BACKGROUND MUSIC AND CUSTOMER RESPONSES: AN EXPERIMENTAL STUDY ON BEHAVIORAL VARIABILITY

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Abstract

The study investigated the effect of in-store soundscapes on customer responses, comparing different types of music with silence. We conducted this study in a cosmetic store as part of an experimentation study with 4 groups of 80 customers interviewed. The results show that vocal music is most effective in improving store atmosphere, time perception and stimulating purchase intention. It also generates positive emotions, promotes recall, encourages customer return intention and encourages recommendation intention. Conversely, trendy music, although slightly less prominent, has similar effects and is particularly effective in stimulating purchase intention and encouraging social media creation.

Key word: instrumental music, vocal music, trendy music, customer responses, morocco.

Musique d'ambiance et réponses des clients : une étude expérimentale sur la variabilité comportementale »

L'étude examine l'effet de la musique d'ambiance en magasin sur les réponses des clients, en comparant différents types de musique avec le silence. Nous avons mené cette recherche dans une boutique de cosmétiques dans le cadre d'une expérimentation impliquant 4 groupes de 80 clients interrogés. Les résultats montrent que la musique vocale est la plus efficace pour améliorer l'atmosphère du magasin, la perception du temps et stimuler l'intention d'achat. Elle génère également des émotions positives, favorise le rappel, encourage l'intention de retour en magasin ainsi que l'intention de recommandation. À l'inverse, la musique tendance, bien que légèrement moins marquante, présente des effets similaires et se révèle particulièrement efficace pour stimuler l'intention d'achat et encourager la création de contenu sur les réseaux sociaux.

Mots-clefs : musique instrumentale, musique vocale, musique tendance, réponses des clients,

Maroc

Résumé managérial

Cette recherche expérimentale menée dans une boutique de cosmétiques au Maroc démontre que la musique d'ambiance est un levier puissant pour améliorer l'expérience client et stimuler les ventes. Trois styles musicaux ont été testés : la musique vocale, la musique tendance et la musique instrumentale, comparés à l'absence de musique. Les résultats sont clairs : la musique vocale est la plus performante pour créer une atmosphère agréable, réduire la perception du temps d'attente, renforcer les émotions positives et encourager les intentions d'achat, de retour et de recommandation. La musique tendance obtient des effets similaires et se révèle particulièrement efficace pour susciter des achats impulsifs et stimuler la création de contenus sur les réseaux sociaux, offrant ainsi une visibilité accrue aux enseignes. La musique instrumentale, bien que relaxante, agit moins sur les comportements d'achat, tandis que le silence génère une atmosphère froide et réduit l'engagement des clients. Pour les professionnels du commerce, ces résultats soulignent l'importance de choisir une ambiance musicale adaptée aux objectifs : privilégier la musique vocale pour la fidélisation et l'expérience globale, utiliser la musique tendance pour dynamiser les ventes et l'engagement digital, et éviter le silence qui nuit à l'attractivité. L'étude invite enfin à exploiter la musique comme un outil stratégique de différenciation et de performance commerciale, et à envisager des solutions innovantes comme la personnalisation musicale via l'intelligence artificielle.

Managerial Summary

This experimental research conducted in a cosmetic store in Morocco demonstrates that background music is a powerful lever for enhancing customer experience and boosting sales. Three musical styles were tested: vocal music, trendy (pop) music, and instrumental music, compared to the absence of music. The findings are clear: vocal music is the most effective in creating a pleasant atmosphere, reducing perceived waiting time, strengthening positive emotions, and encouraging purchase, revisit, and recommendation intentions. Trendy music produces similar effects and is particularly effective in driving impulse purchases and stimulating social media content creation, thereby increasing brand visibility. Instrumental music, although relaxing, has less impact on purchasing behavior, while silence generates a cold atmosphere and reduces customer engagement. For retail professionals, these results highlight the importance of selecting a musical ambiance aligned with business objectives: prioritize vocal music to build loyalty and enhance overall experience, use trendy music to boost sales and digital engagement, and avoid silence which undermines attractiveness. Finally, the study encourages retailers to leverage music as a strategic tool for differentiation and commercial performance, and to consider innovative solutions such as AI-driven music personalization.

