2361$, $p < 0.01$) and the indirect effect of visual warmth on approach-avoidance mediated by negative emotions was statistically insignificant (Indirect Effect = 0.0012, Boot CI [-.0177, .0228]). As zero lies in the confidence interval, this supports the claim that the indirect effect is not statistically different from zero.

Zhao, Lynch, & Chen (2010), identified three different forms of mediations; complementary, competitive and indirect only mediation[4]. If the mediated effect (a*b) and direct effect (c) are both significant and have the same direction, this will signal towards complementary mediation. However, if both the indirect (medaited) effect and direct effect are significant but in opposite direction then that means it is competitive medaition. Lastly, indirect only mediation is present if the direct effect is not significant.

Based upon this classification of type of mediation, we can conclude that medaition via percieved crowding, positive emotions and serail mediation via perceived crowding and brand attachment is complementary in nature as both the direct effect and mediated effects were significant and positive.

Together the overall model explained 74% variance in the approach-avoidance behaviour of the consumers.

[4] Refer to Figure 4.2. – Decision Tree for establishing Mediation and Non-mediation

Table 4.14

Regression Analysis with Control Variable (Brand Loyalty)

Variable(s)		Dependent Variable Approach – Avoidance Behaviour	
		Step 1	**Step 2**
Control Variable			
Brand Loyalty		0.241**	.194
Independent Variables			
Visual Warmth			0.528***
	R^2	0.046	0.438
	F	4.817**	38.968***
	ΔR^2	-	0.392

Note: R^2 = R-Square, F = F statistic and ΔR^2 = Change in R^2
** p < 0.05, *** p <0.01

Table 4.15.
Path Structural Coefficients

Direct Effect/Path	Coefficient	t-value	Confidence Interval	R-square
Visual Warmth ⟶ Feeling Crowded (a_1)	.636**	7.569	[.4693; .8027]	0.372
Visual Warmth ⟶ Positive Emotions (a_2)	.252**	3.202	[.0959;.4081]	0.208
Visual Warmth ⟶ Negative Emotions (a_3)	.099	1.535	[-.029;.227]	0.058
Feeling Crowded ⟶ Approach-Avoidance Behaviour (b_1)	.252**	3.983	[.1266;.3781]	
Brand Attachment ⟶ Approach-Avoidance Behaviour (b_2)	.239**	3.533	[.1048;.3733]	
Positive Emotions ⟶ Approach-Avoidance Behaviour (b_3)	.267**	4.121	[.1388;.3967]	0.740
Negative Emotions ⟶ Approach-Avoidance Behaviour (b_4)	.012	.1686	[-.1347;.1598]	
Visual Warmth ⟶ Approach-Avoidance Behaviour (ϵ)	.236**	4.188	[.1242;.3480]	

Note: ** = p-value <0.01, * = p-value < 0.05

Table 4.16.

Indirect Path Coefficients

Indirect Effects of Visual Warmth via mediators (individually and in a sequence)	Point Estimate	Confidence Interval
(via Feeling Crowded) $\alpha_1 = .636$ $b_1 = .252$ $(a_1 * b_{2)} =$ **.1605**	.1605	[.0642 .2733] Significant
(via Positive Emotions) $a_2 = .252$ $b_3 = .267$ $a_2 * b_3 =$ **.0675**	.0675	.0139 .1645 [Significant]
(via Negative Emotions) $a_3 = .099$ $b_4 = .012$ $a_3 * b_4 =$ **.0012**	.0012	-.0177 .0228 [Insignificant]
(via Feeling Crowded and Brand Attachment) $a_1 = .636$ $d_{31} = .424$ $b_1 = .252$ $a_1 * d_{31} * b_1 =$ **.0646**	.0646	.0177 .1294 [Significant]
(via Feeling Crowded, Preference for Social Interaction and Brand Attachment) $a_1 = .636$ $d_{21} = -.123$ $d_{32} = .421$ $b_2 = .239$ $a_1 * d_{21} * d_{32} * b_2 =$ **-.0002**	-.0002	-.0075 .0049 [Insignificant]
Total Indirect Effect $(a_1 * b_{2)} + (a_3 * b_{3)} + (a_{32} * b_{4)} + (a_1 * d_{31} * b_{1)} +$ $(a_1 * d_{21} * d_{32} * b_{2)} =$ **.2936**	.2936	.1917 .4203 [Significant]
Direct Effect of Visual Warmth on Approach-Avoidance Behaviour (ć)	.2361	.1242 .3480 [Significant]
Total Effect of Visual Warmth on Approach-Avoidance Behaviour Total Indirect Effect + Direct Effect 0.2936 + 0.2361 = 0.5297	0.5297	t-value 8.357 p-value 0.000
Direct Effect of Visual Warmth on Approach-Avoidance Behaviour (c)	0.5283	

Table 4.17.

Specific Indirect Effect(s) of X on Y

Specific Indirect Effect(s) of X on Y

		Effect	BootSE	BootLLCI	BootULCI
	TOTAL INDIRECT EFFECT	.2936	.0594	.1917	.4203
Visually Warm → Feeling Crowding → Approach-Avoidance Behaviour					
$a_1 \times b_1$	Indirect Effect 1	.1605	.0540	.0642	.2733
Visually Warm → Positive Emotions → Approach-Avoidance Behaviour					
$a_2 \times b_3$	Indirect Effect 2	.0675	.0392	.0139	.1645
Visually Warm → Negative Emotions → Approach-Avoidance Behaviour					
$a_3 \times b_4$	Indirect Effect 3	.0012	.0094	-.0177	.0228
Visually Warm → Feeling Crowding → Brand Attachment → Approach-Avoidance Behaviour					
$a_1 \times d_{31} \times b_1$	Indirect Effect 4	.0646	.0292	.0177	.1294
Visually Warm → Feeling Crowding → Pref. for Social Interaction → Brands Attachment → Approach-Avoidance Behaviour					
$a_1 \times d_{21} \times d_{32} \times b_2$	Indirect Effect 5	-.0002	.0029	-.0075	.0049

