

Music as an environmental factor in hospitality: what is the impact of background music on perceived atmosphere and sales in a school cafeteria?

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Extending the research of North and Hargreaves (1998)¹, this study investigates the influence of three different musical styles, namely lounge, pop and jazz on perceived atmosphere and sales in a school cafeteria. Interviews and questionnaires were conducted to acquire information about the patrons' perception of the characteristics of the cafeteria. Results indicate that there is significant differences between perceived characteristics and the three different musical styles. However, there was no significant difference between the music styles played and the purchases made during the testing period nor between the product items sold and the music played. The results of this research contribute to the better understanding of the consumer behaviour and can be used for commercial purposes.

¹ North AC, Hargreaves DJ. 1998. The effect of music on atmosphere and purchase intentions in a cafeteria. *Journal of Applied Social Psychology* 28: 2254–2273

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Introduction

Music is an element within the life of people that is constantly encountered in social and commercial contexts (North and Hargreaves, 1998). Customers expect to hear music in every establishment and physical setting they are interacting in (Magnini and Thelen, 2008). Thus, understanding peoples' everyday life as well as understanding the role of music within their lifestyle is important for the hospitality industry including bars, restaurants and other related services (North and Hargreaves, 1998). Music has the unique power to create stimulation and ambiance, manipulating emotions and behaviour in customers minds without their becoming aware of it (Blackmon, 2011; Blazer, 2006). Furthermore, music represents an establishment's design, also called 'musical fit', accentuating a company's culture (Hertzfeld, 2010). Therefore, the hospitality industry can make use of the capability of the music within their establishments to create memorable experiences and a pleasant atmosphere (Blackmon, 2001).

There are two different approaches when using music in a restaurant – background and foreground music (Blackmon, 2011). Background music is played mostly in high-end (gourmet) restaurants. Background music' is played at low volume in order to create a peaceful and elegant atmosphere. On the other hand, foreground music seeks to create an exciting and lively atmosphere for patrons. It is a statement to reinforce the theme and experience of the business by reaching desired customers (Blackmon, 2001).

Numerous studies have been carried out on the impact of music in restaurants on the buying behaviour of guests and their perception of atmosphere. Others studies have measured the

shopping behaviour of customers in supermarkets. Yet, investigations of the impact of music on students are very limited.

Therefore, a replication study was carried out on the impact of music on perceived atmosphere and purchase intention of students in the student cafeteria in the Stenden University, Leeuwarden.

Effect of music on perceived atmosphere

Atmosphere is an all encompassing term used to embody the experience felt. It can be consciously designed to reinforce buyers' responsiveness towards the consumption of a product. Thus, atmosphere is considered as more influential and powerful than the unrefined establishment itself (Kotler, 1973/1974). Atmospherics enhance the establishment's ambiance and character, specifically brightness, size, shape, volume, pitch, scent, freshness, softness, smoothness and temperature (Kotler, 1973/74). By introducing the concept of store atmospherics, a conscious designing of space to construct certain effects in buyers, was established (Kotler, 1973/74). Within this concept of atmospherics, music is seen as producing effective and powerful stimuli and an influential force with the capability of manipulating the customers' mindset (Magnini and Thelen, 2008). The stimuli influence arousal, a level of activation, and pleasure contribute to patrons' state of feeling by manipulating their emotions (Magnini and Thelen, 2008). Thus, a relationship between music and the listening circumstances in an environment exists (North and Hargreaves, 1998).

An appropriate use of loudness as well as a good fit in style of music makes the guest feel comfortable within the setting

they are part of (Blazer, 2006). In addition, Kellaris and Kent (1992) found that music can influence customers' time perception in positive ways. Other studies show that that pleasant music made the waiting lines seem shorter for the customers, leading to a reduced likelihood of negative attitudes towards the length of waiting (Magnini and Thelen, 2008).

North and Hargreaves (1998) investigated the customers' 'liking' of the played music within a cafeteria and found that, relaxed and calm impression was associated with an enhanced liking level and variation of musical conditions changed the subjects' perception about the cafeteria.

Other research focused on the importance of diverse musical styles, where distinct styles produced a difference in perceived characteristics of a restaurant. (Wilson, 2003). The nature of the subjects' feelings demonstrated a connection to the understanding of music. The work of North and Hargreaves (1998) showed that the more the subject perceived the music as fun the cafeteria was perceived as fun. In addition, easy listening music, 'lounge music', achieved few positive effects on responses to the cafeteria environment. Classical music was perceived as contributing to an elegant environment whereas no music had the most peaceful impact on the subjects. By playing pop music, the subjects sensed the atmosphere as upbeat, assertive and less peaceful.

Effect of music on sales

Several studies proposed that music is likely to influence product choices and shopping behaviour, specifically the volume, speed and style of the music are identified as the main factors (Wilson, 2003; Milliman, 1982; Magnini and Thelen, 2008).