Introduction:

In the context of customer experience, background music is a strategic lever to influence consumer behavior. Several studies have shown that music can influence customers' emotions, perceptions and purchase decisions (Rieunier 2000, Roschk & al. 2017). However, the results vary according to cultures, local preferences and socio-economic contexts, which raises the question of their applicability in specific contexts as Morocco. This requires further research. This study focuses on three types of music: instrumental music, vocal music, and trendy music (popular contemporary music). Each of these categories has unique characteristics that may induce distinct effects in consumers. For example, instrumental music, often perceived as soothing, may encourage calm and prolonged reflection (Lantos & Craton, 2012), while vocal music, richer in messages and emotions, could activate intense affective reactions (Sbai & al 2022), but can also be distracting if it is too intrusive (North &Hargreaves,1997). On the other hand, trendy music is associated with modern and captivating rhythms, which may create an energetic atmosphere and stimulate active behaviors, such as browsing shelves or impulse buying (Lantos & Craton, 2012). The main objective of this research is to analyse and compare customers' reactions to these three types of music in an experimental context. We aim to examine their effects on consumers' cognitive and affective responses, behavioural intentions and physical behaviour. We also explore the role of moderating and mediating variables, such as congruence between the music and the commercial environment, personal preference for a particular type of music, and customer mood. Thus, the following question guides our approach:
How does vocal, instrumental and trendy music vary customer responses?

This issue presents three interconnected challenges. Commercially, music is a strategic tool to enhance the in-store customer experience, influencing purchasing behavior, perceptions, and time spent in-store, which can boost the performance and competitiveness of Moroccan retailers. Culturally, Morocco’s diverse music offers a unique context to explore the effect of different musical genres on local consumers' emotions and preferences. Academically, this study adapts international models to the Moroccan context, contributing to the literature on customer experience in developing countries. Ultimately, the research combines economic, cultural, and scientific perspectives to provide innovative solutions for Moroccan retailers and fill existing research gaps on the strategic use of music in retail.

I- Literature review:

Background or ambient music is a widely used marketing tool to influence consumer behaviour and reinforce brand identity. Goudey (2007) defines background music as a selection of music, either commercially available or custom created, specifically selected to convey a particular atmosphere, emotion, affect and value. The duration of these tracks, measured in hours (at least one hour), reflects the brand's own musical sensibility. This strategy is based on an effective approach that aims to create a musical universe that embodies the brand's identity and communicates it to the customer, whether at home (via branded CDs) or in the retail environment (via a musical ambience) (Goudey, 2007).

1- Background Music as a Marketing Stimulus:

1.1. Instrumental music

Instrumental music, as a key component of the musical stimulus, is gaining increasing interest in consumer behaviour research. Despite limited studies focused specifically on this type of music, several highlight its significant influence on customer responses. The choice of instrumental music in this research is based on several reasons. Instrumental music (background music) helps to reduce the cognitive distortions that lyrics may introduce, while drawing attention to certain structural aspects of the music (tempo, tone, volume, etc.) without linguistic interference. This makes its effect measurable and less likely to cause distraction. Furthermore, previous studies, such as Perlovsky et al. (2012), have investigated the 'Mozart effect', demonstrating that instrumental music (especially classical music) reduces cognitive dissonance and induces positive emotions. In retail environments, this could lead to increased customer satisfaction and loyalty. Guéguen and Jacob (2004) have shown that instrumental music enhances the ambience of a retail space and encourages customers to spend more time in the store, thereby promoting purchasing behaviour.

From an experimental perspective, Klein et al. (2021) demonstrate that background music also alters the way consumers perceive visual elements in retail spaces, through a cross-modal interaction between auditory and visual stimuli. Additionally, a 2025 report by the *Financial Times* notes that supermarket chains introducing instrumental in-store radio observed a 10% increase in sales, particularly at the end of the day when customers tend to be more fatigued.

The choice of instrumental music in this study offers several methodological advantages: it minimizes cognitive distortions caused by lyrics, allows for more precise control over musical variables (such as tempo, key, and volume), and reduces cultural bias linked to language-based preferences. Moreover, recent studies (Cloutier et al., 2022; Souza & Barbosa, 2023) confirm that instrumental music enhances concentration during low-demand cognitive tasks, without introducing verbal distractions. Finally, a meta-analysis by Pantoja & Borges (2021) shows that exposure to fast instrumental music increases positive expectations toward food products and strengthens purchase intentions. these recent contributions confirm that instrumental music is a controllable, measurable, and effective auditory stimulus for influencing the cognitive, emotional, and behavioral responses of consumers in retail environment.

