

## 20th IMTC - Venice January 14-16 2021

## Marketing Trends Congress Research Sessions

With authors coming from more than 50 countries and a great variety of research topics. A unique occasion to interact and create links for future research and career opportunities.

January 15th - 16th 2021

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January 15th - 16th 2021

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January 14th 2021

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## VOLUME 5

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# JOURNAL OF MARKETING TRENDS

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# How the interplay between subjective and objective financial risk influences consumers' expectations, information search, and product satisfaction

#### Abstract

Consumer risk taking is central to much of the financial market literature and a deeper understanding of consumer risk behavior is essential for advancing research and managers' and authorities' thought and policy. Yet, relatively little research has considered the interplay between subjective financial risk (i.e., the level of risk perceived by consumers) and objective financial risk (i.e., the level of risk as stated by financial authorities) on consumer financial behavior. Based on cognitive consistency theory and cognitive congruence theory as theoretical underpinnings, we develop a conceptual model hypothesizing relationships between subjective and objective risk and consumers' expectations, information search (from both financial and non-financial sources), and product satisfaction.

This study distinguishes between high objective risk savings products (HRSP) (i.e., stocks) and low objective risk savings products (LRSP) (i.e., bank saving accounts). In the study, 269 respondents had obtained a HRSP and 573 respondents had obtained a LRSP. In the pooled sample of respondents (n=842), 46.6% were women and average age was 54.5 years.

Structural equation modelling estimated the results. The results suggest that the negative influence of perceived risk on expectations was significantly higher for LRSP than for HRSP and also that the negative influence of perceived risk on product satisfaction was significantly higher for LRSP than for HRSP. Also, the positive influence of perceived risk on information search from non-financial sources was higher for HRSP than for LRSP. Several implications for future research, alongside with managerial and financial authority implications, are discussed.

Key words: subjective risk; objective risk; expectations; information search; product satisfaction

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#### Introduction

Consumer risk taking is central to much of the financial services literature and a deeper understanding of consumer risk behavior is essential for advancing research and managers' and authorities' thought and policy. Prior research has especially been devoted to investigating how consumers' subjective (perceived) risk may influence their decision making and product evaluations. Subjective financial risk can be conceptualized as the perceived negative monetary consequences that can occur when obtaining a savings product (Conchar et al., 2004). Compared to tangible products, consumers are likely to perceive greater risk in financial services because they typically involve greater monetary risks, have long-term wealth effects, are often more complex, and feature more credence attributes (Hansen, 2012, 2017; Hoffmann and Broekhuizen, 2010). In line herewith, perceived financial risk has been found to positively affect consumers' information seeking (Campbell and Goodstein, 2001) and to negatively affect consumers' transformation of purchase intention into actual purchase behavior (Tan, 1999), among others.

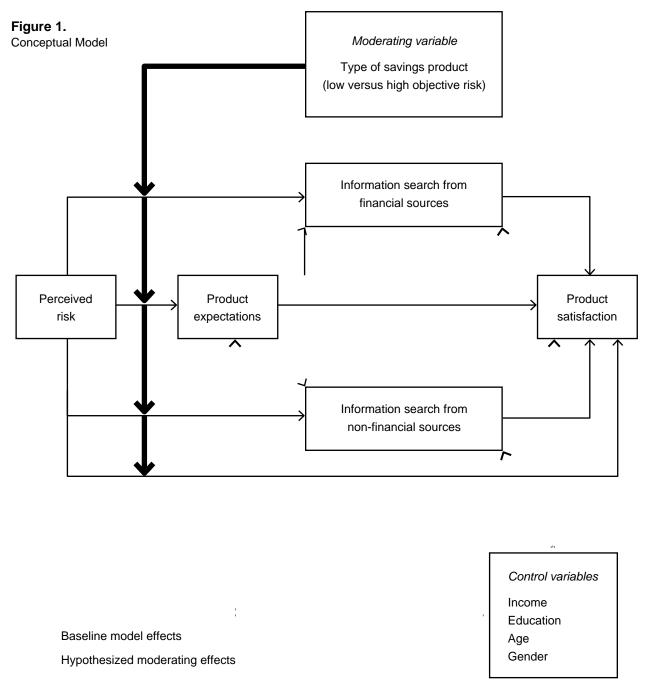
Many countries offer guidelines to their citizens on how various savings products may be classified according to their level of 'objective' risk. Objective risk is conceptualized as the pre-classified uncertainty in outcomes (especially losses) of some significance (Das and Bing-Sheng, 2004; Kahneman and Tversky, 1979). Yet, relatively little research has considered the interplay between subjective financial risk (i.e., the level of risk perceived by consumers) and objective financial risk (i.e., the level of risk as stated by financial authorities) on consumer financial behavior. We do not know how the interplay between subjective and objective risk may influence consumer factors such as products expectations, information search, and product satisfaction. This is unfortunate since a better understanding of the relationships between subjective and objective risk and consumers' financial behavior behavior may assist financial service providers in managing their financial services and may also assist financial authorities and public policy makers in influencing consumers' savings behavior. Consumer savings behavior may also have severe implications for the overall economy as experienced during the financial crisis, which led many consumers to increase their savings (Winterich and Nenkov, 2015), thereby contributing to the lower economic activity in many societies.

This study distinguishes between savings products with high objective risk (HRSP) (i.e., stocks) and savings products with low objective risk (LRSP) (i.e., bank saving accounts). We argue and demonstrate that objective product savings risk moderates relationships between consumer factors. Specifically, we show that the negative influence of perceived risk on expectations is significantly higher for LRSP than for HRSP and also that the negative influence of perceived risk on product satisfaction is significantly higher for LRSP than for HRSP. Also, the positive influence of perceived risk on information search from non-financial sources is higher for HRSP than for LRSP.

The remainder of the paper is organized as follows. First, the theoretical framework and hypotheses are introduced followed by a review of the methods used to test the hypotheses. Next, the results are presented. Finally, the implications of the findings are discussed and suggestions for future research are provided.

#### **Conceptual Model and Hypotheses**

This section consists of two parts. In the first part, a conceptual baseline (non-hypothesized) model is introduced alongside with a discussion of its theoretical underpinnings and proposed relationships between model constructs. The second part hypothesizes how some of these baseline model relationships may differ according to varying levels of objective product savings risk (i.e., LRSP vs. HRSP) (Figure 1).



#### Baseline model

In the model, product expectations is conceptualized as the expectations the customer has developed towards the financial product in question (Fornell et al, 1996), whereas product satisfaction is conceptualized as an overall, cumulative consumer evaluation of the financial product in question (Johnson et al. 2001, 2002). Also, we distinguish between information search from financial sources (e.g., banks) and information search from non-financial sources (e.g., newspapers). Consistent with previous research we expect in the baseline model that perceived risk will be related to product expectations, product satisfaction, and positively influence information search (from both financial and non-financial sources). Also, we expect that product expectations and information search (from both financial and non-financial sources) will positively influence product satisfaction (Campbell and Goodstein, 2001; Byrne, 2005). Based on previous research, a number of control variables (i.e., income, education, age, and gender) are also included in the conceptual model (e.g., Ronay and von Hippel, 2010).

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#### Development of research hypotheses

The conceptual underpinnings of our research come primarily from cognitive consistency theory (Festinger, 1957; Heider, 1958, 1979; Osgood and Tannenbaum, 1955) and cognitive congruence theory (Goodman, 1980; Heckler and Childers, 1992; Meyers-Levy and Tybout, 1989; Teng et al., 2014). Taken together, these theories posit that consumers tend to seek consistency/congruency between their beliefs, their product choices, and their evaluated outcomes in order to avoid a state of cognitive dissonance and to serve their self-interest (Todd and Gigerenzer 2003; Teng et al., 2014). When seeking to accomplish this, consumers may be open to guidance. Indeed, previous research has demonstrated that consumers sometimes moderate, neglect, or even alter, their beliefs as a consequence of contextual influences such as the way in which choices are framed, the complexity of the choice, normative guidance from others, and subjective risk, among others (Kahneman and Tversky, 1984; Tversky and Kahneman, 1986; Campbell and Goodstein 2001).

Subjective risk produces wariness or risk aversion, which often leads to a variety of risk-handling activities—such as increased need for congruency and demand for product savings information (Campbell and Goodstein 2001; Chaudhuri, 2010). For example, Erdem (1998) has demonstrated that when purchasing a new product is associated with high subjective risk, consumers are more likely to choose a known brand than a new brand in order to achieve congruency between their general brand beliefs/preferences and choice of product. Additionally, we propose that consumers' decisions based on subjective risk may vary depending upon the size of objective risk. While people may not always be aware of the specific level of objective risk (e.g., Mitchell 1999), research suggests that financial consumers are generally aware that stocks should be regarded as higher risk products than, for instance, bank savings accounts (e.g., Hansen 2017).

When subjective risk increases consumers can be expected to become more open to rely on the stated objective risk for guidance. If they encounter a conflict between their subjective risk and the objective risk they may risk a confirmatory bias. On the other hand, when subjective risk is low consumers should be more likely to neglect conflicts/congruencies between subjective and objective risk because such conflicts/congruencies are less relevant and important to them (Naylor, Droms, and Haws 2009). When consumers assign a high subjective risk for HRSP, they believe that they are faced with a risk that is congruent with the 'normal' risk for this product type. Consequently, taking into account the amount of objective risk should not be expected to modify consumer expectations and/or satisfaction as a result of subjective risk. On the other hand, when consumers assign a high subjective risk for LRSP it means that consumers believe they are faced with a risk that is higher than the 'normal' risk for this product type, which in turn may have a negative impact on expectations and product satisfaction. In summary, we hypothesize as follows.

H1. The relationship between perceived risk and product expectations is moderated by type of savings product such that the relationship is more negative for LRSP than for HRSP.

H2. The relationship between perceived risk and product satisfaction is moderated by type of savings product such that the relationship is more negative for LRSP than for HRSP.

Subjective risk is likely to positively influence consumer information search (Campbell and Goodstein, 2001). The amount of information search may be reinforced by a perceived congruency between subjective and objective risk. Hence, we expect that consumers who assign a high subjective risk for HRSP (vs. LRSP) are particularly encouraged to carry out a high amount of information search. We hypothesize as follows.

- H3. The influence of perceived risk on information search from financial sources is moderated by type of savings product such that the relationship is more positive for HRSP than for LRSP.
- H4. The influence of perceived risk on information search from non-financial sources is moderated by type of savings product such that the relationship is more positive for HRSP than for LRSP.

#### Methodology

Data collection

This study distinguishes between high objective risk savings products (HRSP) (i.e., stocks) and low objective risk savings products (LRSP) (i.e., bank saving accounts). A two-step procedure was utilized to sample respondents from Capacent Epinion's online panel of approximately 30,000 (Danish) consumers. In the first step, a stratified random

sample of 4,320 respondents aged 18+ was drawn from the online panel, reflecting the distribution of gender, age, and educational level in the population (aged 18+) as a whole. In the second step, these 4,320 respondents were contacted by email and asked to respond to the screening question "Have you obtained a savings product during the last two years?" (Yes/No). If yes, the respondent was next asked to state what type(s) of savings product(s) that has been obtained. In case a respondent had obtained multiple savings products s/he was instructed to focus on the savings product most recently obtained. In the study, 269 respondents had obtained a HRSP and 573 had obtained a LRSP. In the final pooled sample of respondents (n=842), 47.7% were women and average age was 54.3 years and ranged between 18 and 90 years.

We investigated whether our sample deviates from the Danish population (aged 18-90) on age, gender, educational level and income level (Table 1). The conducted c²-tests suggest that the pooled sample and the LRSP group, respectively, both reflect the Danish population on gender distribution (p>0.05) but that women are underrepresented in the HRSP group (c²=19.0, p<0.01). The pooled sample and the LRSP/HRSP groups all had a higher income when compared to the population. Also, the proportion of high income level respondents (>400.000 DKK) was higher in the HRSP group vs. the LRSP group (c²=6.71, p<0.01). All study respondents groups had a higher age as compared with the age found in the population (p<0.01) and the proportion of middle-age to elderly respondents (≤55 years) was higher in the HRSP group vs. the LRSP group (c²=4.86, p=0.03). Finally, the pooled sample and the LRSP/HRSP groups all had a higher education (i.e., short advanced or medium/long advanced study) when compared to the population (p<0.01 for all comparisons). These deviations from the Danish population and between LRSP vs. HRSP are consistent with previous research, which suggests that the willingness to take risk is higher for men (vs. women) and among those with higher income (e.g., Ronay and von Hippel, 2010). Also, people with higher age tend to have higher savings groups vs. the population.

Table 1

Socioeconomic characteristics of the sample compared to the Danish population

		Percentage of					
Variable	Specification	Pooled sample (n=842)	LRSP group (n=573)	HRSP group (n=269)	Danish population (2016) <sup>a</sup>		
Gender	Female	47.7	52.9	36.8	50.4		
	Male	52.3	47.1	63.2	49.6		
Age (years)	18-24	1.6	2.1	0.4	11.0		
	25-34	7.2	7.9	5.7	14.8		
	35-44	13.4	14.6	10.9	16.1		
	45-54	24.5	24.6	24.2	17.1		
	55-64	31.3	31.6	30.6	16.0		
	65-74	18.1	16.5	21.5	14.7		
	75-90 <sup>b</sup>	4.0	2.6	6.8	9.4		
Income (DKK)°	<200.000	13.2	13.9	11.8	32.0		
	200.000-399.999	45.6	48.0	40.7	45.1		
	400.000-699.999	33.7	32.6	36.2	19.4		
	<u>&gt;</u> 700.000-	7.4	5.5	11.4	3.5		
Education <sup>d</sup>	Without any graduation	0.0	0.0	0.0	0.4		
	Primary school	4.4	4.7	3.7	25.2		
	High school	4.5	5.3	3.0	8.7		
	Business training	26.5	25.2	29.4	35.4		
	Short advanced study	34.3	34.7	33.5	4.4		
	Medium/long advanced study	30.2	30.2	30.5	25.9		

#### Notes

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<sup>&</sup>lt;sup>a</sup> Frequencies pertain to the Danish population aged 18-90.

<sup>&</sup>lt;sup>b</sup> The highest age in the LRSP group was 81. The lowest age in the HRSP group was 22.

<sup>°100</sup> DKK (Danish Kroner)≈16 USD.

<sup>&</sup>lt;sup>d</sup> Population percentages are from 2015. 'Business training' includes educations such as carpenter, glazier, and electrician; 'short advanced study' includes undergraduate degrees such as teacher, accountant, and registered nurse; 'medium/long advanced study' includes graduate degrees, i.e., bachelor's, master's, and Ph.D. degrees. Source (population percentages): Danish Statistical Bureau, DST (2018).

#### Measurements

Three items derived from Spreng and Page (2001) measured product expectations. The measurements of information search from financial (three items) and non-financial sources (four items), respectively, were based on items from (Beatty and Smith, 1987), whereas four items based on De Wulf et al. (2001) measured product satisfaction. Perceived risk was measured by exposing respondents to the statement that 'Obtaining [the savings product in question] is risky'. The applied measurements are displayed in the Appendix.

