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The Effects of Music as an Atmospheric Variable on Consumer Behaviour in the Context of Retailing and Service Environments

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Music variables affect consumer behaviour. This paper presents the current state of knowledge of the effects of music on consumers in retailing and service environments, showcasing the results of relevant studies that have manipulated specific musical variables (such as tempo, volume, genre, liking) and their impact on cognitive responses (expectations, perceptions, attitude, quality evaluation), emotional responses (moods, feelings, emotions), and ultimately behavioural responses (time spent in store, money spent in store, consumption speed, waiting). Based on a critical review of the most important studies, it concludes by identifying gaps in the already extensive literature and suggests future research to explore the relationship between musical variables and consumer responses in the context of retailing.

Key words: music, cognitive, emotional, behavioural, retailing, service

JEL classification: M3.

1. Introduction

A great deal of research studies (conceptual, laboratory and field research) has been conducted into the use of music in retail and service contexts and the effects this has on consumers. A preliminary search on Business Source Complete for peer-reviewed journal articles containing the word "music" in the author-supplied abstract resulted in a list of 1,516 titles[10]. This interest in the effect of music and its potential as an aid to marketing spans more than 50 years: in 1963 Brand wrote about its use in "Modern Supermarket Operation", whilst in 2013 Cameron, Baker & Peterson wrote about the effects of music volume when waiting to be served. Indeed so much has been published on different aspects of this subject in the interim that during the last 20 years researchers have published several reviews, attempting to summarise aspects of the literature. Table 1 lists the major reviews, starting with that of Bruner (1990). At the time of writing, the most recent is Jain & Bagdare (2011).

Author(s)	Description
Bruner (1990)	The first published literature review of studies on the effect of music in marketing area
Herrington & Capella (1994)	Based on the literature in service environment, the authors classify variables in two categories: structural variables and affective variables
Oakes (2000)	Literature review of the empirical studies which analyse the relationship between compositional music variables and consumer behaviour. They proposed the concept of Musicscape"
Turley & Milliman (2000)	Literature review of sixty published experimental studies from 1964 to 1997
Garlin & Owen (2006)	Using 11 electronic databases, the authors realised a meta-analytic review of all published studies on the effects of background music in retail context
Oakes & North (2008)	Based on more than twenty-five recent studies, the authors review the effect of music in (both real and simulated) service environments
Jain & Bagdare (2011)	Literature review of the effect of music on consumption experience

Table 1. Reviews of studies of the use of music in retail and service environments

[10] The authors note that many of these concern the marketing of music products rather than the use of music as a marketing tool

Retailers and other service environments use background music to influence consumer behaviour. The notion that background music can do this is derived from the concept of atmospherics, an area of environmental psychology offering great potential for improving the efficiency and effectiveness of retail and service operations (Yalch & Spangenburg, 1990). Atmospherics, including music, has received the attention of marketing academics since Kotler (1973-1974) first pointed out that shopping behaviour is affected by what he called the *"total product",* which included the atmosphere of the place where the product is bought or consumed, and in some cases this atmosphere has a greater influence on shopping behaviour than the product itself. He used and defined atmospherics as the conscious designing of space in store environments to create certain effects in buyers. The field is still being widely studied: at the time of writing one of the most recent publications is that of Lunardo & Mbengue (2013), who examined the potential for negative outcomes if shoppers perceive store atmospherics as a manipulative tool. Generally, atmospherics refers to the design of an environment using colours, lighting, music, smell, and/or furnishings deliberately to stimulate desired cognitive, emotional and behavioural responses. Milliman & Fugate (1993) noted that an "atmospheric variable" is any component within an individual's perceptual field which stimulates the senses and it can be conclude that these variables influence the total experience of being in a given place at a given time (p. 68). Also, the authors noted that atmospheric variables can be dynamic or static. A simple example can be considered by the fact that music can be quickly changed while wall decorations or layout of the store are far more permanent. Nevertheless, if we are referring in the long run, all atmospheric variables are dynamic. Morrison (2002), confirming Kotler (op cit), observed that in many cases the specific atmosphere created by a retailer can be more influential in the decision-making process than the product. Given the importance of atmospherics in general and music in particular, because of its more dynamic nature, retailers should understand how powerful can be the use of the right music in store to have the greatest influence on the way people make their purchase decisions. Studies of the effect of background music on consumer behaviour have recognized music as one of the most important key atmospheric variables in retail stores and service organizations, reporting a range of cognitive, affective and behavioural consumer responses or determining overall store effectiveness, satisfaction, or loyalty (Jain & Bagdare, 2011). Schmitt (1999) showed how music can be a valuable primary element in creating or enhancing the sensory experiences of shoppers. Alpert & Alpert (1990) demonstrated how in store music can be a critical element of a store's atmosphere. Yalch & Spangenberg (1993) state that "music is a particularly attractive atmospheric variable because it is relatively inexpensive to provide, is easily changed, and is thought to have predictable appeal to individuals based on their ages and lifestyles" (p. 632). According to Chebat, Chebat & Vaillant (2001) "what really matters in store music is its evocative power" (p.121), for example there is a relationship between music and memories evoked by the music. More specifically, these memories related to and evoked by the music can be correlated with other atmospheric variables (smell, light or colour) and then all together can influence the shopping experience. Music is magical, versatile it can take us to places we would like to be and most of the time music is relaxing us (Morrison, 2002). Morrison & Beverland (2003) highlighted how different background music is used to demarcate different zones within the service environment and how several organizations successfully matched the use of background music to their desired positioning, heritage, brand image, store design, and overall satisfaction with the store. Music is an important variable in creating an attractive store experience, connecting directly with customers' emotions. According to Hui, Dube & Chebat (1997), music can improve the evaluation of the in store environment, which has positive spin-offs for how consumers approach that environment. Several studies have confirmed that music provides pleasure and arouses consumers (e.g. Turley & Milliman, 2000; Garlin & Owen, 2006). Previous research on the use of music found that it can influence consumers' responses to advertising (e.g. Gorn, 1982; Kellaris & Cox, 1989; Alpert & Alpert, 1990; Macinnis & Park, 1991), to retail environments (Milliman, 1982; 1986; Yalch & Spangenberg, 1990, 1993, 2000, Areni & Kim, 1993; Herington & Capella, 1996; Sweeney & Wyber, 2002), and to service environments (North & Hargreaves, 1996, 1998; Areni, 2003; Wilson, 2003; Oakes & North, 2007). Music is the most studied and perhaps the most controllable atmospheric factor, ranging from different volumes (loud or soft), different genres (classical or contemporary), different tempo (slow or fast), preference (liked or disliked), or mood ("happy" or "sad"). Table 2 lists the music variables that have typically been studied, and some of the key relevant research papers.