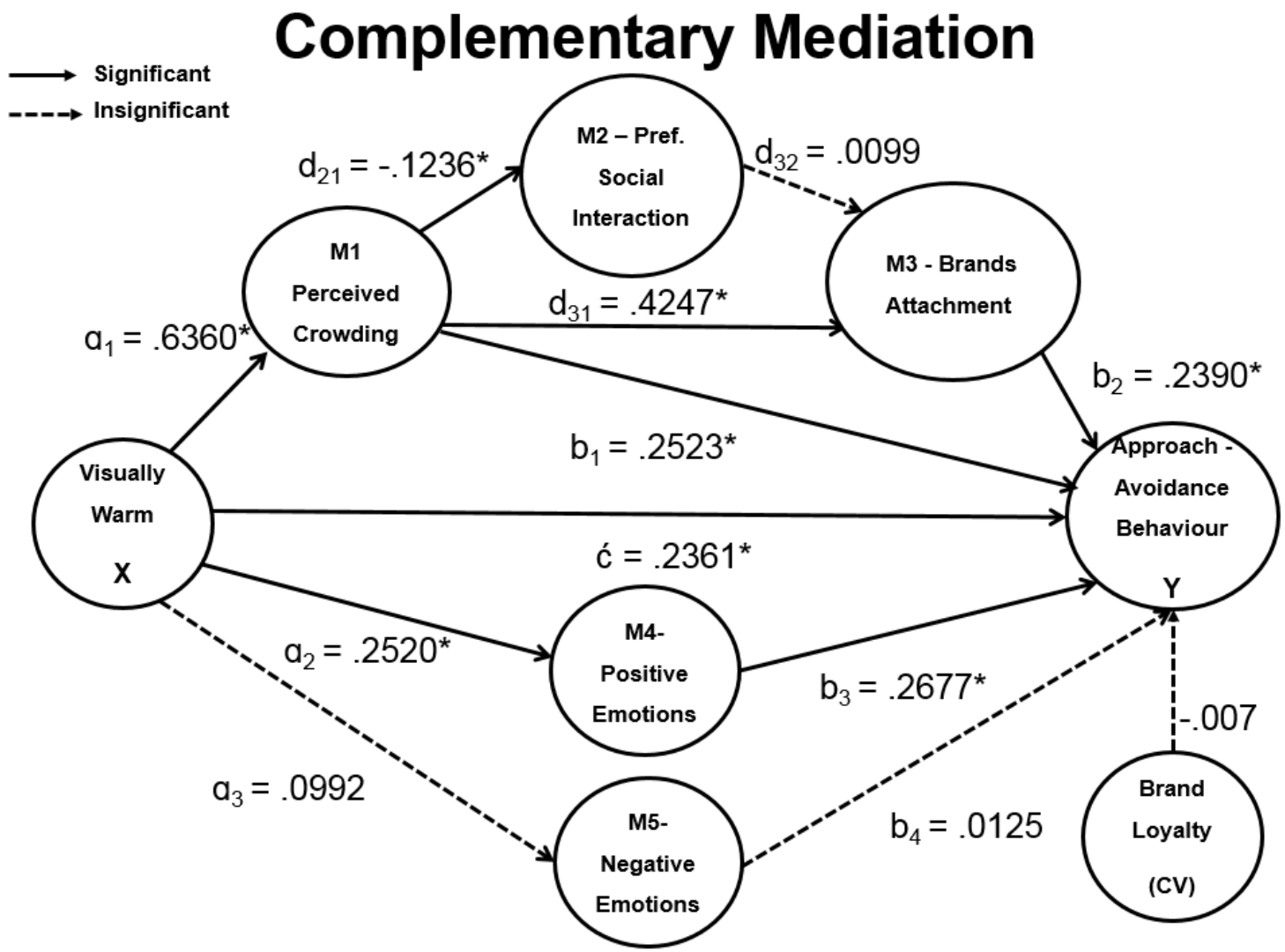


Figure 4.1. Visually Warm Model

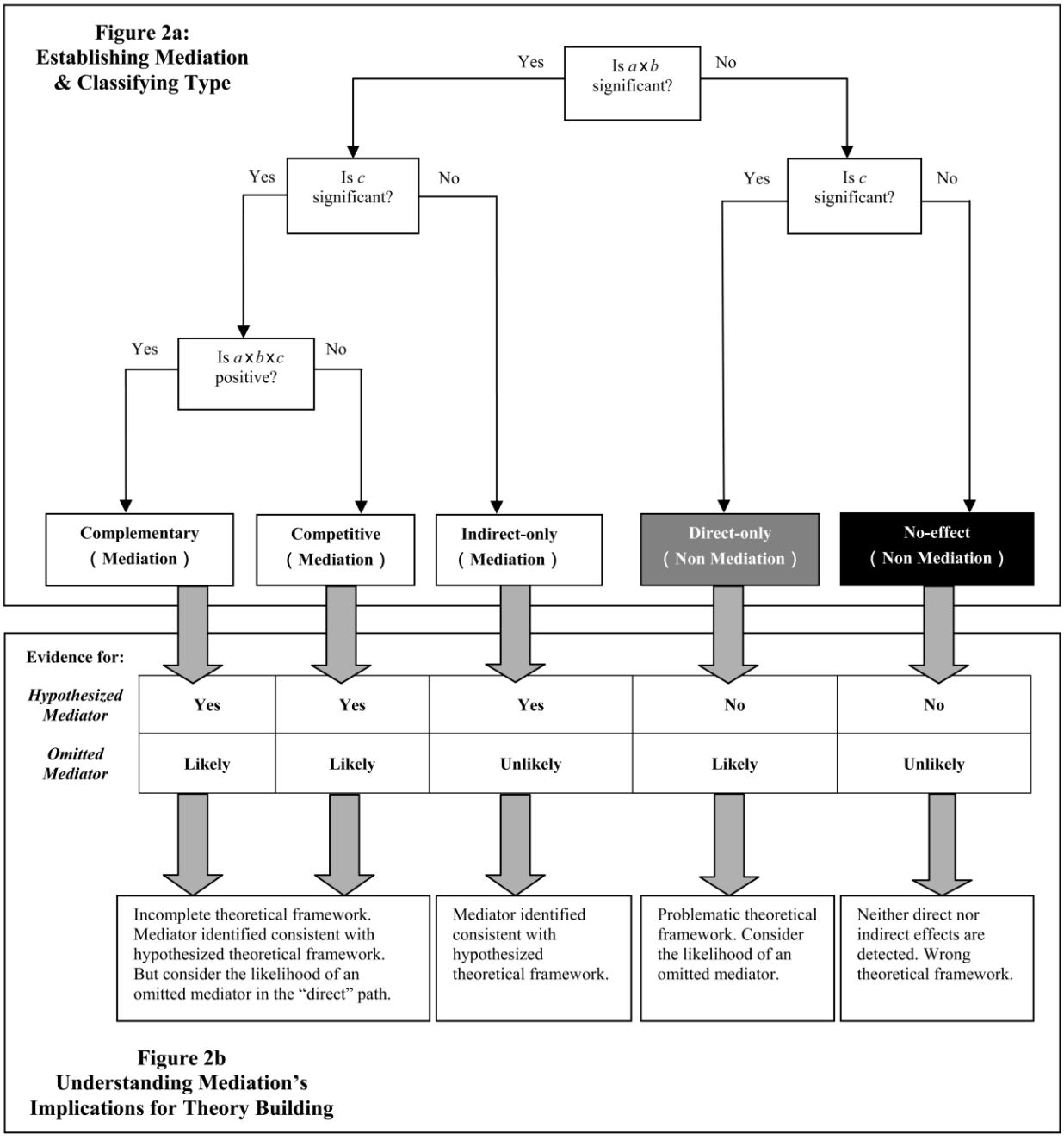


Figure 4.2. Decision Tree for Establishing Mediation and Non-Mediation *(Zhao, Lynch, & Chen, 2010)*

Table 4.18.

Regression Coefficients, Standardized Errors, and Model Summary information for the Visually Warm Design Model

		M_1 (Crowding)				M2 (Preference for Social Interaction)				M3 (Brand Attachment)				M4 (Positive Emotions)				M5 (Negative Emotions)				Y (Approach/Avoidance Behaviour)		
Antecedent		Coeff.	SE	p		Coeff.	SE	p		Coeff.	SE	p		Coeff.	SE	p		Coeff	SE	p		Coeff.	SE	p
X (Visual Warmth)	α_1	.636	.084	0.000		---	---	---		---	---	---	α_2	.252	.078	.001	α_3	.099	.064	.127	ć	.2361	.056	.000
M1 (Crowding)		---	---	---	d_{21}	-.123	.059	.039	d_{31}	.424	.064	.000		---	---	---		---	---	---	b_1	.252	.063	.000
M2 (Pref. Social Interaction)		---	---	---		---	---	---	d_{32}	.009	.107	.926		---	---	---		---	---	---		---	---	---
M3 (Brand Attachment)		---	---	---		---	---	---		---	---	---		---	---	---		---	---	---	b_2	.239	.067	.000
M4 (Positive Emotions)		---	---	---		---	---	---		---	---	---		---	---	---		---	---	---	b_3	.267	.065	.000
M5 (Negative Emotions)		---	---	---		---	---	---		---	---	---		---	---	---		---	---	---	b_4	.012	.074	.866
C1 (Brand Loyalty)	f_1	.101	.113	.373	f_2	.316	.084	.000	f_3	.229	.096	.019	f_4	.400	.105	.000	f_5	.161	.087	.067	g_1	-.006	.064	.919
Constant	i_{M1}	2.471	.558	.000	i_{M2}	1.526	.434	.000	i_{M3}	2.354	.493	.000	i_{M4}	2.201	.522	.000	i_{M5}	2.928	.429	.000	i_y	.474	.434	.277
		$R^2 = 0.3721$ $F(2, 100) = 29.621$ $p = 0.000$				$R^2 = 0.1449$ $F (2, 100) = 8.4705$ $p = 0.0003$				$R^2 = 0.3600$ $F (3, 99) = 18.5614$ $p = 0.000$				$R^2 = 0.2080$ $F (2, 100) = 13.1289$ $p = 0.000$				$R^2 = 0.0582$ $F (2, 100) = 3.0884$ $p = 0.0499$				$R^2 = 0.7402$ $F (6, 96) = 45.5860$ $p = 0.000$		

Table 4.19.

Hypotheses Results Summary

Hypotheses	Status
H1: A visually warm store design will increase desired approach behaviour.	Supported
H2: A visually warm store design will increase perception of feeling crowded.	Supported
H3: Feeling crowded will have a positive impact on brand attachment.	Supported
H4: The effect of visual warmth on approach-avoidance behaviour is mediated by feeling crowded.	Supported
H5: The effect of visually warm store design on approach-avoidance behaviour is mediated by perceived crowding and brand attachment.	Supported
H6: The effect of visually warm store design on approach-avoidance behaviour is mediated by feeling crowded, preference for social interaction and brand attachment.	Not Supported
H7: The effect of visually warm store design on approach-avoidance behaviours of the consumers is mediated by positive emotions.	Supported
H8: The effect of visually warm store design on approach-avoidance behaviours of the consumers is mediated by negative emotions.	Not Supported

4.5. Visually Cold Model Analysis

4.5.1. Treatment of Missing Data

Missing data can cause several problems such as reduction in the sample size or biased results. Therefore, before proceeding with the analysis, as we did for group 1, we examined the data for the extent of missing values. This is crucial in order to decide upon the remedy for treatment of data. According to (George & Mallery, 2010), it is acceptable to replace missing values with the mean score of all other subjects for that variable, if the missing values comprise up to 15% of the data without any damage to the results. However, this holds true only for the continuous variables.

In our case, data was missing for three variables pertaining to demographics including age, monthly income and education. All three variables were continuous. According to our analysis, for the variable 'age' and 'education', 10 and 15 values were missing respectively, hence, we opted for series mean as the imputation method for replacing these missing values. However, for the income variable, around 36 cases were missing values, therefore, we decided to drop this particular variable from all subsequent analysis.

Table 4.20.

Missing Values

Case Number of Non-Missing Values				
	Result Variable	**No of Replaced Missing Values**	**No of Valid Cases**	**Creating Function**
1	Age_1	10	103	SMEAN(Age)
2	Education_1	15	103	SMEAN(Education)

4.5.2. Normality Assessment

Normality refers to the degree to which a given data ascribes to normal distribution. And in order to assess the normality of the variables, skewness and kurtosis values are usually estimated. Skewness measures the symmetry of the distribution with respect to the normal distribution. If the estimated values of skewness are within the range of -2 and +2 (Field, 2009; George & Mallery, 2010), then normality of the data is established. In this particular case, the skewness values of all variables are within the prescribed range meaning that the data follows normal distribution.

Another measure used in order to establish normality of the data, is to check for kurtosis. It refers to the presence of outliers in the distribution of data and is graphically represented by peak-ness or flatness of a distribution. Data with outliers depict large values of kurtosis and a peaked distribution, whereas, data without any outliers have low kurtosis and a flatter distribution. The desired range for kurtosis is of +7 and -7 (Byrne, 2010; Hair, Black, Babin, & Anderson, 2013). The values in the table 4.21 below show that kurtosis of all the variables is well within the prescribed range meeting the criteria, therefore, we can say that there are no issues of normality.

Table 4.21.

Tests of Normality

	Skewness		**Kurtosis**	
	Statistic	**Std. Error**	**Statistic**	**Std. Error**
Visually Cold	.550	.241	-.127	.478
Feeling Crowded	.370	.241	-.735	.478
Preference for Social Interaction	-.307	.241	-.425	.478
Positive Emotions	.112	.241	-.235	.478
Negative Emotions	-1.218	.241	1.183	.478
Approach Avoidance Behaviour	-.239	.241	-.539	.478
Brand Loyalty	.045	.241	-.203	.478

Note: Std. Error = Standard Error

4.5.3. Multicollinearity Assessment

Multicollinearity refers to the extent one variable can be explained by the other variables present in the data during the analysis. In the case of high multicollinearity, the interpretation becomes extremely complex and uncertain as it is difficult to ascertain any effect in the presence of existing interrelationships (Hair, Black, Babin, & Anderson, 2013). Therefore, in order to assess presence of multicollinearity, we have calculated two statistics; Variance Inflation Factor (VFI) and Tolerance level. VFI is calculated as "l/Tolerance". If a VIF value is 5 or lower and the Tolerance level is 0.2 or above, then multicollinearity does not exist (Wong, 2019). Looking at the results as shown in the table 4.22, all of the indicators' VIF values are lower than 5 and their Tolerance values are higher than 0.2, so there is no collinearity problem.

Table 4.22.

Multicollinearity Test

Model	**Collinearity Statistics**	
	Tolerance	**VIF**
Visually Cold	.903	1.108
Feeling Crowded	.791	1.264
Preference for Social Interaction	.903	1.107
Brand Attachment	.376	2.662
Positive Emotions	.641	1.560
Negative Emotions	.617	1.621
Brand Loyalty	.396	2.526

Note: VIF = Variance Inflation Factor

4.5.4. Cooks Distance Analysis

Cooks distance is used for assessing influence of a single observation or a set of observations in the linear regression model (Cook, 1979) . In essence, it measures the degree of influence a predictor variable (independent variable) has on the predicted value of an outcome (dependent variable). Thus, it is regarded as a measure of influence. According to the accepted standard, if any D_i value is above 1, then it indicates it as an influential value.

All cooks values for our Sapphire data are below 0.1 except two observations of 0.98 and 0.93 of respondent 62 and 76 respectively. However, both these value are again less than 1, below the accepted cut-off point. Therefore, there is no need to delete any observation from our data set. For Cooks distance chart of Sapphire dataset, please refer to appendix; Chart B.

4.5.5. Common Method Variance

In order to detect Common Method Variance, Harman's single-factor and Common Latent Factor analysis were performed for Model 2 as well. As mentioned earlier, Harman's test is mainly a diagnostic test. It checks whether the variance present in the data could be attributed to a single factor or not. In order to perform this test, all the variables present in the data are loaded onto a single factor through factor analysis.

If around 50% of the variance is attributed to it, then common method variance maybe a problem. In the table 4.23 below, we can see that only 27.84% of the total variance can be explained by a single factor, which is substantially less than the cut-off point. Hence, according to this particular test, CMV may not be a problem.

Table 4.23.

Harman's single factor Test

Total Variance Explained						
Factor	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	11.414	27.838	27.838	11.414	27.838	27.838
2	4.542	11.079	38.917			
3	2.810	6.855	45.772			
4	2.503	6.105	51.877			
5	2.251	5.490	57.367			
6	1.863	4.544	61.910			
7	1.753	4.276	66.187			
8	1.307	3.187	69.374			
9	1.161	2.833	72.207			
10	1.031	2.514	74.721			
11	.955	2.329	77.050			
12	.861	2.101	79.151			
13	.774	1.888	81.040			
14	.718	1.750	82.790			
15	.689	1.680	84.470			
16	.649	1.582	86.052			
17	.582	1.420	87.472			
18	.506	1.235	88.707			
19	.458	1.117	89.824			
20	.426	1.040	90.863			
21	.392	.956	91.820			
22	.359	.875	92.694			
23	.342	.835	93.529			

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
24	.305	.743	94.272			
25	.262	.638	94.910			
26	.237	.579	95.488			
27	.216	.527	96.015			
28	.195	.477	96.492			
29	.193	.470	96.962			
30	.176	.429	97.390			
31	.163	.398	97.788			
32	.139	.339	98.127			
33	.128	.312	98.439			
34	.124	.301	98.740			
35	.112	.272	99.013			
36	.098	.239	99.252			
37	.091	.221	99.473			
38	.073	.178	99.651			
39	.058	.140	99.791			
40	.047	.115	99.906			
41	.039	.094	100.000			

Note: % = percentage

4.5.6. Descriptive Statistics and Correlations

4.5.6.1. Univariate Analysis

In order to have a better understanding of our sample's demographic characteristics, we performed series of tests to summarize the information and to develop our respondents'' profile.