#### **Results**

This section presents our results. We begin with a validation of the applied measurement items and also examine whether common method bias may pose a serious threat to the analysis and interpretation of the data. We then estimate the proposed hypotheses using multi-group structural equation modelling (MG-SEM). We used SPSS Amos 24 to calculate the results.

#### Measurement model results

Confirmatory factor analysis (CFA) was conducted on the four latent model factors included in the baseline model (Figure 1) with each indicator specified to load on its hypothesized latent factor. Raw data was used as input for the maximum likelihood estimation procedure. Table 2 summarizes the CFA results.

Table 2

Confirmatory factor analysis results

Construct/indicator	Standardized factor loading <sup>a</sup>	Critical ratio	Composite reliability	Extracted variance
Expectations			0.90	0.75
X1	0.89	-		
X2	0.89	33.12		
X3	0.81	29.38		
Info from financial sources			0.84	0.64
X4	0.73	-		
X5	0.91	22.09		
X6	0.75	20.68		
Info from non-financial sources			0.75	0.44
X7	0.61	-		
X8	0.73	14.78		
X9	0.71	14.69		
X10	0.58	12.82		
Product satisfaction			0.73	0.41
X11	0.54	-		
X12	0.58	10.81		
X13	0.76	11.91		
X14	0.65	11.36		

#### Notes

a One item for each construct was set to 1.  $\chi^2$ =295.22 (d.f.=71, p<0.01); RMSEA=0.059, CFI=0.95, NFI=0.94, Hoelter(0.05)=281.

The measurement model yields a chi-square of 295.22 (d.f.=71, p<0.01). However, the Hoelter(0.05) (Hoelter 1983) estimate (n=281) suggests that the lack of absolute fit can be explained by sample size. Thus, since the chi-square test is highly sensitive to sample size other fit measures are given greater prominence in evaluating model fit (e.g., Ye, Marinova and Singh, 2007). The root mean square error of approximation (RMSEA=.059), the comparative fit index (CFI=0.95) and the normed fit index (NFI=0.93) suggest that the measurement model fits the data reasonably well (Bagozzi and Yi, 1988). Composite reliabilities were all greater than 0.70 indicating a reasonable reliability of measured constructs (Bagozzi and Yi, 1988). Finally, extracted variance was greater than 0.40 all the latent constructs, which to a fairly degree satisfies the threshold value recommended by Fornell and Larcker (1981).

Discriminant validity was assessed using the method proposed by Fornell and Larcker (1981). According to this method, the extracted variance for each individual construct should be greater than the squared correlation (i.e., shared variance) between constructs. An examination of Table 3 shows that the extracted variance for each of the constructs in every case exceeds the squared correlation between constructs suggesting sufficient discriminant validity in the study.

A CFA approach to Harmon's one-factor test was used as a diagnostic technique for assessing the extent to which common method bias may pose a serious threat to the analysis and interpretation of the data. The single latent factor accounting for all the manifest variables yielded the following chi-square value: 2965.21 (d.f.=77, p<0.01). A chi-square difference test suggested that the fit of the one-factor model was significantly worse than the fit of the proposed four-factor model ( $\Delta \chi^2$ =2669.99;  $\Delta$ d.f.=6, p<0.01) indicating that the measurement model was robust to common method variance.

Table 3

Correlations and descriptive statistics

	1	2	3	4	5	6	7	8	9
Conceptual model constructs									
1. Expectations	0.75								
2. Info from financial sources	-0.02	0.64							
3. Info from non-financial sources	< 0.01	0.56a	0.44						
4. Satisfaction	0.55a	0.04	-0.02	0.41					
5. Perceived risk	-0.19a	0.02	0.27a	-0.29a	na				
Controls									
6. Educational levelc	< 0.01	0.09b	0.11a	-0.01	0.02	na			
7. Gender	na	na	na	na	na	na	na		
8. Incomee	-0.02	0.06	0.09b	-0.03	0.15a	.30a	na	na	
9. Age	0.09b	-0.01	0.11a	-0.02	0.04	-0.04	na	-0.03	na
Mean	5.91	2.34	1.94	5.81	3.20	5.71	46.6d	4.37	54.5
Std. deviation	1.11	1.79	1.20	1.21	2.15	1.85	na	1.72	12.8

#### Notes

ap<0.01; bp<0.05.

c Educational level was measured on an eight-point scale ranging from 1(=elementary school) to 8(=master's degree or higher). dProportion of women in the sample is reported. eIncome was measured on an eight-point scale ranging from 1(=less than 100.000 dkk) to 8(=more than 700.000 dkk); 100 dkk (Danish Kroner)≈16 USD. na: not applicable.

The diagonal represents average amount of extracted variance for each construct.

Averaged scale means are reported; all items pertaining to the latent constructs and perceived risk were measured on 7-point scales.

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#### Hypotheses testing

The hypothesized model - including the control variables - was fitted simultaneously to the low and high risk savings product samples using multiple-group latent variable structural equation modelling (SEM) analysis. The testing of path differences between the LSRP and HRSP groups using multigroup analysis assumes measurement invariance – meaning that the construct measures are invariant across the two groups. An assessment of the factor loadings across the two groups showed that all factor loadings were high and above the recommended threshold of 0.70 in most incidents, which provides reasonable evidence that the applied measures are invariant across groups (Morgenson III, Sharma, and Hult, 2015).

The model chi-square statistic was 637.83 (d.f.=244, p<0.01), indicating that the model fails to fit in an absolute sense. However, the more robust fit indexes (CFI=0.91; NFI=0.87; RMSEA=0.044; Hoelter(0.05)= 372) suggested an acceptable model fit. Table 4 displays the estimated coefficients from the multiple-group SEM analysis.

The negative influence of perceived risk on expectations was significantly higher for LRSP ( $\beta$ = -0.26, p<0.01) than for HRSP ( $\beta$ = -0.07, p=0.33) ( $\Delta$ c²=12.76,  $\Delta$ d.f.=1, p<0.01). This provides support to H1. Also, supporting H2, the negative influence of perceived risk on product satisfaction was significantly higher for LRSP ( $\beta$ = -0.24, p<0.01) than for HRSP ( $\beta$ = 0.03, p=0.68) ( $\Delta$ c²=9.42,  $\Delta$ d.f.=1, p<0.01). Rejecting H3, the influence of perceived risk on information seeking from financial sources did not differ across product savings type as this relationship was non-significant for both LRSP ( $\beta$ = -0.08, p=0.13) and HRSP ( $\beta$ =0.09, p=0.19), respectively, although the difference between coefficients was in the expected direction. Consistent with our expectations, the positive influence of perceived risk on information search from non-financial sources was higher for HRSP ( $\beta$ =0.19, p=0.01) than for LRSP ( $\beta$ =0.10, p=0.05) ( $\Delta$ c²=24.76,  $\Delta$ d.f.=1, p<0.01). Hence, H4 was supported in the study.

Of the control variables, we found that gender was more negatively related to information search from non-financial sources for HRSP ( $\beta$ =-0.18, p=0.03) than for LRSP ( $\beta$ =-0.10, p=0.05) ( $\Delta$ c<sup>2</sup>=18.33,  $\Delta$ d.f.=1, p<0.01).

Table 4

Estimated standardized coefficients (baseline model and hypothesized effects)

		Moderating effects			
	Baseline model effects	Object Low	tive risk High		
Relationship	β(SE) t-Value	$\beta(SE)$ t-Value	β(SE) t-Value		
Direct effects					
Perceived risk  → product expectations	-0.19(0.02) 5.29°	-0 26/0 03\ -5 08	-0.07(0.04) -0.97		
Perceived risk			-		
→ product satisfaction Perceived risk	-0.20(0.02) -4.79 <sup>a</sup>	-0.24(0.03) -4.88°	0.03(0.05) 0.41		
→ info search from financial sources	-0.02(0.03) -0.36	-0.08(0.05) -1.57	-0.08(0.05) -1.57 0.09(0.06) 1.32		
Perceived risk  → info search from non-financial sources	0.23(0.02) 6.02 <sup>a</sup>	0.10(0.02) 1.93	0.19(0.04) 2.44 <sup>b</sup>		
Product expectations  → info search from financial sources	-0.02(0.06) -0.36	0.01(0.08) 0.01	-0.06(0.13) -0.83		
Product expectations					
→ product satisfaction Product expectations	0.52(0.05) 9.92 <sup>a</sup>	0.51(0.06) 8.06ª	0.54(0.13) 5.47 <sup>a</sup>		
→ info search from non-financial sources	0.05(0.03) 1.21	0.05(0.03) 1.03	0.07(0.08) 0.92		
Info search from financial sources  → product satisfaction	0.04(0.02) 1.06	-0.01(0.03) -0.22	0.13(0.06) 1.65		
Info search from non-financial sources  → product satisfaction	0.01(0.06) 0.21	-0.01(0.08) -0.13	-0 04(0 12) -0 41		
Controls	0.0 . (0.00) 0.2 .	0.0.(0.00) 0.10	0.0 .(0.1.2)		
Income					
→ product expectations Income	0.01(0.03) 0.27	0.03(0.04) 0.52	0.03(0.04) 0.32		
→ info search from financial sources	0.01(0.04) 0.15	0.03(0.06) 0.47	-0.01(0.06) -0.19		
Income  → info search from non-financial sources	-0.01(0.02) -0.13	0.05(0.02) 0.98	-0.15(0.04) 1.77		
Income  → product satisfaction	-0.01(0.03) -0.12	-0.06(0.03) -1.29	0 11(0 05) 1 32		
Education					
→ product expectations Education	0.01(0.02) 0.25	0.01(0.03) 0.14	-0.02(0.04) -0.23		
→ info search from financial sources Education	0.08(0.03) 2.18 <sup>b</sup>	0.08(0.05) 1.60	0.08(0.06) 1.20		
→ info search from non-financial sources	0.10(0.02) 2.58 <sup>a</sup>	0.06(0.02) 1.24	0.16(0.04) 2.11 <sup>b</sup>		
Education  → product satisfaction	-0.01(0.02) -0.22	0.04(0.03) 0.94	-0.02(0.05) -0.31		
Age  → product expectations	0.10(0.01) 2.62 <sup>a</sup>	0.12(0.01) 2.62ª	-0.05(0.01) -0.74		
Age		, ,			
→ info search from financial sources Age	-0.04(0.01) -0.99	0.01(0.01) 0.03	-0.05(0.01) -0.70		
→ info search from non-financial sources Age	0.08(0.01) 1.96 <sup>b</sup>	0.05(0.01) 0.96	0.09(0.01) 1.12		
→ product satisfaction	-0.07(0.01) -2.00 <sup>b</sup>	-0.04(0.01) -0.79	-0.07(0.01) -0.91		
Gender  → product expectations	-0.01(0.08) -0.02	0.02(0.11) 0.42	-0.06(0.15) -0.75		
Gender → info search from financial sources	-0.13(0.13) -3.35°		-0.18(0.25) -2.38 <sup>b</sup>		
Gender					
→ info search from non-financial sources Gender	-0.12(0.06) -2.90 <sup>a</sup>	-0.10(0.06) -1.99	°-0.18(0.16) -2.20 <sup>b</sup>		
→ product satisfaction	-0.05(0.08) -1.29	-0.06(0.10) -1.31	0.08(0.20) 0.99		

#### Notes

Model fit (baseline model effects):  $\chi^2$ =571.62 (d.f.=122, p<0.01); CFI=0.91; NFI=0.89; RMSEA=0.064). aSignificant on the 1% level; bsignificant on the 5% level. R²(info search from financial sources)=0.03; R²(product expectations)=0.04; R²(info search from non-financial sources)=0.11; R²(satisfaction)=0.34. Coefficients in bold are statistically different (p<0.05); only differences in which at least one coefficient was significant were inspected.

#### **Discussion**

This study provides the first attempt to model relationships between subjective and objective risk and financial consumers' expectations, information search, and product satisfaction. Consumer policies aimed at improving consumers' financial behavior have become even more important after the financial crisis (Winterich and Nenkov 2015). Thus, while financial education programs have been established in many countries (Brennan and Coppack 2008), a great challenge for financial service practitioners is to simultaneously provide financial risk information and motivating consumers to pursue it. The ability of professional service providers to effectively influence customer financial risk behavior is also critical from an organizational resource perspective (Grubman et al. 2011), as unsuccessful attempts to advise customers can drain time, energy, and emotions as well as financial resources (Seiders et al. 2015). In these respects, this study provides several suggestions.

This study demonstrates that the relationship between perceived risk and product expectations is moderated by objective risk such that this relationship is more negative for LRSP than for HRSP. We also found that he negative influence of perceived risk on product satisfaction was significantly higher for LRSP than for HRSP. These results have several implications for financial service managers aiming at improving financial consumers' product expectations. As a direct implication financial service managers should consider investing additional resources in developing risk information for LRSP, which guides consumers towards their level of perceived risk. From a more general point of view the results of this study strongly suggest that managing and investigating customer-seller relationships should not be limited to focusing on the influence of perceived risk on financial behavioral and outcome variables, as is typically modelled, but should also take into account the objective risk assigned to the products studied. The present study stresses this need by showing how objective risk, over which the individual service provider has no direct control (i.e., the level of objective risk is most often settled by financial authorities), may influence how perceived risk influences consumer expectations and satisfaction. Overall, the potentially complex interplay between subjective and objective risk is not well understood. In this research, we demonstrate how the understanding of consumer financial behavior can be enhanced by the inclusion of the two risk types. Future research may wish to expand the proposed conceptual model to include more behavioral variables such as product involvement, perceived product complexity, among others.

We are aware of the limitations of our study. Respondents were approached via online surveys; they may behave differently when engaging in specific relationship settings. Thus, although a survey is generally accepted as a means of data collection there is little control over the contextual setting and over the response behavior of consumers. Also, this study used perceptive measures for the investigated moderator, which could be threatened by biased responses. Future research could examine this issue by manipulating, for instance, social norms in an experimental setting. Our sample groups deviated from the population on several criteria meaning that the results of this study could not be generalized to the population. Instead, the study samples should be seen as reflecting those consumers who have used LRSP or HRSP and the results should be treated as an attempt to model and understand the behavior of these financial consumer groups.

Moreover, the detected effects may not generalize to all contexts. Indeed, the influence of perceived risk on the endogenous variable may vary according to market and/or product complexity. This is because complexity may increase consumer perceived risk (Zak and Knack 2001). However, all the constructs examined in this study are generalizable across financial service businesses, and it is likely that similar effects would be found irrespective of the particular business being investigated. For example, the split into LRSP and HRSP relates to the financial service industry in general and not to a specific type of business. Moreover, the consistency of the findings with the theoretical model suggests that the findings will be similar in other financial services contexts (Guo et al. 2013). Indeed, the theoretical underpinnings regarding the interplay between the studied variables may also provide a research agenda for other industries, such as the food market, which also can be characterized by perceived market complexity and demand for trust (e.g., Hansen and Thomsen 2013).