Regarding shopping behaviour, Magnini and Parker (2008) stated that the use of proper music made the customer spend more money. They showed that slow background music in a supermarket is associated with a slower shopping pace as well as increased sales. Under similar conditions, restaurant guests dined longer, which is directly connected to higher beverage sales.

Other studies have also reported a connection between musical tempo and consumers' shopping pace. Milliman (1982) illustrated that rapid music shows similar results, arguing that more money is spent within a slow-music condition. In a subsequent study, Milliman (1986) controlled the tempo of music played in a restaurant, which showed that fast music led to quicker eating by the diners whereas slow music led to a slower eating pace. Additionally, volume has an impact on the time spent in a supermarket, music played at a low volume resulted into a longer stay while loud music within the environment led to a shorter stay (Magnini and Thelen, 2008).

Supplementary studies suggest that the style of music played is likely to have an additional significant effect on customers' perception and choices (Bruner, 1990), which is as well-supported by the investigation of Yalch and Spangenberg (1990). Furthermore, the appropriate 'fit' of music to context relates to an enhanced persuasion of consumers, for instance, classical music played in a wine cellar led to consumers buying more expensive wine. (Areni and Kim, 1993). Wilson (2003) proposed that there are differences in purchasing between no music played, jazz, easy listening, classical and popular. These studies verify that

certain music styles might control the assortment of certain products as well as different purchase approaches.

Overall, North and Hargreaves (1998) declared that their study proposition requires validation by future research and investigations. In reply, the current study investigates the effect of music on perceived atmosphere and purchase intention in a school cafeteria and poses two research questions:

- Does musical style influence perceived atmosphere of the school cafeteria?
- Does musical style influence the sales in the school cafeteria?

Methods

Participants

The cafeteria was situated in the Stenden University in Leeuwarden, the Netherlands. Consequently, all students and teachers who were present at the Stenden University's cafeteria were selected as the population for this project. The cafeteria offered sitting areas for up to 65 persons. Subjects were presented with a set of questionnaires and interviews during the 4-week experiment phase, 3 days a week. The testing took place between 12:30 until 14:00 on the busiest days of the week – Tuesdays, Wednesdays and Thursdays.

Materials and design

Field research has been carried out with the help of the authors as participating observers. The authors observed and recorded data through interviews and questionnaires. During the 12 days quasi-experiment, each day an 80 minute CD of the representing musical styles – lounge music, pop music and jazz music – was played. Normally, there was no music played in the cafeteria before the experiment. For the research, the music was played on a high quality CD player through one speaker in one corner, in the dining area of the cafeteria. The volume was set on medium level, allowing the patrons to hear the music clearly in the dining area and at the same time let them talk over it comfortably. However, the music could be heard only slightly from the queues at the cashier. The music was played continuously throughout the experimental time frame.

A time-series design has been used for the research, in order to observe the dependent variables which, in this research, were customers' perceptions of the of the cafeteria's characteristics and the product items sold. The differences were examined throughout the four weeks, with the rotation of the musical styles' order, the interviews and the questionnaires carried out. In week one and three the order of music styles presented were lounge music, pop music, and jazz music. This order has changed in the second and the fourth week to jazz music, lounge music, and pop music.

Changes in purchase intentions with style of music were measured through observing the most purchased items.

Questionnaires

The sample group was asked personally by the authors to fill in the questionnaire. The questionnaires were handed out during the stay of the customers at the cafeteria and were self-administered by the guests themselves. Questionnaires included 20 characteristics of the atmosphere in the cafeteria, and were asked to choose the characteristics on an 11-point scale (0 = *I personally think that the cafeteria does not possess*

this characteristic; 10 = I personally think that the cafeteria definitely possesses this characteristic) (see Appendix 1) .The 20 adjectives used in the questionnaire were derived from the original study by North and Hargreaves (1998).

Interviews

The sample group was also interviewed through a two-way systematic conversation, in order to collect information for the research. The type of the interview was ‘focused’, allowing the authors to execute an interview which concentrated on the customers’ cafeteria experience due to the music’s effect. Firstly, the subjects were asked whether they recognized the music while dining. Subsequently, the guests had to identify the type of music played as well as to determine their preference regarding the music styles (or no-music played) in the cafeteria. Moreover, they were asked to indicate whether music adds value to their cafeteria experience or not.

Data analysis

Collected data from the questionnaires were analysed following the methodology of the original study of North and Hargreaves (1998), using IBM SPSS Statistics ®. An analysis of variance was carried out to investigate differences between the three musical styles on the customers’ ratings of the characteristics of the cafeteria, and between product items sold in the cafeteria and the three different musical styles and the three musical styles and the total sales. A t-test was used to test if purchases were made due to music played.

