# The Influence of Music on Purchasing Behavior of Consumers in a Supermarket

Bachelor Thesis – Management Studies

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August 2016

# Abstract

Music is a complex concept, with many different aspects. All these aspects have their own features. Music, as an environmental factor, triggers internal responses, which lead to certain behavior. Lam (2001) introduced an integrative framework of store environmental effects, based on the Mehrabian-Russel model of 1974. The store environment consists of three factors, the ambient factor, the design factor and the social factor. These factors trigger internal responses on emotional, cognitive and physiological level. Those responses lead to certain shopping behaviors with three aspects, namely approach or avoidance, inside or outside the store, and an immediate or lagged response. This thesis gives an overview of five aspects of music and their responses and behavior in a supermarket. The aspects are volume, tempo, style/type/genre, familiarity, and likeability. Loud and/or fast music leads mostly to avoiding behavior, while slow and/or quite music triggers approaching behavior. Style and type of music lead mostly to approach behavior, when it is applied correctly. Familiarity can trigger both approach and avoidance behavior, depending on what purpose is used by it. Liked music leads most of the time to approach behavior. Approach behavior will result in an increased evaluation of the store, longer shopping times or even more purchases. As profit is often the goal of a store owner, it is likely that they strive for as much approach behavior induced by music.

# Content

# Introduction

## Context and relevance

Music plays an important role in every day's life. We are almost always and everywhere surrounded by music, even when we do not notice it. When we watch TV, scenes are accompanied by music to make the effect more dramatic. When we walk in the city center during December, all we hear are Christmas songs. And even when we do not notice the music in the background, your brain will still hear it.

Music can affect people in many ways in any setting. One of the settings almost everyone experiences is shopping at a supermarket. Supermarkets are complex settings where customers experience several stimuli, not even always consciously. Thinking of the layout of the store, the width of the corridors, the shelves with all their products, price information, advertisements, scents and supermarket employees. All these factors have one goal: persuade customers to buy. Music is one of the elements with which shops try to influence the shopping behaviors of consumers. Research shows that people do not always notice the music that is played in a supermarket, although the ambient cue was there. Afterward, when they are told that there is music being played, the next time they go shopping they will hear the music. The music becomes a manifest stimulus, instead of latent. So, music has the characteristic of being unconsciously present at a supermarket, and consequently may influence customer's behavior more than they are aware off.

Doing research on the influence of music on the purchasing behavior of consumers in a supermarket may be relevant for multiple reasons. For supermarket owners, it is good to know in what way they can stimulate purchasing behavior with music (Donovan, Rossiter, Marcoolyn, & Nesdale, 1994; Jain & Bagdare, 2011) or the other way around, how they can chase away their customers in case that would be necessary (Morrison & Beverland, 2003). Many big chains of supermarkets did their own research about this and have their own system of playing music, like their own radio station or playlists (Cabenda, 2005). However, the outcome of this research is kept to their own so that the competitor does not know what knowledge they have. Therefore, by conducting a literature review on what is already known about the way music can influence purchasing behavior of consumers in a supermarket, we aim to present an overview of the existing body of knowledge.

## Research Questions

The goal of this thesis is to make an overview of what is already known about the way music can influence purchasing behavior of consumers in a supermarket.

The main question of this thesis is "How does music influence purchasing behavior of consumers in a supermarket?". Sub-questions that will be answered are

- How can the influence of different aspects of music on consumers be modeled?
- What are different aspects of music that can be experienced by people?
- How do people respond to different aspects of music?
- How do different responses to music in the supermarket affect consumers' purchasing behavior?

These questions will be answered by reviewing existing research and literature.

## Methods

When the research was started, the studies of Milliman (1982, 1986) were held as basis. Looking at their studies gave a hint of the outcomes on the effects of music. The citations of these studies gave a good starting point for other studies and reviews. The relevant articles were used. Their references

and citations were also looked into, and what seemed relevant was used. Again and again, references and citations were used to find more literature that was relevant.

On the other hand, several search words were entered in the Global Search of the Library Catalogue of Wageningen UR or Google Scholar, like “music and shopping”, “atmospherics” and “M-R model”. This led to several results, which were read and analyzed for their relevance. After these search sessions, a lot of literature about the subject was available. These were read, summarized and divided into categories. After that, a model or concept was needed to be found. This led to more literature on the subject, but mostly gave a clear view on the model and other uses.

While writing this thesis, more background information about certain concepts and topics was needed at some point. This led to very specific searching, like “volume and shopping” or “effects of familiar music”, in Google Scholar or the Library Catalog, which led to new articles. The reference manager ‘Mendeley’ was used, which also gave suggestions based on the own-build library. Some new studies came up that also were used.

In the end, not all found literature was used, as all the information was just too broad.  A selection as made based on the aspects of music that were focused on in the thesis, to give a focused overview.

# 1. Modeling the influence of music

When researching the influence of music, all its many aspects have to be taken into account. And all these aspects have their own influence on different parts of human behavior. To have an overview of these aspects and the responses they trigger, a model can be useful to be sure all aspects and their responses are accounted for. With a model, a basic view of the facts is given to simplify a complex situation. This will give more insight into the situation.

## 1.1 M-R model

In 1982, Donovan and Rossiter introduced the Mehrabian-Russell environmental psychology model (M-R) model into store atmosphere research. The M-R model is based on the stimulus-organism-response model (S-O-R), which explains the effects of the environment on emotional states that in turn affect human behavior in that environment. The responses (R) are approach or avoidance behavior with the environment that is influenced by the emotional state (O) induced by the environment. The environment has features that affect behavior, like music, noise, color, odor and furnishing, or temperature, lighting, materials and architecture (Lam, 2001). Mehrabian and Russell (1974) proposed that there are three basic, independent emotional states that mediate the environment-behavior relationship: pleasure-displeasure, arousal-non-arousal and dominance-dismissiveness (PAD). Pleasure-displeasure refers to the degree to which a person feels good, joyful, happy or satisfied with the situation. Arousal-non-arousal refers to the level to which a person feels excited, stimulated, alert, or active in the situation. Dominance-submissiveness refers to the extent to which a person feel in control of the situation, or free to act in that situation (Donovan & Rossiter, 1982). These emotional responses will lead to a certain behavioral response, namely approach or avoidance. Approach behavior is, in short, the willingness to stay in or return to the environment. Avoidance behavior is the opposites of approach, desireness to leave the environment and not to return (Donovan & Rossiter, 1982).