Variable studied	Examples
Structural and affective characteristics	Herrington & Capella (1994)
Genre (classical/contemporary)	Baker, Levy & Grewal (1992); Areni & Kim (1993); Baker et al. (1994), North, Hargreaves & McKendrick (2000); Sweeney & Wyber (2002); Areni (2003), Wilson (2003); Spangenberg, Grohmann & Sprott (2005)
Tempo (fast/slow)	Milliman (1982, 1986), Yalch & Spangenburg (1990; 1993), Mattila & Wirtz (2001); Sullivan (2002); Oakes (2003); Michon & Chebat (2004); Eroglu et al., (2005)
Volume (load/soft)	Smith & Curnow (1966), Morrison (2001), Lin & Wu (2006)
Linking (liked/disliked; happy/sad)	North & Hargreaves (1996), Dube & Morrin (2001), Cameron, et al. (2003)
Familiarity	Yalch and Spangenberg (1990; 1993; 2000); Bailey and Areni (2006)
Modality (major/minor/atonal)	Kellaris & Kent (1991); Kellaris and Altsech (1992); Kellaris and Mantel (1994)
Style (jazz, popular, easy listening, classical)	North and Hargreaves (1996; 1998); Sullivan (2002)
Variation (background music/foreground music)	Yalch and Spangenberg (1988; 1990; 1993; 2000)
Presence/absence	Mattila & Wirtz (2001); Morrin, Dube & Chebat (2007)

Table 2. Music variables studied

2. Previous Reviews of the Literature

Studies of the role played by music have turned up in various areas of the marketing literature, such as consumer aesthetics (Holbrook & Anand 1988); mood research (Bruner 1990); advertising (Alpert & Alpert 1988, Kellaris & Cox 1989); retail atmospherics (Milliman 1982, 1986, Herrington & Capella, 1996) and service environments (North & Hargreaves, 1998, Mattila & Wirtz, 2001). Based on the fact that music is the most studied atmospheric variables, before concentrating on the analysis of the results of the most important empirical studies on the effects of music on consumer behaviour, will be introduce the principal reviews of this vast body of literature, to help future researchers by indicating their commonalities and differences, and highlighting the most important (see Table 1) (Petruzzellis et al, 2014). Bruner (1990) was the first one who noted that relatively few papers had examined the effects of music in retail stores. He looked at studies of non-behavioural outcomes of music in general and in the marketing context (eg. changes in affect, purchase intention, recall, brand attitude, emotion expressed) and at those studies which had examined behavioural issues (for example sales volume, product selection, music apparel, shopping behaviours and pleasantness), and examined published work dating from as far back as 1932. He concluded that more studies involving music and various aspects of marketing were needed since music has long been considered to be an efficient and effective means for triggering moods and communication nonverbally and can be a powerful emotional stimulus capable of evoking affective and behavioural consumer responses. Herrington & Capella (1994) noted the differences between the structural (physical) and affective (emotional) characteristics of music and the specific behavioural effects associated with these characteristics. Background music can influence a shopper's evaluations of the shopping experience, which in turn can increase the probability of repeat patronage. Background music may also serve to reduce counter-productive psychological states (frustration, anxiety, depression, negative mood), thereby enhancing positive evaluations of the shopping experience (Herrington & Capella, 1994). The authors defined structural characteristics of music as "objective and observable qualities of a musical composition" (p. 52), identifying six structural dimensions: tempo, volume, mode, pitch, rhythm, and harmony. Numerous studies in the last three decades have demonstrated that various structural components, in isolation, are capable of extracting specific effects in the retail context or in other service settings. The other musical variables are the affective characteristics: listeners must provide their own evaluations of the music, and describe it in terms of cognitive characteristics (Agmon, 1990) and/or on its affective qualities (Bruner, 1990). Affective characteristics of music can be related to emotions, feelings, moods and preferences, including qualitative variables such as liking (valence), familiarity with the music, and type (in terms of feeling and style) of listener (Herrington & Capella, 1994).

In a review of relevant empirical research, Oakes (2000) classified musical variables in terms of the compositional components (tempo, harmony, volume and genre) and their effects on consumer behaviour,

drawing together findings from studies examining the impact of music on customer behaviour within service environments. Inspired by Bitner's (1992) model proposing the "servicescape", Oakes (op cit), proposed "musicscape" as a visual framework highlighting music as just one of a range of physical environment dimensions such as temperature, air quality and scent influencing consumers' responses to a service environment. While servicescape examines both customer and employee response and behaviour, musicscape concentrates on customer responses and behaviour within the service environment. In his work on musicscape, Oakes (op cit) presented the interdependence of compositional variables such as tempo, harmony, volume and genre (e.g. classical, popular, jazz) and examined their impact on buyer behaviour. A large number of experimental studies were presented showing the effects of music on consumer responses (purchase intention, satisfaction, duration of stay, money spent, perceived waiting time). The most frequently measured outcome was spending and this was the only one that has been analysed in the context of each of the musical variables (Smith & Curnow, 1966; Milliman, 1982, 1986; Kellaris & Kent, 1991, 1992; Areni & Kim, 1993; Morrison, 2001; Herrington & Capella, 1996; Yalch & Spangenberg, 1990, 1993, 2000; North & Hargreaves, 1996.). In their review of sixty published experimental evidence studies from 1964 to 1997, Turley & Milliman (2000) found a significant relationship between the effects of atmospheric variables such as background music, lighting, color, scent, room temperature, product display and merchandise on shopping behaviour. They noted that, "Music is the most commonly studied general interior cue" (p.195). In terms of background music they identified 11 papers related to music effects (Smith and Curnow, 1966; Milliman, 1982, 1986; Yalch & Spangenburg, 1988, 1990; Baker, Levy & Grewal, 1992; Areni & Kim, 1993; Chebat, Chebat & Filiatrault, 1993; Baker, Grewal & Parasuraman, 1994, Gulas & Schewe, 1994; Hui, Dube & Chebat, 1997).

