The Effects of Background Music on Sport Leisure Consumption Experience: the Case of a Bouldering Center.

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Cite as:
Loustaunau Lucie, Degore Aline, Galan Jean-Philippe (2019), The Effects of Background Music on Sport Leisure Consumption Experience: the Case of a Bouldering Center.. *Proceedings of the European Marketing Academy*, 48th, (8075)

Paper presented at the 48th Annual EMAC Conference, Hamburg, May 24-27, 2019.

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Abstract:

Background music and more specifically its tempo, has been the object of many studies. However, its impact in leisure sport consumption context has not yet been explored. Its effects on immersion, social interactions and satisfaction, which are key elements of consumer experience, are relatively rare in marketing literature. These points are the reasons for a quasi-experience involving 146 customers in a bouldering center. Background music was manipulated according to tempo (fast tempo *vs* slow tempo *vs* no music) and its absence. Therefore, three experimental conditions have been set up. Results highlight significant direct and/or indirect effects of background music on social interactions, immersion and satisfaction.

Keywords: Music background; Quasi-experimentation; Consumer experience

Tracks: Relationship Marketing

1. Introduction.

Background music owns to the atmosphere factors category and has been the focus of numerous studies. They highlighted its actual impact on consumer behaviours (e.g. Milliman, 1982, 1986; Yalch and Spangenberg, 1990). This is because this stimulus is easy to handle that it is the atmospheric factor the most used to enhance the delivery services (Yalch and Spangenberg, 1990) or atmosphere retails (Chébat, Chébat, and Vaillant, 2001). Tempo, more specifically, has been raised the interest of many researchers (Chebat, Gelinas-Chebat, and Filiatrault, 1993; Knoferle, Spangenberg, Herrmann, and Landwehr, 2012; Milliman, 1982, 1986; Sweeney and Wyber, 2002). This point is particularly interesting because the current commercial music is characterized by fast tempi (Karageorghis, Jones, and Low, 2006). However, effects of tempo on affective, cognitive and conative reactions command no consensus. In fact, some researchers propose a significant impact on pleasure and arousal (e.g. Andersson, Kristensson, Wästlund, and Gustafsson, 2012; Sweeney and Wyber, 2002), others suggest the opposite (Chébat and al., 1993).

Most of these studies own to the neoclassical paradigm (Vargo and Lusch, 2014). Nowadays retail environment has become a place where consumption experience is theatricalized (Holbrook and Hirschman, 1982). The managers are not delivering value anymore, but making value propositions (Vargo and Lusch, 2015) because the consumer has become an active actor (Carù et Cova, 2003). He became the co-creator of his own consumption experience (Vargo and Lusch, 2004). This new feature seems to suggest that impacts of individual's interactions on his experience are bigger. In this study, we focused on consumption experience key elements which are social interactions, immersion in a leisure sport context – indoor bouldering – and the likely influence of background music on these concepts.

Two points prompted this research. (1) Our aim was to examine the effect of background music in a service context not yet investigated. Most of prior studies were realized in restauration or retail contexts. Thereby none was realized in leisure sport contexts (Michel, Baumann, and Gayer, 2017). (2) Even if the aim of experiential context is to make consumers absorption in experience easy in order to making them satisfied, to our knowledge, no research focused on the effect of background music on immersion. Results from the present empirical study conducted involving 146 bouldering climbers highlights (1) a significant direct and/or indirect effects of music on social interactions, on immersion and on satisfaction; (2) the experimental condition "no music" seems to be the most favorable to consumption experience; (3) while "fast tempo" appears like a factor deteriorating it.