Results

Questionnaires were completed by 120 students and teachers at the university (56 males, 64 females; mean age = 22.3 years, SD = 4.11).

The analysis of variance revealed that there was a significant difference in perceived characteristics of the cafeteria between the three musical styles (Table 1). Characteristics that were differentially rated are: exciting, spiritual, up-market, restful, sophisticated, happy, rebellious, youthful, fun, feminine, invigorating, aggressive, fashionable and sensual. These findings indicate that pop music contributes to the perception of the cafeteria as youthful, exciting, fashionable and invigorating. If the music style is changed to jazz, the cafeteria is perceived as happy, restful, peaceful, feminine, fun, sensual and cerebral. Furthermore, if lounge music is played the cafeteria is perceived as up-market and sophisticated.

Table 2 illustrates that there is no significant difference in perceived characteristics between the three music styles on the aspects: masculine, cerebral, fresh, down-market and peaceful.

Total sales

Analysis of Variance was carried out to determine any significant differences between the total sales and the three musical styles. The test reveals that there is no significant difference in total sales between the three music conditions ($F = 2.037$, $df = 2$, $p = 0.155$).

Furthermore, a t-test was carried out to assess whether purchases were made due to the music played by comparing sales during periods with or without music. The result shows no significant difference between the presence of music and the total sales ($t = 1.979$; $df = 5,659$, $p = 0.098$).

Table 1: Characteristics perceived significantly different between three music styles.

Characteristics	Mean Score				p
	Lounge	Pop	Jazz	F(2,117)	
Youthful	5.13	7.95	7.58	27.542	<0.001
Happy	5.80	7.00	7.83	10.925	<0.001
Fun	5.43	7.63	7.38	14.617	<0.001
Exciting	4.00	7.60	7.30	59.769	<0.001
Fashionable	5.78	7.23	6.23	5.540	0.005
Restful	5.83	4.83	7.05	8.695	<0.001
Invigorating	5.15	6.60	5.80	6.952	0.001
Feminine	4.83	4.53	6.25	7.627	0.001
Up-market	6.23	4.03	5.38	9.336	0.000
Sensual	4.78	3.70	5.63	6.162	0.003
Sophisticated	5.23	3.95	3.55	5.907	0.004
Spiritual	3.83	2.80	4.60	4.427	0.014
Aggressive	1.58	3.93	1.80	16.639	<0.001
Rebellious	2.03	3.63	2.48	6.894	0.001

Table 2: Characteristics not significantly different perceived in three musical styles

Characteristics	F(2,117)	p
Masculine	0.023	0.978
Cerebral	2.965	0.055
Fresh	2.060	0.132
Down-market	0.242	0.786
Tacky	0.512	0.601
Peaceful	0.544	0.582

Products sold

In each of the musical conditions the highest sales were made with Turkish toast, cappuccino, and coffee crème (Table 3). An analysis of variance showed no significant variations between sales of the almost all products under the three conditions of musical style. Coffee crème was an exception ($F = 3,624$, $df = 3$, $p = 0,040$).

Discussion

Perception of the cafeteria

The aim of this study was to identify any impact of background music on perceived atmosphere in a school cafeteria, specifically how patrons perceived the cafeteria’s environment due to three musical styles played. Results reveal that different musical styles influenced the subjects’ perception of the cafeteria environment, since ratings differed significantly between the three conditions for 15 of the 20 adjectival scales. These findings are consistent with the original study of North and Hargreaves (1998).

The characteristics showing a significant difference are exciting, spiritual, up-market, restful, sophisticated, happy, rebellious, youthful, fun, feminine, invigorating, aggressive, fashionable and sensual whereas masculine, cerebral, fresh, down-market and peaceful are rated non-significantly different. The above mentioned findings provide evidence that the five adjectival characteristics do not suit the cafeteria’s atmosphere.

Furthermore, several patterns emerged per music styles regarding perceived characteristics. Pop music was associated

Table 3: Sales of several products under three different musical styles

Product Items	Sales (€)			F*	p
	Lounge	Pop	Jazz		
Salmon Wrap	103.75	132.00	92.25	1.314	0.309
Bun Healthy	157.50	189.00	181.50	2.091	0.147
Bun Filet American	222.75	204.75	207.00	3.138	0.059
Bun Cream Cheese	166.50	227.25	166.50	1.287	0.317
Bun Italian Ham	335.00	317.50	362.50	0.140	0.934
Turkish Toast	1 001.00	1 075.25	1 020.25	0.707	0.564
Focaccia Tomato/Mozzarella	272.50	252.50	310.00	2.514	0.101
Toasted Ham/Cheese	261.00	267.00	237.00	1.378	0.290
Coffee Crème	351.00	356.25	383.25	3.624	0.040
Espresso	27.00	31.50	32.25	0.479	0.702
Cappuccino	415.65	408.00	408.00	0.080	0.970
Tea	97.20	104.40	73.20	0.318	0.812
Drink Yoghurt	53.55	54.40	40.80	0.433	0.733
Earth Water (Still)	137.00	131.00	108.00	0.576	0.640

* df = 3

with the environment being perceived as generally youthful, exciting, fashionable and invigorating, and least spiritual. Lounge music was related to the atmosphere being perceived as up-market and sophisticated, and least aggressive.