More recently, Garlin & Owen (2006), in their meta-analytic review of all published studies on the effects of background music in retail searched 11 databases, including: ABI Inform, Academic Search Elite, Business Source Premier, Communication and Mass Media Complete, Expanded Academic, Google, Hospitality and Tourism Index, Medline, Professional Development Collection, Psychinfo and Science Direct. They found 150 papers which explicitly discuss background music effects. 32 of these were amenable to meta-analysis treatment. Five categories of dependent variables were identified: affective (mood, arousal, emotion and nostalgia), financial returns (value of sales, repeat purchase, items purchased, rate of spend, quantity purchased) attitudinal or perceptual variables (liking, brand loyalty, product evaluation, quality perceptions, experience satisfaction, perception of visual stimuli, service quality perceptions, price sensitivity, expectations, intentions, social identification, status perceptions), temporal effects (duration perceived/actual, service time, unplanned time, time to serve customers, time to consume, duration of music listening), and behavioural (patronage frequency, store choice, behaviour speed, affiliation, items examined/handled, in-store traffic flow, impulsive behaviour, recommend service, number of customers leaving before served). The effects of musical characteristics on these key affective, financial, attitudinal and behavioural factors were small to moderate and can be summarised in five key points:

- music valance (familiarity/liking) has a positive impact on shoppers;
- music has a positive impact on consumers and their perceived pleasure
- consumers spend more time at a meeting place when music tempo is slower, music volume is lower and music is familiar;
- when the tempo and volume are high and the music less liked, shopping duration is overestimated;
- music tempo have a greater influence on arousal.

The Oakes & North (2008) paper was one of the most important one on reviewing congruity effects in the service environment and in the definition of the concept of musicscapes. They identify more than twenty-five recent studies which analysed the impact of music variables such as, music genre, music tempo, music volume and music liking in service contexts, highlighting the fact that music congruity is the result of the findings in the case of reviewed studies. Also, the authors observed that the aim of most of the studies was to help managers to realise desired organizational results. Based on a comprehensive literature review, Jain & Bagdare (2011) proposed a complex framework for the impact of music on the shopping experience, classifying the responses of customers in cognitive, affective and behavioural. At the end, the authors noted that:

- music (as a sensory stimulus) influence shopping experience;
- structural music variables (such as tempo, volume, genre pitch and harmony) and affective ones (such as liking, familiarity, style and type) influence shopping experience;
- music variables can be controlled to produce desired responses**;**
- delightful shopping experience influence desired consumer responses at all three levels cognitive, emotional and/or behavioural;
- the relationship between background music and shopping experience is moderated by consumer profile, store profile, ambient factors and time of purchase.

3. Consumers' responses

Many studies use the Mehrabian & Russell (1974) framework, which specified that individuals react to their environment along three basic dimensions: pleasure, arousal and dominance (the PAD model) which determines the response as approach-avoidance behaviours (Donovan & Rossiter, 1982). All the research which we have examined in the present study on the effect of background music demonstrated that music influences consumer behaviour leading to cognitive (Kellaris & Kent, 1992; Areni, 2003; Oakes, 2003; Spangenburg, Grohmann & Sprott, 2005; Eroglu, Machleit & Chebat, 2005; Morrin, Dube & Chebat, 2007) emotional (Bruner, 1990; North & Hargreaves, 1996; Garlin & Owen, 2006; Lin & Wu, 2006) and behavioural outcomes (Milliman, 1982, 1986; Yalch & Spangenberg, 1990, 1993, 2000; Areni & Kim, 1993; Mattila & Wirtz, 2001; Sullivan, 2002; Caldwell & Hibbert, 2003, Wilson, 2003; Andersson et al. 2012) (Table 3). Studies analysed focus on different dependent variables. Behavioural responses have been compared with emotional or cognitive responses as we can see below. Also behavioural responses have been analysed in a relatively larger researches as compared with emotional or cognitive responses.

COGNITIVE	EMOTIONAL	BEHAVIORAL
Expectations	Moods	Time spent in store
Perceptions	Feelings	Money spent in store
Attitude	Emotions	Speed of consumption
Quality Evaluation		

Table 3: Consumer responses to music

3.1. Cognitive responses

Table 4 summarizes most of the relevant studies on the impact of background music on consumers' cognitive responses in retail and service environments.

Cognitive responses	Authors	Musical variables	Results
Expectations	Baker *et al.* (1994); Areni (2003)	**Music genre** (classical vs. Top 40; classical vs. jazz)	Higher expectations of merchandise quality and higher levels of service quality are produced using classical music as compared to Top 40 music
	Morrison (2002)	**Music volume** (soft vs. load)	Loud music influenced store stay time, traffic flow and brand recognition, while soft music influence both store stay time and traffic flow and perception of the service in retail shops
Perceptions	Kellaris & Kent (1991; 1992)	**Music modality/harmony** (major, minor, atonal)	Music in major keys produced the longest duration estimates, whilst minor keys produced shorter estimates, and the shortest were made in response to atonal music
	Kellaris & Altsech (1992); Kellaris & Mantel (1994); Hui *et al.* (1997)	**Music preferences** (liked vs. disliked)	Disliked music produced shorter time duration estimates as compared with liked music
	Chebat et al. (1993); North et al. (1998b); Tnasik & Routhieaux (1999); Oakes (2003); Michon & Chebat (2004)	**Music tempo** (fast vs. slow)	Slow music determined shorter time perceptions, while fast music effects were no significant on time perceptions. Slow music effects perception of service quality and fast tempo music stimulate