#### **Appendix**

Items used to measure the latent constructs in the study

#### Expectations

- X1 I expected to be satisfied with the product<sup>a</sup>
- X2 I expected that this product would make me happy<sup>a</sup>
- X3 I expected to do the right thing when purchasing this product<sup>a</sup>

#### Info from financial sources

- X4 Searched for info from a specific financial service provider<sup>b</sup>
- X5 Searched for financial products<sup>b</sup>
- X6 Searched for financial prices across financial service providers<sup>b</sup>

#### Info from non-financial sources

- X7 Acquired information from TV and/or radio programs<sup>b</sup>
- X8 Acquired information from on- or offline articles<sup>b</sup>
- X9 Acquired information from public information sources<sup>b</sup>
- X10 Searched for information in newspapers or magazines<sup>b</sup>

#### Product satisfaction

- X11 I'm satisfied with the product when compared with similar products<sup>c</sup>
- X12 I'm not satisfied with the product#c
- X13 The product fulfills my needs and wants<sup>c</sup>
- X14 The product was not a good choice#c

#### Notes

# Item reverse coded.

a, cltem was measured on a 7-point Likert scale ranging from 1(=disagree totally) to 7=(agree totally). bltem was measured on a 7-point scale ranging from 1(=to a very low degree) to 7=(to a very high degree).

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# Which screens to share in stores with which customers?

#### **Abstract**

Following retailers' attempts to tangle the digital and physical realm together, digital devices have been provided to shop assistants to support them in their selling process. Accordingly, they are expected to use their screens while interacting with their clients. The objective of this paper is to identify the most suitable screens to share with customers during a service interaction. It introduces the concept of "perceived sharing affordance" into the marketing literature by identifying the characteristics of screen-devices perceived by customers as enabling their sharing. The findings show distinct devices categories associated with the customers' screen-sharing motives following the perception of what they "afford" to do in a sharing process.

Key words: Phygital, shop-assistant, joint-shopping, screen-sharing, selling-process

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#### Introduction and objectives

Shopping together on the same screen has become quite a common practice. Already in 2007, 92% of people in Canada spent between 1.5 and 3 hours a week with their spouse on the Internet and between 1.5 and 4.6 hours with their children (Kennedy et Wellman, 2007). In France, 81.25% of French adolescents say they have already made online purchases with their parents (Durand-Megret, 2014). The phenomenon of shopping together on the same screen, that can occur with different persons (family members, friends and shop assistants) and in different places (at home, in public or commercial spaces) can be explained by the daily time spent on the Internet (Kennedy and Wellman 2007).

Figure 1: Shopping screen-sharing activities with a relative / with a shop assistant







(Images: Thinkstock)

Concerning the commercial places, if retailers have made large investments in stores to provide digital screens for customers' self-service use (Filser 2001), they also supply digital devices to their shop assistants in order to support them in their service process with customers. Whereas some French retailing brands have begun to encourage their shop assistants to go online with their clients when interacting with them, U.S. Nordstrom fashion retailer has already promoted 'co-shopping' practices where customers and shop assistants "shop together" online on the same screen. However, if numerous research have identified consumers' motivations to shop on-line (Childers et al. 2001), very few research have been conducted on their motivations to go on a screen with a shop assistant (Vanheems, 2013; authors, 2017a,b,c,d, 2018a).

The objective of this paper is to identify the best ways for shop assistant to share a screen with their customers according to their shopping motivations. More precisely, it aims at identifying the most suitable screens to be shared and the best way to do it. The concept of "Perceived Affordance" gives a first framework to analyze the most adapted screens for interaction. The implementation of this concept, originally from the field of Ecological Psychology (Gibson, 1979) and adapted to Human Computer Interaction (Norman, 1988) is rooted in the assumption that the willingness of a customer to go with a shop assistant on a screen will depend on his perceived features of the screens and on their coherence with his screen-sharing motivations.

This paper is structured as followed. A literature review about the reasons why customers shop together is firstly reported. After being presented, the concept of "Affordance" is used as a framework to identify the perceived features of the devices and the way they fit customer's motivations. The methodology and the main results are then presented. Finally, implications and contributions are developed.

#### Literature review

#### Why do people shop together?

Why do People shop together on the same screen? As no research has been conducted on the motivations to do such a common activity, a preliminary literature review is needed to recall firstly the reasons why people shop and secondly why they do it with another person on their sides. Some decades ago, Tauber (1972) conducted a qualitative research to understand the reasons why people shop. He showed that getting a product was not the only motivation to go to a store. On

the contrary, different motivations he classified into personal and social motivations may explain such a behavior. Twenty years later, Babin, Darden and Griffin (1994) showed that shopping can be motivated by utilitarian and hedonic factors.

As a particular case of shopping, shopping with someone else in a store can be motivated by utilitarian or emotional motives. Motivations of shopping together may vary across context and according to the identity of the partner (Kiecker and Hartman, 1994, Borges et al., 2010) and his personal/relational characteristics (e.g., gender, relation length) (Beatty and Talpade, 1994; Furse et al.,1984; Wagner, 2007). In the family context, Lim and Beatty (2011) showed that the decision of a couple to shop together can be motivated by hedonic reasons (expected shopping pleasure) as well as by utilitarian reasons (purchase relevance, financial risk). Concerning perceived risk, shopping together is "a manner to cope with anxiety and stress in a meaningful decision process" (Hartman and Kiecker, 1991). Moreover, companion shoppers may "perform many duties traditionally performed by the retail salesperson" (Lindsey-Mullikin, and Munger' 2011, p.7).

In terms of consequences, shopping with another person in physical stores has been recognized as having mainly a positive impact on purchases in terms of both volume and sales (Mangleburg, Doney and Bristol 2004; Sommer, Wynes and Brinkley 1992). Nonetheless, Borges, Chebat, and Babin (2010) suggested that the positive valence of such a shopping experience depends both on the motivation of the consumer to shop jointly and on the identity of the shopping companion.

#### Why do people shop together on the same screen?

This literature review, about the reasons why people shop together in physical world, confers a first framework to understand what can motivate people to shop together in the digital world, i.e. around the same screen. Such screen-sharing shopping activity can be expected to be driven by the same types of motivations (hedonic, utilitarian). Furthermore, these motivations are supposed to vary according to the identity of the partners and according to the customer's shopping orientations (Gehrt and Carter, 1992). In a previous research (authors, 2017a,b,c,d, 2018a), three types of motivations to share a screen have been identified: utilitarian, social and individual motivations.

The utilitarian task-related dimension stems from a need for functional assistance in order to succeed at the shopping task in the most efficient manner. The social activity-related component on the other hand expresses an intrinsic motive for social bonding and togetherness. Regarding the individual control-related third motives, it stresses a more individualist need, either active (i.e.: the willingness to have an impact on the shopping process) or reactive (i.e., a reaction to hinder a potential loss of control in the process). These motivations are conform with McClelland (1985) motivational psychology theory called "the three big needs theory", claiming that every human behavior may be addressed within three basic needs described as "achievement, affiliation and power" (Sokolowski et al., 2000). These dimensions which may be described also as transactional, relational and personal action/reaction-oriented in a shopping perspective, continuously evolve and change in their intensities according to past experience and perceived contextual cues (i.e., which can be sorted according to an adapted P.O.S. interaction paradigm<sup>1</sup>).

#### From the motivations to surf jointly to the perceived "sharing affordance" of the screen

When involved in a screen-sharing activity for shopping, customers are living a "hybrid interaction" as they interact in the physical world (sharing a physical place in which they are close to each other) as well as in the virtual one (sharing a digital place where they surf together). Such an "hybrid interaction" creates complexity and involves not only personal, emotional, interactional, spatial dimensions but also technological ones. Screen-sharing activity may be considered therefore as "new hybrid interactions combining Human-Human Interactions with Humans-Computer Interactions" (authors 2017b). The screen is the artefact that gives rise to this new hybrid interactions that can take place via different tools (display screen, screen table, service kiosk, personal computer, laptops, tablets, smartphones, etc.). As the characteristics of such tools can determine motivations to interact together, the theoretical concept of "Affordance" offers a first framework to analyze their ability to allow such a hybrid interaction. The theory of affordance was first developed by Gibson (1979) as

<sup>1</sup> The Partner, Object, Situation perception of the actor (authors, 2017a, 2017c, 2017d, 2018a)	is adapted from Punj and Steward (1983)
Person, Object, Situation (P.O.S) interaction framework	

an ecologic psychological theory implying "the complementarity of the animal and the environment" (p. 127) in terms of what the natural environment offers to the animal survival actions. In 1988, Donald Norman introduced the concept of affordance into the Human-Computer-Interaction (HCI) field to understand the affordance of a medium. Its principle is based on the perception of the "action possibilities" of a medium by an actor. It assumes that artefacts need to be assessed in terms of what they enable to do rather than only according to their technical physical or even digital components (e.g. see Wells, 2002 extensive review on affordance and computation). The affordance theory is still applied today to evaluate the fit of the "technology" as perceived by the actors. For instance, ElAmri (2015) proposed a classification of connected hybrid objects on the basis of the affordance theory, sorting them according to consumers' perception of what they afford to do. In our research, screens are evaluated according to their perceived ability to allow a share used, that is to say according to their perceived "sharing affordance". In the lineage of this research, the aim in this paper is to evaluate the sharing affordance of screens when they are used with shop assistants in stores:

Are specific screens perceived as more adapted to use together with consumers in stores? Does this perception vary according to their motivations to share a screen?

#### Method

The objective of this research is to identify the most suitable screens to share with customers during a service interaction and whether they are linked to the motivations of customers to share a screen with a shop assistant.

#### Sampling and interviews procedure

Since it is the first research exploring the consumers' perceptions of the sharing devices that can be used in stores, an exploratory qualitative approach was chosen. Twenty French customers aged from 16 to 79 were interviewed through semi-structured interviews. Our sampling choice (See Appendix 1) based on diversification (Miles and Huberman 1994) was intended to achieve a theoretical saturation threshold (Glaser and Strauss 1967). External diversification was first achieved by interviewing men and women from distinct socio-economic levels and family situations. A process of internal diversification was then performed according to the "purposeful sampling" design (Palinkas et al. 2015) for the identification and selection of individuals knowledgeable about or experienced with the phenomenon of interest. Based on the need to yield cases that are "information-rich" (Patton 2002), it focused on respondents living with a partner and/ or with grown-up children, who have experienced more numerous situations of screen-sharing interactions in both private and commercial spheres. They were first required to describe a recent shopping experience in store in order to understand their shopping orientations. Then, using a funnel methodology, they were asked about their shopping digital habits, before, during or after visiting a "bricks and mortar" store. Finally, they were required to remember firstly an experience of surfing on the Internet with friends or family members and secondly with shop assistants in stores (See Appendix 2: Interviews guide).

#### **Recalled and Simulated Screen-Sharing Situations**

However, at the time of this research (2015), as all respondents succeed to recall a sharing screen interaction with relatives or friends, only slightly more than half of the customers remembered screen-sharing interactions with shop assistants. A scenario-based procedure was therefore adopted for interviewees who did not remember such interactions with shop assistants. These respondents were asked to project themselves into "a screen-sharing scenario" with a shop assistant with whom they remembered having a verbal interaction during their visit in the store. This request for projection was necessary to approach behaviors not yet experienced by all or not fully consciously. Luo's (2005) research drawing on Dahl, Manchanda and Argo's (2001) study has suggested that "the effects of imagining a social presence on purchase behavior can be similar to the effects of an actual presence" (Luo, 2005, p.290). Moreover, such "scenario" methodologies have been applied in research on couples' joint-shopping motivations in stores (e.g., Lim and Beatty 2011) and shoppers' attitudes when faced with retail technology (Inman and Nikolova 2017). Bateson and Hui (1992) also supported the use of these simulation techniques, citing them as having advantages over retrospective memory-based ones and providing ecologically valid tests.

#### The content analysis procedure

A content analysis was carried out according to the methodological recommendations of Evrard et al., (2009)

and Bardin (1977). The interviews were recorded and fully transcribed, and a content analysis was carried out, according to scholars' methodological recommendations (Andreani and Cochon; Harwood and Garry 2003; Malhotra 2007). A pre-analysis was performed consisting in selecting the corpus to be analyzed (interviews) and reading it meticulously (Bardin 1977). An encoding step was then carried out, choosing and defining the presence of sequences of phrases having complete meanings by themselves as "units of meaning". A corpus categorization, organization and classification process was performed when a set of significant units of record (the codes) were grouped by analogy of meaning and sorting based on the criteria of the entire encoded material. Finally, a process of reorganization of classifications and interpretation by an inferential process yielded an open model. While the horizontal analysis (between respondents) of the interviews highlighted the different features of the screen-devices, the vertical analysis (within respondents) enabled to sort distinct categories of devices and to determine how they are specifically perceived in a screen-sharing perspective. The interviews grid (horizontal analysis) allowed to examine the relation between the perceived "sharing affordance" of each kind of devices and the customers' screen-sharing main motivations.

#### **Findings**

The findings first identify the main features of screen-devices perceived as impacting the motivations of customers to use them jointly with a shop assistant. Then, a typology of digital devices shared between shop assistants and customers in stores is proposed, according to the different screen-sharing motivations of the customers.

#### Are screens suitable for joint shopping?

Concerning the screen devices, they were described in terms of what they allow (or not) to perform jointly. Two dimensions have been identified: the visibility convenience of the screen and its belonging.

#### 1. The visibility convenience of the screen

The first dimension that has emerged from the content analysis is related to the visibility convenience of the screen. Two visual themes appear: the size of the screen and its angle.

#### The screen size

The size of a screen illustrates the actors' perception whether a specific screen "affords" more than one person to look at it simultaneously- "Anyway smartphones, it's a screen made for one person" (M., 18). Consequently, customers perceive instantly whether it may be "pleasant" to share a screen, first according to its size - "Since on smartphones, it's a small screen ..., on the computer it's still more (...) pleasant" (M., 18). The sharing affordance of small-sized screens has been described as "not easy"-"I was next to him (to the shop assistant), so it's not easy because anyway if it's in front of the screen, you're still a little bit aside relatively to the screen because the screen is not so big" (C., 60). However, the question whether the sharing is "convenient" or not also depends of the number of persons crowded around the same screen - "It's not convenient to be 7 people in front of a small screen" (M., 18).

The perceived size of the screen is in fact related to visibility issues rather than only physical position convenience - "It is above all that they see better 'so, visually, it is preferable" (L., 16). Logically, the size of a screen needs to afford its sharing - "To watch on a big screen, it would be nice, you may have an image that is better than that on a small mobile screen" (D., 55). The visual aspect appears as the first condition required of screen-sharing practices and directly related to its affordance to share it with a shop assistant.

#### The screen angle

A second visual theme that came into light is the possibility to move the screen angle to enable a better visibility - "He had his computer screen turned towards us and as he went along, he added other parts of the table, we could see everything he added" (S., 27). The gesture of changing the orientation of a screen to enable a better visibility to the customers is perceived as an invitation to share it and to be a part of the process occurring at the screen - "Well, with open

screens at Darty (a consumer electronics retailing brand), well we are with them; what is good is that they turn the screen, you see what they type (...); he was looking at the same time, and I saw everything that was displayed" (O., 38).

A screen which can be turned easily is viewed by customers as a tool which c affords a shared use. Moreover, it seems also easier to turn a screen toward the partner with a mobile device than a fixed one - "I'll take the laptop for her, I'll tell her "look, what do you think" (T., 48). In this way, a more effective and cheerful oral and visual communication can then be achieved. The effect of a fixed screen, on the contrary, seems to hinder the communication process between the dyad. "The (fixed) computer, one cannot take it at hand to tell the other "look..."; the computer is fixed, people are fixed facing the computer and that's what bothers me "(S.,27). The possibility to turn the screen and variate its angle is perceived therefore as a complementary visual affordance allowing a more pleasant shared use of the device.