Moreover, with the change of the musical styles to jazz, the subjects perceived the cafeteria's environment as restful, peaceful, feminine, fresh, sensual and cerebral, and least aggressive, similar to the response to lounge music.

Actual sales

No conclusive evidence was found that sales were affected by the musical styles played. Furthermore, there was no relationship between the purchases made and the presence or absence of music. These findings contradict the formal study of Wilson (2003), indicating that there are differences in purchasing during periods with and without music and also among different music styles.

Furthermore, it was questioned whether the musical styles influence the individual product items bought in the cafeteria. The study of Wilson (2003) has implied that music is likely to influence the product choices and shopping behaviour of the patrons, opposing the findings of this study.

Even though the purchases were not affected by the presence of music or by the different musical styles played, through an interview, it was discovered that 94.16% of the patrons agreed that music a value to the perceived experience in the cafeteria.

Limitations

During the quasi experiment, the authors have faced several drawbacks. Firstly, there has been only one speaker available for this experiment situated in one corner of the dining area. The volume was set on a medium level allowing the subjects to hear the music in the background. However, the music was not audible in the entrance area. Hence, the music could not be heard while the patrons were waiting in a queue to make their purchases.

Another limitation of this study was the short amount of time students/patrons were prepared to spend in the cafeteria due to classes and other educational obligations. The time spent by students in the cafeteria is relatively short; hence,

they purchase food/beverages and leave directly. Moreover, the students are not sensitive to the different musical styles played. The genre of the music did not make a difference to them, as apparent during the interviews.

Implications

Since the atmosphere was perceived differently per musical style, it can be speculated that music has an impact on the patrons' views and feelings in an environment. This finding corresponds with that of Magnini and Thelen (2008) who stated that music is seen as an influential force with the capability to manipulate the customers' mindset. Furthermore, the original study of North and Hargreaves (1998) supports this speculation by indicating that there is a relationship between music and the listening circumstances within an environment. However, the results showed that the diverse musical styles did not affect the patrons' purchases which may indicate that patrons behave differently to music in a cafeteria environment than in a dining restaurant. It can be expected that the intentions of the patrons change per venue. Additionally, the product items sold were also not influenced by the musical styles, which is in contradiction with the findings of Bruner (1990), who demonstrated that different musical styles have a significant effect on patrons' choices.

Nevertheless, the present results show coherence with the customers' perception and the music played, but not with the product choices. The reason for this outcome could be that students in the investigated environment already have a preference over products regardless of music played, and therefore, there are not sensitive to different genres of music. Even though the purchases and total sales were not affected by music played, almost all customers agreed that music adds value to their stay. Hence, it enhances the environment's ambiance.

This study supports the practical application that music may affect the perceived characteristics of any dining venue. Firstly, it can be suggested that different musical styles influence the establishment's ambiance. Thus, store managers may use this advantage to enhance an establishment's design emphasising the company's culture and resulting in an ultimate musical fit. Moreover, it is recommended to investigate the most

influential and preferred musical styles in order to create a specific atmosphere which will differentiate the environment from its competitors. Importantly, the image of the company may be reflected and represented by music. Nevertheless, the main idea behind playing music in dining venues is to create an enjoyable experience for patrons. Store managers should ensure that they select the type of music in the store with care, taking into account the different tastes regarding musical styles of various customer segments.

Although in the present study, the total sales were not influenced by the presence of music in the school cafeteria, music creates additional value to the already existing dining experience. There are obvious practical applications to using music as a commercial tool in various school dining outlets. Concerning school cafeterias, the music system has to be set up properly in order to reach every customer in the entire dining area. Furthermore, a more relaxed atmosphere has to be provided to make students stay for a longer period of time and eventually purchase more.

Generally, the present study reveals that students do not prefer any particular musical style. Hence, it is recommended to replicate this study in a different environment with another student sample to further investigate whether background music has an effect on sales and purchase intention in the school cafeteria.

To conclude, this research has illustrated that music is an influential environmental factor. Hence, it influences the perceived characteristics of the environment in which it is played. Additionally, it gives evidence that different musical styles create different atmospheres in an environment. In that way it is obvious that music aids commercial processes. However, this study did not provide enough evidence in change of sales influenced by different musical styles.

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