Table 4.24 summarizes the demographic characteristics of our sample. According to the results, as was the case with the first group, it is primarily a female sample as around 79% of the total respondents were female and only 20% were male. Again, this is not surprising considering Sapphire's target market mostly comprises of female consumers.

Out of the total 100 respondents, 34% of the subjects were less than the age of 24 years, whereas, a large majority, comprising almost half of the total respondents; 44% were between the age of 25 and 30 years, 16% between 31 and 40 years and 6% between 41 to 59 years.

Similar to the respondents' profile of Khaadi, a significant portion of the total sample around 71% have completed 16 years of formal education (Bachelors), whereas, 27% had a Master degree. Only a meagre 2% of the total sample had an intermediate degree.

High female representation and education level shows it is a quite a close representation of the actual population of these particular retail stores.

Table 4.24.

Sample Demographic Characteristics

Demographic Characteristics	Frequency	Percent
Gender		
Male	20	20.2
Female	79	79.8
Age		
18-24 years	34	34
25-30 years	44	44
31-40 years	16	16
41-59 years	6	6
Education		
Intermediate / A-Levels	2	2
Bachelors	71	71
Masters	27	27

4.5.6.1.1. Variable Means

Feeling Crowded reported a low mean of (M = 3.0139, SD = 1.340), depicting that the consumers of Sapphire perceived a lower degree of crowdedness as compared to Khaadi, whose reported mean was relatively higher (M = 6.069, SD = 1.262). Whereas, preference for social interaction had a (M = 2.8243, SD=.8344), followed by Brand Attachment which reported a relative low mean of 3.2013, SD = 1.208 as compared to Khaadi's Brand Attachment's mean (M = 5.700, SD =.990) illustrating greater degree of brand attachment for Khaadi consumers.

Positive Emotions in the context of Sapphire reported a mean of (M = 3.813, SD = 1.262), which is again significantly less than what was reported for Khaadi (M = 4.805, SD = 1.052). The outcome variable i.e. Approach/Avoidance Behaviour reported relatively the highest mean

value out of all the variables (M = 4.773, SD =1.2764). Whereas, the control variable of Brand Loyalty reported a low mean value (M = 2.280, SD = 0.724).

Table 4.25.

Descriptives

	Minimum	Maximum	Mean	Std. Deviation
Visually Cold	.85	5.50	2.5012	1.09863
Feeling Crowded	.86	6.40	3.0139	1.34019
Preference for Social interaction	.88	4.59	2.8243	.83440
Brand Attachment	.91	6.23	3.2103	1.2081
Positive Emotions	1.01	6.66	3.8133	1.26291
Approach/Avoidance Behaviour	1.82	6.93	4.7736	1.27649
Brand Loyalty (Control Variable)	.65	3.83	2.2801	.72475

Note: Std. Deviation = Standard Deviation

4.5.6.2. Appropriateness of Data (Adequacy) -Keiser-Meyer-Olkin (KMO) and Bartlett's Test:

Two tests; KMO measure and Bartlett's test of sphericity, as shown in Table below were undertaken to evaluate whether, computing factor analysis would be appropriate for this data or not.

The Keiser-Meyer-Olkin's (KMO) measure of Sampling Adequacy value is calculated to see if the sample is adequate enough to yield distinct and reliable factors. A value above 0.65 is considered acceptable, and the KMO value of 0.782 means that our sample is sufficient to perform factor analysis and it would be useful (Kaiser & Rice, 1974).

The Bartlett's test tells us if our correlation matrix is appropriate for factor analysis or not. A statistically significant value tells us that we can reject the null hypothesis here that the correlation matrix is an identity matrix meaning that there is a certain correlation between the variables. In our case, p-value is 0.000 which is less than 0.001, this proves that there is relationship among variables. Hence, data reduction is possible.

Table 4.26.

KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.782
Bartlett's Test of Sphericity	Approx. Chi-Square	3030.353
	df	820
	Sig.	.000

Note: df = degrees of freedom and Sig = Significance

4.5.7. Bivariate Analysis:

4.5.7.1. Bivariate Correlations:

As we had conjectured, visual cold design has an insignificant and weak relationship with crowding ($r = 0.053$), and approach/avoidance behaviour has a weak but significant positive correlation with crowding ($r = 0.263$, $p < 0.01$). While, brand attachment has a strong positive relationship with positive emotions ($r = 0.587$, $p < 0.01$).

Moreover, approach/avoidance behaviour has a strong positive relationship with positive emotions ($r = 0.641$, $p < 0.01$).

Complete correlations among all variables are presented in Table 4.27.

Table 4.27.

Correlations of Main Variables

	VW	**CR**	**PFI**	**BA**	**PE**	**NE**	**Ap/Av**	**BL**
Visual Cold	--							
Feeling Crowded	.053	--						
Preference for Social Interaction	.129	.118	--					
Brand Attachment	-.057	.263**	.237*	--				
Positive Emotions	-.040	.135	.044	.587**	--			
Negative Emotions	-.012	-.309**	-.117	-.151	-.031	--		
Approach/Avoidance Behaviour	-.112	.194	-.085	.481**	.641**	.220*	--	
Brand Loyalty	-.210*	.207*	.072	.622**	.423**	.297**	.301**	--

Note: VW = Visual Warmth, CR = Crowding, PFI = Preference for Social Interaction, BA = Brand Attachment, PE = Positive Emotions, NE = Negative Emotions, Ap/Av = Approach/Avoidance Behaviour and BL = Brand Loyalty
**. Correlation is significant at the 0.05 level (2-tailed), **. Correlation is significant at the 0.01 level (2-tailed)*

4.5.8. Multivariate Analysis

4.5.8.1. Measurement Model – Confirmatory Factor Analysis

In order to construct and evaluate the measurement model, a series of Confirmatory Factor Analysis were performed using AMOS (Version 21) software. This was done primarily to gauge if the respondents were successful in distinguishing all constructs from one another in a hypothesized model.

For this purpose, an eight factor measurement model was constructed including visual design element, feeling crowded, preference for social interaction, brands as alternative to social

connectedness, positive emotions, negative emotions, approach/avoidance behaviour and a control variable of brand loyalty.

During the analysis, in order to achieve model fit, items with factor loadings below 0.5 were dropped from the model from each construct as presented in table 4.28. For Visual Design Elements (VDE) all three items were retained as their factor loadings were above the cutoff point of 0.5. For 'feeling crowded' construct, three of the original six items were retained.

In the case of preference for Social Interaction (PSI), two of the original three items were retained. For Brand Attachment (BA), nine out of the original ten items had suitable factor loadings. For Positive Emotions (PE), three of the original six items were retained and for negative emotions (NegEmo); two of the original four items had appropriate factor loadings. Lastly, for our dependent variable; Approach/Avoidance Behaviour (ApAv), two of the original six items were retained.

After eliminating all items with low factor loadings, modification indices were considered to improve the model fit.

Table 4.28.

Latent Constructs with Standardized Loadings

Construct	Items	Factor Loadings
Visual Design Elements	VDE1	.766
	VDE2	.924
	VDE3	.896
Feeling Crowded	C1	.860
	C2	.913
	C3	.800
Preference for Social Interaction	PSI1	.707
	PSI2	.692
Brand Attachment	BA1	.826
	BA2	.877
	BA3	.845
	BA4	.868
	BA5	.885
	BA6	.829
	BA8	.809
	BA9	.781
	BA10	.767
Positive Emotions	E1	.904
	E2	.871
	E3	.882
	RE9	.920
	RE10	.846
Approach/ Avoidance Behaviour	APAV1	.932
	APAV2	.699
Brand Loyalty	BL1	.567
	BL2	.950

Note: VDE = Visual Design Elements, BA = Brand Attachment, E = Emotions, C = Feeling Crowded, APAV = Approach-Avoidance Behaviour, BL = Brand Loyalty, PFI = Preference for Social Interaction and RE = Negative Emotions

4.5.8.2. Model Fit Analysis

4.5.8.2.1. Absolute Fit Indices

One measure of Absolute Fit Indices is Root Mean Square Error of Approximation (RMSEA). It shows how well our estimated model fits the population, apart from the sample used. Lower RMSEA values indicate a better fit and according to the given standard, an RMSEA value below 0.08 is considered to indicate a better fit (Hair, Black, Babin, & Anderson, 2013). The RMSEA value of our measurement model is coming out to be 0.08, on the basis of which we can claim that this particular index is hinting towards a better fit.

Another Goodness of Fit measure we look at is known as "Normed Chi-square' or CMIN/df. This measure in essence is simply a ratio of chi-square with respect to degrees of freedom of a model. The accepted standard requires this to have a ratio of 3:1 or less ti indicate a good model fit. The chi-square ($\chi 2$) value of our model is coming out to be 442.407. The CMIN/df value computed is 1.676 which is well within the accepted range of 1-3. This shows that our model fit is appropriate.

4.5.8.2.2. Incremental Fit Indices

Incremental Fit Indices differ from Absolute Fit indices in the sense that they assess how well a model fit is in comparison to some alternative baseline model. This alternative baseline model is usually one which assumes that all variables in a given model are uncorrelated with each other and there aren't any multiple item factors. Thus, the baseline model can be improved using any form of specifications. The incremental fit indices then compare the estimated model with this baseline model and report the improvements made in the model due to specification.

Our IFI value computed is 0.909 which points out to a good model fit. Another one of the most widely reported incremental fit indices is Comparative Fit Index (CFI). A value above 0.9 is associated with a good fit. And as can be seen from the table 4.29 below, the CFI value for our model is coming out to be 0.906 which is above the prescribed standard.

Table 4.29.

Model Fit Analysis

Model Fit Indices	Recommended	Actual	Reference
Absolute Fit Indices			
Chi-square *(χ2)*	-	442.407**(262)	
CMIN/df	1 - 3	1.676	
RMSEA	<0.08	.08	
Incremental Fit Indices			
IFI	> 0.90	0.909	
CFI	> 0.90	0.906	(Hair et al, 2013, p.578)

Note: df = degrees of freedom, RMSEA = Root Mean Square Error of Approximation, IFI = Incremental Fit Index and CFI = Comparative Fit Index
** p < 0.01, * p < 0.05

4.5.8.3. Reliability and Validity Analysis

From the table 4.30 below, we can see that the reliability and validity measures of all constructs are coming out to be appropriate and meet the prescribed standard based on Fornell and Larcker's (1981) validity determination criteria. The construct reliability (CR) for all variables is above 0.7. Hence, we can conclude that all constructs are measuring exactly what they were supposed to.

The convergent validity indicates the degree of correlation between the items of a particular construct. The AVE values again of all variables are above 0.5 and the discriminant validity (Maximum Shared Variance) values are less than then AVE, hence, we can safely conclude that in the case of Khaadi (Visually Warm) all eight hold both validity and reliability.

Table 4.30.

Reliability and Validity of Latent Constructs

Variables	**Items**	**Reliability (CR > 0.70)**	**Convergent Validity (AVE > 0.50)**	**Discriminant Validity MSV < AVE**
Visual Cold	3	0.898	0.748	0.038
Feeling Crowded	3	0.894	0.738	0.080
Preference for Social Interaction	2	0.700	0.500	0.038
Brand Attachment	9	0.953	0.695	0.346
Positive Emotions	3	0.916	0.785	0.348
Negative Emotions	2	0.877	0.781	0.080

4.5.8.4. Hypotheses Testing (Serial and Parallel Mediation)

For hypotheses testing, Process Macro developed by (Hayes, 2018) was employed and a custom dialog builder tool was used to build and customize our model. This particular tool was used for two reasons; first our model was a blend of serial and parallel mediation and the existing default models did not have one which met our specifications and secondly, we wanted to estimate only few specific indirect paths. Therefore, we had to build our own specific model.