1.2. Vocal music (Foreground music):

In addition to instrumental background music, vocal (foreground) music characterized by the presence of lyrics, introduces a personal, narrative-driven dimension that actively engages listeners and can cultivate a stronger brand connection. Vocal music, often referred to as foreground music, is a musical composition featuring a human voice, usually accompanied by an instrument or instrumental ensemble. It is characterised by its ability to capture attention through lyrics (active listening) that add a narrative or emotional dimension. Customers perceived a sporting goods store as "cool and modern" when upbeat, fast music was played, but as "tired and boring" when slow rock music was played (North, Hargreaves, & McKendrick (1999). Empirical evidence shows that vocal music has a direct impact on mood, memory, and behavior in retail contexts. For example, Areni and Kim (1993) found that classical vocal music enhanced consumers' affective responses and willingness to spend more in wine stores, while North, Hargreaves, and McKendrick (1999) demonstrated that playing upbeat vocal tracks led shoppers to perceive a sporting goods store as “cool and modern,” whereas slower rock vocals created a “tired and boring” ambiance.

The main interest in studying foreground music in this study is its potential effect on customer responses compared to background music. Unlike discrete instrumental melodies, vocal music captures customers' attention more through the presence of lyrics, which can influence their emotions, memory and behaviour. In the Moroccan context, the cultural and linguistic richness of vocal music, particularly through genres such as Moroccan pop music, provides a unique opportunity to explore how the messages conveyed by lyrics and their emotional connection with consumers can reinforce or alter their perception of the in-store experience. By exploring this area, this study aims to fill a theoretical and empirical gap while providing practical insights to optimize the use of music in sensory marketing strategies.

1.3. Trendy music :

We defined trending music as tracks that achieve widespread success and are popular at a given time (Sbai et al., 2023). Music popularity is rapidly evolving based on changing listener preferences, streaming platforms, the rise of social media and global cultural phenomena. It is constantly evolving, with new tracks and styles emerging and going viral at an astonishing speed. This dynamic reflects the growing influence of new technologies and globalization on contemporary music. Current musical trends are characterized by several notable elements. First, there is a marked fusion of musical genres. Increasingly, tracks blend different styles, creating innovative sounds that appeal to a diverse audience. For instance, pop music often incorporates influences from Afrobeat, electronic, or reggaeton, resulting in compositions that are both modern and accessible to a wide range of listeners. This hybridization of genres reflects a desire for musical experimentation and a break from traditional formats. Simultaneously, emerging artists play a central role in shaping trending music. Platforms such as TikTok, Spotify, and YouTube provide emerging talents with immediate visibility.

These new generations of artists can gain recognition quickly and reach a global audience through the virality of content shared online. Additionally, these platforms facilitate international collaboration, enabling artists from different cultures to come together to create global hits. This phenomenon not only blends diverse musical influences but also fosters cultural synergies that appeal to an increasingly broad and diverse audience.

Recent examples effectively illustrate these trends. International pop and dance music, with artists such as Dua Lipa, The Weeknd, and Rosalía, continues to dominate global charts by blending elements of electronic music, R&B, and pop. The TikTok phenomenon has also significantly contributed to the viral success of tracks such as "Cupid" by Fifty Fifty or "Doja" by Central Cee, which gained rapid popularity through challenges and dances on the platform. Furthermore, genres like modernized Arabic and Moroccan music are also achieving widespread success. Artists such as Saad Lamjarred, Manal, and DJ Van skillfully merge traditional sounds with modern influences, creating music that appeals to both local and international audiences. These artists bring African cultural influences to the forefront while producing tracks that resonate on a global scale.

2. Consumer Behavioral, Emotional, and Cognitive Responses to Background Music

The consumer's responses, widely discussed in the sensory marketing literature, can be grouped into three interrelated categories: cognitive**,** affective**,** and behavioral. Examining these dimensions helps uncover the mechanisms through which background music influences consumers' in-store experiences, perceptions, and purchasing behaviors. The following section provides a detailed analysis of these customer responses, supported by recent theoretical and empirical findings, while taking into account the cultural and sensory specificities of the studied context.

2.1. Cognitive responses:

Consumers' cognitive responses to background music in retail settings involve the processes through which they perceive and evaluate their environment (Bitner, 1992; Turley & Milliman, 2000). Two key variables are widely studied: store atmosphere evaluation and perceived time spent, both directly influencing customer experience and purchase behavior (Baker, Grewal, & Parasuraman, 1992; Rieunier, 2000). Background music modifies these perceptions depending on its characteristics, such as tempo and style, making it crucial for optimizing sensory design, especially in the Moroccan context (Sbai & Bahoussa, 2024; Manzoor, 2024).