2. Literature Overview.

Postmodernist's researchers were the first to link the immersion concept with the consumption experience (e.g. Firat and Dholakia, 1998). The immersion state responds to intensive state activity (Fornerino, Helme-Guizon, and Gotteland, 2008) associated to a highlight experienced by the consumer (Carù and Cova, 2003) in an experiential context in which he is completely involved, absorbed and engaged (Lombard and Ditton, 2006). Total immersion is, therefore, linked to a positive satisfaction evaluation (Firat and Dholakia, 1998). Furthermore, presence of others consumers is an inescapable dimension of experience (Petr, 2002). For this reason, our aim was also to investigate its role. In our opinion social interaction would be antecedents of immersion and satisfaction. Indeed, conviviality is a core value of climbing. In addition to being a satisfaction source (Crandall, 1979), Carù and Cova (2006) propose that an interaction with a peer gives the feeling to an individual to own to the group even if it is short. Thereby the individual's active role is more evident, and his interactions give more meaning to his experience and, *in fine*, help him to be easily immerged. Psychologists demonstrated that individuals are more likely to verbally interact when relaxant music is played than stimulant (Stratton and Zalanowski, 1984). Haake (2011) reveals that people do not listen to music when they are talking with somebody else on their workplace. Talking with someone demands a lot of attentional resources that could be partially diverted to annihilate the effects of overly stimulating music. Formally:

H1: Background music influences directly social interactions.

To our knowledge, no study focuses on impact of background music on immersion during a consumption experience. Carù and Cova (2003) suggest that external and/or situational factors can impact consumer immersion during a current activity. In our opinion music owns to this category of factors because it includes in the experiential context proposed by the manager. Formally:

H2: Background music influences directly immersion.

Very few studies have investigated background music effects on satisfaction. However, Wilson (2003) explains that consumers experience a better assessment of their satisfaction in the presence of music rather than the absence of music. Formally:

H3: Background music influences directly satisfaction.

As mentioned before, music influences individual's willingness to interact with the social environment. Social interactions would be an antecedent of immersion and satisfaction issue to consumption experience. For this reason, we propose that social interactions mediate the relationships between music and immersion and music and satisfaction. Formally:

H4: Social interactions mediate the relationship between background music and

a) immersion

b) satisfaction

To refine effects of background music on satisfaction, we chose to test a complementary hypothesis. This one refers to a sequential mediation to highlight the indirect impact of music on satisfaction through social interactions then immersion. Formally,

H5: Social interactions and immersion mediate the relationship between background music and satisfaction.

3. Methodology and Results.

3.1. Methodology.

The quasi-experimentation involving 146 French boulder climbers was realized (Men=7.3%; less than 35 years old=89.8%). Background music was manipulated according to its tempo. Three conditions were set up on three evenings of the same week: low tempo (< 95 BPM; N_{slow}=50) *versus* fast tempo (> 113 BPM; N_{fast} = 48) *versus* no music ($N_{NoMusic}$= 48). Loudness was regularly controlled to be around 66dB. The selected music came from *Spotify*® playlists usually used by employees. Respondents perceived music during the fast condition as significantly faster than during the slow condition (t=2.398; p=0,018).

Respondents were invited to complete the questionnaire in the end of their bouldering session. Measurements of endogenous are issue from literature. They were prior adapted to the study context and pre-tested. Reliability and internal validity were checked, and some items were eliminated (cf. Appendix 1). Experimental manipulations was considered as nominal qualitative variable and transformed in dummies codded (0;1) to be introducing in the structural model as exogenous variable (Bagozzi and Yi, 1989).

Concerning hypothesis tests, variance analyses have been carried out to check the direct relations existence between tempo and the endogenous variables. Results are interpreted as regression including dummy variables (Hair, Ringle, and Sarstedt, 2013). Only results issue from dummy variables couples Slow*No Music and Slow*Fast are presented in this paper to avoid redundancy. Structural analysis was realized with SmartPLS. Mediator analysis was experienced with the bootstrap test of indirect effect p_1 x p_2 (Hair et al., 2017; Hayes, 2018; Zhao et al., 2010). Preliminary analysis exhibit of measurements and structural model with satisfying psychometric properties (SRMR=0.055<0.08; RMS_{theta}=0.163) (cf. Appendix 1 and 2).