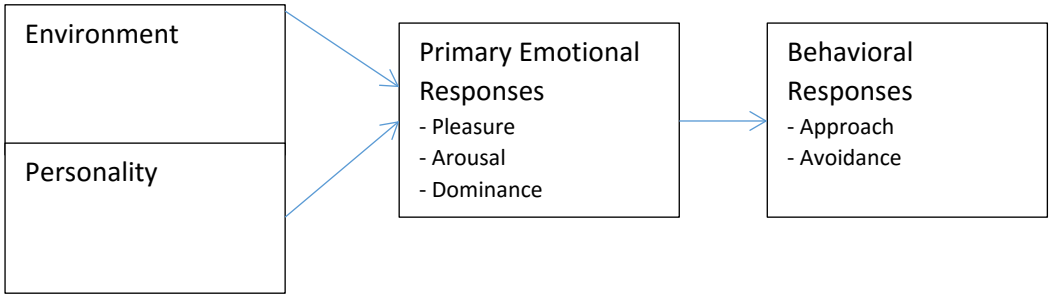


**Figure 1 Mehrabian-Russell Model (1974)**

## 1.2 Emotional response

The first level of response to stimuli within an environment is the development of an emotional state or the modification of an existing one (Sullivan, 2002). Any environment will produce an emotional state in a person. The state pleasure is described by Mehrabian and Russell (1974) in terms of positive or negative feelings, ranging from pain or unhappiness to happiness and satisfaction. Arousal was linked to mental states as stimulated, relaxed, excited, calm, active or sleepy. Dominance was described by Mehrabian and Russel (1974) as the extent to which one feels restricted in his behavior, or in control of the situation. The restrictions in behavior can be caused by physical or social barriers (Bakker, van der Voordt, Vink, & de Boon, 2014).

## 1.3 Behavioral response

Mehrabian and Russell (1974) suggested that approach or avoidance behavioral responses are considered to have four aspects:

1. A physical desire to stay in (approach) or to get out of (avoid) the environment
2. A desire or willingness to explore the environment (approach) or a tendency to avoid moving through the environment or to remain inanimate in the environment (avoidance)
3. A desire or willingness to communicate with others in the environment (approach) or a tendency to avoid interaction or ignore communication with others (avoidance)
4. The degree of enhancement (approach) or hindrance (avoidance) of performance and satisfaction with task performances

The first aspect, physical approach or avoidance can be related to intentions of a person at a basic level. At this level, the physical desire to enter the environment, or to walk past it is considered. Is one attracted to the situation, or is it repellent? The first decision of approach or avoidance is made on this level. Exploring the environment can be related to search and exposure to a range of information within the environment. When one is looking for more information or details about the situation and willing to improve their knowledge about it, this is approach behavior. When one does not need to be more informed or is indifferent about the situation, it is avoidance. Communication approach and avoidance can be related to interaction with others present in and around the environment. One is approached by the environment when he or she is looking to speak with others and interact with them. Avoidance is the case when one is ignoring others or tending to avoid interaction. If one is returning again, and time and expenditures spent are growing, it is clear that one is approaching. When one is hindering tasks, or not coming back and decreasing the amount of time spent, this is avoidance behavior (Donovan & Rossiter, 1982).

## 1.4 S-O-R in the store environment

The generic S-O-R-model, with its broad applicability, can also be used to model man-environment relationships in the store environment. Lam (2001) introduced an integrative framework that takes into account all effects that store environment can have on shopping behavior. The store environment consists of three factors; the Ambient Factor, the Design Factor and the Social Factor. The ambient factor is about background characteristics as temperature, lighting, noise and ambient scent. These characteristics are present in the background of an environment. It is present, but people only notice it when they give attention to it. For instance, you notice the temperature only when it is too hot or too cold, when it is just a pleasant temperature you will not fee it. Or for noise, when it is irritating or annoying you will hear it and notice it, but when there are just normal sounds like a fan you will not notice it. But unconsciously, you will notice all these characteristics. The design factor exists of foreground aspects as the architecture, color, and materials. These aspects are in the foreground of our awareness. You will see them, notice them, and form an opinion about it. If you do not like the color, you take that into account by making the overall impression. Or the architecture, when it is your taste you will like the environment more, but when it is out of place in the neighborhood you will find it strange. The social factor refers to social aspects as the number, type, and behavior of customers and employees. When there are many customers present, it gives a certain sign. Many people choose to go shopping there, that must be for a reason. But if the customers present are the type of people one does not want to be associated with, it can be a reason not to go there. When there are many employees present, that are willing to help the customers, it will affect the customer. If they need help with choosing their products, it helps when an employee is present (Lam, 2001).

According to Lam (2001), the three store environment factors trigger an internal response. As an extension to the early S-O-R model, these internal responses can be emotional, cognitive and/or

physiological. The emotional response, the same as in the M-R model, can be described by three states; pleasure, arousal, and dominance. There can also be a cognitive response, such as attention, perception, information processing, and evaluation. These responses are triggered by the environment, and may be affected by it. For example, the attention can be less when there are a lot of distracting factors in the environment. Or, when the environment is built (designed) to provide information in an easy way, information search and processing will be easier. The overall evaluation and perception of the situation will be determined by all the factors of the environment. Another internal response is the physiological state that can be affected by the environment. The factors in that situation have an influence on the level of comfort one experiences. Also, heart rates can be affected by the environment, when it is a stressful situation the heart rate might go up (Lam, 2001).

These internal responses will influence on if people will stay in that environment or enjoy this environment, and may affect the shopping behaviors, like approach or avoidance of the store, or time and money spend. Even the perceived shopping time can be influenced. Shopping behavior can be influenced inside the store, but also outside. When passing by, a customer can be attracted by the window display and decide to go inside. Or the other way around, when one does not like the music that is coming out of a store, they might skip the shop and walk on. Shopping behavior can be influenced immediately, or with a lagged response. An immediate response is observed directly, like going inside a store when one feels attracted by it. A lagged response is perceived later on, for instance, the perceived shopping time. That might be longer than expected, which may influence the total evaluation and may lead to not coming back again, even though the first response was positive and the person intended to go back again (Lam, 2001).