Table 1: Consumer cognitive responses

Cognitive Variable	Description	Effects of Background Music	References
Store Atmosphere Evaluation	Overall perception of the physical retail environment, integrating sensory stimuli (music, lighting, scents, colors), customer expectations, and their subjective interpretation. Influences cognitive and affective responses.	Music strongly influences atmosphere perception, modulating emotions and behaviors. In the Moroccan context, local, instrumental, or trendy music shapes this evaluation, impacting customer experience and commercial performance (Bitner, 1992; Turley & Milliman, 2000; Rieunier, 2000; Sbai & Bahoussa, 2024; Manzoor, 2024).	Bitner (1992); Turley & Milliman (2000); Rieunier (2000); Sbai & Bahoussa (2024); Manzoor (2024)
Perceived Time Spent in Store	Subjective evaluation of the duration of the shopping visit, influenced by emotional engagement and environmental stimuli (notably music). Time perception relates to satisfaction and customer engagement.	Fast tempo tends to reduce perceived time, encouraging longer visits and more product exploration. Slow tempo may increase perceived duration, affecting fatigue and purchase behavior. Familiar music can shorten perceived waiting time (Baker, Grewal, & Parasuraman, 1992; Hui, Dube, & Chebat, 1997; Milliman, 1982; Rieunier, 2000; Guéguen, Jacob, & Legohérel, 2002, 2004; Bailey & Areni, 2006; Herrington & Capella, 1996).	Baker, Grewal, & Parasuraman (1992); Hui, Dube, & Chebat (1997); Milliman (1982); Rieunier (2000); Guéguen, Jacob, & Legohérel (2002, 2004); Bailey & Areni (2006); Herrington & Capella (1996)

2.2. Emotional responses

Emotional responses and memory are key components of the consumer experience in retail environments. Ambient music influences not only immediate affective states—such as pleasure, arousal, and mood—but also shapes how these experiences are encoded and recalled (Mehrabian & Russell, 1974; Alpert & Alpert, 1990). Pleasant and culturally relevant music enhances positive emotions, increases time spent in-store, and strengthens emotional attachment (Garlin & Owen, 2006; Sbai & Bahoussa, 2024). These emotions are often integrated into memory, influencing future behavior, satisfaction, and loyalty (Kellaris & Kent, 1993; Kahneman, 2011). Thus, music acts as both a sensory trigger and a memory anchor within the consumer journey.

Table 2: Consumer affective responses

Affective Response Variable	Description	Key Findings / Implications	References
Emotional States	Temporary, intense affective responses to external stimuli like store music. Defined by three dimensions: Pleasure, Arousal, Dominance (PAD model). Music influences pleasure (e.g., pleasant vs unpleasant music), arousal (e.g., familiar or enjoyable music increases stimulation), and dominance (sense of control). Emotions during consumption impact satisfaction and behavioral engagement.	- Pleasant, slow, harmonious music fosters positive emotional states, relaxation, and longer store visits (Alpert & Alpert, 1990).	(Mehrabian & Russel 1974 ;Alpert & Alpert, 1990) yalch & Spangenberg, 2000; Kellaris & Kent, 1993).
Memory / Remembrance (Souvenir)	Memory of the shopping experience encompasses both cognitive (stored information) and affective (emotions felt) components. It involves conscious or unconscious recall of past experiences that shape future consumer decisions. According to Kahneman, consumers have a dual self: the experiencing self (momentary feelings) and the remembering self (reconstructed memories). Music acts as a sensory cue that enhances encoding and recall, shaping emotional memory and long-term attachment.	- Memories influence repeat purchase, recommendation, and loyalty more than the actual experience itself (Kahneman, 2011; Wirtz et al., 2003).	(Kahneman, 2011; Wirtz et al., 2003 ; Hofstede, 2001 ; Areni & Kim, 1993).

2.3. Behavioral intentions.

Behavioral intentions represent a crucial link between customers' in-store experiences and their future decisions. These intentions, such as the intention to purchase, revisit, or recommend a store, are shaped by emotional, cognitive, and sensory stimuli encountered during the shopping experience.