Although parallel mediation models are fairly common, serial mediation models are not as prevalent. While estimating a serial mediation model, we are attempting to investigate the direct and indirect effect of visual warmth (X) on approach-avoidance behaviour(Y), through a process in which visual warmth (X) would trigger perception of feeling crowded (M_1), which in turn would reduce preference for social interaction (M_2), and increased brand connectedness (M_3), translating into desired approach behaviour (Y) of consumers as the outcome variable.

Visual warmth was identified as the independent variable and Approach-Avoidance behaviour as the dependent variable. The remaining five mediators were entered in the order they effect each other. The following equations representing the five mediator model are as follows;

$$\mathrm{M}_1 = \propto + \alpha_1 \mathrm{X}_1 + \mathrm{eM}_1$$

$$\mathrm{M}_2 = \propto + d_{21} M_1 + \mathrm{eM}_2$$

$$\mathrm{M}_3 = \propto + d_{31} M_1 + d_{32} M_2 + \mathrm{eM}_3$$

$$\mathrm{M}_4 = \propto + a_2 X + \mathrm{eM}_4$$

$$\mathrm{M}_5 = \propto + a_3 X + \mathrm{eM}_5$$

$$\mathrm{Y} = \propto + C'X + b_1 M_1 + b_2 M3 + b_3 M4 + b_4 M5 + \mathrm{ey}$$

Our model assumes causal relationship between the first three mediators. The theory proposes that consumers' crowding perception will decrease their preference for social interaction, which in return will influence their brand attachment. As consumers perceive their space to be more crowded than it actually is due to seemingly high social density, they will engage in power-compensatory behaviours and will attempt to reassert their control and regain their personal space by avoiding interaction with people present in their surroundings like evading eye contact in order to deter unwanted interaction (Huang, Huang, & Wyer, 2018).

However, a positive outcome of this behaviour is that they become more engrossed in the product or brand that they are purchasing and develop an attachment with them in order to satisfy their need for belongingness.

This increased brand attachment would then manifest itself in the form of increased consumer preference for premium brands, greater amount of money spent on premium or luxury products and increased number of total purchased products (Madzharov, Block, & Morrin, 2014), enhanced store image (Tse, Sin, & Yim, 2002) and displaying confidence in the choice of retail outlet (Eroglou & Machleit, 1986).

OLS based regression results were calculated and the SPSS output (attached in Appendix) was used for hypothesis testing. Table 4.30 and 4.31 shows the path coefficients and indirect effect coefficients along with, the t-values and p-values at 95% confidence interval.

4.4.8.5.1. Path Analysis

H1: A Visually Cold store design will decrease desired Approach Behaviour.

Hypothesis 1 stated that a visually cold store design as opposed to a visually warm store will decrease the desired approach behaviour in the consumers and as we can see in table 4.30, we have a statistically significant and negative beta value ($\beta = -0.0602$, $p < 0.01$) lending support to our first hypothesis.

H2: A Visually Cold store design will increase perception of Feeling Crowded.

Hypothesis 2 stated that the visually cold store design will significantly increase the perception of feeling crowded. Results of our analysis present in Table 4.30 show that a visually cold store design does not significantly increase the perception of feeling crowded ($\beta = 0.123$, $p > 0.05$) therefore, our results do not offer strong support for this claim.

H3: Feeling crowded will have a positive impact on brand attachment

Hypothesis 3 sought to analyse the effect of perceived crowding on brand attachment and the results show that feeling crowded in a visually cold environment as opposed to a visually warm environment did not significantly increase brand attachment ($\beta = 0.108$, $p > 0.05$) in consumers. It could be due to the fact that as a visually cold store design does not increase the perception of feeling crowded, therefore, the respondents did not feel the need to engage in power compensatory behaviour.

4.4.8.5.2. Mediation Analysis

In the following section, we will discuss the hypotheses results pertaining to both serial and parallel mediations.

H4: The effect of a Visually Cold store design on Approach-Avoidance Behaviour is mediated by Feeling Crowded.

Hypothesis 4 sought to test feeling crowding as the mediator between visual cold and approach-avoidance behaviour. Prior literature posits that a visually cold store design will not increase the perception of feeling crowded leading to an increase in desired approach behaviour. Results of our analysis present in Table 4.31 show that the direct effect of visual warmth on approach-avoidance behaviour is significant ($\beta = 0.2361$, $p < 0.01$) and the indirect effect from visual warmth to approach-avoidance behaviour through feeling crowded was statistically insignificant (Indirect Effect = 0.0311, Boot CI [-.0261, .1055]) not providing support to hypothesis 4.

H5: The effect of a Visually Cold store design on Approach-Avoidance Behaviour is mediated by Feeling Crowded and Brand Attachment.

We next sought to determine in hypothesis 5 whether the effect of a visually cold store design on approach-avoidance behaviour is mediated by feeling crowded and brand attachment or not. The direct effect of visual cold on approach-avoidance behaviour is significant ($\beta = -0.194$, $p < 0.01$) and the mediation results presented in Table 4.31 show insignificant positive indirect effect = 0.0062, Boot CI [-.0072, .0286], as zero is present within the confidence interval.

H6: The effect of a Visually Warm store design on Approach-Avoidance Behaviour is mediated by Feeling Crowded, Preference for Social Interaction and Brand Attachment.

In hypothesis 6, we attempted to determine if the effect of a visually warm store design on approach-avoidance behaviour is mediated by feeling crowded, preference for social interaction and brand attachment or not. The direct effect of visual cold on approach-avoidance behaviour is significant ($\beta = -0.194$, $p < 0.01$) and the indirect path analysis results in table 4.31 show the indirect effect to be statistically insignificant (Indirect Effect = 0.0010, Boot CI [-.0016, .0053]). As zero lies in the confidence interval, therefore, we cannot claim the indirect effect to be statistically different from zero.

H7: The effect of a Visually Cold store design on Approach-Avoidance Behaviours of the consumers is mediated by Positive Emotions.

We next sought to determine in hypothesis 7 whether the effect of a visually warm store design on approach-avoidance behaviour is mediated by positive emotions or not. Visual cold is not a significant predictor for positive emotions ($\beta = 0.058$, $p > 0.05$), whereas, positive emotions significantly increase the desired approach behaviour in consumers ($\beta = 0.551$, $p < 0.01$) and the direct effect of visual cold on approach-avoidance behaviour ($\beta = -0.194$, $p < 0.01$).

Results of mediation presented in Table 4.31 show that the standardized indirect effect from visual warmth to approach-avoidance behaviour through positive emotions was statistically significant (Indirect Effect = 0.0323, Boot CI [-.0805, .1538]) offering support to our hypothesis.

H8: The effect of visually cold store design on approach-avoidance behaviours of the consumers is mediated by negative emotions

Last but not the least, our hypothesis 8 sought to assess the final serial mediation testing whether the effect of visually cold store design on approach-avoidance behaviour is mediated by negative emotions or not. The direct effect of visual cold on approach-avoidance behaviour is significant ($\beta = -0.1940$, $p < 0.01$) whereas, the indirect the indirect effect was statistically insignificant (Indirect Effect = 0.0312, Boot CI [-.1006, .1738]). As zero lies in the confidence interval, this supports the claim that the indirect effect is not statistically different from zero.

Zhao, Lynch, & Chen (2010), identified three different forms of mediations; complementary, competitive and indirect only mediation[5]. If the mediated effect (a*b) and direct effect (c) are both significant and have the same direction, this will signal towards complementary mediation. However, if both the indirect (medaited) effect and direct effect are significant but in opposite direction then that means it is competitive medaition. Lastly, indirect only mediation is present if the direct effect is not significant.

On the other hand, if the indirect effect (a*b) is insignificant and direct effect (c) is significant then it will be Direct Only, No Mediation.

Based upon this classification of type of mediation, we can conclude that medaition via feeling crowded, positive emotions, negative emotions and serail mediation via feeling crowded, preference for social interaction and brand attachment is direct only, no mediation in nature as the direct effect is significant and mediated effects were insignificant.

[5] Refer to Figure 4.2. – Decision Tree for establishing Mediation and Non-mediation

Together the overall model explained 60% variance in the approach-avoidance behaviour of the consumers.

Table 4.31

Path Structural Coefficients

Direct Effect/Path	Coefficient	t-value	Confidence Interval	R-square
Visual Cold ⟶ Perceived Crowding (a_1)	.123	1.000	[-.1214, .3681]	0.0525
Visual Cold ⟶ Positive Emotions (a_2)	.058	.5411	[-.1560,.2728]	0.1812
Visual Cold ⟶ Negative Emotions (a_3)	.061	.5355	[-.1673,.2909]	0.0911
Feeling Crowded ⟶ Approach-Avoidance Behaviour (b_1)	.252**	3.640	[.1148, .3902]	
Brand Attachment ⟶ Approach-Avoidance Behaviour (b_2)	.460**	4.221	[.2438, .6767]	
Positive Emotions ⟶ Approach-Avoidance Behaviour (b_3)	.551**	6.790	[.3905, .7133]	0.6096
Negative Emotions ⟶ Approach-Avoidance Behaviour (b_4)	.512**	6.240	[.3497, .6760]	
Visual Cold ⟶ Approach-Avoidance Behaviour (ϵ)	-.194**	-2.468	[-.3500, -.0380]	

Note: ** = p-value <0.01, * = p-value < 0.05

Table 2.32.
Indirect Path Coefficients

Indirect Effects of Visual Cold via mediators (individually and in a sequence)	Point Estimate	Confidence Interval
(via Perceived Crowding) $\alpha_1 = .123$ $b_1 = .252$ $(a_1 * b_{2)} =$ **.0311**	.0311	[-.0261, .1055] Insignificant
(via Positive Emotions) $a_2 = .058$ $b_3 = .551$ $a_2 * b_3 =$ **.0323**	.0323	[-.0805, .1538] Insignificant
(via Negative Emotions) $a_3 = .061$ $b_4 = .512$ $a_3 * b_4 =$ **.0317**	.0317	[-.1006, .1738] Insignificant
(via Feeling Crowded and Brand Attachment) $a_1 = .123$ $d_{31} = .108$ $b_2 = .460$ $a_1 * d_{31} * b_1 =$ **.0062**	.0062	[-.0072, .0286] Insignificant
(via Crowding, Preference for Social Interaction and Brand Attachment) $a_1 = .123$ $d_{21} = -.067$ $d_{32} = .261$ $b_2 = .460$ $a_1 * d_{21} * d_{32} * b_2 =$ **.0010**	.0010	[-.0016, .0053] Insignificant
Total Indirect Effect $(a_1 * b_{2)} + (a_3 * b_{3)} + (a_{32} * b_{4)} + (a_1 * d_{31} * b_{1)} +$ $(a_1 * d_{21} * d_{32} * b_{2)} =$ **.1023**	.1023	[-.0413, .2685] Insignificant
Direct Effect of Visual Cold on Approach-Avoidance Behaviour (ć)	-.1940	[.1242 .3480] Significant
Total Effect of Visual Cold on Approach-Avoidance Behaviour Total Indirect Effect + Direct Effect 0.1023 + (-.1940) = -0.09	-0.09	t-value -2.468
Direct Effect of Cold on Approach-Avoidance Behaviour (c)	-0.06	

Table 4.33.

Result summary of Hypotheses

Hypotheses	Status
H1: A visually cold store design will decrease desired approach behaviour.	Supported
H2: A visually warm store design will increase perception of feeling crowded.	Not Supported
H3: Feeling crowded will have a positive impact on brand attachment.	Not Supported
H4: The effect of visual cold on approach-avoidance behaviour is mediated by feeling crowded.	Not Supported
H5: The effect of visually warm store design on approach-avoidance behaviour is mediated by perceived crowding and brand attachment.	Not Supported
H6: The effect of visually warm store design on approach-avoidance behaviour is mediated by feeling crowded, preference for social interaction and brand attachment.	Not Supported
H7: The effect of visually warm store design on approach-avoidance behaviours of the consumers is mediated by positive emotions.	Not Supported
H8: The effect of visually warm store design on approach-avoidance behaviours of the consumers is mediated by negative emotions.	Not Supported

Table 4.34.