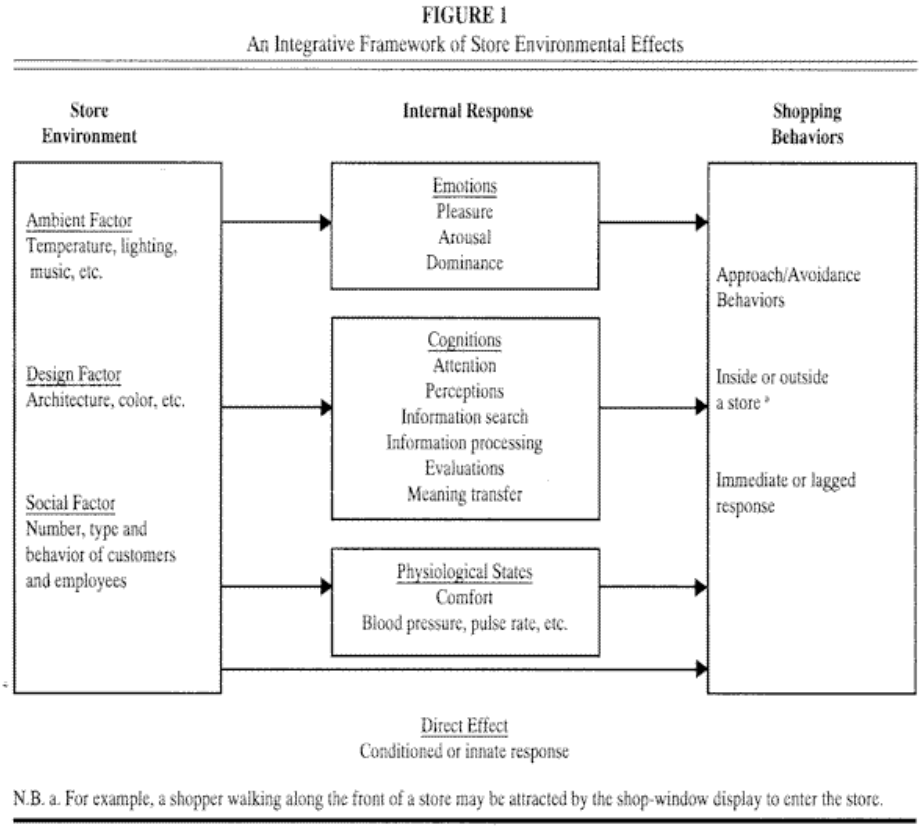


**Figure 2 An Integrative Framework of Store Environmental Effect** (Lam, 2001)

With the model of Lam (2001) as a basis and only the ambient factor music, the remaining research questions will be answered.

# 2. Different aspects of music

Different aspects of music that can be experienced by people are among others volume, tempo, style, type, genre, familiarity, and likeability (Bruner, 1990; Coloma & Kleiner, 2005; Jain & Bagdare, 2011; Oakes, North, & Oakes, 2008; Sullivan, 2002).

Volume can be easily measured by a number of decibels. Tempo can be measured by beats per minute. It is harder to define style, type, and genre of a piece of music, but following guidelines, for instance by looking at origin and period, they can be classified in a certain way. Likeability and familiarity can be measured by for example a scale, like Cameron (2003) did.

## 2.1 Volume

Although volume has an objective measure in terms of decibels, it entails also a quite subjective aspect of music. Volume can be judged quite personal. What one can barely hear, can be a normal volume for another person. And what some can really enjoy as a nice volume, can be way too loud for someone else, or could even hurt. This can depend on, for example, the volume level one is used to listen to. How people experience volume also has to do with the hearing of humans, this is personal and different for everyone. Also, the situation in which one hears the music has an influence on the experienced volume. When you go to a concert, you expect the music to be louder than when you play the cd at home. The experience of the volume is different then. When one listens to music consciously they will expect another volume than when music is used as background or filling. As background volume cannot be disturbing, it may not dominate as a stimulus. In other words, background volume has to be quiet. To measure volume in a more objective way, the logarithmic unit decibel (dba) is used. According to Dalton and Behm (2007), quiet music is defined as music lower than 60 dba. Loud music is above 80 dba.

## 2.2 Tempo

In musical terminology, the tempo is the speed or pace of a piece or part of a piece of music. Tempo is often marked in Italian markings like lento, presto or dolce, but can also be measured by beats per minute (bpm). Music with beats per minute lower than 72 is considered as slow, while music with a bpm of 94 or higher is considered as fast (Milliman, 1982; Sullivan, 2002). Often there is not only one tempo in a piece of music. To enforce the music, the composer can use tempo changes. A more calm tempo can be used for more emotional parts, while a faster tempo can have an exciting or motivating effect. A change of tempo can occur more than once in a piece, often more tempi are used to deliver the message. Especially in live music tempo can vary, compared with the original. A tempo that is just a bit faster than what the listener expects can be more exciting, to enthuse the crowd more.

## 2.3 Style, type, genre

Music can be categorized in many genres, types, and styles. Classifications are quite arbitrary and there is a lot of overlap. Larger genres or styles might have more specific sub-categories. A few examples of music genres are classical, folk, Latin, jazz, rock, pop and electronic music. Within these genres, there are several styles. Classical music can, for example, be divided into style periods, based on the era it is made. Classical music can also be divided by style of composition, like a ballad, opera or suite. Almost every genre can be divided into time or origin. Folk music often is originated in a certain country or culture, like klezmer. Latin is frequently divided based on the dance that can be danced to the music. Often this has to do with the type of measure. Within jazz, there is modern jazz with all kinds of new influences, and the early, traditional jazz. In rock music are several currents, which often is associated with a certain style of clothing like gothic or punk. Within pop music, there is a division by origin, like Britpop and Eurobeat. This last one can also be counted in electronic

music, which gives a hint about how many overlap there is within music styles. A type of music often does not belong in just one category but has influences from several sides which makes it fit under several styles.