Table 3: Consumer behavioral intentions

Behavioral Intention	Definition	Effects of Background Music	References
Purchase Intention	The perceived likelihood or predisposition of a consumer to buy a specific product or service following an experience.	Pleasant or culturally familiar music enhances positive emotions, increasing purchase intention. Tempo, tonality, and familiarity directly influence product appeal.	Ajzen (1991); Alpert & Alpert (1990); Bitner (1992); Pine & Gilmore (1999); Verhoef & al. (2009); Hofstede (2001); Oliver (1999); Zeithaml, Berry, & Parasuraman (1996)
Revisit Intention	The consumer's predisposition to return to the same store or repeat the experience.	Stimulating music (e.g., upbeat, rhythmic) creates an engaging ambiance that enhances the desire to return. The perception of a pleasant experience with low effort/cost reinforces revisit intention.	North & Hargreaves (1996); Mattila & Wirtz (2001); Kotler & Keller (2016); Lombart & Labbé-Pinlon (2006)
Recommendation Intention	The willingness of a customer to recommend a store, brand, or service to others.	Positive emotional experiences enhanced by music increase word-of-mouth potential. Poorly managed music can negatively impact recommendation.	Boulding et al. (1993); Zeithaml et al. (1996); Dick & Basu (1994); Dube et al. (1995); Ben Lallouna Hafsia et al. (2008); Reichheld (2003); Sbai & Bahoussa (2024); Amine & Gallouj (2021)

2.4. The behavioral responses

Behavioral responses refer to the observable actions that consumers take within the retail environment, directly influenced by sensory stimuli such as background music. These include approach or avoidance behaviors, time spent in-store, movement patterns, and purchasing actions. Numerous studies (e.g., Donovan & Rossiter, 1982**;** Milliman, 1982**)** have shown that music can significantly shape customer behavior by creating a pleasant atmosphere, increasing dwell time, and encouraging exploratory or impulsive buying. Understanding these responses is essential for optimizing in-store strategies and enhancing the overall customer experience.

Table 3: Consumer behavioral response

Behavioral Response Variable	Description	Key Findings / Implications	References
Impulse Buying	Impulse buying refers to unplanned purchases triggered by external stimuli (visuals, music, promotions). It is an immediate response driven by spontaneous emotions and a desire for instant gratification.	- Energetic or relaxing music enhances impulse buying tendencies. - Music serves as a contextual stimulus that can lower cognitive control and increase spontaneous purchasing. - Music-driven emotion plays a mediating role in unplanned shopping behavior. - In Moroccan retail settings, impulse buying is a key behavior influenced by ambiance.	Stern (1962); Piron (1991); Rook (1987); Chebat & Michon (2003); Mohan, Sivakumaran & Sharma (2013); Meradi (2020)
Number of Products Examined	Refers to the number of items a consumer evaluates before making a purchase decision; reflects consumer engagement and exploratory behavior.	- Background music can extend store visit time, increasing the number of items examined. - Soft and relaxing music encourages consumers to browse more, enhancing involvement in the decision-making process. - This variable acts as an intermediate indicator between sensory stimulation and purchase.	Milliman (1982); Mohan, Sivakumaran & Sharma (2013)
Social Media Creation	The act of generating and sharing content (photos, videos, reviews) about in-store experiences on social media platforms.	- Positive emotional responses to music stimulate content creation and social sharing. - Emotional arousal from music can drive digital word-of-mouth and brand engagement. - In-store music experiences are likely to be shared through Instagram stories or online reviews,	Kaplan & Haenlein (2010); Kietzmann et al. (2011); Hennig-Thurau et al. (2004); Berger & Milkman (2012); Daugherty, Eastin & Bright (2008); Short, Williams & Christie (1976)

		amplifying brand perception. - This variable links sensory marketing to digital behavior and contributes to the brand's online reputation.	

After identifying the various types of background music commonly used in retail settings namely instrumental, vocal, and trendy local music, and the main categories of customer responses (cognitive, affective, and behavioral), it is now appropriate to formalize the expected relationships among these variables. Accordingly, this study proposes a set of hypotheses to empirically investigate how each type of music influences different aspects of customer reactions within the store environment.

H1: Instrumental music influences customer cognitive responses in retail store.
H1.1: Instrumental music influences customer cognitive responses in retail store.
- **H1.1.a**: It enhances the evaluation of store atmosphere. - **H1.1.b**: It enhaces perceived time spent. - **H1.1.c**: It enhaces purchase impulse
H1.2: Instrumental music influences customer emotional responses in retail store. - **H1.2a**: It enhances emotional states. - **H1.2b**: It enhaces souvenir.
H1.3: Instrumental music influences Behavioral intentions in retail store. - **H1.3.a** It enhaces purchase Intention - **H1.3.b** It enhaces revisit intention - **H1.3.c.** It enhace Recommendation intention
H 1.4. : Instrumental music influences Behavioral responses in retail store. - **H1.4.a** It enhaces impulsive purchase - **H1.4.b.** It enhace social media creation - **H1.4.c.** It enhance the number of products examined