			cognition
	Baker & Cameron (1996)	**Music volume** (soft vs. loud)	High music volume (above the respondent's range of preference) made perceived waiting time longer
	Yalch & Spangemberg (2000); Bailey & Areni (2006)	**Music familiarity** (familarity - top 40 unfamiliarity –intrumental)	Unfamiliar music significantly influence perceived shopping duration and product evaluation as compared with familiar music
Attitude	Chebat et al. (2001)	**Music tempo** (fast vs. slow)	Music affects the attitudes through cognitive process
	Spangemberg et al. (2005)	**Music Genre** (Christmas music vs. Non Christmas music)	In a retail store, the coherence between scent and music have a positive impact on evaluation of the store, visual merchandise, revisit the store and overall the store environment
	Morrin et al. (2007)	**Music Valence** (presence vs. absence)	Background music in servicescapes influences service outcomes, such as service evaluation and purchase intention. Bckgorund music conditions and provider attitude serves as a partial mediator of servicescape effects
Quality evaluation	North et al. (2000); Sweeney & Wyber (2002)	**Music genre** (Classical music, easy-listening music, pop music)	Pleasure, arousal, merchandise quality and service quality have an effects on all desired intended behaviour
	Dube and Morrin (2001)	**Music preferences** (Pleasure intensity Background music)	The presence of pleasant background music induced superior affinitive attitudes and behaviours
	Sweeney and Wyber (2002); Eroglu, Machleit, Chebat (2005)	**Music Tempo** (fast vs. slow)	Enhanced evaluation of the environment with moderately incongruous slow tempo music/high crowd density and fast tempo music/low crowd density.

Table 4. Effects of musical variables on cognitive responses

3.1.1. The effect of music on consumer expectations

In a laboratory experiment, Baker, Grewal & Parasuraman (1994) combined two atmospheric variables (music and lighting) and show how classical music and soft lighting produced expectations of higher service and merchandise quality as compared to Top 40 music and bright lighting. After interviewing managers of restaurants and pubs, Areni (2003) conclude that when managers chose the music, jazz music and classical music were associated with up-market consumption setting. Also, music is most effective when it matches the target customer demographic (age). In the context of retailing, Morrison (2002) show that music volume have an influence on consumer expectations. It seems that soft music influence perception of service, while loud music influenced store stay time, traffic flow and brand recognition.

3.1.2. The effect of music on consumer perceptions

Kellaris & Kent (1991; 1992) demonstrated that modality (minor, major and atonal) is an important determinant of responses to music. They show that the major key was evaluated as more attractive than either the minor mode or atonal tone scale. The authors observed that, the least liked version, atonal music produced the higher gap between actual time and perceived time and is perceived as more dissonant. In another study, Kellaris & Altsech (1992) found that louder (more disliked) music produced longer time estimates than quiet (more liked) music for females' respondents. Gender was a moderator in the influence of loudness music on perceived duration. Subsequently, Kellaris & Mantel (1994) found that disliked music produced shorter time duration estimates as compared with liked music. They also suggested that managers can use this knowledge to manipulate consumer perceptions of time, for example, if music can make people in a fast-food restaurant feel that they spend more time over their meal than they actually do, this can be used to increase the speed of table turnover without making customers feel rushed. Alternatively, music can make perceived waiting time seem shorter for consumers waiting in line, resulting in a reduction of dissatisfaction levels. Hui, Dube & Chebat (1997) reveals that when music is liked by consumers it produced a more positive emotional response to the wait in comparison with disliked music. Based on the literature review, not only music linking has an influence on consumer perceptions, but also music tempo.

Chebat, Chebat & Filiatrault (1993) find that slow music tempo were significant on time estimates, while fast music tempo effects had no significant effect on time estimates. In a different context, Tansik & Routhieaux (1999) showed that slow classical music played in the surgery waiting room reduced stress and increased the relaxation of the visitors waiting for surgery and ICU patients. North, Hargreaves, & Heath, (1998b) found no evidence that background music tempo influenced retrospective estimates of temporal duration in a university gymnasium. Also, for female subjects the authors identified a tendency to underestimate the amount of time spent in the university gymnasium as compared with male subjects. Oakes (2003) used strong-size model of subjective time estimation which indicate a significant positive impact of music tempo upon time perception duration. Also, the author noted that music can have different effects on perceived duration depending on whether consumer are remembering an interval that has already passed or experiencing an interval that is currently passing, so the author wanted to obtain consistently estimates by measuring perceived duration during the waiting process, rather than seeking retrospective estimates after the distracting and potentially variable interactions with service had taken place. Michon & Chebat (2004) studied the effects of background music and ambient odours on shopper's perception of service quality in the context of a mall. They found that, the influence of slow tempo music on positive affect supports the environmental psychology model (Mehrabian & Russell, 1974; Donovan & Rossiter, 1982) as well as the servicescapes theory (Bitner, 1992) and an interaction effect of fast tempo music and ambient scent on mall perception. The authors suggest that ambient scent, background music and positive affect have no direct effect on consumers' perception of service quality; these variables act as mediators rather than moderators of service quality. Referring to the influence of music volume, on perceived durations, Baker & Cameron (1996) reveals that high music volume (above the respondent's range of preference) made perceived waiting time longer. This appears to contradict Kellaris & Mantel (1994) results, however it is not clear if disliking (for loud music) was the critical factor, or if it was the higher decibel level which led to the longer estimates. Another musical variable studied in relationship with the perceived durations is music familiarity. Yalch & Spangenburg (2000) showed that consumers shopped less when listening to familiar music, but perceived themselves to be shopping longer, whereas shopping time was longer for subjects exposed to unfamiliar music. In contrast, in a laboratory experiment using student participants, Bailey & Areni (2006) found that perceived duration was shorter with familiar music, but this happens when participants were not engaged in a cognitive task while waiting. Bailey & Areni (2006) suggested that the level of customer preoccupation with the passage of time moderates music's effect on perceived duration. Based on these, Oales & North (2008) suggest that, the contradiction between these results can be resolved by making the distinction between experiencing an interval of time that is currently passing and remembering an interval of time that has already passed.