#### 2. The belonging of the screen-device

The second dimension is surprisingly not a technical feature of the device. It is related to the belonging perception of the screen-device. The content analysis highlighted that the possibility to use a digital device is associated to its perceived belonging -"It is the one to who the computer belongs that generally look at it..." (M., 18) – There is a social taboo that prohibits any active operation at a screen that is perceived as the personal possession of another person - "Honestly I will not, it's his, his computer (of the shop assistant), I will not touch it" (PJ, 78). When a screen is considered to belong personally to another person, it usually doesn't "afford" to operate it jointly. Nonetheless, this interesting social norm seems to be moderated by the strength of the link between the partners. When strong-ties partners may feel socially comfortable to touch the device of each other's, that is not the case of weak-ties partners (strangers, acquaintances or shop assistants). In such cases, the partner feels that touching physically the personal device of his occasional screen-sharing partner is far outside the accepted social norms of weak-ties partners' interactions. It is the reason why customers are not poised to actively operate a device perceived as personally belonging to the shop assistant. This perception of device belonging affects therefore the "screen-sharing affordance" evaluation of the customer.

#### When screens are not able to satisfy the same motivations ...

Distinct screens were perceived differently according to their ability to satisfy various sharing motivations. The screen "sharing affordance" seems to be linked with the motivations of the respondent to share the same screen. Actually, we can identify different types of screen-devices that are perceived as more adapted for functional assistance ("Display screen-devices"), for social interactions ("Interaction screen-devices") or for personal control-related use ("Individual screen-devices").

#### 1. The "Display screen-device"

Some devices were perceived as better adapted to functional assistance. The devices we call "Display screen-device" are characterized by a "good visual quality" for both actors (a larger dyadic<sup>2</sup> size and an opened angle) and conceived as belonging to the partner. Sometime, the very shop assistants' act of turning the screen angle to enable a better visibility to the customers is perceived as fulfilling the utilitarian motives of the consumers – "What is good is that they turn the screen, you see what they type (...)" (O., 38). Therefore, such display screen "affords" first the completion of utilitarian task-related motives/ achievement needs of the consumer – "If the screen (of the shop assistant), if I can see things easily or not. That will certainly be something that will make me join or go away and look elsewhere" (P., 55)

#### 2. The "Interaction screen-devices"

Another type of devices that we name "Interaction screen-device" better "afford" mutual activity at them. These devices are constituted by a good visual quality for both interlocutors (a larger "dyadic" size and an opened angle) but perceived as a public or communal belonging (not the personal belonging of any of the partners). For instance, public interactive kiosks in stores with a touch screen enabling mutual activity are classified in those devices category. With this type of devices, the feeling of togetherness and affiliation - "Well..., we are with them" (O., 38) through cooperation - "If it

<sup>&</sup>lt;sup>2</sup> The term "dyadic size" is used here in order to define the size perception of the "visual sharing affordance" of the screen to two partners.

is someone that is like you or looking for the same thing as you, it can be a form of cooperation and can be nice"(M., 18) is reinforced during the shared activity. This sensation of a shared process is the result of the possibility to have a real exchange when also operating the device mutually and actively - "It can be a moment of exchange... from a quality point of view, it can be nice" (D., 55). Consequently, social activity-related motives to share a screen - "I like it a lot because I... I like to feel part of it" (C., 60) seems to be spurred by this type of devices.

#### 3. The "Individual screen-devices"

These screen-devices have been designated as "Individual screen-devices" as they enable only a unilateral control of the process. It can be symbolized by the customer's smartphone when he is the one leading the surfing process - "If I do not really find an article, well, I can show it to her on my phone" (L., 17). Consumers striving to preserve their autonomy during a screen-sharing exchange with a shop assistant prefer to use their own screen - "I would prefer to be on my screen "(M., 18). Their need of active control during the screen-sharing process -"It's directly the image of the product on my smartphone"(S., 27), restricts any possibilities to enlarge the sharing with the shop assistant beyond a quick glance at the screen - "If I'm surfing with my phone, uh, I can go and show something to someone but we're not surfing both" (S., 27). Here, the use of individual screen devices, stemming from active individual control-related motives may lead only to successive or parallel visual sharing practices between the customer and the shop assistant - "So he can go search directly on his computer, uh ... whether he has it or not and in which place..., so I think it helps them quite a lot" (S., 27).

Nevertheless, "Individual screen-devices" may be also the partner's personal device. In the commercial sphere, the shop assistant's personal mobile device or his/her work computer at the assistance point are additional examples of these kinds of devices. In this case, the sharing affordance of individual screen devices may satisfy reactive individual motives associated with the need to react to a perceived loss of control/power - "I place myself next to him and I look at the screen" (M.,63). This need of visual control also determines the physical position of the customer behind the shop assistant trying to monitor the process s/he is doing at the screen - "She was in front of the screen and I looked like that from behind, uh" (P.,79). In sum, when the shop assistant uses an "individual screen-device" in a sharing process, it stimulates the fulfillment of reactive individual motives associated with the need of reactive control of the consumer.

The table below summarizes the association of the motives to share a screen and the three distinct types of devices according to their visual and social sharing affordance

**Table 1**The association of the screen-sharing motives and the types of devices according to their sharing affordance

Type of screen-device/ sharing affordance	Motives to share a	Visual sharir	ng affordance	Social sharing affordance	
parameters	screen	Size of the screen	Orientation of the screen	Belonging of the screen	
Display screen-device	Utilitarian task- related	Dyadic	Semi-Opened	Shop assistant's device	
Interaction screen-device	Social activity- related	Dyadic	Opened	Communal device	
Individual screen-devices	Individual control- related	Small	Semi Closed	Customer's/ Shop assistant's Personal device	

.....

#### **Discussion**

The results of this research show that the different screens may be more or less appropriate to fulfill the distinct motives to share a screen. Gaver (1992) claims that "Social activities are situated in their environment: if collaboration depends on complex, subtle social relations, it also depends on a medium in which these relations can work". In our case, the medium is represented by the perceived "sharing affordance" of the screen device. Such an affordance naturally depends on the situation. For instance, the nature of the links between the surfing partners3 may have an impact on this sharing affordance. As viewed earlier, screen-sharing situation with strong-ties partners (Kiecker and Hartman 1994) appears naturally to moderate the effect of belonging. People feel usually more convenient to operate the device of a more "intimate partner" than the one of a stranger or a "weak ties" partner. Thus, it can be expected that the screen size as well as the belonging effect have less influence in screen-sharing practices between close partners than in a commercial context between shop assistants and customers. In the commercial sphere, the impact also depends on the customer's perceived professional roles of the shop representatives. This role conception might depend on the consumer's cognitive script and accepted social norms of interaction in a commercial context (Goudarzi and Eiglier 2006). Notwithstanding, it may also vary according to the motivational disposition of the customer (i.e., his shopping orientation) and cultural factors of proximity (Hall, 1967). However, the fit of the device to the first dominant motive to share a screen (utilitarian, social, individual) will also be an important factor affecting the decision and the manner to share a screen. Actually, the perceived "sharing affordance" of the device may evolve and change with the intensity of the different motives to share a screen, shaping also the decision to pursue the joint shopping activity at this specific screen-device, or to continue it alone or together at a same or separate screens.

The theoretical implications of this research lie in the applications of the affordance theory to screen-sharing hybrid interactions. It highlights first the dimensions generating the perception of the sharing affordance of a digital tool by customers. Interestingly, not only technical hardware features (size and orientation visual features) were revealed, but also social dimension (the belonging perception of the device). Then, based on these features, a classification of three types of devices used in stores by customers and shop assistances (Display, Interaction, Individual) was proposed on the basis that they enable (or not) different "possible actions" (Norman, 1988) related to the consumers' screen-sharing motives. Since the customer anticipates distinct "possible actions" while sharing these different categories of devices, this new concept of perceived "sharing affordance" can be accounted as a theoretical contribution to Marketing research on subjects related to Marketing Collaborative Practices and Human Computer Interactions.

#### Conclusion

Nowadays, retailers are trying to provide customers a more engaging and coherent shopping journey, resulting in an enhanced satisfaction. Nonetheless, when they invested in self-service devices intended for customers, they did not question the fundamentals. Why a customer will be willing to use the self-service screens of the store (Glérant-Glikson, and Feenstra 2017; Procacci and Pellicelli 2019), when he has at least one personal screen at his immediate disposition<sup>4</sup>? Similarly, when providing efficient digital tools to their sales' staffs enabling to check stock availabilities on line or to show brands characteristics and compare models online, they didn't think whether and how these new screens can be integrated smoothly in the face-to-face verbal interaction of customers and shop assistants.

Only in the last years, shop assistants' screens have been clearly "opened" to the customers' sight on the premise

<sup>&</sup>lt;sup>3</sup> Even if a screen-sharing process may occur between a shop assistant and a customer knowing each other's for years

<sup>&</sup>lt;sup>4</sup> In 2014, already 42% of consumers were using their smartphone to conduct a research online while being in stores - https://www.thinkwithgoogle.com/consumer-insights/how-digital-connects-shoppers-to-local-stores/ Moreover, a study from 2017 claims that nearly 60% of shoppers look up product information and prices while using their mobile phones in stores - https://www.retaildive.com/news/how-shoppers-use-their-smartphones-in-stores/444147/

that customers will be more satisfied when looking with the shop assistants at the screen. Nonetheless, some recent research has shown that the introduction of technology during interaction with service encounters may constitute either a barrier or a benefit (Giebelhausen, et al., 2014). Subsequently, this study has been conducted to analyze the features of the technology involved in digital devices present in stores and the motives of customers to share these devices with front line employees. In fact, the choice of a device in the store is rarely chosen by shop assistants in a customer centric perspective. The shop assistant usually imposes the use of a specific screen, even if its characteristics is not congruent with the willingness of the customer. That issue can create dissatisfaction especially when the screen is perceived as not appropriate to the situation, that is to say when it cannot "afford" the customer's dominant sharing motives.

This study aimed at identifying the most suitable screens to be shared during a consumer-shop assistant in- store interaction has highlighted three types of screens (Display, Interaction, Individual) according to their visual (size and orientation) and social (belonging) perceived affordance. Interestingly, these types of screens surfaced as associated with different motivations to share a screen. These results show the importance of identifying the main screen-sharing motivation of the customer in order to choose a compatible screen to share.

Understanding customers' perception of screens according to "what they afford to do" on it constitutes the main managerial contribution of this paper. Aggregating screen-sharing practices within the trend of adaptive selling (Koel 2015; Roman and Iacobucci 2010; Weitz, Sujan, and Sujan, 1986), shop assistants could be trained to discern the main motive inducing a customer to share a screen and choose a compatible screen-device, having a corresponding sharing affordance. In this manner, anticipated positive instrumental, social or individual values expected from this joint activity could be fulfilled (authors, 2018b). Nonetheless, one of the limitations of this study remains its level of analysis, focusing only on the customer's perspective without taking into consideration the shop assistants' appetence to share a screen with a customer and its perception of the sharing affordance of the different digital tools used in-store. Even if it seems like a complex task, considering a dyad perspective of screen-devices sharing affordance in an interdependence perspective<sup>5</sup> might enable to understand the crossing of two similar/ opposite or complementary partner's affordance of the same device. Furthermore, this paper has only stressed the association between screen-devices perceived sharing affordance and motives to share a screen. As a matter of fact, upcoming researches might also focus at understanding the congruence of screen-sharing motives, screen-sharing affordance, screen-sharing modes and benefits. Indeed, the impact of this phygital screen-sharing practice on customers' perceived values and satisfaction constitute an intriguing issue with important theoretical and managerial potential contributions. While the scope of this study stands at the private customers in retailing stores, its perspective might be similarly enlarged to B2B and applied to business customers in future research.

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<sup>5</sup> I.e. when one person's motives and perceived affordance of a device, affects the motives and device perceived affordance of the partne
(e.g., Cook and Kenny 2005)

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### Appendix 1: Interviews sampling

	Age	Birth place	Home town	Profession	Living situation	Gender
R1	48	Togo- Africa	Paris	Psychologist	Married + children	F
R2	18	Surenne	La Rochelle	Student	Bachelor, living with his parents	М
R3	60	Surenne	Anthony	Architect	Married + children	М
R4	39	La Rochelle	Bois Colombe (92)	Journalist	Divorced + children	F
R5	38	Joinville Manche	Bois Colombe (92)	Journalist	Divorced	М
R6	60	St Jean d'Angely	La Rochelle	Ludothecary	Married + children	F
R7	23	Luxembourg	Saint Cloud(92)	Student	Bachelor - living alone	М
R8	55	Paris	La Rochelle	Producer	Married + children	М
R9	55	Luxembourg	Paris	Cartoonist	Divorced	F
R10	60	Strasbourg	Paris	Teacher	Married	F
R11	34	Strasbourg	Paris	Journalist	Married + children	М
R12	27	Nice	Messe	Speech Therapist	Bachelor - living alone	F
R13	56	Paris	Paris	Accountant	Married + children	М
R14	48	Alger Algeria	Neuilly sur Seine	Surgeon	Living with his partner	М
R15	56	Marseille	Courbevoie	Building keeper	Divorced + children	М
R16	16	Paris	Palaiseau	School girl	Bachelor, living with his parents	F
R17	78	Reaux - Charente Maritime	La Rochelle	Retired	Married + children	М
R18	79	Déllys - Algeria	La Rochelle	Retired	Married + children	F
R19	59	Casablanca Marroco	Issy-les-Moulineaux	Accountant assistant	Married + children	F
R20	39	Strasbourg	Issy-les-Moulineaux.	Communication / Education	Married + children	М

	<u>Men</u>	Women	<u>Bachelor</u>	Married + children	<u>Divorced + children</u>	Divorced	Retired
	11	9	4	5	5	4	2
<u>Percentage</u>	55%	45%	20%	25%	25%	20%	10%

### JOURNAL OF MARKETING TRENDS - IN-STORE CUSTOMER SCREENS

### Appendix 2: Interviews sampling

- 1. Presentation and Method
- 2. Part One Open Interview Non-directive and narrative (Store purchase experience)
- 3. Part Two Semi-structured
- Theme A: Preliminary information search before purchase / consumption
- Theme B: The seller in store
- Theme C: The use of a digital device in store (From narrative to projective)
- Theme D: Stories of shopping screen sharing with friends and family members. (From narrative to projective)
- Theme E: Stories of shopping screen sharing with shop assistants at the point of sale (From narrative to projective)
- 4. Remarks, conclusion and thanks

# Doing Good with Shopping – A Systematic Review of the Effects of Cause-related Marketing on Purchase Intention

#### Abstract

Commitment to social and ecological responsibility is becoming increasingly relevant for companies, as more and more customers are demanding companies to act in a more sustainable and conscious manner (Bockman et al., 2009; Schmeltz, 2012). Cause-related Marketing, as a strategy of showing socially responsible practices is both an academic and a managerial marketing issue. One of the older questions in the debate on Cause-related Marketing is whether it is profitable for organisations to pay attention to social requirements as factors that cause purchasing intention. Today, taking social aspects into account is an important trigger for empirical research in Cause-related Marketing. Understanding whether and which aspects of Cause-related Marketing make a difference for purchase intention have important implications for marketing managers and researchers. However, the answer to this question has not yet been found, as the fragmented literature shows.