Regression Coefficients, Standard Errors, and Model Summary Information for the Visually Cold Design Model

		M_1 (Crowding)				M2 (Preference for Social Interaction)				M3 (Brand Attachment)				M4 (Positive Emotions)				M5 (Negative Emotions)				Y (Approach/Avoidance Behaviour)		
Antecedent		Coeff.	SE	p		Coeff.	SE	p		Coeff.	SE	p		Coeff.	SE	p		Coeff	SE	p		Coeff.	SE	p
X (Visual Warmth)	α_1	.123	.123	.319		---	---	---		---	---	---	α_2	.058	.108	.589	α_3	.061	.115	.593	ć	-.194	.078	.015
M1 (Crowding)		---	---	---	d_{21}	.067	.064	.297	d_{31}	.108	.070	.128		---	---	---		---	---	---	b_1	.252	.063	.000
M2 (Pref. Social Interaction)		---	---	---		---	---	---	d_{32}	.261	.111	.021		---	---	---		---	---	---		---	---	---
M3 (Brand Attachment)		---	---	---		---	---	---		---	---	---		---	---	---		---	---	---	b_2	.460	.109	.000
M4 (Positive Emotions)		---	---	---		---	---	---		---	---	---		---	---	---		---	---	---	b_3	.551	.081	.000
M5 (Negative Emotions)		---	---	---		---	---	---		---	---	---		---	---	---		---	---	---	b_4	.512	.082	.000
C1 (Brand Loyalty)	f_1	.421	.186	.026	f_2	.057	.118	.631	f_3	.973	.130	.000	f_4	.755	.163	.000	f_5	.545	.175	.002	g_1	-.781	.181	.000
Constant	i_{M1}	2.471	.558	.000	i_{M2}	2.492	.309	.000	i_{M3}	-.0751	.439	.864	i_{M4}	1.9452	.517	.000	i_{M5}	3.300	.553	.000	i_y	.474	.434	.277
		$R^2 = 0.0525$ $F(2, 97) = 2.6865$ $p = 0.0732$				$R^2 = 0.0163$ $F(2, 97) = .8028$ $p = 0.4510$				$R^2 = 0.4375$ $F(3, 96) = 24.8883$ $p = 0.000$				$R^2 = 0.1812$ $F(2, 97) = 10.7297$ $p = 0.001$				$R^2 = 0.0911$ $F(2, 97) = 1.5218$ $p = 0.0097$				$R^2 = 0.6096$ $F(6, 93) = 24.2007$ $p = 0.000$		

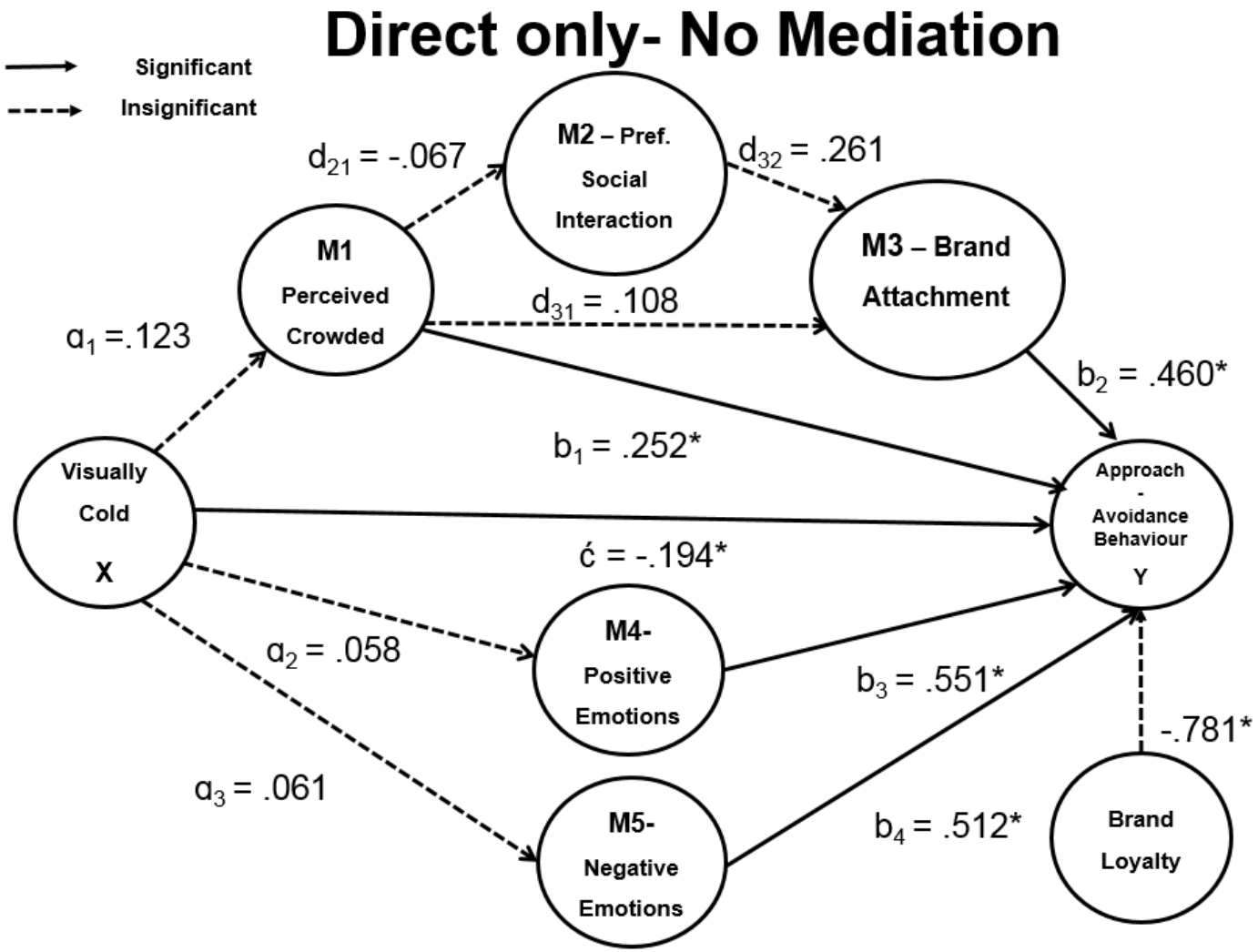


Figure 4.3. Visually Cold Model

5. Conclusion

5.1. Introduction

The final chapter will begin with a brief description of our main research question and conceptual model followed by an in-depth discussion of the findings of our study. After the results, we are going to discuss the theoretical and managerial implications of the study.

The latter part of the chapter will discuss limitations of this study and the potential future research directions.

5.2. Concluding the Research Problem and the Conceptual Framework

The key objective of this study was to understand the intricacies and nuances consumers' exhibit when exposed to visually warm and cold conditions. And as mentioned earlier, despite the renewal of interest in grounded cognition theory, we have only managed to scratch the surface yet. There is still a dearth of empirical studies testing conceptual models based upon grounded cognition theory. Therefore, we wanted to understand the foreplay visual warmth plays with consumers' crowd perception manifested through the lens of grounded cognition theory.

Grounded cognition theory propagates that our concrete experiences (such as temperature) are grounded with abstract concepts (positive feelings) with which they are experienced. When people view an image of a fireplace, the stored associations related to it of feeling warm, comfort and relaxation will get triggered. Hence, the feeling of physical warmth manifests itself without even experiencing the physical warmth (Macrae, Raj, Best, Christian, & Miles, 2013; Baek, Choo, Oh, & Yoon, 2018).

And in Ijzerman & Semin (2009) research, they demonstrated the presence of a bi-directional relationship between warmth and social proximity; feeling cold and feeling lonely. As

temperature changes, perception regarding social density also alters. Therefore, we sought to study this relationship from a newly surfaced architectural element of visual warmth.

This interplay of these variables is even more significant as previous studies show that not much work had been done prior to this research in terms of understanding the underlying contrivances of visual warmth. The current literature suffers from an inherent biasness towards only studying specific design elements like colour, scent, music, temperature and their impact on consumers' approach behaviours and emotions and highlights only negative consequences of crowding. Whereas, the aspect of visual warmth and positive consequences of crowding despite their significance and reported effect, have scarcely gained the amount of attention they should in the present marketing literature.

Therefore, visual warmth (vs cold), feeling crowded, preference for social interaction, brand attachment as alternative to social connectedness, positive and negative emotions and approach/avoidance behaviour of consumers were examined as an integrated framework.

5.3. Theoretical Implications

Although some studies earlier to this have explored and sought to explain the relationship between social warmth and physical warmth and the effect of visually warm colours independently Fenko, Schifferstein, & Hekkert (2010); Mehta, Chae, Zhu, & Soman (2011) and positive outcomes of crowding Andrews, Luo, Fang, & Ghose (2015), however, no research till date has been done in order to study these variables of visual warmth in conjunction with perceived crowding. The effect of their congruency and interplay was yet to be explored and documented. Therefore, it was interesting to discover how these two variables when in congruence, augmented the proposed relationships and the effect when they were not in accord with each other.

The most important concept in this study was to establish newfound antecedants and consequences of feeling crowding; which is defined as the state in which individuals experience a space to be more crowded and limited than it actually is and feel decresead levels of perceived control over their social environment due to seemingly high social density (Stokols, 1972; Eroglou & Machleit, 1986). In business literature, negative response has always been consistently highlighted as the 'only outcome' and as such has been used to define the consequneces of crowding. Hence, negative relationship between crowding and consumer behaviour dominate the studies till date with the exception of few including (Tse, Sin, & Yim, 2002; Pons, Laroche, & Mourali, 2006; Huang, Huang, & Wyer, 2018), which are begining to question this presumption of negative response as the only rationale oucome of crowding and are hinting towards a positive outcome as well.

However, interestingly enough, feeling crowded is a pyschological construct. Therefore, whether an individual percieves a space to be crowded or not, depends upon various spatial, individual, social and situational factors and as such, his or her response to it can also differ (Whiting & Nakos, 2008). In line with these findings, we believed that the feeling of crowdedness in consumers can be successfully manipulated to a certain extent by altering certain environmental and architectural elements related to visual warmth in a retail setting to generate desired positive consumer behaviour.

In our study, we attempted to do that by taking two retail stores; Khaadi and Sapphire. With the former store exhibiting a visually warm environment and the latter, a visually cold. In our study, the visually warm retail environment was observed to have a significant impact upon perceived crowding. Respondents shopping in Khaadi reported higher perceived crowding levels, as compared to Sapphire. This particular finding is in line with grounded cognition theory and

(Ijzerman & Semin, 2009) study which proposed an existence of a bidirectional relationship between temperature and social proximity. Thus, confirming visually warm environment as an antecedent to crowding.

The second aspect of this study was related to establishing positive outcomes of crowding. As respondents felt increased levels of perceived social density and their personal space threatened, they indulged in positive power compensatory behaviours to reassert their control. They exhibited these behaviours in two ways; lowering the need for social interaction with other people present in store and using brand as an alternative to social connectedness.

Individuals have an inherent need for belongingness, thus, when they find themselves in situations where engaging in social interaction is not possible, they satisfy that particular need by developing an attachment to objects which in this case, is the retail brand and its products. In our study, we observed that in the case where the store environment was visually warm, consumers displayed increased brand attachment and were witnessed to be highly engrossed with the products in Khaadi leading to heightened approach behaviours of the consumers. Consumers were observed to have discernible likeness for the Khaadi (visually warm) environment and wanted to spend more time browsing the store and they considered it a place where they would likely end up spending more money than they had originally planned.