3.1.3. **The effect of music on consumer attitude**

Dube & Morin (2001) reveal how liked background music enhanced customer attitudes toward the physical environment dimensions of a store. Chebat, Chebat & Vaillant (2001) demonstrated that music have an effects on attitude toward the store. Also, cognitive processes moderate intention to revisit the store and attitude of salespersons toward the store. Dube, et al., (1995) found that the optimal level of arousal is achieved with soothing music, which gave a combination of low arousal and high pleasure. For example in a retail store, when sales arguments are weak, soothing music, pleasure and low arousing enhances cognitive activity. In a mock retail store, Spangenberg, Grohmann & Sprott (2005) reveals that a consistency between ambient Christmas scent and the presence of Christmas music (as compared to no scent and Christmas music) have a positive influence on store attitudes, intention to revisit the store, greater pleasure, arousal and dominance and a more favourable evaluation of the environment. These results are important especially for managers of the store, it is better to use a single environmental cue rather than incongruous combinations of scent and music. Morin, Dube & Chebat (2007) conducted two experiments (a video simulation and an e-service environment) which demonstrated how background music in servicescapes influences service evaluation and purchase intention. The results of both studies were similar with only a few exceptions. Provider attitude was a partial mediator of servicescapes effect, at the aggregate level, when they include all participants regardless of the background music conditions. In study 1, even in the absence of music, was found a provider mediated servicescapes, though of weaker magnitude, while in study 2, the absence of music demonstrated that the provider effect is not strong enough to influence service

outcomes.

3.1.4. The effect of music on quality evaluation

In three different studies (North & Hargreaves 1996; 1998, North et al. 2000) were showed that background music influences shoppers' evaluations of service environments even when the clientele studied is different. In a student cafeteria, North & Hargreaves (1996) found that diners' liking increased with their liking for the music played therein, suggesting that music in the environment may condition responses to the environment itself. North & Hargreaves (1998) confirm this, but highlights the fact that the conclusions are limited for generalization because of the context (college cafeteria) and clientele (students), suggesting more research based on these results. North et al. (2000) sought to remedy this aspect by determining if music can influence the atmosphere in different, more commercial environments and chose a bank hall, and a bar. The results indicated a positive correlation for each of 20 adjectives between ratings of classical and easy-listening background music and ratings of a bank. In the same time, North et al. (2000) revealed a positive correlation between classical and pop background music and ratings of a bar. In a mall outlet, Dube & Morin (2001) found that store evaluation is influenced by pleasure intensity but not by direct transfer of affect, because attitude towards the servicescapes and the sales personnel were considered powerful mediators. In the context of women's fashion store, Sweeney & Wyber (2002) showed how perceptions of merchandise and service quality were intensified in the presence of music that was liked, extending the Meharabian-Russell (1974) model of environment psychology. The model proposed by Sweeney & Wyber (2002), suggest a positive relationship between music and approach avoidance behaviour where emotional states and cognitive processing were acting as mediators. The results of this study indicated interactive effects of genre and tempo, since pleasure was enhanced by fast tempo music and service quality was enhanced by slow tempo pop music. Referring to the music characteristics, liking of the music increased emotional states (pleasure and arousal) and cognitive processes (merchandise quality and service quality) but familiarity had no effect on these perceptions. The model proposed is consistent with Meharabian & Russell's (1974) suggesting that music increased levels of pleasure and arousal.

3.2. Emotional responses

In Table 5 are presented more details about the relationship between musical variables and emotional responses.

Emotional responses	Authors	Musical variables	Results
Moods	Bruner (1990); Alpert & Alpert (1990)	**Music linking** (happy vs. sad)	Happy music is powerful stimulus for affecting moods and of evoking nonrandom affective and behavioral responses in consumers.
Feelings	North & Hargreaves (1996)	**Music linking** (liked vs. disliked)	New age music brings positive response
	Morrison (2001)	**Music volume** (soft vs. load)	Music volume have a significant influence on the moods, especially in context of retail stores
	Michon & Chebat (2004)	**Music tempo** (slow vs. fast)	Slow music tempo influences shopper's positive affect
	Garlin & Owen (2006)	**Music characteristics**	Musical characteristics had numerous influences on key financial, affective and attitudinal factors and behavioural, all of them were small to moderate effects
Emotions	Lin and Wu (2006)	**Music volume** (soft vs. load)	Slow music volume evokes positive emotions. Joyful music stimulates positive consumption emotions in contrast to sad music

Table 5. Effects of musical variables on emotional responses

3.2.1. The effect of music on moods

In his review about music variables, Bruner (1990) revealed the fact that music has an important impact on mood. Also the author noted that music can be considered a powerful emotional stimulus. Alpert & Alpert (1990) noted a positive relationship between background music in commercials and emotional responses among consumers. Herrington & Capella (1994) found that music influence shopper mood in the

store and background music is an antecedent for mood states. Based on his research, Oakes (2000) noted that music can alter mood and mood changes consumer behaviours.

3.2.2. The effect of music on feelings

North & Hargreaves (1996) in their study found that liking for the music has a positive influence on linking for the atmosphere in the context of a student cafeteria. Morrison (2001) showed how the right music in a store can change the mood of the customers in the store and the perception of the store. In another study, Michon & Chebat (2004) reveals how some atmospheric variables can mediate shoppers' affect while other variables stimulate cognitive processing. Morrison et al. (2011) demonstrated that the consistency between music volume and scent have a positive influence on shoppers' emotions and subsequently influence shopper behaviours.