This apparent ambiguity invites a systematic review of the literature that can clarify the de-bate whether Causerelated Marketing has effects on purchase intention and allow conclusions to be drawn concerning which kind of impact it has.

Through intensive literature research, a total of 61 papers published between 1992 and 2018 were identified and then classified according to the definition of Cause-related Marketing of Varadarajan & Menon (1988) based on a framework developed by the author. The papers were then analyzed descriptively.

The results show that interest in this area is growing and that year after year a wider variety of topics and methods are emerging. However, so far only individual aspects have been examined. The cause-brand fit was most frequently studied. Constantly changing conditions make it necessary to combine various Cause-related Marketing components.

Key words: Cause-related Marketing, corporate social responsibility, purchase intention, buying behavior, systematic review

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#### 1. Introduction

As more and more customers are turning away from materialism, current trends are emerging that aim to reduce the negative effects of purchases on the environment and society. This changing behavior is one of the driving forces behind Cause-related Marketing. Cause-related Marketing links product sales to the support of a cause (Varadarajan and Menon, 1988) and can be classified under the superordinate term corporate social responsibility. The topic of Cause-related Marketing is not new, but it must be refined due to emerging innovative tech-nologies. It is no longer enough to only consider changing customers' attitudes and subsequent behaviors. Mobile technology and social networks have revealed other forms of accountability such as sharing economy, freeganism and pay-per-use (Jastrzebska, 2017).

Due to fragmented research thus far, the goal of this investigation is to review research on Cause-related Marketing and structure the empirical and theoretical findings to give an over-view of the current state of research.

The paper proceeds as follows. In the next section, the relevance of Cause-related Marketing will be discussed considering the aspects of corporate social responsibility and purchasing behavior. Thereafter, the research objectives and methodology will be addressed. Then the conceptual framework will be introduced. This section is followed by the analysis of the cur-rent state of research on the effect of Cause-related Marketing on purchase intention. The en-suing discussion highlights the research gaps derived from the literature review. In the last section the limitations and possible avenues for future research will be pointed out.

### 2. The Evolution of Cause-related Marketing

### **Corporate Social Responsibility and Cause-related Marketing**

Companies must take responsibility for their actions or, in other words, develop a corporate social responsibility strategy. The first comprehensive discussion of corporate social respon-sibility took place in the USA during the 1950's. The publication 'Social Responsibilities of the Businessmen' by Bowen (1953) marked the beginning of the debate on this concept. In 1979, Carroll laid the foundation for a model that is still one of the best-known and most cited models for corporate social responsibility (Ma et al., 2012). Carroll defines corporate social responsibility as a construct that meets society's economic, legal, ethical and philanthropic expectations. In 1991, Carroll illustrated these four responsibilities in a pyramid. Due to emerging criticism of the pyramid form as an allocation of values to the individual categories and the division into charitable responsibility, Carroll and Schwartz modified their allocation in 2003 and developed a corporate social responsibility approach with three responsibilities that merged into one another. They subsumed the category philanthropic under ethical re-sponsibility.

### **Cause-related Marketing**

Rooted within the corporate social responsibility landscape is the field of Cause-related Mar-keting. It describes the corporate practice of linking company donations to product sales (Varadarajan and Menon, 1988). According to this definition, the donation depends on the engagement of the customers. For each transaction, the company donates a certain amount for a specific cause. Kotler and Lee (2005) define Cause-related Marketing in a comparable way and express the donation as a certain percentage of sales revenue. However, according to Ad-kins (1999), this purely transaction-related view of Cause-related Marketing is too limited. Other marketing instruments such as advertising, public relations, direct marketing and spon-soring are also a part of Cause-related Marketing (Adkins, 1999). It can therefore be stated that no unified definition of Cause-related Marketing exists thus far.

However, the definitions only differ regarding the concept range. Opinions vary as to whether Cause-related Marketing requires a transaction (Kotler and Lee, 2005) or just connecting a company for a relevant social purpose that benefits both parties, the firm and the charity (Pringle and Thompson, 1999). There are similarities, such as the mutually profitable business relationship between companies and non-profit organizations. Since the broad definition ac-cording to Pringle and Thompson or Adkins is too imprecise, the classification according to Varadarajan and Menon is used as a basis for the further course of this investigation.

### **Cause-related Marketing and Purchase Behavior**

The current state of research on Cause-related Marketing and its effect on purchase behavior is fragmented. The

existing studies have only focused on specific issues, with no regard to the complete framework. As a means of overcoming fragmentation, Rousseau et al. (2008) sug-gested systematic reviews to be useful for consolidating findings.

Therefore, this paper presents a narrative literature review that aims to bring some structure into current research and to advance an agenda for future research on Cause-related Marketing in the customers' attitudes and behavior context.

### 3. Research Objectives and Methodology

The objective of the study is to review systematically the findings of published research pa-pers and answer the question what impact various types of Cause-related Marketing have on purchase intention.

To gain a comprehensive view of how Cause-related Marketing aspects impact purchase be-havior, the author observed broadly the academic literature, including three relevant databases: EBSCOhost, Emerald Insight and Science Direct and implemented cross-referencing. Not only have marketing journals been analyzed, but also journals in business ethics and management. These journals also publish issues within the field of Cause-related Marketing within a marketing context. These databases have been searched using the following search criteria: 'cause-related marketing' or 'cause related marketing' or 'cause marketing' and 'purchase intention' or 'buying intention' or 'willingness to buy' or 'buying willingness' or 'purchase probability' or 'purchase behavior' or 'purchase'. The full text of the articles was searched and the search engine was also allowed to search for similar terms. A total of 181 papers were found as a result. These articles were then scanned and any papers which did not examine the search terms were removed. Therefore, there will be a total of 61 papers investigated in this study ranging from 1992 to 2018. A detailed compilation of all papers used, including theoretical background and methodology, can be found in the appendix.

### 4. Conceptual Framework

To approach the different data and to gather them in an appropriate way, qualitative research-ers often use a loose conceptual framework (Elliott and Timulak, 2005). The classification derived from the Cause-related Marketing definition from Varadarajan and Menon (1988) and the theory of reasoned action (Ajzen and Fishbein, 1988) offers a relevant conceptual frame-work. The framework is depicted in figure 1 (p. 4). Both authors defined Cause-related Marketing as 'the process of formulating and implementing marketing activities that are charac-terized by an offer from the firm to contribute a specified amount to a designated cause when customers engage in revenue-producing exchanges that satisfy organizational and individual objectives' (p. 60).

#### 5. Results

The results will be analyzed and discussed according to the different aspects of Cause-related Marketing depicted in figure 1 with a focus on the theoretical background and the most im-portant findings.

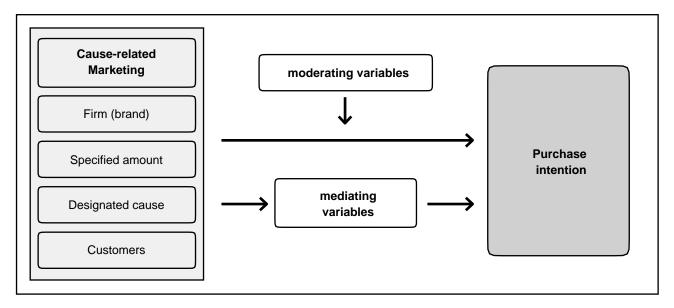


Figure 1. Conceptual Framework

### Firm (brand)

Regarding the element 'firm', the following aspects are mainly considered in the literature: cause-brand fit, product type, attitude toward firm/brand.

#### Cause-brand fit

The element of cause-brand fit is the most studied. The results basically all reflect the same aspect. A high fit between cause and brand results in a higher purchase intention (Chang and Liu, 2012; Chéron, 2012; Gorton et al., 2013; Gupta and Pirsch, 2006; Kerr and Das, 2013; Lafferty, 2007; Melero and Montaner, 2016; Neel et al., 2013; Samu and Wymer, 2009; Sung and Lee, 2016).

This can be justified by the help of information-integration theory (Anderson, 1981). Brands are presented in alliance with a charity in order to evoke associative learning of the customer and thus transfer social associations to the brand. Some authors investigate additional modera-tor or mediator effects. On the one hand, cause-brand fit can act as a mediator between the relationship of attitudes and purchase intention (Neel et al., 2013). On the other hand, various customer-related effects, such as need for cognition (Kerr and Das, 2013) or gender (Chéron, 2012) moderate the cause-brand fit effect on purchase intention. People with a high need for cognition consider fit as important for purchase intention.

While the above-mentioned authors made a distinction between high and low fit, Chang and Liu (2012) distinguished between consistent and complimentary fit. The type of product moderates the effect, determining whether a consistent or complimentary fit is better.

All studies found a significant effect of cause-brand fit on purchase intention, except for the studies by Roy (2003, 2010). One possible explanation for this deviating result is that the researcher measured the effect of the interaction with type of firm and concluded that only the interaction of cause-brand fit and type of firm plays a role for purchase intention.

### Product type

In Cause-related Marketing campaigns, company donations are linked to product sales. Prod-ucts themselves can be divided into utilitarian and hedonic products. Regarding their effects on purchase intention when combined with a donation, the researchers came to different con-clusions. On the one hand they stated that purchase intention is greater for hedonic products when combined with a donation than utilitarian products (Melero and Montaner, 2016; Strahi-levitz and Myers, 1998). Another researcher states that utilitarian products are more effective for the use in a Cause-related Marketing campaign (Galan-Ladero et al., 2013). Minton and Cornwell (2016) found out that adding a cause to a product, regardless of the type, did not significantly increase purchase intention.

These contradicting findings can be explained by different individual cognitive processes which lead to different evaluations of the use of a product and its effects. The consumption of hedonic products can for example cause feelings of guilt. The dissonance theory by Festinger (1957) provides a theoretical structure for understanding guilt-induced behavior. To maintain cognitive consistency people buy social responsible products.

### Attitude toward firm (brand)

Several authors confirm that the attitude toward the firm or brand must be positive for the cause-related campaign to be successful (Bigne-Alcaniz et al., 2012; Baek, 2017; He et al., 2016; Lee and Ferreira, 2011; Pérez, 2009; Shu-Pei, 2009). Attitude toward firm or brand can function as mediator or moderator.

Information-integration theory (Anderson, 1981) explains that customers' prior attitude or knowledge influences them in assessing new information that they receive from a Cause-related Marketing campaign.

The attitude to the firm or brand mediates on the one hand the relationship between Cause-related Marketing and purchase intention (Baek, 2017; Bigne-Alcaniz et al., 2012; Pérez, 2009; Qamar, 2013; Shabbir et al., 2010). On the other hand, identification with the brand moderates the evaluation of Cause-related marketing and its effects on purchase intention (Lee and Ferreira, 2011; Rathod et al., 2014).

Regarding a negative attitude or identification with the firm, there is a contradictory view concerning its effect on purchase intention. On the one hand, some authors recognized that when identification with the firm or brand is low Cause-related Marketing provides an addi-tional reason to buy the product (Lee and Ferreira, 2011). Gabrielli and Baghi (2010) argue on the other hand that the support of a charitable cause cannot compensate for a bad image.

### **Specified amount**

Among the element specified amount, the various levels of donation and the type of presenta-tion has been examined. This is mainly limited to financial donations; the non-financial dona-tion is only examined in one study.

Level of financial donation amount

Several authors examined the diverse levels of donation amount and found that the highest level of purchase intention can be achieved when donation amount is perceived to be high (Boenigk and Schuchardt, 2013; Koschate-Fischer et al., 2012, 2016).

This effect is moderated by product price (Boenigk and Schuchardt, 2013), but also by cus-tomer-related motives. The customers' attitude toward helping others and their warm glow feelings are influential in this regard (Koschate-Fischer et al., 2012). A high product price and positive emotions positively influence the relational structure.

Presentation of financial donation amount

The presentation of financial donation amount is essential. Presenting the donations in an ab-solute amount is better compared with presenting it as percentage of profit or price (Kleber et al., 2016). This effect is moderated by individual difference in numeracy. Expressing the specified amount as percentage leads to confusion and to an overestimation of the amount spent (Olsen et al., 2003).

If the donation amount is presented with a percentage then a fixed percentage is better for increasing purchase intention (Hyllegard et al., 2011). If the donation amount is presented as absolute amount it does not play a role if it is an exact amount or a vague amount of a currency (Kerr and Das, 2013).

Only one study cares about non-financial donation – in particular the donation of a product in the form of a buy-one-give-one-promotion (BOGO). Hamby (2016) found out that non-financial donations are more effective with utilitarian products (moderator) through the medi-ator of perceived helpfulness.

Construal-level theory (Liberman et al., 2007) serves as theoretical justification of these ef-fects. The theory organizes customer thinking on a continuum of high and low construal. Presentations with concrete features such as an absolute amount of money can evoke a con-crete construal which arouses more attention. Personal relevance theory (Sperber and Wilson, 1986) can also contribute to explaining this effect. The theory will be discussed in more detail in the next paragraph.

### **Designated cause**

For the element designated cause, mainly cause choice and the proximity effect (temporal and local) have been investigated.

Cause choice

The researchers concluded that allowing customers to choose a cause has a positive effect on the intention to buy (Howie et al., 2018, Kull and Heath, 2016; Lucke and Heinze, 2015; Rob-inson et al., 2012). This effect is mediated by personal characteristics such as collectivism (Robinson et al., 2012) or involvement (Kull and Heath, 2016), customer empowerment and commitment (Lucke and Heinze, 2015).

This effect can be explained by the personal relevance for the customer. Relevance is defined in relevance theory (Sperber and Wilson, 1986) as a function of processing effort and positive cognitive effect. A positive cognitive effect is achieved when information is particularly im-portant for the situation in which a customer finds himself or when a significant change is activated in the customer's surroundings.

Proximity effect

The proximity effect plays a role with regard to temporal and local proximity. Customers are more willing to support causes occurring suddenly (Hou et al, 2008; Tangari et al, 2010; Vyravene and Rabbanee, 2016) and are locally close (Ross, Patterson and Stutts, 1992) rather than ongoing and far away causes. In terms of duration; customers prefer long-lasting cam-paigns over short-lasting campaigns (Youn and Kim, 2018). Customers' temporal orientations moderate the influence of the temporal framing within the ad on purchase intention (Tangari et al, 2010).

This relevance of distance has its origin in the social impact theory, which states that the reac-tion to a social stimulus, such

as naming the recipient of a donation in an advertising campaign, is influenced by the proximity and immediacy of the origin of the donation (Latané, 1996; Latané and Bourgeois, 2001).

### Ad appeal

It has also been examined to what extent the cause should be designed in terms of visual as-pects. Examination has been done on portraying either cause or brand as main aspect. Portray-ing the brand instead of the cause in the ad is more effective for purchase intention when fo-cusing on utilitarian products (Chang, 2012; Lafferty and Edmondson, 2009). Chang (2011) tested the effect of different ad appeals (guilt vs. non-guilt). The researcher concluded that when the cause is communicated with a guilt appeal and a practical product, purchase intention is higher. Cognitive dissonance theory (Festinger, 1957) can function as an explanatory approach. Customers try to reduce their feeling of guilt by buying a social prod-uct.