Different people have different preferences of music types. Music can influence your clothing, but also your way of living. Taste of music divides people into subcultures, for example, the rock or house scene. Especially the artists have a certain way of life, but also the fans have their way. House lovers go to parties that last all night long, while fans of classical music might prefer to listen at home in a quiet environment or in church or theater for example.

## 2.4 Familiarity

When you know a song, or might recognize it, it says something about the familiarity of the music. Familiarity can vary between unknown music, that has never been heard, to very familiar. This can be music one likes to listen to and often hears. This can be said about a certain song or artist, but also about a whole style or genre. It is most convenient to measure familiarity on a scale, for example, a 10-point scale with 1 is unfamiliar and 10 is very familiar, like Bailey & Areni (2006) used.

When music is new to someone, the experience of the music is also new. One has to listen carefully to all details. When one gets more familiar with the music, he will become freer to experience it. One does not have to concentrate on the details anymore, which enriches the experience. This experience can differ every time one listens to this music, depending on the mental or physical state. The experience of music can also be deepened, by being prepared for what is to come. When you know the music, you know what will come. A change of tempo for example, or what text will be sung. In live music, the experience of familiar music can be different as a live version of the music can be slightly different, on purpose or not. One will recognize the music but will still be surprised by changed details, for example, a break, change of tempo, or an adaption of the song text.

## 2.5 Likeability

If you like a song or not is very personal. It depends on taste, experience, background and even familiarity. If you hear music more often, you might get to like it. The moment and situation you hear the music also affect the likeability. If you are in a bad mood, you might not like a happy song that you normally enjoy very much. Or when you are at a party and you find the music not fitting for the occasion, you might not like it at that moment. Familiarity and likeability often cohere. If you get to know a song or a style of music, you might get to like it more. So a new song might not be likable, but it can be liked later on. Likeability also depends on how annoying a song might be. If the song is really annoying to you, for example, because of the repetition of the text, you will not like it. To measure likeability, it is best to use a scale. Cameron et al (2003) used, for example, a 7-point scale for three questions: (1) how well did you like the music, (2) how annoying was the music and (3) how familiar was the music.

## 2.6 Conclusion

Music is a very complex concept. It has many different aspects, which all have their own features. All these features have different effects on different people because people have their own taste and experiences. Also, physical aspects need to be taken into account, like the hearing of people which may influence the experience of volume. The situation and environment are very important for experiencing the aspects of music, as it can differ in each situation or moment.

# 3. General internal responses to music

Different aspects of music elicit different internal responses. According to Lam (2001), there are three types of internal responses: emotional, cognitive and/or physiological responses. The emotional response can be described by three states; pleasure, arousal, and dominance and their opposites displeasure, non-arousal and dismissiveness. A cognitive response can influence the attention, perception, information processing or evaluation of a person. Physiological responses are responses of the body or physical state, like the degree of comfort one experiences, or heart rate.

## 3.1 Volume

According to Dalton and Behm (2007), moderate music in volume is optimal for activities that require attention and concentration. Moderate music can resemble one's comfort level, but it is subjective to the listener himself what a moderate volume level is. Normally, music with a volume level between 60 and 80 dba is considered as moderate music. Kellaris and Rice (1993) found that loud music (90dba) was rated less pleasant than soft music (60dba). Loud volume intensities (>80 dba) can impair human performance while performing tasks that need attention (Dalton & Behm, 2007).

When the volume of music is too loud for one, it can be very distracting. Concentrating will be harder and the work will take more time to finish. When music is too soft and you can hardly hear it, your mind will focus on hearing the music and cannot focus on the task to be performed. So the right volume matching the situation a person is in is quite important to have the best cognitive result.

Higher volume adds to the complexity of the environment, which increase the level of information to be processed (Herrington & Capella, 1996).

Too loud music can make someone feel uncomfortable in a certain environment. When music is too loud, it can hurt which makes people feel bad. Too loud music can also affect one's concentration, which can give a restless feeling. This physical state can be affected by volume. A restless physical state can lead to certain behavior, for example postponing tasks or even not finishing them. Loud music may lead to leaving the environment or simply lowering the volume so that the state of comfort will return or increase.

Estimated time was longer when music was louder versus softer. Louder music may leave more memory traces, which makes the time passed feel longer than it actually is (Kellaris, Mantel, & Altsech, 1996).

## 3.2 Tempo

The tempo of music can influence people in their behavior. Fast music, for example, can increase the speed at which one completes a specific task (Dalton & Behm, 2007). When fast music is played, people tend to move faster, especially when the fast music is played loud (Edworthy & Waring, 2006). Faster moving results in faster heart rates. When you move faster, your body needs more oxygen. To get this oxygen through the body faster, the heart rate will increase. This will affect the physical state.

Fast music can also increase the number of mistakes made during a task, as it can be distracting. (Dalton & Behm, 2007). Fast music can make it harder to concentrate. The speed of music directly affects performance (Edworthy & Waring, 2006) and so the cognitive state.

Slow music can be distracting during frustrating situations, making one feel less stressed or frustrated. Slow tempo music might make people feel less rushed in a crowded area, they will be less stressed and feel more comfortable. So tempo has an influence on the emotional and physiological state (Eroglu, Machleit, & Chebat, 2005). Fast music makes people enjoy what they are doing slightly

more than with slow music, their emotional state will be enhanced. But as fast music also leads to making more mistakes, this may make one feel irritated about the failures. The enjoying then might decrease again (Edworthy & Waring, 2006). Tempo is assumed to influence a range of emotional expressions: happiness, surprise, pleasantness , anger and fear (Gabrielsson & Lindström, 2010). Slow tempos are associated with low-arousal sad music, while fast tempos are associated with high-arousal happy music (Schellenberg, Krysciak, & Campbell, 2000; Webster & Weir, 2005). Fast tempo music generates higher levels of arousal and tension than slow tempo music (van der Zwaag, Westerink, & van den Broek, 2011).