3.2.3. The effect of music on emotions

The most relevant research on the effect of music on emotions is realised by Lin & Wu (2006). They show how music volume (measured in decibels) and radio broadcast type (male voice, female voice or non-vocal) effects consumption emotion and temporal perception. Lin & Wu (2006) reveals that when music in the store is unfamiliar, time perception is underestimated and consumer attention is more easily distracted, while music in the store is familiar time perception is overestimated. Referring to music volume, the data show that, given moderate music volume, positive emotions are stimulated by moderate lower volume, leading to the underestimation of time perception. Hui et al., (1997) noted that music ameliorated emotional evaluation of a service environment. In other words, music had a positive impact on approach behaviour toward the store.

3.3. Behavioural responses

The most relevant results of the studies on the impact of music on behavioural responses are presented bellow (Table 6).

Behavioural responses	Authors	Musical variables	Results
Time spend in store	Smith and Curnow (1966); Herrington & Capella (1996); Sullivan (2002)	**Music volume** (load vs. soft)	Loud music decrease shoppers' rates of spending per minute in store as compared with soft music. Music does not affect sales
	Milliman (1982, 1986); Herrington and Capella (1996); Mattila and Wirtz (2001); Sullivan (2002); Caldwell and Hibbert (2002); Garlin & Owen (2006); Andersson (2012)	**Music tempo** (fast vs. slow)	Slow tempo music increase time spend in store in comparison with fast tempo music. Also, slow tempo music is related with traffic pace and increases the daily gross sales volume but is not related with awareness, leaving before being seated or with food purchases
	Yalch and Spangemberg (1988; 1990; 1993)	**Music variation** (background music, foreground music)	Younger shopper spent more time in the store when exposed to background music and older shoppers shopped longer when exposed to foreground music
	Lopez & Malhotra (1991); Cameron et al. (2003)	**Music linking**	Time estimates get shorter with the liked music
	Wilson (2003)	**Music genre** (jazz, popular, easy listening and classical)	Congruous jazz enhanced restaurant atmosphere lenght to stay and spending. Different musical styles have the potential to influence patrons' purchase
Money spend in store	Areni and Kim (1993); Baker et al. (1992) North & Hargreaves (1998; 2000)	**Music genre** (classical vs. Top-forty)	Classical music influences shoppers to spend more money, spend more time, intention to revisit and buy expensive merchandise
	Yalch and Spangenberg (2000)	**Music preferences** (familarity vs. unfamiliarity)	Familiar music result in less shopping and vice versa
	Nort et al. (2000); Broekemier et al. (2008)	**Music linking**	Music linking increased spending and creates a unique store atmosphere. Interactive effect of

			happy and liked music increases the intensity of shopping intentions
	Morin et al. (2007)	**Music Valence** (presence vs. absence)	Pleasant music results into stronger purchase intentions
Consumption Speed	Milliman (1982, 1986); Kellaris & Kent (1991); Caldwell & Hibbert (2002); Oakes (2003)	**Music tempo** (fast vs. slow)	Fast tempo increases the consumption speed and significantly affects the pace of in-store traffic flow. Presence of music results into shorter wait durations.

Table 6. Effects of musical variables on behavioural responses

3.3.1. The effect of music on time spent in store

The first published research which showed how background music influence consumer behaviour was realised by Smith & Curnow (1965). The authors manipulated music volume and demonstrated the impact loud music and soft music on shopping duration, total amount of sales and perceptions of the environment. They noted (op cit, 255) that "retail-store management has accepted music not so much for the benefit of employees as for encouraging purchases". The results of the study reveal that loud music positively influence shoppers' rate of spending per minute in the context of the store. Also, loud music had no impact on total sales. Milliman (1982) analysed the impact of music tempo on shopping behaviour, in the context of a supermarket. The author found that slow tempo music determined shoppers to move slower and to spent more money in the supermarket as compared with fast tempo music. Also slow tempo music has a significant influence (increase) on daily gross sales volume. In a follow-up study, Milliman (1986) examines the effect of background music on consumer behaviour in the context of a restaurant, he noted that: "While it is obvious that an atmosphere is made up of and affected by numerous factors, some are considerably more controllable than others. One of these factors that is ordinarily highly controllable is music, ranging from loud to soft, fast to slow, vocal to instrumental, heavy rock to light rock, or classical to contemporary urban" (p. 286). The results of the observation show that when slow-tempo instrumental background music was played customers spend more time in the restaurant, consumed more alcoholic beverages but ate about the same amount of food. Also music tempo (fast or slow) did not influence the total number of customer groups that left the restaurant before being seated. Herrington & Cappela (1996) found different results as compared with previous studies (Smith & Curnow, 1966; Milliman, 1982) after realising a research in the context of a supermarket. Used digitised musical sequences at similar music tempo (slow or fast) levels to the Milliman (1982) research, the authors reported that music volume and music tempo had no impact on purchase behaviour. In fact Herrington & Capella (op cit) suggest that the real difference between their finding and previous studies (eg Smith & Curnow, 1966; Milliman, 1982) were that a more likely explanation for any increase in shopping time and expenditure was the level of music preference. In other words, musical preference is a variable which had not been previously examined, even though it may offer a more valid explanation for the influence of music as compared with music tempo and/or music volume. More specifically, the results of previous studies realised by Smith & Curnow (1966) and Milliman (1982) may have been the result of music preference rather than music tempo or music volume as the authors suggested based on observed music effects. In their study, Harrington & Capella (op cit) reveal that music preference has a positive effect on shopping time or in other words music preference increase shopping time. Using for music condition such as music volume (loud/soft), music tempo (fast/slow), music familiarity (popular/unpopular) and music valence (presence/absence), Sullivan (2002) analysed the impact of music on time spent in restaurant and money spent (on food and drink). The author found that music volume (loud/soft) and style of music in terms of its popularity influence time spent in restaurant. Money spent in restaurant on food and drink was affected only by loud music. Even if patrons spend more time with their meal, they did not spend more money on food or on drink. Caldwell & Hibbert (2002) study if there is a relationship between music tempo, music preference and actual and perceived time spent dining, the amount of money spent, and outcomes in terms of enjoyment of the experience and future behavioural intentions. The results show that music linking has a positive influence on money spent in the restaurant**,** enjoyment levels, intention to return and to recommend the restaurant. Caldwell & Hibbert (op cit) demonstrated that slow tempo music influence time spend in the restaurant and higher spending of food and drink, while fast tempo music influence consumers to eat and drink more quickly. Contrary to

Sullivan (2002) results, Caldwell & Hibbert (2002) suggest that time spent in the restaurant was the most powerful predictor of money spent in the restaurant. Caldwell & Hibbert (2002) suggest that enjoyed dining, intention to return, and intention to recommend the restaurant is influence by the environmental pleasure and arousal elicited by the music.