#### Kind of cause

There are several types of causes a company can donate money to, e.g. to human, and health, environmental or animal causes. When it comes to purchase intention, cause does not directly play a role (Guerreiro, 2015; Lafferty and Edmonson, 2014) only an indirect one through cause-brand fit (among others Chang and Liu, 2012).

### **Customers**

The personality traits of customers will be analyzed on the basis of their sociodemographic characteristics and traits. Following the definition of Varadarajan and Menon (1988), the term customer is consistently used for this investigation. However, this does not mean the repeat buyer, but the prospective buyer. This difference is also decisive for the viewpoint of the results. There was no clear use of the two terms in the papers investigated; they were often used interchangeably.

### Gender

With regard to sociodemographic, only the trait of gender was considered. Avilelaa and Nelson (2016) showed that gender plays a role as moderator on the attitude toward sponsorship and perception of brand quality as predictors of purchase intention. The results showed that women are more likely to buy Cause-related Marketing products. Hyllegard et al. (2010) in-stead found no difference. Most samples were student samples and therefore did not control for other sociodemographic variables.

### **Emotions**

Emotions are important to consider when creating a Cause-related Marketing campaign. Trig-gering positive emotions (Andrews et al., 2014, Guerreiro, 2015; Tucker et al., 2012) or re-ducing negative emotions by participation (Elving, 2013; Kim and Johnson, 2013) plays a significant role as a mediator in the relationship. Also important is how people perceive them-selves, the self-construal, which functions as a moderator (Chen and Huang 2016; Kim and Johnson, 2013). Interdependent people tend to react more on moral emotions than independ-ent participants.

### Involvement/Commitment

Cause/Brand-Involvement is decisive for the success of Cause-related Marketing campaigns. Several studies confirm that a prominent level of involvement triggers a higher purchase in-tention (Berger et al. 1999; Bester and Jere 2012; Gorton et al. 2013; Hajjat 2003; Hyllegard et al., 2010, 2011; Sheikh and Beise-Zee, 2011; Sung and Lee 2016; Vaidyanathan and Aggarwal 2005). Involvement can act as mediator, moderator or independent variable in the relationship between Cause-related Marketing and purchasing intention.

### 6. Discussion and Conclusion

The literature review tried to summarize extant research on the effect of Cause-related Mar-keting elements on purchase behavior, to connect the findings of several studies and to derive gaps in research that might guide future research.

It has been noted that interest in this area is growing and that year after year a wider variety of topics and methods are

emerging. The number of growing studies shows the advantages and potentials of the use of Cause-related Marketing elements to increase purchase intention.

However, in most of the studies only one aspect of Cause-related Marketing has been exam-ined. That is, Cause-brand fit was the most investigated. One possible reason might be the rising concern of greenwashing activities (Du, 2014; Lyon and Montgomery, 2015; Nyilasy et al., 2014). Lyon and Montgomery define greenwashing as communication that encourages customers to get a positive impression of a company's sustainability practices without imple-menting appropriate measures in the company. Due to this rising concern and constantly changing environmental conditions; the combination of different aspects of Cause-related Marketing can be useful to strengthen the understanding of the underlying mechanisms to explore links to new concepts. Especially the effects of moderators and mediators show that it is also necessary to deal with the combination of various aspects.

#### 7. Limitations and Further Research

This review contains at least three limitations. The first limitation refers to the selection of the journals. No journal was excluded from the search due to its rankings (e.g. ERIM Journals List or Science Citation Index). This served to give an overview of the current research landscape. Secondly, the specific choice of purchase intention as dependent variable can be questioned. The literature that deals with the effect of Cause-related Marketing on purchase intention is limited. The relatively small number of studies of the issue and the high number of rejected papers could be viewed as suggesting a need to understand the topic as an emerging research domain. If other dependent variables had been included, such as attitude toward the company, there would have been more references, but the results would have been diluted as well. The third limitation goes hand in hand with the second. Purchase intention was used as a dependent variable but not the actual purchase behavior. This has to be reflected critically insofar as the commitment to a responsible lifestyle does not necessarily have to be replicated in the purchase of sustainable products. This relationship is described in the literature as the mind-behavior gap (Schuitema and Groot, 2015). Customers lack the motivation to reflect on their actions when shopping and often do not see themselves in a position to reliably assess the effects of their purchase. Out of convenience, familiar patterns of buying behavior are used. The buying behavior shows a resistance to change (Barbarossa and Pastore, 2015).

This limitation leads to the first focal area for future research. In addition to improve the un-derstanding of actual behavior, research is needed on actual customer behavior. A comparison must be made between the willingness to buy and then compared with actual sales figures. Furthermore, qualitative studies should be carried out to determine possible reasons for the mind-behavior gap.

Besides that, there are many more opportunities for future research which will be presented according to the used framework.

### Firm (brand)

The integrated firm is always a manufacturer; an examination of a retailer or a service provider is missing. It is interesting to find out whether information-integration theory applies and whether positive information about the retailer or a service provider can be transferred to a Cause-related Marketing campaign (Anderson, 1981).

As mentioned above, concerns of Greenwashing activities are rising (Du 2014; Lyon and Montgomery, 2015; Nyilasy et al., 2014). The skepticism among customers is mainly trig-gered by the communication of various oppositional stakeholders, such as the press. A study on the effects of the inclusion of negative press (e.g. as a moderator) has not yet been carried out. Given the growing importance of this issue, it would also be appropriate to take this as-pect into account.

### **Specified amount**

The growing skepticism of customers is also contributing to the next research gap. Only the donation per product is examined. An investigation of the effects of the actual amount of do-nations has not yet been carried out. However, it is possible that the donation per product is high, however not the total donation amount in comparison to the company's turnover.

There has also been no comparison between financial and non-financial donations. However, this is particularly necessary in view of the developments in practice. A start-up in Germany, Sharefoods, focuses on the BOGO donation and donates one product with every product pur-chased. The campaign is well accepted by customers (about-drinks, 2018). Construal level theory (Liberman et al., 2007) supports this principle, as it is often easier for customers to assess the counter value of a product than to estimate how much a percentage donation is.

### **Designated cause**

Praxis is also the trigger for the next research gap. Two large companies have already discov-ered the holidays, especially the time shortly before Christmas, to combine with a call for do-nations. The holidays mark a time to reflect, give thanks, and give back. Coca-Cola and Uber are using this time to support Cause-related Marketing campaigns for suffering children (Clarabridge, 2018). In research, the examination of a fit between donation and occasion is lacking. Relevance theory (Sperber and Wilson, 1986) offers the corresponding theoretical starting points. It can be assumed that the relevance of an event such as Christmas promotes the processing of information and thus positively represents the relevance of the donation.

#### **Customers**

The literature review showed that 3 of 4 studies used a convenience sample consisting of stu-dents. Since sustainable behavior often also depends on socio-demographic variables, there is a need for further research into different clusters in the population.

Another interesting area for future research is other industries. So far mainly the FMCG industry has been examined. The examination of different industries would be useful in the interest of improving generalization of the results. There is for example the trend toward con-ducting e-commerce via mobile phones (Turban et al 2018). This innovation in purchase pro-cessing should be taken into account in the transaction-based definition of Cause-related Mar-keting. The technology makes it possible, for example, to give more information on types of donations. It also enables the customer himself to set a donation amount.

Finally, it can be said that attention should be paid to the customers and their increased in-volvement in Cause-related Marketing.

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### **Appendix**

Table 1

Cause-related Marketing and Purchase Intention

Author	Title	Journal	Theoretical foundation	Method	Key results
wt al. (2014)	Cause Marketing Effectiveness and the Moderating Role of Price Discounts	Journal of Marketing	Theory of Warm-Glow Giving	Experimental design, n = 426 students	In combination with a given price discount, the impact of Cause-related Marketing on purchase intention is greatest at a moderate level of discounts. Customers warm glow feelings mediate the impact.
Avilelaa and Nelson (2016)	Testing the Selectivity Hypothesis in Cause- related Marketing among Generation Y: [When] Does Gender Matter for Short- and Long-term Persuasion?	Journal of Marketing Communica- tions	Gender- Schema theory, theory of psychological reactance	Experimental design, n = 177 students	Gender plays a role as moderator on the attitude toward sponsorship and perception of brand quality as predictors of purchase intention.
Baek et al. (2017)	Millennial Consumers' Perception of Sportswear Brand Globalness Impacts Purchase Intention in Cause-related Product Marketing	Social behavior and personality	Attribution theory	Experimental design, n = 382 students	Appraisal of the brand plays a significant role in evaluating brand-cause fit and firm motives which then influences purchase intention.
Berger et al. (1999)	Consumer Persuasion Through Cause-Related Advertising	Advances in Consumer Research	Theory on prosocial behavior	Experimental design, n(1) = 196, n(2) = 210 students	The inclusion of a cause claim influences purchase intention through the mediation of brand attitude, involvement and perceived argument quality. Women tend to respond more positively to Cause-related Marketing than men.
Bester and Jere (2012)	Cause-related Marketing in an Emerging Market: Effect of Cause Involvement and Message Framing on Purchase Intention	Database Marketing and Customer Strategy Management	Elaboration Likelihood Model	Experimental design, n = 40 women	Involvement with the cause positively influences purchase intention.

Bigne- Alcaniz et al. (2012)	Cause-related Marketing: The Influence of Cause-Brand Fit, Firm Motives and Attribute Altruistic to Consumer Inferences and Loyalty and Moderation Effect of Consumer Values	Journal of Marketing Communica- tions	Information accessibility- theory, social identity theory, theory of reasoned action	Experimental design, n(1) = 373, n(2) = 595 students	Positive beliefs about the firm positively influence attitude toward the firm, which then influences purchase intention. This relationship is moderated through the cause-brand fit.
Boenigk and Schuchardt (2013)	Cause-related Marketing Campaigns with Luxury Firms: An Experimental Study of Campaign Characteristics, Attitudes, and Donations	International Journal of Nonprofit and Voluntary Sector Marketing	Attribution theory, anchoring and adjustment theory	Experimental design, n = 281 students	The highest level of purchase intention can be reached when donation amount spent is perceived to be high.
Chang (2011)	Guilt Appeals in Cause-related Marketing, The Subversive Roles of Product Type and Donation Magnitude	International Journal of Advertising	Cognitive dissonance theory	Experimental design, n = 820 participants	Communicating a cause with a guilt appeal has a positive effect on purchase intention. This effect is higher for utilitarian products and a low donation amount.
Chang (2012)	Missing Ingredients in Cause-related Advertising – The Right Formula of Execution Style and Cause Framing	International Journal of Advertising	Congruency theory	Experimental design, n = 236 students	A cause-focused ad leads to higher purchase intention in hedonic product promotions and a brand-orientated ad leads to higher purchase intention in utilitarian product promotion. This effect is moderated by self vs other-focused.
Chang and Liu (2012)	Goodwill Hunting? Influences of Product-cause Fit, Product Type, and Donation Level in Cause-related Marketing	Marketing Intelligence and Planning	Attribution theory	Discrete choice experiment, n = 512 participants	A high cause-brand fit (consistent or complimentary) leads to higher purchase intention. Customers are more likely to choose a hedonic product offering a donation with a complementary-fit cause. In contrast, individuals tend to prefer a utilitarian product with a consistent-fit cause. This effect is moderated by donation level. Higher donation level positively influences purchase intention.

					Customers react more
Chen and Huang (2016)	Cause-related Marketing is Not Always Less Favorable than Corporate Philanthropy: The Moderating Role of Self-construal	International Journal of Research in Marketing	Construal-level theory	Experimental design, n = 203 participants	positively toward philanthropy than Causerelated Marketing. But it also depends on the customers: customers with interdependent self-construal are more likely to choose Cause-related Marketing than customers with independent self-construal.
Chéron et al. (2012)	The Effects of Brand-cause Fit and Campaign Duration on Consumer Perception of Cause- related Marketing in Japan	Journal of Consumer Marketing	Attribution theory	Experimental design, n = 196 participants	A high cause-brand fit creates greater purchase intention. This effect is moderated by gender and past experiences in philanthropic activities. The duration of the Cause-related Marketing campaign does not influence purchase intention.
Elving (2013)	Skepticism and Corporate Social Responsibility Communications: the Influence of Fit and Reputation	Journal of Marketing Commu- nications	Attribution theory, associative network theory, congruence theory	Experimental design, n = 160 participants	Customers' skepticism when confronted with a Cause-related Marketing advertisement negatively influences purchase intention. Bad reputation leads to more skepticism; high level of fit instead leads to less skepticism.
Gabrielli and Baghi (2010)	Co-branding Strategy for Cause Related Marketing Activities: The Role of Brand Awareness on Consumers' Perception	6th International conference, univeristà della svizzera italiana	Attribution theory	Experimental design, n = 154 participants	The support of a social cause cannot compensate for a bad company image.
Galan- Ladero et al. (2013)	Does the Product Type Influence on Attitudes Toward Cause-Related Marketing?	Economics and Sociology	Behavioral theories	Questionnaire, n = 456 partic- ipants	Cause-related Marketing influences purchase intention through the mediator of attitude toward it. This effect depends on the product type: utilitarian products are more effective for Cause-related Marketing campaigns.