3.2. Results.

Direct effects of background music. Variance analysis reveals a significant direct effect of music on social interactions ($F_{2; 145}$=4.419; p=0.014) and on immersion ($F_{2; 145}$=7.735; p=0,001) and not significant on satisfaction ($F_{2; 145}$=1.972; p=0.143). Structural analysis confirms these ANOVA results (cf. Table 1 and 2). Consequently, H1and H2 are validated, but H3 is not. Further, results reveal that social interactions are significantly lower when tempo is slow (β=-0.190; p=0.024; [-0.358; -0.024]) compare to no music condition. Concerning immersion, it is significantly lower with the fast tempo condition than with no music (β=-0.288; p=0,001; [-0.487; -0.193]) and low tempo condition (β=0.225; p=0,017; [0.028; 0.398]).

Table 1 – Direct Effects of Background Music Compare to Fast Tempo

	β	p	IC (95%)
Slow → SocInter	0.164	0.077	[-0.021; 0.345]
Slow → Immersion	0.225	0.017	[0.028; 0.398]
Slow → Satisfaction	-0.021	0.759	[-0.156; 0.111]
NoMusic → SocInter	0.351	0.000	[0.201; 0.508]
NoMusic→ Immersion	0.288	0.001	[0.105; 0.452]
NoMusic → Satisfaction	-0.009	0.889	[-0.139; 0.129]

Table 2 - Direct Effects of Background Music Compare to No Music

	β	p	IC (95%)
Slow → SocInter	-0.190	0.024	[-0.358; -0.024]
Slow → Immersion	-0.066	0.480	[-0.244; 0.122]
Slow → Satisfaction	-0.011	0.855	[-0.133; 0.105]
Fast → SocInter	-0.351	0.000	[-0.487; -0.193]
Fast → Immersion	-0.288	0.001	[-0.487; -0.193]
Fast → Satisfaction	0.009	0.889	[-0.132; 0.133]

Indirect effects of background music. Before being focused on mediation relationships, social interactions significantly influence immersion (β=0.242; p=0.009; [0.054; 0.421]), which significantly impacts satisfaction (β=0.251; p=0.003; [0.085; 0.417]) (cf. Appendix 3). Therefore, it is possible to test mediation hypothesis H4a and H5, but not H4b, which is consequently rejected. Results outline the background music effect on immersion through social interaction in one hand, and on satisfaction through immersion on the other hand (cf. Table 3). Background music influences also satisfaction by means sequential mediation through social interactions then immersion.

Firstly, refer to no music, fast temp and low tempo influence negatively and indirectly on immersion *via* social interactions (respectively, β=-0.046; [-0.115; -0.005]; β=-0.085; -0.175; -0.021]. In addition, only fast tempo has a negative and indirect consequence on satisfaction through immersion (β=-0.072; [-0.167; -0.017]). Moreover, it exists a negative and indirect effect of low and fast tempo on satisfaction by means sequential mediation involving social interactions then immersion (Respectively, β=-0.012; [-0.035; -0.002]; β=-0.021; [-0.054; -

0.006]). Secondly, compare to fast tempo; low tempo has an indirect and positive impact on satisfaction through immersion (β=0.056; [0.010; 0.150]) and also, by the mean sequential mediation of social interactions then immersion (β=0.010; [0.001; 0.038]). To summarize, H4a and H5 are confirmed, but H4b is not.

Table 3. Indirect Effects of Background Music

	β	p	IC (95%)
Compare to fast tempo			
Slow → SocInter → Immersion	0.040	0.169	[0.000; 0.123]
Slow → Immersion → Satisfaction	0.056	0.086	[0.010; 0.150]
Slow → SocInter → Immersion→ Satisfaction	0.010	0.194	[0.001; 0.038]
NoMusic → SocInter → Immersion	0.085	0.028	[0.022; 0.176]
NoMusic → Immersion → Satisfaction	0.072	0.050	[0.019; 0.168]
NoMusic → SocInter → Immersion → Satisfaction	0.021	0.056	[0.006; 0.055]
Compare to no music			
Slow → SocInter → Immersion	-0.046	0.083	[-0.115; -0.005]
Slow → Immersion → Satisfaction	-0.017	0.511	[-0.076; 0.024]
Slow → SocInter → Immersion→ Satisfaction	-0.012	0.120	[-0.035; -0.002]
NoMusic → SocInter → Immersion	-0.085	0.026	[-0.175; -0.021]
NoMusic → Immersion → Satisfaction	-0.072	0.054	[-0.167; -0.017]
NoMusic → SocInter → Immersion → Satisfaction	-0.021	0.056	[-0.054; -0.006]