## 3.3 Style, type, genre

Particular styles or genres of music have specific associations in the minds of people. A style or genre of music can create an atmosphere. For example, in a restaurant with a certain type of food from a specific country, music from that country might improve the image that a guest has. The perception is a cognitive response that can be influenced by the style of music (Areni, 2003). (Areni, 2003)Certain types of music, rock or classical music, for example, can help recognize visual images faster. The cognitive process is stimulated by hearing new music, the efficiency of recognizing an image decreased when the same music was used again (Pavlygina, Frolov, Davydov, Milovanova, & Sulimov, 1999).

Listening to certain types music is used by people to help them relax and calm down. Music is often used by people to improve their moods. People will feel less stressed, and happier. A particular style of music can help people to find a connection with the music and get in touch with certain emotions. They know that they are not the only ones having these emotions after listening to the music (Tol & Edwards, 2011). Music can calm one down and makes them think straight again.

Music that was heard in the past, during certain events, at certain places or with certain people can be a strong reminder of these events, places or people. A specific song or maybe a certain genre can work as a memory trigger and make you relive happenings in the past (Tol & Edwards, 2011). Strong memories can make one want to relive it again, go back there or meet the people the music is associated with.

A certain type of music, ‘sad’ music for instance, or music that is described as beautiful or good, are said to contain more emotional content (Tol & Edwards, 2011).

## 3.4 Familiarity

Music can stimulate the cognitive process, images can be recognized faster when familiar music is played. However, when this music is already known by the person, the efficiency in recognizing the image decreases. Familiar music is more likely to draw the attention of a person, compared to relatively unknown music. When attention is focused on music, it is harder to concentrate on your task which will make it harder to finish it (Pavlygina et al., 1999).

When people hear familiar music they estimate the perceived duration of time longer than when they hear unfamiliar music. Familiar music is more accessible in the memory, which makes that more events are remembered. This makes the perceived time passing by seeming longer (Bailey & Areni, 2006).

Familiar music can easily access memories. These memories are most likely linked with certain emotions, a positive memory will make one happy as a negative memory will make one sad or maybe even angry.

## 3.5 Likeability

Music likeability has a negative influence on wait-length evaluation. People thought that they were waiting longer than they actually did when they liked the music they heard (Bailey & Areni, 2006). But music likeability has also a positive influence on the mood of people. Their mood became better when they listen to music they like, and the better the mood, the better the overall experience. When people think they have to wait too long, the overall experience will become more negative. Music likeability has a double influence on the overall experience, a negative one on the waiting time perception and a positive one on mood on the other hand (Cameron et al., 2003)

When people like the music they hear in a certain environment, it has a positive influence on liking the atmosphere in that environment and the likelihood to return. The more the music was liked, the more people wanted to return to that situation (North & Hargreaves, 1996). So likeability has an attractive influence on the behavior of people. If they do not like the music, they will not come back. If one likes the music that is played, they will feel more at ease and enjoy the moment.

## 3.6 Conclusion

Music and its different aspects induce several internal responses in emotional, cognitive or physiological level, which all lead to certain behavior.

Volume and tempo often correlate in the responses. Fast music often goes together with loud, and slow music with quiet. Volume and tempo have quite an influence on the degree one can focus and concentrate on the tasks they have to fulfill. Familiar music also tends to draw away the attention from what has to be done. Since people already know what is to come, their mind will predict the rest of the song, which consequently makes it harder to think about anything else.

Too loud or too fast music can make one feel uncomfortable in a certain situation or environment and make them feel less happy. Slow music can distract one during frustrating situations, making them feel less stressed. Certain styles of music or specific songs can trigger memories. Familiar music draws attention and accesses the memory, which makes the perceived time passing by seeming longer.

When one is not at ease in a certain environment, which is caused by, music, he or she will presumably not return to this situation. When one likes the environment, for instance, because they like or know the music that is played there, the chance of getting back there will increase.

# 4. Effect of different aspects of music on purchasing behavior in a supermarket

As already shown, different aspects of music trigger all kinds of internal responses. These responses can be targeted to influence purchasing behavior in a supermarket, in order to stimulate spent in-store time, purchasing volume and store evaluation, which eventually will lead to higher sales revenues. For shops, profit is one of the most important targets.

## 4.1 Volume

Smith and Curnow (1966) show that volume has an impact on the time spent in the supermarket, but not on sales or the reported satisfaction of the customers. There was less time spent when the music was played loud, but the sales were unaffected by the loud music (Smith & Curnow, 1966). Louder music can make people feel that the time they spend doing their shopping was longer than it actually was (Kellaris et al., 1996). It may be assumed that this longer perception of time can make customers stay away, as it takes too much time to go shopping, it is better to do all the shopping at once instead of going more often. Doing all the groceries in one moment will probably lead to less expenditure, whereas going more often to a supermarket also means more exposure to all the temptations to buy the products.

Too loud music can make people feel uncomfortable in an environment, which will lead to avoidance of this situation. For a supermarket, this behavior is unfavorable, as they wish to attract customers and make them come back again. What too loud music is, is quite subjective for people. Loud music can be distracting, and may result in taking more time for a certain task, shopping in this case (Herrington & Capella, 1996). This is opposite to what Smith & Curnow (1966) imply, namely that consumers spend less time when music was played loud. It can be assumed that the loudness of music and the state of unpleasantness it can evoke is more likely to make people leave than taking more time.

Yalch and Spangenberg (1990) imply that more social interaction between customers and sales staff might be encouraged when music is played at low volume. When the volume is too loud, it is harder to speak with someone, and customers might not be willing to approach an employee to ask a question about a product. This might lead to not buying the product.

## 4.2 Tempo

Milliman (1982) shows that the pace of consumers was significantly slower when slow tempo music was played than for faster tempo music. Slow tempo music even showed a slower pace of consumers than when no music was present. So, the tempo of music played in a store can significantly affect the pace of consumers in a supermarket (Milliman, 1982). Also, when consumers move more slowly through a supermarket, they tend to buy more. So the sales volume can be influenced by the tempo of the background music (Milliman, 1982). When music is too fast, people cannot adapt to the tempo of the music anymore. They will get distracted and it might make them feel restless, as their movements are not in pace with the music (Edworthy & Waring, 2006). People will feel rushed by the music, and their overall evaluation of the store might decrease. In the end, this may cause customers not coming back again, as they do not like the shopping atmosphere. When music is too slow, people might get bored or distracted and go do other things. They will not be focused on the shopping anymore, but as slow music can increase the enjoyment they might like shopping more (Eroglu et al., 2005).