Cameron et al., (2003) analysed the relationship between judgement about music, wait-length evaluation, customer mood and subjects' overall experience evaluations (in a low-cost wait situation). The results of the study show that music influences both cognitive (wait-length evaluation) and affective (mood) responses in the low-cost waiting conditions. Also, based on the results of this study it can be affirm that music's positive contribution to overall experience evaluation is through mood and not through wait-length evaluation. Yalch & Spangenberg (1988; 1990; 1993) in three different studies examined the effects of music (background and foreground) on shopping behaviour. Foreground music includes original artists and lyrics, while background music uses studio musicians playing instrumental, this kind of music tend to be more restricted in rages of tempo, frequencies and volume. Generally speaking, foreground music commands more attention from customers while they shop. Yalch & Spangenburg (1990; 1993) noted that preference for type of music (background or foreground music) depending on customer age. Also, customers clearly differ in their purpose for shopping (purchase intention, leisurely shopping) which are varied by time of day. In their field experiment, Yalch & Spangenberg (1988) found that younger shoppers spend more time in the store when they listened background music while older shoppers considered they spend more time in the store when they were exposed to foreground music.

Contrary to the expectations, Yalch & Spangenburg (1990) revels that shoppers had shopped longer than expected when exposed to the less preferred music which means foreground for older shoppers and background for younger shoppers in comparison with the situation when they listened their preferred music, background for older shoppers and foreground for younger shoppers. One of the biggest gap of these studies is the fact that actual time spend in store was not recorded, so it is not clear if the impact of background and foreground music were behavioural (actually spent more time), or perceptual (spent the same amount of time but perceived it to be longer) or a combination of the two. Yalch & Spangenberg (1993: 632) noted that in general, teenagers usually listen to rock music, adults may prefer classical music, and middle-aged, blue collar adults may prefer country and western. Based on these preferences it is expected that shoppers are spending more time and more money in stores when they listening liked music, when they listened disliked music, they spend less time and less money in the store. Yalch & Spangenberg (1993) found that younger shoppers (under age 50) preferred the foreground music and indicated that it was more similar to their usual music than the background music, while older shoppers (50 and over) preferred background music but specified that they were no more likely to listen to it than the foreground music.

Mattila & Wirtz (2001), show that when ambient scent and music are congruent in terms of their arousing qualities, consumers perceived the environment positively, with higher levels of approach and impulsive buying behaviour and satisfaction and store evaluations. For example, fast music tempo had a positive effect on approach behaviour, when the high arousal scent (grapefruit rather than lavender) was used. The authors conclude that consumers react more positively when the stimuli in the environment function together to provide a coherent atmosphere of the store. For example, congruity between atmospheric stimuli such as music and scent increased overall satisfaction levels and encouraged approach behaviour. Wilson (2003) extended research by North & Hargreaves (1998), examining the relationship between music style and perceived atmosphere and purchase intentions in the context of a restaurant. The results of the study show that perception of the music has a positive effect on patrons' perceptions of the restaurant. Also, different music style such as

jazz, popular, easy listening, classical or absence of the music influence in a different way the perceived characteristic of a restaurant. Wilson (2003) found that when patrons were exposed to classical, jazz popular and music they were prepared to spend more money on their main meal. When patrons were exposed to easy music or no music conditions, the possibility to send more money on their main meals was significantly lower.

Andersson, et al., (2012) conducted two consumer field studies to analyse the effect of music on shopping behaviour. The results of the first study indicated that music influenced the time spent in store and the money spent in store. Also approach/avoidance behaviour was moderated by gender. Their results also showed that arousal predicted approach/avoidance behaviour, which confirms the complexity of

arousal effects on approach behaviour, but the effects of arousal was moderated by gender. These results are in line with Sherman et al. (1997) findings which reveal that arousal increases spending and purchase intentions. These results from study two indicate that females are positively affected by no music or slow tempo music while males are affected positively by the music and fast tempo music. These results are consistent with Kellaris & Rice (1993) findings, which show that females respond positively to music at lower volumes.

3.3.2. The effect of music on money spent in store

Baker, Levy, & Grewal (1992) reveals that ambient cues such as classical music and soft lighting versus pop music and bright lighting interacted with social cues in terms of number and friendliness of employees to influence customer pleasure which have then a direct impact upon willingness to buy. Also, pleasure and arousal may mediate the effects of store environment on respondent's willingness to buy. Areni & Kim (1993) analysed the influence of music genre (classical versus top-forty music) on shopping (purchase and consumption) behaviour in the context of a wine store. When the classical background music was played shoppers purchased more expensive wines in a wine store as compared to Top 40 music (op.cit). If consumers associate wine consumption with prestige and sophistication, then Top-40 may provide an incompatible with the sophistication of the product, while classical music may have provided a more appropriately sophisticated atmosphere, which suggested that, only expensive merchandise should be considered. Anyway, Areni & Kim, (1993) did not consider the situation of no music condition so it is debatable whether classical music facilitated or Top 40 music inhibited selection of expensive wines. This study also suggest that it is possible shoppers, being somewhat unfamiliar with wine cellars and wines in general, used the classical music as a cue and inferred that the cellar contained mostly high priced merchandise. The number of items examined, handled, and purchased, the total amount of time spent in the store, and the decision to taste wines on site were unaffected by the background music.