4. Discussion.

The present research highlights three major results. Firstly, (1) music significantly influences the consumption experience. Therefore, (2) fast tempo tends to deteriorate social interactions of boulder climbers with the other, their immersion degree and their satisfaction assessment compare to conditions associated to low tempo or no music. Finally, (3) the experimental manipulation “no music” emerges as the condition more favorable condition. These results contribute to the literature related to the background music effect on consumer experience. A fast tempo seems to imply an over-stimulation for individuals. It is possible that background music with a fast tempo generates a cognitive effort to annihilate this surplus stimulation. For this reason, this atmospheric factor could disrupt the boulder climber interactions with his social and physical environment and block his immersion in the consumption experience. Consequently, satisfaction issue to experience would be weaker.

Concerning managerial recommendations, our results give the key to the manager to favor a positive experience of consumers in experiential contexts that they propose. Indeed, results exhibit that background music significantly influences the consumer experience and that a fast tempo damages it. This is why the design of this audio stimulus needs a particular attention to avoid counter-effective effects due to mismanagement.

Some limits characterized this study. First of all, there are few respondents (N=146; N_{low}=50; N_{fast} =48; $N_{nomusic}$=48). It can explain by the difficult access to them. These are actual consumers, generally regulars, who just finished their sport session. Also, to cut not off the pool of respondents for the following experimental conditions, a goal of 50 respondents for each condition was established. Furthermore, each experimental condition was set up only during one evening. Therefore, if this study has been conducted during a longer period, the results might have been different. Actually, usually, in this context, the music is continually playing. So, "no music" condition was a punctual and unique event. If this condition was used longer, maybe its effects on consumer experience can vary. However, constraints linked to the study field. However, field constraints did not allow us to implement longer experimental conditions.

New research perspectives emerge from these results. Firstly, it could be interesting to set up quasi-experimentation with a design more durable or even to carry out a longitudinal study. This would make it possible to highlight the intra-individual variations of the regular consumers and thus, to determine the most favorable condition for the experience of the latter. Secondly, a replication of this study in new contexts of experiential consumption in which the active role of the consumer is salient (e.g. online video games, escape room, fitness center) would confirm or refute the results brought to light in the present study.

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Appendix.

Appendix 1. Reliability and Intern Validity of Measurement

	Cronbach Alpha	Rho A	Composite reliability	AVE
Dependant Variables				
Social interactions (Fornerino et al. 2008)	0.867	0.876	0.909	0.715
Immersion (Fornerino et al. 2008)	0.854	0.854	0.911	0.774
Satisfaction (Oliver. 1980 traduite Plichon. 1999)	0.846	0.850	0.907	0.765
Control Variables				
Atmosphère (Plichon. 1999)	0.767	0.779	0.895	0.811
Mood (Peterson et Sauber. 1983, translated by Plichon, 1999)	0.857	0.888	0.901	0.695
QS (Taylor et Baker. 1994)	0.810	0.829	0.888	0.726

Appendix 2. Structural Model Evaluation

	R^2	Ajusted R	Q^2
Social Interactions	0.299***	0.264	0.188
Immersion	0.201**	0.154	0.126
Satisfaction	0.574***	0.543	0.381
	$SRMR$	< 0.8	0.55
	RMS_{theta}	< 0.12	0.163

Appendix 3. Interactions between Social Interactions, Immersion and Satisfaction

	β	p	IC (95%)
SocInter → Immersion	0.242	0.009	[0.054 ; 0.421]
SocInter → Satisfaction	0.117	0.146	[-0.049 ; 0.270]
Immersion → Satisfaction	0.251	0.003	[0.085 ; 0.417]