Fast music may increase the number of mistakes made during a task. Fast music is distracting, and in a shopping environment, one can get distracted from the actual purpose of his visit to the store. This

may lead to forgetting things that were needed, which means less purchasing at that moment. On the other hand, forgetting products at that moment may lead to returning to make the shopping list or all ingredients complete. Returning to the shop can induce buying more in the end, but spread in several sessions.

## 4.3 Style, type, genre

The evaluation of a store and shopping behavior varies with music type (Lam, 2001). One type of music is not appropriate for all situations. It depends on the customers present in a certain situation what music will be most suitable for that moment. Yalch and Spangenberg (1990) show that younger shoppers reported a longer shopping time than they had planned when they heard background music. Older shoppers (above 25 years) mentioned this when they were exposed to foreground music. Age of the shoppers will determine how customers respond to the music. Also, factors like income and education can determine what style of music will appeal to customers. People who have had a higher education have, in general, a different education in music. They might be familiar with more kinds of music, as they are more curious to explore. So it is better to offer a variety of types of music, depending on the aimed customers or situation. The time of year or even within the day should be taken into account when choosing the type of music. Different times of a day will attract another type of customers, as working people are dependent on the hours they are not working for doing their groceries, and for example, older people that are retired can go shopping throughout the day, but probably do so especially in the early morning hours. If a shop owner takes this into account, it is easier to play music that is attractive to the customers present at that moment (R. Yalch & Spangenberg, 1990). Also the time of day, week or even year could be considered when selecting the type of music to be played. A simple example is December when the holidays are coming, people will hear Christmas music everywhere to enhance the atmosphere and create the Christmas feeling (Spangenberg, Grohmann, & Sprott, 2005). Or on Friday evening, when the weekend is about to start, a more party like genre could be considered to get people in the mood for the weekend(R. F. Yalch & Spangenberg, 1993; R. Yalch & Spangenberg, 1990).

Music from a certain country can help stimulate the purchasing of products from that country. North et al (1999) show that strong associations with a country, that is triggered by hearing the music, leads to buying more wine from that country. It might be assumed that this can also be the case in other product categories, as long as their association with a country is determinable by the consumer.

As rock or classical music can help to recognize visual images faster (Pavlygina et al., 1999), these types of music can also help to recognize for example advertisements of products in a supermarket. It is assumed that when searching for a certain product, the music can help to find the product more easily. For example, when a customer is looking for something to drink, and the song of the advertisement on the television of a certain drink is played in the supermarket, the customer might by affected by hearing the song and thinking that that drink is the one he wants. So, purchases can be influenced by playing music that is associated with certain products. This can be the style of music, or the genre, or maybe just one song that is used for promoting the product (Pavlygina et al., 1999).

## 4.4 Familiarity

Shoppers had a longer shopping time when they were listening to less familiar music, compared to more familiar music. But they perceived to be spending more time on shopping when they were listening to familiar music. The actual shopping time thus increases by unfamiliar music, but the actual spent time increases with familiar music (Kellaris & Kent, 1992; R. F. Yalch & Spangenberg, 2000). Products were evaluated higher when people were exposed to familiar compared with

unfamiliar music. Shoppers evaluated products more favorably when they were listening to familiar music. This can lead to more purchases, as customers tend to buy more if they are happy or satisfied with a product, even though that satisfaction might be triggered by other factors than the actual evaluation (Yalch & Spangenberg, 2000)

When music is familiar to employees of a supermarket, they might like the music being played more, as familiarity seems to be a determinant of preference of music. However, after numerous repetitions of a song, employees might get tired of the song and become annoyed. This will not benefit their performance and level of service they give. So, when selecting music to be played in a supermarket, music that is familiar but still fresh to the listeners will be the best option (Herrington & Capella, 1996).

## 4.5 Likeability

The presence of music makes consumers feel more positive in general. Perceived waiting time increased when the played classical music was liked by the consumers (Lam, 2001). Hui et al (1997) show that when people think positively about the music played, the most positive evaluation of the store environment, the most positive response to the wait, the strongest approach behavior towards the environment and the longest perceived wait duration are observed (Hui et al., 1997). This positive evaluation of the environment may lead to a more positive evaluation of the store on itself, which will lead to a higher return rate. When customers return again for more shopping, this will eventually lead to more purchases and thus higher sales.

Shopping time and expenditures were to increase with the level of preference for the background music (Herrington & Capella, 1996). It may be assumed that when people like the music, they tend to stay a little longer to enjoy the music longer. As they walk around the supermarket, they see more products they might like or be willing to try. This leads to longer shopping times and more purchases.

Workers tend to perform better or at least feel better about their jobs when they like the music that is being played. Employees in a supermarket have to be service oriented, they have to serve the customers. If they like the music that is played when they are working, they will feel better and are more likely to provide better service. Better service will lead to a better evaluation of the store, customers will feel more at ease and more valued. When they feel good about the service and employees in the store, they are more likely to return and do purchases again (Herrington & Capella, 1996). However, it might be hard to find the right mix in the liking of music by employees and the customers of the supermarket. Older customers might have a different taste than the generally young personnel. The younger personnel might find the music boring or unpleasant, which they might let on the customers. Thus, the shop holder should try to select music that is acceptable for both consumers and employees (Herrington & Capella, 1996).

## 4.6 Conclusion

Music and its different aspect trigger certain internal responses. When focusing on purchasing behavior, several effects are shown that will lead to a different evaluation of the store, longer shopping times or even more purchases. But as music still is a complex concept, the way people might react to it may even be more complex. It all depends on other factors.

Volume has an impact on the time spent in the supermarket, when loud music was played people tend to shop a shorter time. But louder music can make people feel that the time actually spent feels longer. Too loud music makes people feel uncomfortable, which may lead to avoiding the shopping situation.