Gorton et al. (2013)	Understanding Consumer Responses to Retailers' Cause Related Voucher Schemes: Evidence from the UK Grocery Sector	European Journal of Marketing	Associative learning theory	Questionnaire, n = 401 adults	Company-cause fit and status of cause are predictors of interest, involvement and sincerity. Those three variables then influence purchase intention.
Guerreiro et al. (2015)	Attention, Emotions and Cause-related Marketing Effectiveness	European Journal of Marketing	Stimulus- Organism- Response theory	Eye tracking, n = 48 participants	Emotional arousal and pleasure are dominant when buying hedonic products. When buying utilitarian products customers focus on the brand logo and the donation.
Gupta and Pirsch (2006)	The Company- cause-customer Fit Decision in Cause- related Marketing	Journal of Consumer Marketing	Organizational identification theory, information-integration theory	Experimental design, n(1) = 232, n(2) = 531 students	The fit between cause and company is important for the increase in attitude toward company-cause alliance and therefore purchase intention.  The level of skepticism toward a Cause-related Marketing campaign does not influence purchase intention.
Hajjat (2003)	Effect of Cause- Related Marketing on Attitudes and Purchase Intentions: The Moderating Role of Cause Involvement and Donation Size	Journal of Nonprofit and Public Sector Marketing	Behavioral theories	Experimental design, n = 240 students	The combination of high involvement and high donation creates high purchase intention; the opposite is true for a mismatch.
Hamby (2016)	One For Me, One For You: Cause- Related Marketing with Buy-One Give- One Promotions	Psychology and Marketing	Construal-level theory	Experimental design, n = 277 students	Non-financial donations (donation of a product) are more effective with utilitarian products for purchase intention through the mediator of perceived helpfulness.
He et al. (2016)	Moral Identity Centrality and Cause-related Marketing: The Moderating Effects of Brand Social Responsibility Image and Emotional Brand Attachment	European Journal of Marketing	Emotion theory, signaling- priming theory	Experimental design, n = 160 adults	Customers with higher moral identity have a higher purchase intention. This effect is moderated by a cognitive and moral aspect: brand social responsibility and emotional brand attachment

Hou et al. (2008)	Cause's Attributes Influencing Consumer's Purchasing Intention: Empirical Evidence From China	Asia Pacific Journal of Marketing and Logistics	Personal relevance theory, social exchange theory	Questionnaire, n(1) = 178, n(2) = 376 participants	Cause-brand fit, cause importance and cause proximity play an important role for purchase intention. The effects of those factors are mediated through customers' attitude toward product and firm.
Howie et al. (2018)	Consumer Participation in Cause-Related Marketing: An Examination of Effort Demands and Defensive Denial	Journal of Business Ethics	Cognitive dissonance theory	Experimental design, n = 175 students	Allowing customers to choose the sponsored cause seems to effectively refocus their attention and increases customers' threshold for campaign requirements.
Hyllegard et al. (2010)	Exploring Gen Y Responses to an Apparel Brand's Use of Cause-Related Marketing: Does Message Matter When It Comes to Support for the Breast Cancer Cause?	Clothing and Textiles Research Journal	Theory of reasoned action	Experimental design, n = 349 participants	Perception of Cause- Related Marketing is a strong predictor of attitude toward brand but not toward purchase intention. Involvement in the cause is essential for purchase intention. Gender does not play a role.
Hyllegard et al. (2011)	The Influence of Gender, Social Cause, Charitable Support, and Message Appeal on Gen Y's Responses to Cause-related Marketing	Journal of Marketing Management	Theory of reasoned action	Experimental design, n = 562 students	Women tend to respond more positively to Cause-related Marketing than men. The exact amount of donation given and involvement in the cause is essential for increasing purchase intention.
Hyllegard et al. (2014)	College Students' Responses to Prosocial Marketing Claims on Apparel Hang Tags	Journal of Fashion Marketing and Management	Theory of reasoned of action	Experimental design, n = 262 students	Cause-related Marketing has no more relevance for increasing purchase intention than other green messages.
Kerr and Das (2013)	Thinking About Fit and Donation Format in Cause Marketing: The Effect s of Need for Cognition	Journal of Marketing Theory and Practice	Cue consistency theory	Experimental design, n = 216 students	The effect of cause-brand fit depends on the moderating effect of need for cognition.  People with a low need for cognition do not display a difference. People with a high need for cognition consider fit as important for purchase intention. The kind of donation amount does not play a role. When combined with a hedonic product, any kind of donation is important.

Kim and Johnson (2013)	The Impact of Moral Emotions on Cause- Related Marketing Campaigns: A Cross- Cultural Examination	Journal of Business Ethics	Concept of self-construal	Questionnaire, n = 180 (US), n = 191 (Korean) students	Moral emotions influence purchase intention through the moderating effect of self-construal.
Kleber et al. (2016)	How to Present Donations: The Moderating Role of Numeracy in Cause- related Marketing	Journal of Consumer Marketing	Prospect theory	Experimental design, n(1) = 56, n(2) = 118 students	The presentation of the donation amount is essential. Presenting the donations in an absolute amount is better compared with presenting it as percentages. This effect is moderated by individual differences in numeracy. This effect is independent of price and kind of product.
Koschate- Fischer et al. (2012)	Willingness to Pay for Cause-Related Marketing: The Impact of Donation Amount and Moderating Effects	Journal of Marketing Research	Attribution theory	Experimental design, n(1) = 103, n(2) = 115 students	The height of donation amount influences purchase intention. The higher the donation amount the higher is the purchase intention. It is moderated by customers' related motives. The customers' attitude toward helping others and warm glow motive are influential in this regard. In case of a low company-cause fit, customers attribute motives to the company according to the donation amount.
Koschate- Fischer et al. (2016)	When will Price Increases Associated with Company Donations to Charity be Perceived as Fair?	Journal of the Academic Marketing Science	Attribution theory	Experimental design, n(1) = 127, n(2) = 575, n(3) = 141 participants	The height of donation amount influences purchase intention. The higher the donation amount the higher is the purchase intention.  It is mediated through attributed motives and perceived price fairness and is moderated through company's corporate social responsibility (CSR) reputation (positive), company-cause fit (negative) and simultaneous and no simultaneous timing (no simultaneous timing of price increase is better).

Kull and Heath (2016)	You Decide, We Donate: Strengthening Consumer–brand Relationships through Digitally Co-created Social Responsibility	International Journal of Research in Marketing	Reactance theory	Experimental design, n = 208 students	Allowing customers to choose a cause (unrestricted) leads to greater purchase intention. Mediator of this relationship is customer empowerment and engagement.
Lafferty (2007)	The Relevance of Fit in a Cause–brand Alliance when Consumers Evaluate Corporate Credibility	Journal of Business Research	Congruence theory, social identity theory	Experimental design, n = 153 students	The fit between brand and cause is important to generate higher purchase intention regardless of company credibility.
Lafferty and Edmondson (2009)	Portraying the Cause instead of the Brand in Cause-related Marketing Ads: Does it Really Matter?	Journal of Marketing Theory and Practice	Information- integration theory	Experimental design, n = 495 participants	Portraying the brand instead of the cause in the ad is more effective for purchase intention which is mediated through the cause-brand alliance.
Lafferty and Edmondson (2014)	A Note on the Role of Cause Type in Cause-related Marketing	Journal of Business Research	Information- integration theory	Experimental design, n = 776 participants	The kind of cause only plays an indirect role. Human and health cause category has a greater influence on attitude toward cause than environmental or animal causes. It has no effect when it comes to purchasing the product.
Lee and Ferreira (2011)	Cause-Related Marketing: The Role of Team Identification in Consumer Choice of Team Licensed Products	Sport Marketing Quarterly	Social identity theory, random utility theory	Discrete choice experiment, n = 119 participants	When identification with the firm and brand is low, Cause-related Marketing provides a justification to buy the product.
Lucke and Heinze (2015)	Role of Choice in Cause-related Marketing – Investigating the Underlying Mechanisms of Cause and Product Involvement	Procedia - Social and Behavioral Sciences	Congruity theory	Experimental design, n = 420 students	Giving customers the choice to choose the cause negatively influences involvement. Involvement then influences purchase intention.
Manuel et al. (2014)	Functional Matching Effect in CRM: Moderating Roles of Perceived Message Quality and Skepticism	Journal of Marketing Communica- tions	Attribution theory	Experimental design, n = 100 students	There is no significant relationship between Cause-related Marketing message and motivation for purchasing a brand.

Melero and Montaner (2016)	Cause-related Marketing: An Experimental Study about how the Product Type and the Perceived Fit may influence the Consumer Response	European Journal of Management and Business Economics	Behavioral theories	Experimental design, n = 86 students	The kind of product plays an important role for purchase intention. Purchase intention is greater for hedonic products. Cause-brand fit creates greater purchase intention.
Minton and Cornwell (2016)	The Cause Cue Effect: Cause- Related Marketing and Consumer Health Perceptions	The Journal of Consumer Affairs	Cueing theory, activation theory	Experimental design, n = 140 students	Adding a cause to a food package did not increase purchase intention.
Neel at al. (2013)	Cause-Brand Alliance: Purchase Intention	Journal of Indian Management	Information- integration theory	Questionnaire, n = 846 university members	A high fit between cause and brand results in a higher purchase intention.
Olsen et al. (2003)	When Profit Equals Price: Consumer Confusion About Donation Amounts in Cause-Related Marketing	Journal of Public Policy and Marketing Fall	Behavioral theories	Experimental design, n(1) = 62, n(2) = 81, n(3) = 29, n(4) = 133, n(5) = 137 students	To express the specified amount as a percentage of profit or price leads to confusion and to an overestimation of the amount spent. A higher percentage told lead to a higher purchase intent.
Pérez (2009)	Effects of Perceived Identity Based on Corporate Social Responsibility: The Role of Consumer Identification with the Company	Corporate Reputation Review	Social identity theory, self- categorization theory	Experimental design, n = 296 participants	Positive beliefs about the firm positively influence the attitude toward the company, which then influences purchase intention.
Qamar (2013)	Impact of Cause Related Marketing on Consumer Purchase Intention: Mediating Role of Corporate Image, Consumers' Attitude and Brand Attractiveness	Middle-East Journal of Scientific Research	Behavioral theories	Questionnaire, n = 278 participants	Cause-related Marketing campaigns influence purchase intention through the mediation of customers' attitude.
Rathod et al. (2014)	Effect of Cause- Related Marketing on Corporate Image and Purchase Intention: Evidence from India	International Journal of Business and Emerging Markets	Theory of reasoned action	Experimental design, n = 150 participants	Cause-related Marketing campaigns influence purchase intention as well as corporate image. Customers' skepticism influences through a moderator effect corporate image, which then influences purchase intention.

Robinson et al. (2012)	Choice of Cause in Cause-Related Marketing	Journal of Marketing	Collectivism, goal proximity theory	Experimental design, n(1) = 41, n(2) = 59, n(3) = 112, n(4) = 90 students	Allowing customers to select a cause has a positive effect on purchase intention through the mediation of perceived personal role.
Ross et al. (1992)	Consumer Perceptions of Organizations That Use Cause-Related Marketing	Journal of the Academy of Marketing Science	Prosocial behavior theory	Questionnaire, n = 238 adults	Females are more positive toward Cause-related Marketing than men. People tend to support local causes more than national causes.
Roy (2010)	The Impact of Congruence in Cause Marketing Campaigns for Service Firms	Journal of Services Marketing	Theory of reasoned action	Experimental design, n = 176 students	Interaction of congruence and service type plays a role for purchase intention.
Roy and Graeff (2003)	Consumer Attitudes Toward Cause- Related Marketing Activities in Professional Sports	Sport Marketing Quarterly	Behavioral theories	Telephone survey, n = 500 participants	Cause-related Marketing is beneficial for building an athlete's image.
Samu and Wymer (2009)	The Effect of Fit and Dominance in Cause Marketing Communications	Journal of Business Research	Information- integration theory	Experimental design, n = 120 students	Perceived fit and cause dominance are essential for purchase intention.
Shabbi et al. (2010)	Cause related Marketing Campaigns and Consumer Purchase Intentions: The Mediating Role of Brand Awareness and Corporate Image	African Journal of Business Management	Theory of reasoned action	Questionnaire, n = 203 students	Cause-related Marketing campaigns positively influence purchase intention through the mediation of brand awareness and corporate image.
Sheikh and Beise-Zee (2011)	Corporate Social Responsibility or Cause-related Marketing? The Role of Cause Specificity of CSR	Journal of Consumer Marketing	Theory of person-organization (P-O) fit and social identity theory	Experimental design, n = 103 participants	Corporate Social Responsibility and Causerelated Marketing have similar positive effects on customers' attitudes. A requirement for Causerelated Marketing is a high cause affinity.
Sony et al. (2014)	How to Go Green: unraveling Green Preferences of Consumers	Asia-Pacific Journal of Business Ad- ministration	Theory of reasoned action	Experimental design, n = 300 participants	Green Corporate Social Responsibility and Cause- related Marketing are substitutable.
Strahilevitz and Myers (1998)	Donations to Charity as Purchase Incentives: How Well They Work May Depend on What You Are Trying to Sell	Journal of consumer research	Theory of Warm-Glow Giving	Experimental design, n(1) = 150, n(2) = 264, students	In a Cause-related Marketing campaign, hedonic products create greater purchase interest than utilitarian products.

Sung and Lee (2016)	What Makes an Effective CSR Program? An Analysis of the Constructs of a Cause-related Participant Sport Sponsorship Event	International Journal of Sports Marketing and Sponsorship	Theory of reasoned action	Questionnaire, n = 650 participants	Involvement, cause-brand fit and attitude toward brand influence purchase intention. The corporate image has the function of a mediator.
Tangari et al. (2010)	The Moderating Influence of Consumers' Temporal Orientation on the Framing of Societal Needs and Corporate Responses in Cause- Related Marketing Campaigns	Journal of Advertising	Construal-level theory	Experimental design, n = 525 household panel users	Customers' temporal orientation moderates the influence of the temporal framing within the ad on purchase intention and attitude on the Cause-related Marketing campaign.
Tsai (2009)	Modeling Strategic Management for Cause-related Marketing	Marketing Intelligence and Planning	Confirmation bias theory, attribution theory	Experimental design, n = 669 participants	Evaluation of the brand plays an important role in increasing purchase intention. If the evaluation is positive, purchase intention is positive as well. Feeling moral pleasure to participate mediates this process.
Tucker et al. (2012)	Consumer Receptivity to Green Ads	Journal of Advertising	Theory of persuasion	Experimental design, n = 420 shoppers	Personal characteristics (high environmental activism) positively influence purchase behavior.
Vaidyana- than and Aggarwal (2005)	Using Commitments to Drive Consistency: Enhancing the Effectiveness of Cause-related Marketing Communications	Journal of Marketing Communica- tions	Commitment– consistency theory	Experimental design, n =153 students	When customers are committed to an environmental cause, they are more willing to donate and have a higher purchase intention.
Vyravene and Rabbanee (2016)	Corporate Negative Publicity – the Role of Cause related Marketing	Australasian Marketing Journal	Information- integration theory	Experimental design, n = 343 students	Customers are more willing to support a sudden cause than an ongoing cause.
Youn and Kim (2018)	Temporal Duration and Attribution Process of Cause- related Marketing: Moderating Roles of Self-construal and Product Involvement	International Journal of Advertising	Construal level theory, attribution theory	Experimental design, n = 323 students	The combination of temporal duration and self-construal affect purchase intention. Independent individuals were influenced by the message that was framed with the distant, long-term duration.

### Whether to Use Deception in Experiments? Proposal of a Cost-Benefit Approach

#### **Abstract**

This article argues that in some research contexts, deception can undermine the validity of research results. A case-by-case approach should be favoured over a universal resolution of whether deception is indeed more useful than hurtful for the scientific validity of the experiment. This article proposes a cost-benefit approach rather than a systematic use of deception in marketing experiments. We argue that the prevalence of demand artefacts is relatively low, and its consequences, tacitly overvalued. We expose the ethical and methodological weaknesses of deception at a micro and macro level and propose less costly methods for control of demand artefacts.

Key words: Deception; Cost-benefit approach; Experiments; Methodology; Demand artefacts

"Seldom, very seldom, does complete truth belong to any human disclosure; seldom can it happen that something is not a little disguised or a little mistaken."

-Jane Austen, Emma

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#### 1. Introduction

The editorial of Journal of Consumer Research entitled "Death to dichotomizing" (Fitzsimons, 2008) reveals the importance of rigour in marketing research, which could be compromised by dichotomising of continuous independent variables in order to test their combined effect with manipulated variables in experiments. The very title of this editorial includes an unusually strong normative injunction, which has had the expected outcome, namely a significant reduction in this popularly accepted practice (Pham, 2015). However, the idea that this analytical procedure has disadvantages such that it should be systematically excluded, has recently been questioned (Iacobucci, Posavac, Kardes, Schneider & Popovich, 2015b). Beyond the question of merits and demerits of the dichotomisation and competing methods, this controversy highlights two different stances relating to the methodology of marketing research. The first is to maximise the methodological rigour, which implies, for example, establishing a prescriptive requirement that applies to all cases of analysis of the effect of continuous independent variables in experimentations, the use of regression analysis (McClelland, Lynch, Irwin, Spiller, & Fitzsimons, 2015; Rucker, McShane, & Preacher, 2015). The second approach could be described as cost-benefit, where the best procedure is applied according to the case (Iacobucci, Posavac, Kardes, Schneider & Popovich, 2015a, Iacobucci et al., 2015b), thus is less drastic than the outright rejection of a method which has indisputable merits, knowing that the alternative methods presented as superior have their own weaknesses.