H2: Vocal music influences customer cognitive responses in retail store.
H2.1: Instrumental music influences customer cognitive responses in retail store. - **H2.1a**: It enhances the evaluation of store atmosphere. - **H2.1b**: It enhaces perceived time spent. - **H2.1c**: It enhaces purchase impulse
H2.2: Vocal music influences customer emotional responses in retail store. - **H2.2a**: It enhances emotional states. - **H2.2b**: It enhaces souvenir.
H2.3: Vocal music influences Behavioral intentions in retail store. - **H2.3.a** It enhaces purchase Intention - **H2.3.b** It enhaces revisit intention

- **H2.3.c.** It enhace Recommendation intention
H2.4. : Vocal music influences Behavioral responses in retail store. - **H2.4.a** It enhaces impulsive purchase - **H2.4.b.** It enhace social media creation - **H2.4.c.** It enhance the number of products examined

H3: Trendy music influences customer cognitive responses in retail store.
H3.1: Trendy music influences customer cognitive responses in retail store. - **H3.1a**: It enhances the evaluation of store atmosphere. - **H3.1b**: It enhaces perceived time spent. - **H3.1c**: It enhaces purchase impulse
H3.2: Trendy music influences customer emotional responses in retail store. - **H3.2a**: It enhances emotional states. - **H3.2b**: It enhaces souvenir.
H3.3: Trendy music influences Behavioral intentions in retail store. - **H3.3.a** It enhaces purchase Intention - **H3.3.b** It enhaces revisit intention - **H3.3.c.** It enhace Recommendation intention
H 3.4. : Trendy music influences Behavioral responses in retail store. - **H3.4.a** It enhaces impulsive purchase - **H3.4.b.** It enhace social media creation - **H3.4.c.** It enhance the number of products examined

II- Methods:

Our study was conducted as part of an experimental investigation in an organic cosmetic store located in the city of Salé, Morocco. We played three types of music: instrumental, vocal, and trending.The selection of the types of music tested in this research, vocal music, instrumental music, and trendy (local/pop) music based on a dual exploratory approach combining non-participant observations and semi-structured interviews. For instrumental music, we selected relaxing tracks reminiscent of nature and water. For vocal music, we chose Moroccan pop songs such as Asala & Asma Lamnawar - Sid Laghram, Mehdi Mozayine - Malna Hakka, and RYM - Howa. For trending music, we selected popular tracks at the time of our study, including Manal - 9ad Biya, Zouhair Bahaoui - Follow, Saad Lamjarred - Guli Mataa, and Maestro - Ha Mama.

The sample was selected using a non-probability convenience sampling method. Participants were recruited among customers present in the store during the experimental phase. Although non-random, this approach was appropriate for real-world exploratory research, allowing direct access to individuals actually exposed to the musical stimuli. Customers were approached after their shopping experience and voluntarily completed the questionnaire after being informed about the study's objectives. The use of convenience sampling in this study presents several advantages. It allows for quick and efficient data collection in a natural shopping environment, ensuring that respondents are genuinely exposed to the in-store conditions under investigation.

This method is particularly relevant in exploratory and experimental research, where the objective is to capture spontaneous customer reactions in context, rather than to generalize findings to a broader population. Moreover, it reduces the logistical and financial constraints associated with probabilistic sampling methods in field settings.

Customers were exposed to these three types of music over a one-month period, at different times of the day (from 10 a.m. to 8 p.m.). After their visit, customers were surveyed at the store's exit. The questionnaire focused on the effect of music on their evaluation of the store's atmosphere, perception of time, impulsing buying, emotional states, behavioral intentions, and social media creation. We adopted a statistical approch to examine the influence of different types of music (traditional, Moroccan pop, international, etc.) on variables such as cognitive, affective, behavioral, and intentional reactions. We analysed, also Moderation and mediation factors, such as congruence, preference, and mood. We used the Kruskal-Wallis test was usd to compare the effects of different types of music on customer responses because it does not require normally distributed data and is suitable for ordinal scales (such as evaluations, intentions, and emotions). It allows for the comparison of multiple independent groups (vocal, instrumental, trendy music, and silence) and helps determine whether significant differences exist between them. This test is a relevant alternative to ANOVA in experimental settings with moderate sample sizes and non-parametric data.