Tempo of music can affect the pace of customers in a supermarket, which may lead to more purchases in case of slow music and fewer purchases when fast music is being played. Too fast music might distract people and make them feel rushed. Too slow people may bore people. Both can lead to skipping the store and going somewhere else.

The style of music can influence the actual and perceived shopping time. Time of day, week or even year should be considered when choosing a type of music, as the time can help enhance the atmosphere that is wanted. Music from a certain country can stimulate the purchases of products associated with that country. Also, music that is connected with a certain brand or product can have an influence on the purchases when the music is heard while customers are shopping.

Familiar music has an influence on the actual and perceived shopping time. The time customers thought they spend when doing their groceries was said to be longer than it actually was when they heard familiar music. The real time they shopped was increased when unfamiliar music was played. When familiar music was played, products were evaluated more favorably, even though this satisfaction was not completely triggered by the product itself. To employees of the supermarket, it is important the music will not be repeated endlessly, as they get annoyed by it. This will affect their performance and their behavior towards customers.

When people think positively about the music that is played, the more positive the evaluation of the store itself will be. This will lead to a higher return rate. Shopping time and expenditure increase when people like the music. Employees tend to work better when they enjoy the music, which will have its effect on the customers. When customers feel welcome and helped they will return and evaluate the store better.

So, there are a lot of factors that may lead to improved evaluation of products, service, employees and the store as a whole. This will eventually lead to more purchases and more profit.

# 5. Discussion

As music is a very complex concept, it has a lot of different aspects. In most research, there is only a focus on one, or maybe two, aspects of music and their influence. As most aspects cohere with other aspects, like tempo and volume, it is hard to say if a certain response is triggered by one aspect or the other. Most of the time, the response is assumed to be a result of the combination of the aspects, but further investigation is needed to make clear what aspect triggered the response, or if another combination of aspects has another result. Also, mostly aspects are researched to trigger one effect or response, but it is to be assumed that an aspect can trigger more responses. In this overview, this is also visible, as some aspects have more internal responses, which lead to more behavioral responses. When researching aspects of music and their effects, researchers often just choose one aspect or response, just to be focused and not to be too broad. A clear focus is needed for investigating, but to make the research complete, a focus on other aspects or responses is needed. For the future is, as can be seen, more than enough to research on the effects of music on shopping behavior.

In this overview, only five aspects of music are taken into account. Of course, there are more aspects, like mode (major/minor) or melody. This thesis gives therefore not a complete overview, but gives an overview of the most important, and most researched, aspects of music. For a complete overview of the influences of all aspects of music, further research is needed. In literature, some aspects are investigated, but this needs to be expanded. As music is a very interesting subject, it can be assured that in the near future more knowledge will be available.

The search of literature used in this thesis was based on the articles by Milliman (1982, 1986). Looking at citations of his studies, and building further on those and other citations, it might be said that the basis of the literature is just seem from one point of view. Later on, literature was found, and used, from other sources and starting points. As a lot of research is already done on this subject, it is difficult to find everything and even harder to use it all. The completeness of all knowledge can be doubted in this overview, but the basis is present and the impact of the effects is made clear. However, as knowledge on this subjects continues to grow and changes, further research is needed to make it complete.

# 6. Conclusions

Music is a very complex concept, with many different aspects with all their own features. There are five aspects of music that have been taken into account in this overview, namely volume, tempo, style (or type or genre), familiarity and likeability. These aspects have their own features and their own effect on people. These effects are different for different people, as everyone has their own taste, knowledge, and experience. Also, the physical aspect of people needs to be taken into account, as for example, the hearing can be quite different. Situation and environment are also important for experiencing the aspects of music.

The different aspects of music induce several internal responses, on the emotional, cognitive or physiological level. These responses lead to certain behavior. Volume and tempo often correlate, as fast music is often played loud, and slow music is associated with quiet. Volume and tempo both have an influence on concentrating on tasks one has to fulfill. Too loud or too fast music can make people feel uncomfortable in a certain situation. Slow music can also distract, for instance in frustrating situations. This can make one feel less stressed. Familiar music can draw the attention from what has to be done, or accesses the memory. Certain styles of music, or specific songs, can trigger memories too. This may make the perceived time passing my seem longer than it actually is. When one likes the music that is played in an environment, it is more likely they will return to that situation.

When focusing on purchasing behavior in a supermarket, several effects of aspects of music are shown. Volume has an impact on the time spent in the supermarket. Loud music makes people go shop for a shorter time, but it makes the actual shopping time feel longer. Shorter shopping times may lead to fewer expenditures, as there is just less time to get and buy more products. Too loud music makes people feel uncomfortable. This may lead to avoiding the store or not coming back. In the end, this will lead to fewer purchases.

Tempo of music can affect the pace of customers. Slow music makes people walk slower, which may lead to more purchases as customers are able to see more products that they might be willing to buy. With fast music, the pace will increase which can lead to fewer purchases. Too fast music makes people feel rushed and might distract customers from their task, the shopping. When the music that is played is too slow, it might be boring. Both can lead to customers avoiding the store and go somewhere else for their groceries.

The style of music can influence the actual and perceived shopping time. Time of day, week or even year should be considered when choosing the music. Music can help to enhance the atmosphere that is wanted. When a store owner wants to stimulate sales from products of a certain country, this can be done with music that is associated with that country. A type of music that is connected with a brand or product may stimulate the sales of those products when it is played while customers are shopping.

The time customers thought they spend when they went to the supermarket was perceived longer than it actually was when they listened to familiar music while shopping. The real time they were shopping increased in fact with unfamiliar music. Familiar music made products be evaluated more favorably. This evaluation might not be triggered from the product itself completely. Employees can appreciate it when the music is not repeated endlessly, as it annoys them. Annoyance will affect their performance and their behavior towards customers.

When customers like the music that is played, the evaluation of the store itself will be more positively. A higher return rate is the result. Also shopping time and expenditure increase when the

music is liked. Employees tend to work better when they enjoy the music, which will affect the customers. They feel welcome and are being helped better, which makes them come back.