North & Hargreaves, (1998) revealed how classical music increase purchase intention in a cafeteria as compared with pop music. More specifically, when subjects were exposed to classical music, they were ready to pay the most for food items on sale therein. These results are consistent with prior research (Areni & Kim, 1993) which reveals how customers purchase more expensive wines in a wine store when classical music is played. Lammers (2003) in his study on the influence of music on the amount of purchase in a restaurant reveals that lower volume rock and classical music intensified restaurant spending in comparison with louder music. Also it is important to be noted that critical factor may have been the contextual congruity between the quiet serenity of the restaurant and the quietness of the musical volume. Broekemier, Marquardt & Gentry, (2008) investigated the effects of two dimensions of music effects (happy/sad or liked/disliked) on shopping intentions. The results indicate that in a stimulated store, when subjects were exposed to music and perceived music as happy music, purchase intentions were higher. Referring to the effects of liked/disliked effect on shopping intentions, the effects were only marginally. Happy music has a more influence on shopping intentions as compared with the liked music. The majority of the research which analysed the relation between music variables and time spend in store**,** referred also at the amount of money spend in store. For example, in their studies, Milliman (1986) and then Caldwell & Hibbert (2002) reveal how slow tempo music has a significant influence in bar purchases of alcohol, in the context of a restaurant. Also, money spent in the restaurant is influence by time spend in the restaurant. Contrary to the expectations, Yalch & Spangenburg (1993) noted that foreground music induce young shoppers (25-49 age) to spend more in a store while background music influence old shoppers (50 age and over) to spend more money.

4. The effect of music on consumption speed

Roballey et al (1985) reveals how fast tempo music significantly increased restaurant diner eating speed. These results are consistent to McElerea & Standing (1992) who also found that fast tempo music versions of unspecified piano music increased the drinking speed compared with the slow tempo versions. Milliman (1982) shows how music tempo significantly affects in store traffic flow Milliman (1986) reveals how customers took significantly longer to finish their meals when exposed to slow tempo as compared to fast tempo music. Caldwell & Hibbert (2002) also reported that more arousing or faster music in a restaurant made customers eat and drink more quickly. Oakes (2000) demonstrated that wait durations appear shorter

in the presence of music.

5. Conclusions and suggestions for future research

After this extensive review of the literature it is safe to conclude that music variables, both structural (tempo, volume, genre, harmony) and affective (liking, familiarity, type or style) can independently or jointly have a significant effect on consumer behaviour. Music is the most studied atmospheric variable in the context of retailing and service environment. We indentified seven reviews of the literature till present on the effect of music on consumer behaviour. Four reviews are concentrated on identified music characteristics such as such as structural or compositional variables (Bruner, 1990, Harrington & Capella, 1994; Oakes, 2000, North & Oakes, 2008) while three of them analysed the relationship between music and consumers' responses (Turley & Milliman, 2000; Oakes, 2000; Jain & Bagdare, 2011). Another important aspect referring to these reviews is the fact that Oakes (2000), Oakes & North (2008) review only the studies in the context of service environment, while Herrington & Capella, (1994) Garlin & Owen (2006) review the studies on the effect of music in retail context. Bruner (1990) was the first one who proposed a classification of musical variables, Herrington & Capella (1994) had continued his work referring to the characteristics of music and classification of musical variables. These two studies are the only one existing in the literature referring to the classification of musical variable and are widely cited. More recently, Oakes (2000) highlight the importance of musical congruity, based on this, Oakes & North (2008) introduce the concept of musicsapes. The most representative review of the literature referring to the impact of music on consumer behaviour is that of Jain & Bagdare (2011) which analysed the results of the studies in both retail and service environments. The present study highlights the majority of the studies realised till present which analysed the relationship between music (and other atmospheric variables) and consumer responses (cognitive, emotional and behavioural) both in retail and service environments. Most of the researchers chose to study the relationship between structural musical variables and consumer behaviour. For example, in the service environment category, the majority of authors chose analysed the effect of music (tempo or genre) in restaurants (Roballey et al. 1985; Milliman, 1986; Caldwell & Hibbert, 2002; Sullivan, 2002; Areni, 2003; Wilson, 2003). In retail setting most of the studies analysed the impact of music on consumer behaviour in the context of supermarkets (Smith & Curnow, 1966, Milliman 1982, Herington & Capella, 1996) and retail stores (Yalch & Spangenburg, 1990, 1993, 2000; Morrison, 2001; Michon & Chebat, 2004; Eroglu et al, 2005; Garlin & Owen, 2006; Andersson et al, 2012). The present study has identified some gaps in the literature referring to the impact of music in the retail context. In this way some important areas for future research can be considered, for example a vast number of previous studies concentrated on structural characteristics of music: there is a need for research into the influence of its affective characteristics. We agree with Herrington & Cappela (1996) opinion about the fact that musical preference is a variable which had not been previously examined, more research have to be done in this way because music preference may offer a more valid explanation for the influence of music than its tempo and/or volume. Also, it can be observed that, research on the effect of music valance (presence/absence) in retail environment are rare, more studies on this aspect are needed, as is need for more research on the interaction between music and other atmospheric variables. We identified in the literature only studies on the influence of music and smell on shopping behaviour, or the influence of music on retail crowding. Future research can consider the impact of music and other atmospheric variables such as window display, colour, lighting, air quality and product category on consumer responses. The majority of previous papers reveal the influence of music on consumer behaviour and exclude the impact of music on employee behaviour, future research can consider this and also the importance of factors that may moderate this relationship. The present study does not consider the impact of music on sales, satisfaction or loyalty, future research can be concentrated on the effect of music on behavioural responses in greater detail, the influence of music variables in a controlled manner on shopping behaviour (such as time spent in store, money spent in store, sales, satisfaction, and loyalty). Our purpose for future research is to develop a framework for the effect of music on shopping behaviour in the context of clothing stores.

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