III- Results:

We assessed the influence of sound ambiance on customers' in-store experience and purchasing behavior through different types of music and silence. Vocals (3.5) have the greatest effect on the store atmosphere evaluation because they are more appealing, followed by trendy and instrumental (3.4). It create a pleasant atmosphere, although to a lesser extent. On the other hand, customers perceived silence (2.4) negatively by creating a less favorable atmosphere. Vocal music is therefore the most effective in improving store atmosphere evaluation, while silence is the least appreciated choice. Customers feel like they have spent less time when they hear vocal music. They considered vocal music (3.8) most pleasant, slightly ahead of trendy and instrumental music (3.5), which also provide a positive experience. Silence (2.9) causes a feeling of monotony. It is reducing the pleasure of the in-store experience. Therefore, vocal music remains the best choice to improve customers' perceived time, while silence reduces this feeling.

Regarding impulse buying, trendy music (3.3) is the most effective in stimulating this behavior due to its dynamism and attractiveness, closely followed by vocal music (3.2). In contrast, instrumental music (2.7) and silence (2.4) are less influential. Silence is least conducive to impulse purchases. Therefore, trendy and vocal music are the most strategic for encouraging impulse buying. The emotional influence t of music is also a key factor. Trendy music (4.1) and vocal music (4.0) generate the most positive emotions due to their dynamism and engagement. Instrumental music (3.8) evokes positive emotions but to a lesser extent, while silence (2.7) has a neutral effect. Vocal and trendy music are the best for eliciting positive emotions, while silence is the least effective in this regard. In terms of memory, vocal music (4.8) is the most

memorable for customers, followed by trendy music (4.5), while instrumental music (4.2) and silence (2.8) leave a less lasting impact. Vocal music is therefore the most effective way to create a lasting memory.

Vocal music (5.0) also performs in driving purchase intent, followed by trending music (4.8). Silence (3.2) has a low effect, demonstrating that the absence of music is unfavorable in this area. Similarly, vocal music (5.0) encourages customers to return to the store, while trending music (4.8) follows closely. Once again, silence performs less well in this context. Vocal music, although slightly better than trending music, is the most effective in encouraging customer loyalty.

In terms of recommendation intent, vocal music (5.0) stands out as the most effective, followed by trendy music (4.7). Silence (3.3) generates little encouragement to recommend, highlighting the importance of an engaging sound environment to maximize recommendations. Thus, vocal music remains the best option to encourage customers to recommend the store. However, to stimulate impulse purchases, instrumental music (1.8) and silence (1.7) prove to be more effective than trendy and vocal music (1.4), suggesting that a calm and soothing environment can encourage spontaneous decisions. When its comes to product exploration, vocal music (4.0) encourage more customer curiosity, followed by instrumental music (3.6). Trendy music (3.2) has a more moderate effect, while silence (2.1) significantly limits exploration. Thus, vocal music is the best option to encourage product exploration.

The music also encourage customers to share content on social medias. Trendy music (4.3) is the most effective in encouraging sharing, slightly outperforming vocal music (4.1), while instrumental music (2.9) and silence (3.2) are less effective in terms of engagement. Therefore, trendy and vocal music are the most relevant for maximizing impact on social media.

In terms of moderating effects, the congruence of music with the commercial environment is crucial. Customers find that vocal and trendy music (4.7) are the most suitable for the store's ambiance, creating a cohesive and pleasant atmosphere, while instrumental music (4.2) is less immersive. Customers perceived Silence (1.9) as disconnected and disrupts the harmony of the experience. The preference play also its role, vocal and trendy music dominate, far above silence (2.2), with people preferring to hear these two types of music. Regarding mood, vocal music (4.9) has the most positive effect, followed by instrumental music (4.7) and trendy music (4.6), while silence (3.5) is less effective in influencing customers' moods. In short, congruence, preference, and mood mediate the effects of music types on customer responses.

In summary, vocal music generally stands out as the best performer in most of the dimensions assessed, although trendy music offers similar results, particularly in stimulating the purchase impulse and encouraging sharing on social networks. Silence, although effective in some quiet contexts such as impulse purchases, remains overall the least favorable choice in all the parameters measured. Indeed, the type of music exerts a significant influence on the variation of customer responses.

IV- Discussion, Conclusion, and Perspectives

The study investigated the effect of in-store soundscapes on customer responses, comparing different types of music with silence. The results show that vocal music is most effective in improving store atmosphere, time perception and stimulating purchase intent. It also generates positive emotions, promotes recall, encourages customer return and encourages recommendation. Conversely, trendy music, although slightly less prominent, has similar effects and is particularly effective in stimulating purchase intent and encouraging sharing on social networks. Silence, on the other hand, has a largely negative impact. It reduces the perceived pleasure of time-spent in-store, creates a less pleasant atmosphere and limits product exploration. It also generates few positive emotions and does not encourage impulse buying, loyalty or recommendation. However, it has been shown to be slightly effective in specific contexts, particularly in encouraging impulse purchases, outperforming trendy and vocal music in this particular area.