To make the overview more structures, the findings are presented in a model based on the model of Lam (2001). On the left, the aspect of music is mentioned. This aspect triggers an internal response, on emotional (E), cognitive (C) or physiological (P) level. This response leads to a certain behavior, that can be stated as approach or avoidance, inside or outside the store, or an immediate or lagged response.

| **Aspect of Music** | | **Internal Response** | | | **Shopping behavior** |
|---|---|---|---|---|---|
| 1. Volume | Loud music | P | Uncomfortable | | Avoiding behavior: less time spent in supermarket, not coming back |
| | | | | | Inside store |
| | | | | | Immediate response: shorter shopping time |
| | | | | | Lagged response: not returning |
| 2. Volume | Loud music | C | Perception of shopping time | | Avoiding behavior: stay away, doing shopping at 1 moment, not returning |
| | | | | | Inside store |
| | | | | | Immediate response: taking too long |
| | | | | | Lagged response: not returning |
| 3. Volume / Tempo | Fast, loud music | C | Concentration | | Avoiding behavior: Cannot focus on task |
| | | | | | Inside store when already shopping, outside store when making decision of store |
| | | | | | Immediate response: leaving when shopping |
| | | | | | Lagged response: not returning |
| 4. Volume / Tempo | Slow, quiet music | C | Distracting from frustrating situation | | Approach behavior: relaxing atmosphere |
| | | P | Less stressed | | Inside store |
| | | | | | Immediate response: feel less stressed |
| 5. Volume / Tempo | Too loud or too fast music | P | Uncomfortable | | Avoidance behavior: leaving, not entering store or not returning |
| | | | | | Inside and outside store |
| | | | | | Immediate response: leaving or not entering |
| | | | | | Lagged response: not returning |

| Aspect of Music | | Internal Response | | | Shopping behavior |
|---|---|---|---|---|---|
| 6. Tempo | Slow music | P | Slower pace | | Approach behavior: buying more |
| | | C | See more | | Inside store |
| | | | | | Immediate response: buying more |
| 7. Tempo | Fast music | P | Faster pace | | Avoidance behavior: lower evaluation |
| | | P | Feel restless | | Inside store |
| | | C | Less information processing | | Immediate response: less information processing |
| | | C | Decreased evaluation | | Lagged response: lower evaluation |
| 8. Tempo | Too fast music | P | Feel rushed | | Avoidance: leaving store |
| | | | | | Inside store |
| | | C | Distraction | | Immediate response: feel rushed, distracted |
| | | | | | Lagged response: lower evaluation |
| 9. Tempo | Too slow music | E | Bored | | Avoidance behavior: no pleasure or arousal |
| | | | | | Inside store |
| | | | | | Immediate response: bored feeling |
| | | | | | Lagged response: lower evaluation |
| 10. Style | Style of music | C | Trigger memories | | Approach behavior in case of positive memories/associations |
| | | | | | Avoidance behavior in case of negative memories/associations |
| | Certain songs | | | | Inside the store |
| | | | | | Immediate response |
| 11. Style | Style of music | C | Actual and perceived shopping times | | Avoiding behavior: stay away, doing shopping at 1 moment, not returning |
| | | | | | Inside store |
| | | | | | Immediate response: actual shopping time |
| | | | | | Lagged response: perceived shopping time |

| Aspect of Music | | Internal Response | | | Shopping behavior |
|---|---|---|---|---|---|
| 12. Style | Style of music | E | Pleasure | | Approach behavior when pleasure/arousal |
| | | | | | Avoidance behavior when displeasure/non-arousal |
| | | E | Arousal | | Inside store |
| | | | | | Outside store |
| | | | | | Immediate response |
| 13. Type | Type of music (country of origin) | C | Attention | | Approach behavior: buying more products that are associated with country of music |
| | | C | Information processing | | Inside store |
| | | | | | Immediate response |
| 14. Type | Type of music | C | Connection with brand or product | | Approach behavior: buying more products with connection to played music |
| | | | | | Inside store |
| | | | | | Immediate response |
| 15. Familiarity | Familiar music | C | Distracting from tasks | | Avoidance behavior: leaving store, buying less |
| | | | | | Inside store |
| | | | | | Immediate response |
| 16. Familiarity | Familiar music | C | Accesses memory | | Approach behavior: recognizing products |
| | | | | | Inside store |
| | | | | | Immediate response |
| 17. Familiarity | Familiar music | C | Perceived shopping time | | Avoiding behavior: stay away, doing shopping at 1 moment, not returning |
| | | | | | Inside store |
| | | | | | Lagged response: not returning |
| 18. Familiarity | Unfamiliar music | C | Increased shopping time | | Approach behavior: longer shopping |
| | | | | | Inside store |
| | | | | | Immediate response |

| Aspect of Music | | Internal Response | | | Shopping behavior |
|---|---|---|---|---|---|
| 19. Familiarity | Familiar music | E | Pleasure | | Approach behavior: entering the store, returning |
| | | | | | Inside store |
| | | | | | Outside store |
| | | C | Evaluation | | Immediate response: entering the store |
| | | | | | Lagged response: evaluation, returning |
| 20. Familiarity | Familiar music (employees) | E | Displeasure | | Avoidance behavior: lower service to customers |
| | | | | | Inside store |
| | | P | Annoyed / uncomfortable | | Immediate response: inaccessible for customers |
| | | | | | Lagged response: lower performance |
| 21. Likeability | Liked music | E | Pleasure | | Approach behavior: entering the store, returning |
| | | | | | Inside store |
| | | | | | Outside store |
| | | | | | Immediate response: entering the store |
| | | | | | Lagged response: returning |
| 22. Likeability | Liked music | E | Pleasure | | Approach behavior: higher evaluation |
| | | C | evaluation | | Inside store |
| | | | | | Lagged response |
| 23. Likeability | Liked music | C | Increased shopping time | | Approach behavior: enjoying music, staying longer |
| | | E | Pleasure | | Inside store |
| | | | | | Immediate response |
| 24. Likeability | Liked music (employees) | E | Pleasure | | Approach behavior: providing service to customers |
| | | C | Performance | | Inside store |
| | | | | | Immediate response |

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