The second part of our model was an extension of the environmental psychology's S-O-R (Stimulus Organism Response) model developed by (Mehrabian & Russell, 1974), with visual warmth (vs cold) as the stimuli, positive and negative emotions as organism and approach-avoidance behaviour as the response. Findings of our study show that positive emotions were associated more with the warm environment as warm colours and materials have been previously found to generate both physical warmth and emotional warmth as compared to the visually cold

environment. This particular finding is in line with the earlier studies, as "warm", has always been considered to be more welcoming and results in eliciting positive judgements and compatible feelings about the person or the place in question (Williams & Bargh, 2008; Bargh & Shalev, 2012; Baek, Choo, Oh, & Yoon, 2018).

Sapphire (visually cold) store environment, on the other hand, did not have a significant impact on perceived crowding, brand attachment or emotions. In fact, as opposed to a visually warm retail design, the visually cold design had a significant but negative relationship with desired approach behaviours of the consumers. Nevertheless, this does not mean that a visually cold design is necessarily a flawed one. There may be some other variables which could be at play which could potentially increase desired approach behaviour, however, factors such as feeling crowded and brand attachment as alternative to social connectedness do not have a significant impact in conjunction with a visually cold store design upon the consumers' patronage intentions.

5.4. Practical Implications

These findings have significant practical implications. Retail atmospherollogy is continuously evolving and we see increased emphasis on creating situational involvement on the consumers' end. Retail and brand managers are now hard pressed for developing immersive retail experience for their consumers and it is no longer an option but rather has transgressed into the realm of a necessity. Therefore, research such as ours entails meaningful insights for retail managers.

Store interior design is a major tool which can be used to manipulate desired approach behaviours in the consumers and can also, increase store patronage intentions in the form of increased consumer preference for premium brands, greater amount of money spent on premium or luxury products and increased number of total purchased products (Madzharov, Block, &

Morrin, 2014), enhanced store image (Tse, Sin, & Yim, 2002) and displaying confidence in the choice of retail outlet (Eroglou & Machleit, 1986).

Moreover, interior design elements sucha as wall colours and the material of the flooring and walls can be successufully used to influence consumers' crowd perception. And as our findings and prior literature suggests, retail crowding can have potential positive consequences. In a study by (Zwebner, Lee, & Goldenberg, 2013), where perception of social density was manipulated by using warm (vs cold) scents, consumers were observed purchasing more high-end luxury products of brands during the days warm scent was diffused through the stores, believing it will gain them more respect. This phenomenon has also been referred to as "temperature premium".

The findings of these further imply that retail crowding can lead to increased brand attachment as an alternative to social connectedness. In a visually warm environement, consumers will find themselves in a situation where they would want to deter social interaction, therefore, they would satisy their need for belongingness by exhibiting an attachment for the brand and the retail products.

Lastly, one major underlying criterion behind the selection of our two retail stores conferring to visually warm and cold oriented was based on characteristics prescribed by prior researches and the second criterion was related to external validity that the elements be currently in use by retailers and such that retail managers would consider them to be commercially viable alternatives (Spangenberg, Sprott, Grohmann, & Tracy, 2006). Therefore, elements such as warm or cool wall colours, wooden or marble flooring and textured brick or smooth surfaced walls are something every retailer can potentially utilize in order to create a certain environment for its consumers.

5.5. Limitations and Future Research Directions

Despite its theoretical and practical contributions, this study has some limitations that should be addressed by future research. First, the scenario and stimuli used were more women-oriented, even though both men and women participated.

Despite the fact that Khaadi and Sapphire display both male and female clothing, both retail stores have more female shoppers, and the product categories, brand and store design was female-oriented. Therefore, the sample was primarily a female sample. As a result, we were unable to identify or explore the gender related difference and had to remove the variable from the main study. Therefore, we suggest that future exploration with a gender-specific design or context may prove meaningful.

Moreover, it was a quasi-experiment and we could not control for a large number of covariates apart from brand loyalty, therefore, we propose that future studies may control for variables such as sales representatives' behaviour, product categories displayed, promotion and marketing campaigns and spatial assortment of the furniture and display shelves in stores.

Lastly, future research can provide generalizability by replicating the same experiment under different contexts in terms of product category or brand. We focused on fashion brands alone however, future studies can explore other product and brand categories.

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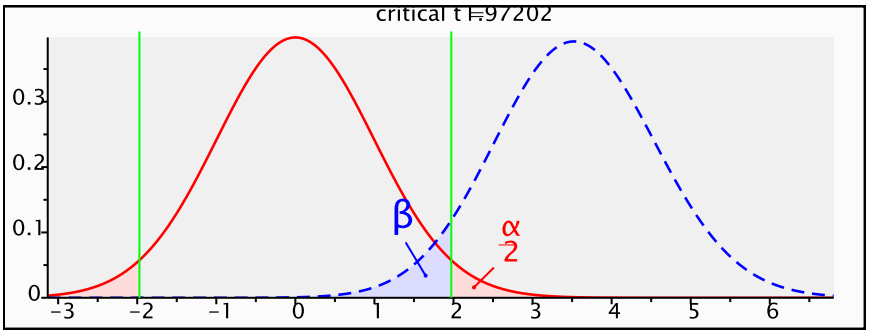
Appendix A Post – Hoc: Achieved power given α, sample size and effect size – T tests: Means difference between two independent groups



Effect Size = 0.4 (Medium – 0.5)

Power (1 – β err probability) = 0.80

α err probability = 0.05

Sample size group 1 = 100

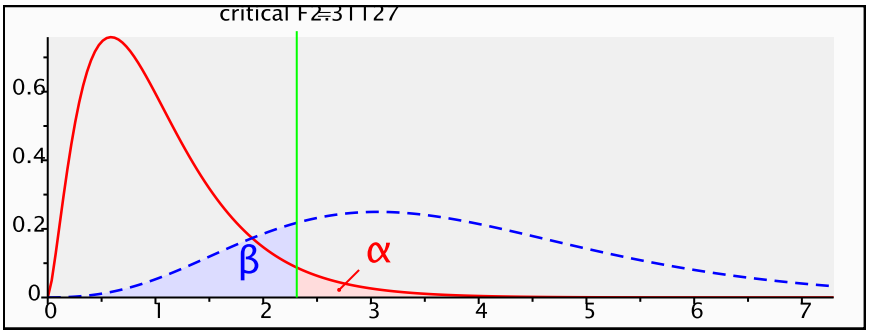
Sample size group 2 = 100

Two Tailed

Critical T = 1.97

Df = 198

Post – Hoc: Achieved power given α, sample size and effect size – F Test: Linear Multiple Regression fixed model R^2 deviation from zero



Effect Size = 0.13 (Medium – 0.15)

Power (1 – β err probability) = 0.80

α err probability = 0.05

Total sample size = 100

Critical F = 2.31

Numerator df = 5

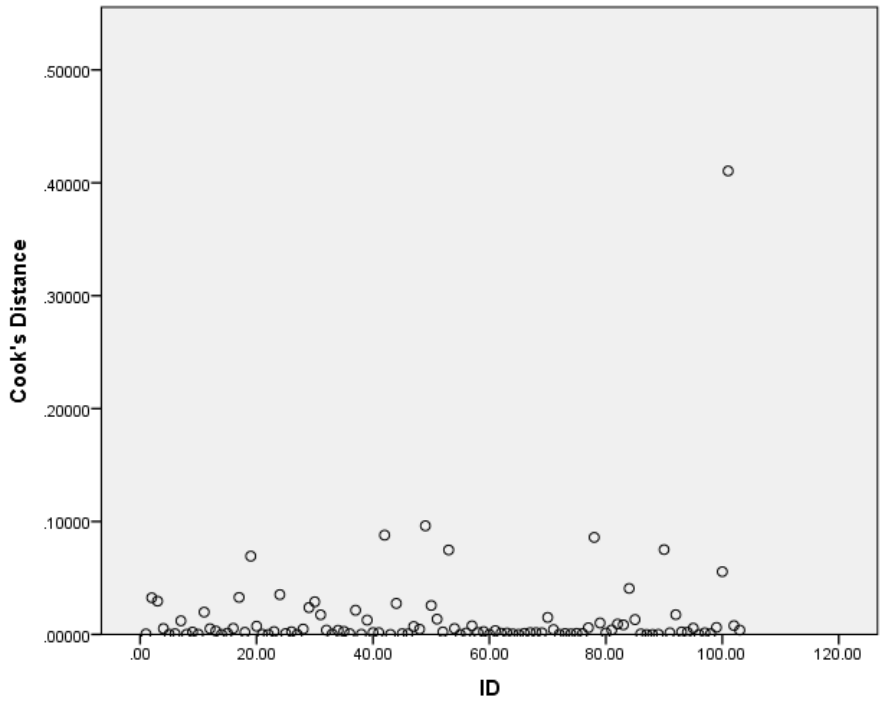
Denominator df = 94

Appendix B Khaadi and Sapphire Retail Outlets

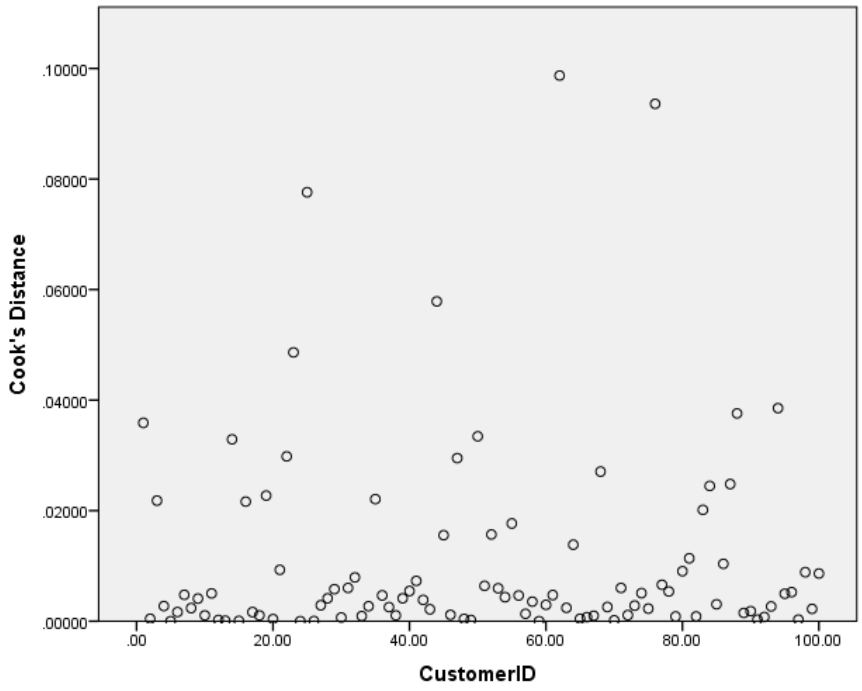
Khaadi Store

Sapphire Store

Appendix C Cooks Distance – Chart A (Visually Warm)



Cooks Distance – Chart B (Visually Cold)



Appendix D

SPSS Output of Sapphire Mediation

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Version 3.3 ******************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : CUSTOM
    Y  : ApAv
    X  : VDE
   M1  : CR
   M2  : PSI
   M3  : BrAtt
   M4  : PE
   M5  : NegEmo

Covariates:
 BL

Sample
Size:  100

Custom
Seed:     1234

**************************************************************************
OUTCOME VARIABLE:
 CR

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .2291      .0525     1.7369     2.6865     2.0000    97.0000      .0732

Model
              coeff         se          t          p       LLCI       ULCI
constant     1.7445      .5911     2.9515      .0040      .5714     2.9176
VDE           .1234      .1233     1.0004      .3196     -.1214      .3681
BL            .4214      .1869     2.2544      .0264      .0504      .7924

**************************************************************************
OUTCOME VARIABLE:
 PSI

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .1276      .0163      .6990      .8028     2.0000    97.0000      .4510

Model
              coeff         se          t          p       LLCI       ULCI
constant     2.4920      .3094     8.0543      .0000     1.8779     3.1061
```

```
CR           .0671      .0641     1.0474      .2975     -.0601      .1943
BL           .0570      .1185      .4813      .6314     -.1782      .2922