The results of this study are consistent with the work of Milliman (1982) who showed that background music, particularly slow music, increased the time spent in the store. This is consistent with the idea that vocal music, because of its engaging nature, not only promotes a positive evaluation of the atmosphere, but also the perception of time in a pleasant way. In addition, the effect of trendy music is consistent with the findings of North, Hargreaves and McKendrick (1999), who found that popular, dynamic music stimulates impulse buying. Trendy music, with its dynamism and appeal, attracts consumers more, which explains its greater impact in this area than vocal music.

Regarding silence, the research by North and Hargreaves (2000) as well as Rieunier (2000) confirms that the absence of music can create a cold environment. Silence reduce customer satisfaction and their willingness to explore products. This finding aligns with the results of our study, which show that silence limits exploration and generates few positive emotions. However, a quiet environment, although unfavorable to an engaging experience, appears to encourage impulsive purchases in contexts where consumers seek a more peaceful atmosphere.

Finally, the effect of vocal music on customers' emotional states was confirmed by Hargreaves et al (2005), who found that vocal music induced positive emotions and increased customer satisfaction. This is directly in line with our findings, where vocal music improved customers' moods and contributed to the creation of lasting memories that encouraged customers to return.

In summary, our results confirm many of the findings of previous research into the impact of soundscape (Roschk et al.2017). Vocal and trendy music stand out as the most effective in creating an engaging atmosphere, stimulating the impulse to buy, generating positive emotions and encouraging loyalty. Silence, while beneficial in certain quiet contexts, generally seems less conducive to a positive customer experience and active purchasing behavior. These studies highlight the importance of choosing the right type of music for the context and business objectives to maximize the effect on consumers. To take these results a step further, several research perspectives can be considered. Firstly, the personalization of music using artificial intelligence could be explored in order to optimize the in-store experience by adapting the soundscape to individual customer preferences. Secondly, it would be relevant to study whether

the influence of music varies according to the sector of activity, such as luxury, mass or fashion, in order to identify the specificities of each retail environment. Another interesting avenue concerns the impact of music on online purchases, by analyzing whether a suitable soundscape can influence browsing and purchasing decisions on e-commerce platforms. These different perspectives pave the way for further research that would enrich our understanding of the role of music in the customer experience.

Appendix:

Table 1-Pivot table

	Trendy Music	Instrumental music	Vocal Music	Silence
Atmosphere evaluation	3,4	3,4	3,5	2,4
Time perception	3,4	3,5	3,8	3,5
Purchasing Impulsion	3,3	2,7	3,2	2,9
	Trendy Music	Instrumental Music	Vocal Music	Silence
Emotions	4,1	3,8	4,0	2,7
Memory	4,5	4,2	4,8	2,8
	Trendy music	Instrumental music	Vocal Music	Silence
Purchasing intent	4,8	4,6	5,0	3,2
Intention de return	4,8	4,6	5,0	3,1
Intention to recommend	4,7	4,6	5,0	3,3
	Trendy Music	Instrumental music	Vocal Music	Silence
Impulse buying	1,4	1,8	1,4	1,7
Number of products examined	4,2	3,6	4,0	2,1
Social média création	4,3	2,9	4,1	3,2
	Music Trendy	Instrumental music	Vocal Music	Silence
Congruence	4,4	4,2	4,7	1,9
Preference	4,7	4,3	4,7	1,8
Mood	4,6	4,7	4,9	3,5

Reference: Authors

Table 2: Kruskal-Wallis test

Kruskal-Wallis Test

Dimensions	Kruskal-Wallis	
	Valeurs	Signification (p)
Atmosphere evaluation	7,612	0,022
Time perception	9,141	0,010
Purchasing impulsion	20,071	0,000
Emotions	21,740	0,000
memory	33,280	0,000
Purchasing Intentions	15,189	0,001
Return Intention	16,127	0,000
Intention de recommend	16,648	0,000
Impulse buying	26,206	0,000
Number of products examined	6,238	0,044
Social media creation	24,987	0,000
Congruence	15,286	0,000
Preference	3,367	0,186
Mood	10,867	0,004

*La valeur doit dépasser le seuil de 0,05

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