**************************************************************************
OUTCOME VARIABLE:
 BrAtt

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .6614      .4375      .8467    24.8883     3.0000    96.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant     -.0751      .4399     -.1708      .8648     -.9483      .7980
CR            .1087      .0709     1.5323      .1287     -.0321      .2495
PSI           .2615      .1117     2.3398      .0214      .0396      .4833
BL            .9734      .1306     7.4548      .0000      .7142     1.2326

**************************************************************************
OUTCOME VARIABLE:
 PE

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4256      .1812     1.3329    10.7297     2.0000    97.0000      .0001

Model
             coeff         se          t          p       LLCI       ULCI
constant     1.9452      .5178     3.7568      .0003      .9175     2.9728
VDE           .0584      .1080      .5411      .5897     -.1560      .2728
BL            .7552      .1638     4.6118      .0000      .4302     1.0802

**************************************************************************
OUTCOME VARIABLE:
 NegEmo

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .3018      .0911     1.5218     4.8588     2.0000    97.0000      .0097

Model
             coeff         se          t          p       LLCI       ULCI
constant     3.3007      .5532     5.9661      .0000     2.2027     4.3988
VDE           .0618      .1154      .5355      .5935     -.1673      .2909
BL            .5450      .1750     3.1149      .0024      .1978      .8923

**************************************************************************
OUTCOME VARIABLE:
 ApAv

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .7808      .6096      .6772    24.2007     6.0000    93.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant      .2877      .5313      .5415      .5895     -.7674     1.3427
```

```
VDE          -.1940      .0786    -2.4689      .0154     -.3500     -.0380
CR            .2525      .0693     3.6409      .0004      .1148      .3902
BrAtt         .4603      .1090     4.2218      .0001      .2438      .6767
PE            .5519      .0813     6.7907      .0000      .3905      .7133
NegEmo        .5129      .0822     6.2420      .0000      .3497      .6760
BL           -.7813      .1813    -4.3098      .0000    -1.1412     -.4213

****************** DIRECT AND INDIRECT EFFECTS OF X ON Y *****************

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_ps
c'_cs
     -.1940      .0786    -2.4689      .0154     -.3500     -.0380     -.1519
-.1669

Indirect effect(s) of X on Y:
          Effect     BootSE   BootLLCI   BootULCI
TOTAL      .1023      .0787     -.0409      .2699
Ind1       .0311      .0320     -.0263      .1008
Ind2       .0323      .0598     -.0832      .1533
Ind3       .0317      .0668     -.0960      .1696
Ind4       .0062      .0090     -.0070      .0292
Ind5       .0010      .0016     -.0015      .0054
(C1)      -.0011      .0488     -.1268      .0701
(C2)      -.0006      .0558     -.1512      .0690
(C3)       .0250      .0234      .0006      .0860
(C4)       .0302      .0263      .0013      .0985
(C5)       .0006      .0620     -.1329      .1174
(C6)       .0261      .0420     -.0098      .1477
(C7)       .0313      .0418      .0009      .1541
(C8)       .0255      .0474     -.0104      .1664
(C9)       .0307      .0463      .0011      .1700
(C10)      .0052      .0078     -.0015      .0276

Partially standardized indirect effect(s) of X on Y:
          Effect     BootSE   BootLLCI   BootULCI
TOTAL      .0801      .0621     -.0321      .2131
Ind1       .0244      .0255     -.0209      .0804
Ind2       .0253      .0473     -.0650      .1220
Ind3       .0248      .0525     -.0770      .1328
Ind4       .0048      .0072     -.0056      .0231
Ind5       .0008      .0013     -.0012      .0042
(C1)      -.0009      .0386     -.0996      .0550
(C2)      -.0004      .0437     -.1177      .0550
(C3)       .0196      .0188      .0005      .0676
(C4)       .0236      .0211      .0010      .0787
(C5)       .0004      .0488     -.1042      .0931
(C6)       .0204      .0334     -.0079      .1158
(C7)       .0245      .0332      .0007      .1220
(C8)       .0200      .0369     -.0082      .1306
(C9)       .0241      .0361      .0009      .1332
(C10)      .0041      .0062     -.0012      .0218

Completely standardized indirect effect(s) of X on Y:
          Effect     BootSE   BootLLCI   BootULCI
TOTAL      .0880      .0674     -.0346      .2323
Ind1       .0268      .0273     -.0233      .0855
```

```
Ind2       .0278      .0511     -.0698      .1324
Ind3       .0273      .0568     -.0809      .1438
Ind4       .0053      .0077     -.0063      .0241
Ind5       .0009      .0014     -.0013      .0045
(C1)      -.0010      .0418     -.1089      .0590
(C2)      -.0005      .0477     -.1269      .0591
(C3)       .0215      .0199      .0005      .0728
(C4)       .0260      .0224      .0011      .0834
(C5)       .0005      .0531     -.1131      .1015
(C6)       .0225      .0361     -.0084      .1268
(C7)       .0269      .0359      .0007      .1319
(C8)       .0220      .0403     -.0090      .1416
(C9)       .0264      .0392      .0010      .1438
(C10)      .0045      .0066     -.0013      .0230

Specific indirect effect contrast definition(s):
(C1)            Ind1      minus   Ind2
(C2)            Ind1      minus   Ind3
(C3)            Ind1      minus   Ind4
(C4)            Ind1      minus   Ind5
(C5)            Ind2      minus   Ind3
(C6)            Ind2      minus   Ind4
(C7)            Ind2      minus   Ind5
(C8)            Ind3      minus   Ind4
(C9)            Ind3      minus   Ind5
(C10)           Ind4      minus   Ind5

Contrasts are differences between absolute values of indirect effects

Indirect effect key:
Ind1  VDE          ->    CR           ->    ApAv
Ind2  VDE          ->    PE           ->    ApAv
Ind3  VDE          ->    NegEmo       ->    ApAv
Ind4  VDE          ->    CR           ->    BrAtt       ->    ApAv
Ind5  VDE          ->    CR           ->    PSI         ->    BrAtt       ->
ApAv

************************ MODEL DEFINITION MATRICES ************************

FROM variables are columns, TO variables are rows.

BMATRIX: Paths freely estimated (1) and fixed to zero (0):
           VDE     CR    PSI  BrAtt     PE NegEmo
CR         1
PSI        0       1
BrAtt      0       1       1
PE         1       0       0       0
NegEmo     1       0       0       0       0
ApAv       1       1       0       1       1       1

CMATRIX: Covariates (columns) in (1) and not in (0) the models of M and Y
(rows):
        BL
CR       1
PSI      1
BrAtt    1
PE       1
```

```
NegEmo  1
ApAv    1

************************ ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

NOTE: Total effect model and estimate generated only when X is freely
estimated to affect each M
      and both X and M are freely estimated to affect Y

------ END MATRIX -----
```

SPSS Output of Khaadi Mediation

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Version 3.3 *******************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : CUSTOM
    Y  : ApAv
    X  : VDE
   M1  : CR
   M2  : PSI
   M3  : BrAtt
   M4  : Emo
   M5  : NegEmo

Covariates:
 BL

Sample
Size:  103

Custom
Seed:     1234

**************************************************************************
OUTCOME VARIABLE:
 CR

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .6100      .3721     1.0211    29.6272     2.0000   100.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     2.4718      .5585     4.4262      .0000     1.3639     3.5798
VDE           .6360      .0840     7.5690      .0000      .4693      .8027
BL            .1012      .1131      .8946      .3731     -.1233      .3257

**************************************************************************
OUTCOME VARIABLE:
 PSI

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .3806      .1449      .5622     8.4705     2.0000   100.0000      .0004

Model
              coeff         se          t          p       LLCI       ULCI
constant     1.5261      .4341     3.5156      .0007      .6649     2.3873
CR           -.1236      .0592    -2.0891      .0392     -.2410     -.0062
BL            .3166      .0843     3.7565      .0003      .1494      .4838
```

```
**************************************************************************
OUTCOME VARIABLE:
 BrAtt

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .6000      .3600      .6465    18.5614     3.0000    99.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    2.3544      .4934     4.7714      .0000     1.3753     3.3335
CR           .4247      .0648     6.5528      .0000      .2961      .5533
PSI          .0099      .1072      .0923      .9267     -.2029      .2227
BL           .2294      .0966     2.3758      .0194      .0378      .4210

**************************************************************************
OUTCOME VARIABLE:
 Emo

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4560      .2080      .8953    13.1289     2.0000   100.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    2.2015      .5229     4.2101      .0001     1.1641     3.2390
VDE          .2520      .0787     3.2025      .0018      .0959      .4081
BL           .4003      .1059     3.7781      .0003      .1901      .6104

**************************************************************************
OUTCOME VARIABLE:
 NegEmo

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .2412      .0582      .6041     3.0884     2.0000   100.0000      .0499

Model
             coeff         se          t          p       LLCI       ULCI
constant    2.9282      .4295     6.8173      .0000     2.0760     3.7804
VDE          .0992      .0646     1.5356      .1278     -.0290      .2275
BL           .1608      .0870     1.8475      .0676     -.0119      .3334

**************************************************************************
OUTCOME VARIABLE:
 ApAv

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .8603      .7402      .2776    45.5860     6.0000    96.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant     .4745      .4341     1.0931      .2771     -.3872     1.3361
VDE          .2361      .0564     4.1888      .0001      .1242      .3480
CR           .2523      .0633     3.9834      .0001      .1266      .3781
```

```
BrAtt          .2390      .0676     3.5339      .0006      .1048      .3733
Emo            .2677      .0650     4.1211      .0001      .1388      .3967
NegEmo         .0125      .0742      .1686      .8664     -.1347      .1598
BL            -.0066      .0649     -.1019      .9190     -.1355      .1223

****************** DIRECT AND INDIRECT EFFECTS OF X ON Y *****************

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_ps
c'_cs
      .2361      .0564     4.1888      .0001      .1242      .3480      .2354
.2809

Indirect effect(s) of X on Y:
          Effect     BootSE   BootLLCI   BootULCI
TOTAL      .2936      .0594      .1917      .4203
Ind1       .1605      .0540      .0642      .2733
Ind2       .0675      .0392      .0139      .1645
Ind3       .0012      .0094     -.0177      .0228
Ind4       .0646      .0292      .0177      .1294
Ind5      -.0002      .0029     -.0075      .0049
(C1)       .0930      .0714     -.0577      .2240
(C2)       .1592      .0544      .0558      .2687
(C3)       .0959      .0673     -.0354      .2321
(C4)       .1603      .0545      .0611      .2725
(C5)       .0662      .0385      .0084      .1544
(C6)       .0029      .0557     -.0934      .1265
(C7)       .0673      .0393      .0114      .1622
(C8)      -.0633      .0312     -.1266     -.0048
(C9)       .0011      .0073     -.0052      .0235
(C10)      .0644      .0286      .0166      .1265

Partially standardized indirect effect(s) of X on Y:
          Effect     BootSE   BootLLCI   BootULCI
TOTAL      .2927      .0580      .1967      .4231
Ind1       .1600      .0546      .0643      .2820
Ind2       .0673      .0393      .0143      .1641
Ind3       .0012      .0097     -.0181      .0232
Ind4       .0644      .0284      .0186      .1271
Ind5      -.0002      .0029     -.0074      .0050
(C1)       .0928      .0718     -.0563      .2262
(C2)       .1588      .0548      .0567      .2765
(C3)       .0956      .0686     -.0350      .2368
(C4)       .1598      .0551      .0606      .2787
(C5)       .0660      .0386      .0082      .1551
(C6)       .0029      .0558     -.0909      .1269
(C7)       .0671      .0393      .0120      .1625
(C8)      -.0631      .0305     -.1243     -.0050
(C9)       .0011      .0075     -.0051      .0241
(C10)      .0642      .0277      .0175      .1238

Completely standardized indirect effect(s) of X on Y:
          Effect     BootSE   BootLLCI   BootULCI
TOTAL      .3493      .0592      .2423      .4721
Ind1       .1910      .0632      .0777      .3204
Ind2       .0803      .0419      .0179      .1788
Ind3       .0015      .0112     -.0210      .0269
```

```
Ind4        .0768      .0350       .0213      .1560
Ind5       -.0002      .0035      -.0090      .0058
(C1)        .1107      .0856      -.0627      .2739
(C2)        .1895      .0637       .0678      .3144
(C3)        .1141      .0795      -.0430      .2704
(C4)        .1908      .0638       .0739      .3193
(C5)        .0788      .0415       .0103      .1710
(C6)        .0034      .0650      -.1164      .1381
(C7)        .0801      .0421       .0146      .1767
(C8)       -.0754      .0374      -.1526     -.0057
(C9)        .0013      .0087      -.0062      .0278
(C10)       .0766      .0341       .0200      .1514

Specific indirect effect contrast definition(s):
(C1)            Ind1      minus   Ind2
(C2)            Ind1      minus   Ind3
(C3)            Ind1      minus   Ind4
(C4)            Ind1      minus   Ind5
(C5)            Ind2      minus   Ind3
(C6)            Ind2      minus   Ind4
(C7)            Ind2      minus   Ind5
(C8)            Ind3      minus   Ind4
(C9)            Ind3      minus   Ind5
(C10)           Ind4      minus   Ind5

Contrasts are differences between absolute values of indirect effects

Indirect effect key:
Ind1  VDE          ->    CR          ->    ApAv
Ind2  VDE          ->    Emo         ->    ApAv
Ind3  VDE          ->    NegEmo      ->    ApAv
Ind4  VDE          ->    CR          ->    BrAtt       ->    ApAv
Ind5  VDE          ->    CR          ->    PSI         ->    BrAtt       ->
ApAv

************************ MODEL DEFINITION MATRICES ************************

FROM variables are columns, TO variables are rows.

BMATRIX: Paths freely estimated (1) and fixed to zero (0):
          VDE     CR    PSI  BrAtt    Emo NegEmo
CR        1
PSI       0      1
BrAtt     0      1      1
Emo       1      0      0      0
NegEmo    1      0      0      0      0
ApAv      1      1      0      1      1      1

CMATRIX: Covariates (columns) in (1) and not in (0) the models of M and Y
(rows):
       BL
CR      1
PSI     1
BrAtt   1
Emo     1
NegEmo  1
ApAv    1
```

```
************************ ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

NOTE: Total effect model and estimate generated only when X is freely
estimated to affect each M
      and both X and M are freely estimated to affect Y

------ END MATRIX -----
```

Annexure

Research Questionnaire

Dear Participant,

I am completing my Master of Philosophy (MPhil) degree at Lahore School of Economics under the supervision of Dr. Faiza Saeed.

I would like your help in this study, which is aimed at determining the impact of visual aspects of a retail environment on store patronage intentions. The following questionnaire will require approximately **2 - 3 minutes** to complete. In order to ensure that all information will remain confidential, please do not include your name. If you choose to participate in this project, please answer all questions as honestly as possible and return the completed survey. Participation is strictly voluntary and you may refuse to participate at any time.

A report on the findings of this study will be made available to all participants upon request. No findings will be published which could identify any individual participant. The access to data is restricted as per the guidelines of the school.

I realize that your time is a very scarce resource, and I appreciate any time devoted to this study. If you have any queries or would like to be informed of the aggregate research finding, please contact me by email.

Thank you for taking the time to assist me in my educational endeavors. Completion and return of the questionnaire will indicate your willingness to participate in this study.

Once again, I am grateful for your kindness and support.

With best regards,

Nosheen Khan

MPhil (Candidate)

Lahore School of Economics[6]

Email: nosheen.niazi@hotmail.com

Lahore School of Economics
Intersection Main Boulevard Phase VI DHA, Burki Road Lahore 53200, Pakistan.
Contact #: +92-42- 36560954

Khaadi Questionnaire

For each of the questions below, circle the response that best characterizes how you feel about the statement, where 1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Neutral, 5 = Somewhat Agree, 6 = Agree and 7 = Strongly Agree

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
This store seemed very crowded to me.	1	2	3	4	5	6	7
This store seemed a little too busy	1	2	3	4	5	6	7
There were a lot of shoppers in this store	1	2	3	4	5	6	7
The store seemed very spacious	1	2	3	4	5	6	7
I would feel cramped shopping in this store	1	2	3	4	5	6	7
The store had an open feeling to it	1	2	3	4	5	6	7
I would enjoy shopping in this store.	1	2	3	4	5	6	7
I like this store's environment.	1	2	3	4	5	6	7
I would avoid visiting this store	1	2	3	4	5	6	7
I would like to spend time browsing in this store.	1	2	3	4	5	6	7
I want to avoid looking around or exploring the store.	1	2	3	4	5	6	7
This is the place where I might end up spending more money than I originally set out to spend.	1	2	3	4	5	6	7
Right now I do not have a strong desire to get away by myself.	1	2	3	4	5	6	7
Right now I have a strong need to be around other people.	1	2	3	4	5	6	7
I enjoy being around other people.	1	2	3	4	5	6	7

Please indicate the extent to which the following sentences describe your typical feelings toward products sold by Khaadi outlets on a seven point Likert scale where 1 = Not at all and 7 = Very well

	Not at all						**Very well**
I feel affection for the products sold at Khaadi.	1	2	3	4	5	6	7
Products sold at Khaadi feel like friends to me.	1	2	3	4	5	6	7
I feel love towards the products sold at Khaadi.	1	2	3	4	5	6	7
Products sold at Khaadi make me feel peaceful.	1	2	3	4	5	6	7
I am passionate about the products sold at Khaadi.	1	2	3	4	5	6	7
Products sold at Khaadi make me feel delighted.	1	2	3	4	5	6	7
I am captivated by the products sold at Khaadi.	1	2	3	4	5	6	7
I am personally connected to products sold at Khaadi.	1	2	3	4	5	6	7

I feel a bond between me and the products sold at Khaadi.	1	2	3	4	5	6	7
I am emotionally attached to the products sold at Khaadi.	1	2	3	4	5	6	7

Please indicate the extent to which you experienced these emotions in Khaadi on a seven point Likert scale where 1 = Not at all and 7 = Very Much.

	Not at all						**Very Much**
I felt pleasure while shopping in Khaadi store.	1	2	3	4	5	6	7
I felt attractive while shopping in Khaadi store.	1	2	3	4	5	6	7
I felt excitement while shopping in Khaadi store.	1	2	3	4	5	6	7
I felt contended while shopping in Khaadi store.	1	2	3	4	5	6	7
I felt pride while shopping in Khaadi store.	1	2	3	4	5	6	7
I felt satisfied while shopping in Khaadi store.	1	2	3	4	5	6	7
I felt ignored while shopping in Khaadi store.	1	2	3	4	5	6	7
I felt anxious while shopping in Khaadi store.	1	2	3	4	5	6	7
I felt displeased while shopping in Khaadi store.	1	2	3	4	5	6	7
I felt angry while shopping in Khaadi store.	1	2	3	4	5	6	7

Various visual design elements such as the interior colour of the walls, material, furnishings, textured walls can make a place appear warmer than it actually is. Keeping this in mind please rate the following visual design elements of Khaadi Store as either warm or cold:

	Cold						**Warm**
Colour of the walls	1	2	3	4	5	6	7
Material of the wall	1	2	3	4	5	6	7
Surface of the wall	1	2	3	4	5	6	7

	Never						**Always**
How often have you bought this brand in the past?	1	2	3	4	5	6	7

	Very Weak						**Very Strong**
How would you characterize your loyalty toward this brand?	1	2	3	4	5	6	7

	Far from my ideal brand						**Close to my ideal brand**
How does this brand compare to your 'ideal' brand?"	1	2	3	4	5	6	7

Please specify the number of items you have purchased: **How many of the purchased items were unplanned?**

Please specify your gender: ☐ Male ☐ Female **Please specify your age:**

Please specify your monthly income: **Please specify the years of formal education:**

Sapphire Questionnaire - For each of the questions below, circle the response that best characterizes how you feel about the statement, where 1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Neutral, 5 = Somewhat Agree, 6 = Agree and 7 = Strongly Agree

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
This store seemed very crowded to me.	1	2	3	4	5	6	7
This store seemed a little too busy	1	2	3	4	5	6	7
There were a lot of shoppers in this store	1	2	3	4	5	6	7
The store seemed very spacious	1	2	3	4	5	6	7
I would feel cramped shopping in this store	1	2	3	4	5	6	7
The store had an open feeling to it	1	2	3	4	5	6	7
I would enjoy shopping in this store.	1	2	3	4	5	6	7
I like this store's environment.	1	2	3	4	5	6	7
I would avoid visiting this store	1	2	3	4	5	6	7
I would like to spend time browsing in this store.	1	2	3	4	5	6	7
I want to avoid looking around or exploring the store.	1	2	3	4	5	6	7
This is the place where I might end up spending more money than I originally set out to spend.	1	2	3	4	5	6	7
Right now I do not have a strong desire to get away by myself.	1	2	3	4	5	6	7
Right now I have a strong need to be around other people.	1	2	3	4	5	6	7
I enjoy being around other people.	1	2	3	4	5	6	7

Please indicate the extent to which the following sentences describe your typical feelings toward products sold by Sapphire outlets on a seven point Likert scale where 1 = Not at all and 7 = Very well

	Not at all						**Very well**
I feel affection for the products sold at Sapphire.	1	2	3	4	5	6	7
Products sold at Sapphire feel like friends to me.	1	2	3	4	5	6	7
I feel love towards the products sold at Sapphire.	1	2	3	4	5	6	7
Products sold at Sapphire make me feel peaceful.	1	2	3	4	5	6	7
I am passionate about the products sold at Sapphire.	1	2	3	4	5	6	7
Products sold at Sapphire make me feel delighted.	1	2	3	4	5	6	7
I am captivated by the products sold at Sapphire.	1	2	3	4	5	6	7
I am personally connected to products sold at Sapphire.	1	2	3	4	5	6	7
I feel a bond between me and the products sold at Sapphire.	1	2	3	4	5	6	7

I am emotionally attached to the products sold at Sapphire.	1	2	3	4	5	6	7

Please indicate the extent to which you experienced these emotions in Sapphire on a seven point Likert scale where 1 = Not at all and 7 = Very Much.

	Not at all						**Very Much**
I felt pleasure while shopping in Sapphire store.	1	2	3	4	5	6	7
I felt attractive while shopping in Sapphire store.	1	2	3	4	5	6	7
I felt excitement while shopping in Sapphire store.	1	2	3	4	5	6	7
I felt contended while shopping in Sapphire store.	1	2	3	4	5	6	7
I felt pride while shopping in Sapphire store.	1	2	3	4	5	6	7
I felt satisfied while shopping in Sapphire store.	1	2	3	4	5	6	7
I felt ignored while shopping in Sapphire store.	1	2	3	4	5	6	7
I felt anxious while shopping in Sapphire store.	1	2	3	4	5	6	7
I felt displeased while shopping in Sapphire store.	1	2	3	4	5	6	7
I felt angry while shopping in Sapphire store.	1	2	3	4	5	6	7

Various visual design elements such as the interior colour of the walls, material, furnishings, textured walls can make a place appear warmer than it actually is. Keeping this in mind please rate the following visual design elements of Sapphire Store as either warm or cold:

	Cold						**Warm**
Colour of the walls	1	2	3	4	5	6	7
Material of the wall	1	2	3	4	5	6	7
Surface of the wall	1	2	3	4	5	6	7

	Never						**Always**
How often have you bought this brand in the past?	1	2	3	4	5	6	7

	Very Weak						**Very Strong**
How would you characterize your loyalty toward this brand?	1	2	3	4	5	6	7

	Far from my ideal brand						**Close to my ideal brand**
How does this brand compare to your 'ideal' brand?"	1	2	3	4	5	6	7

Please specify the number of items you have purchased: **How many of the purchased items were unplanned?**

Please specify your gender: ☐ Male ☐ Female **Please specify your age:**

Please specify your monthly income: **Please specify the years of formal education:**