We propose to apply a critical view, similar to that of lacobucci et al. (2015a, 2015b), on the systematic use of deception. This critical approach to deception is also a contribution to the scientific nature of our marketing discipline, and could even be of relevance to the fields of psychology, sociology, anthropology, or economics. However, unlike lacobucci et al. (2015a, 2015b), it is not to rehabilitate a procedure that has recently been shunned from the discipline, but to propose an alternative to current systematic use of deception in experimentation; specifically, a cost-benefit approach to decide whether or not to use deception in experimental research. Although the cost-benefit approach has the potential of improving validity of experimental methodology, it never seemed to find favour with most researchers, at least in the recent history. To this end, we summarize all the arguments in favour of a cost-benefit approach and highlight the weakness of the arguments in favour of the systematic application of these two procedures. We demonstrate that the use of deception in experiments is not always necessary, and that the disadvantages of this procedure may surpass its advantages. In particular, we maintain that the prevalence of demand artefacts is relatively low and that its consequences are tacitly overvalued. Moreover, we show the weaknesses and disadvantages of deception, from an ethical and methodological point of view, at a micro and macro level, and propose less costly methods for controlling of demand artefacts.

### 2. Controlling Demand Artefacts

Demand artefacts are an important issue in terms of the validity of experiments, since they are likely to influence the results (Orne, 1962). The subject of the experiment may assume a role according to what he believes to be the hypotheses of the research and thus provide biased answers (Orne, 1969). At least three types of roles possibly adopted by the subject are likely to introduce bias (see Sawyer, 1975). If he adopts the "positive role", the subject is motivated to confirm what he believes to be the researcher's assumptions. If he adopts the "negative role", the subject will try to disprove them, behaving in a contradictory, random or neutral manner. Finally, if he is an apprehensive subject, his primary motivation is to look good in the eyes of the researcher. In each of these three cases, the subject does not adopt the role of "integral subject", and this poses a threat both to the internal and external validity of the results (Sawyer, 1975). Thus, since the seminal article by Sawyer (1975), demand artefacts is a major concern for researchers in marketing.

However, according to Shimp, Hyatt and Snyder (1991), the prevalence and consequences of demand artefacts could be tacitly overvalued by researchers. Indeed, it is generally accepted that, on the one hand, guessing a hypothesis induces demand artefacts and, on the other hand, that demand artefacts constitute a source of systematic error (rather than random) (Shimp, Hyatt & Snyder, 1991). These authors propose three conditions that must be met in order for a demand artefact to occur: the subject must encode a demand index, then that he discerns the hypothesis, and finally that he acts according to this hypothesis. These conditions are related to the receptivity and motivation of the Rosenthal and Rosnow model (see also Rosnow & Aiken, 1973), both of which are considered mediating variables of demand artefacts (Allen, 2004). To our knowledge, if the implications of these conditions have been criticised (see Darley & Lim, 1993), the conditions themselves have not been questioned.

Thus, the probability that the results of an experiment are biased due to demand artefacts depends on the least of probabilities of the three necessary but not sufficient conditions individually stated by Shimp, Hyatt and Snyder (1991). In other words, it is not because a subject doubts that the researcher has a specific objective that he will guess a hypothesis, and it is not because the subject has guessed a hypothesis that he will amend his behaviour accordingly. Even if several subjects had altered their behaviour, this would more likely result in a random rather than a systematic error (Shimp et al.,1991). Indeed, for such an error to be systematic, it would be necessary that a significant number of subjects guess

the same hypothesis and consequently adopt the same behaviour to influence the results in the same direction (Shimp et al., 1991). It is therefore reasonable to assume that such an error, if it exists, has a good chance of being random and thus does not constitute a bias in the results, but only a decrease in the magnitude of the effects, which appears much less serious. Then, guessing a hypothesis does not necessarily imply a demand artefact, and a demand artefact does not necessarily imply a systematic error. The prevalence of demand artefacts would be less important, and the potential consequences less damaging, than what most researchers think.

Notwithstanding the prevalence and consequences of demand artefacts, the precautionary principle would require that procedures be implemented to ensure that the problem is controlled, albeit minimally. To do this, a method used in research is to perform a post-experimental survey, which eliminates those who apparently discovered experimental hypotheses (Shimp et al., 1991). Such an approach is problematic for several reasons. First, as discussed previously, discerning a hypothesis does not necessarily imply a demand artefact, since the subject must modify his behaviour accordingly. This procedure therefore leads to the elimination of subjects whose answers were valid. Secondly, measuring the discernment of the hypotheses by the subjects is delicate and possibly invalid, in particular because such a procedure aimed at eliminating the demand artefacts is itself likely to be affected (Gorn, Jacobs & Mana, 1987). Finally, these post-experimental procedures can introduce a bias, which is systematic (Shimp et al., 1991). Indeed, subjects who correctly guessed the hypotheses could be systematically different from others in terms of intelligence or need for cognition, for example (Shimp et al., 1991). Moreover, such a procedure leads to the elimination of subjects in the experimental groups and not in the control groups, as the case may be.

Thus, the post-experimental survey may threaten both the external and internal validity of the experiment (Shimp et al., 1991). It is probably for this reason that such procedures are rarely used in some disciplines such as marketing. In a content analysis of experimental research published in 259 articles in five journals of marketing, namely the Journal of Marketing, the Journal of Marketing Research, the Journal of Consumer Research, the Journal of the Academy of Marketing Science, and the International Journal of Research in Marketing.

Of course, such a point of view, minimising the occurrence of the demand artefact issue, the magnitude of its consequences and invalidating the most used method of coping with it, has been criticised. Darley and Lim (1993) argue that the prevalence is higher and the consequences more important than Shimp, Hyatt and Snyder (1991) suggest. On the one hand, the prevalence of discernment of hypotheses is higher than what the empirical data indicate, as it is likely that some subjects discern the hypotheses without indicating it. In other words, the subjects are able to guess the purpose of the research and adjust their behavior in any way that befits them, accordingly. On the other hand, the consequences of such discernment may be more damaging than suggested by Shimp, Hyatt and Snyder (1991), since the adoption of a role by a subject may be unconscious (Darley & Lim, 1993). Darley and Lim (1993) therefore suggest seeking to systematically control demand artefacts in experiments. With respect to the design of the experiment, they recommend verifying the realism of the experiment and the involvement of the participants in a pilot study and in the main study. In addition, they promote deception to minimise the risk of discernment of hypotheses by the participants. With respect to the validation of the experiment, Darley and Lim (1993) suggest that non-experimentation and hetero method (see Sawyer, 1975) be used systematically and jointly. The first consists of a replication of the experimental procedure, but without treatment, with only the description of the treatments. The second consists of replication with other ways of operationalising the independent variables as well as variations in procedures.

The recommendations of Darley and Lim (1993) deserve several remarks. Regarding the design of the experimentation, they appear reasonable. In particular, as far as the use of deception is concerned, it has been a common practice since at least the early 1980s (Kimmel, 2011, Perrien, 1997). As far as the validation of experimentation is concerned, the systematic and joint use of non-experimentation and hetero method appears as an "extreme" recommendation (Shimp, Hyatt & Snyder, 1993). They involve a complete replication for each experimentation and therefore, multiplication of the number of subjects accordingly. Moreover, among the 259 articles analysed by Perrien (1997), only one reported on the use of non-experimentation and none on the use of the hetero method. But it is even more striking to note that the postexperimental survey is recommended by Darley and Lim (1993)—those advocates of methodological orthodoxy—only for the pilot studies, that is to say, on the plan of the design and not of the validation of the experimentation. The fact of advocating a post-experimental procedure before the main experimentation is, if not an oxymoron, a clear recognition of these weaknesses, even a disavowal. Moreover, Darley and Lim (1993) do not attempt to argue against the criticisms of Shimp, Hyatt, and Snyder (1991) on post-experimental surveys, and thus tacitly endorse them. In conclusion, however, they indicate that it would be more harmful not to delete the subjects likely to have guessed the hypotheses than to retain them. Nevertheless, this is only a matter of faith, as it is in complete contradiction with their own suggestion to confine the post-experimental survey to pilot studies. Table 1 summarises the cases in which the demand artefact risks are more or less high.

### 3. Deception, a common but not always justified practice

If post-experimental surveys are not a common practice to reduce demand artefacts (Khan, 2011; Perrien, 1997), deception is. If a thorough discussion of this point is not necessary (see Hertwig & Ortmann, 2008a for an excellent discussion), there are some key aspects worth discussing. In the Perrien (1997) survey, 42% of articles explicitly used deception in their experimental design, while only 29.4% referred to demand artefacts. Thus, more articles have used deception than dealing specifically with the issue of demand artefacts. For Perrien (1997), "the explanation is obvious: deception becomes part of the experimental process, although it should depend on a high probability of responses with a demand bias". Other studies in marketing, which were focusing on two journals, namely the Journal of Consumer Research and the Journal of Marketing Research, but were taking into account all empirical articles and not only experimentations, show a progression of 43% in 1975-1976 to 56% in 1996-1997 (Kimmel, 2001), then 66% in 2001-2002 (Kimmel, 2004), and finally 77% in 2006–2007 (N. C. Smith, Kimmel & Klein, 2009)2 of articles that used some form of deception. Conversely in social psychology, the use of deception has decreased. In the Journal of Personality and Social Psychology, the use of deception reached a peak of 73% of the articles published in 1978, subsequently declining before stabilising between one third and two fifths in the 1990s (Hertwig & Ortmann, 2008a). Therefore, we can conclude that deception is not a systematic practice in social psychology, whereas it is almost the case in marketing, and especially top marketing research outlets. The reason for this may relate to the influx of many scholars from the field of psychology in general - not only social psychology, in particular - for whom deception-based treatments of subjects remains an elementary form of methodology. Yet, it is clear that deception is a debatable practice not only from an ethical point of view, but also from a methodological point of view. From an ethical perspective, deception can have negative effects on participants, ranging from discomfort to loss of selfesteem (for a review of literature, see Smith et al., 2009). The codes of ethics of the American Psychological Association and the American Sociological Association advocate a cost-benefit approach, whereas the American Anthropological Association apparently prohibits deception (Smith et al., 2009). In addition, it is explicitly prohibited economics (see Jamison, Karlan, & Schechter, 2008). Apart from ethical considerations, deception is criticised from a methodological point of view. Indeed, the effective use of deception depends on four elements: a high level of naivety on the subjects' part; an experimental procedure which does not provide clues to the subjects that deception is used; a valid verification of the effectiveness of deception; a suspicion of deception on the part of the subjects which do not modify the experimental effects (Golding & Lichtenstein, 1970). Thus, the use of deception to eliminate demand artefacts may increase them if the latter is not effective (Sawyer, 1975; Smith et al., 2009). Specifically, rather than reduce demand artefacts, deception may, if detected during experimentation by participants, alter their behaviour and thus introduce bias (Jamison et al., 2008).

The methodological problems of deception largely exceed the framework of the validity of an individual study. Using deception could increase suspicion among potential participants and thus decrease the number of naïve participants (Kimmel, 2011). As a matter of fact, a participant who has been cheated once can expect to be cheated again the next time. More generally, deception can tarnish the image of the discipline (Kimmel, 2011). Non-suspicious participants constitute a "public good" which must be protected (Jamison et al., 2008). Certainly, since Milgram's famous experience on obedience in the 1960s, it seems that deception has not had the deleterious effects apprehended. However, this does not detract from the possibility that such negative effects will occur in the future, particularly because of information technologies that allow rapid dissemination of information on ethically questionable research (Smith et al., 2009). In addition, commonly used post-experimental debriefing can mitigate the short-term negative consequences on participants, but probably has the effect of increasing suspicion, since it reveals deception.

Table 1

Evaluating the Incidence of Deception

Incidence of Deception	Lowest	Highest	
Criteria	Lowest		
Level of naivety on the part of participants.	Low	High	
Risk that the experimental procedure provides clues to the participants that deception is used.	High	Low	
Risk that suspicion of deception on the part of the participants modifies the experimental effects.	High	Low	
Validity of the proposed procedure for the effectiveness of deception.	Low	High	

Source: adapted from Golding & Lichtenstein (1970).

### 4. A Cost-Benefit Approach

No advocate of the maximum methodological rigour (e.g., Darley & Lim, 1993) would deny the disadvantages of control methods of demand artefacts, either on the design of the experiment or on its validation. Similarly, no advocate of methodological simplification (e.g., Shimp, Hyatt & Snyder, 1991, 1993) would deny that demand artefacts can compromise the validity of the results of an experiment or other empirical research.

The use of deception should therefore always be subject to a cost-benefit type of calculation (Pascual-Leone, Singh & Scoboria, 2010), as advocated by the codes of ethics of the American Psychological Association and the American Sociological Association (Smith et al., 2009). Such as approach has also been advanced in the field of economics on the ground that "there are important research questions for which deception is truly unavoidable" (Hertwig & Ortmann, 2008b, p. 225). For Shimp, Hyatt and Snyder (1993), the costs of rigorous efforts, such as proposed by Darley and Lim (1993), greatly exceed the benefits, and this, for the discipline in its entirety. The study of Perrien (1997)—indicating that, on 259 articles, only one has mentioned using non-experimentation, and none of the hetero method, although prior to the article of Darley and Lim (1993)—seems supportive of Shimp, Hyatt and Snyder (1993). In fact, deception should be used only if the probability of demand artefacts is high, and not be a systematic procedure (Perrien, 1997), that is to say that it should be used as a last resort (Kimmel, 2011; Smith et al., 2009) and researchers should consider the use of a procedure without deception (Sawyer, 1975).

The challenge for experimental researchers is therefore to assess the risk of demand artefacts and choose one or several proportionate measures to monitor them. Indeed, "a general awareness and a commitment are more important than any specific methodology" (Sawyer, 1975). It entails assessing the risks of occurrence, which are relatively low in experimental designs of the type "between subjects" less likely to be affected by demand artefacts than designs of the type "within subjects" (Sawyer, 1975). The risk is even lower when the participants are not from a sample of students, which are a source of demand artefacts, since they are more likely to adopt a positive role, namely to confirm the assumed hypotheses (Orne, 1962). It is also interesting to note that, if only 7.7 per cent of marketing studies analysed by Perrien (1997) have used a "within subject" design, 74.3% have used samples of students. Finally, the dependent variables relating to behaviour are less likely to be affected by demand artefacts than other types of variables (Sawyer, 1975). Thus, the type of design, the nature of the sample and the type of dependent variable attenuate the risk of demand artefacts.

With regard to the choice of methods to control the possible demand artefacts, researchers may proceed by elimination. On the validation side of the experiment, non-experimentation and hetero method are very expensive methods, almost absent from research in marketing, for example, as seen previously. With regard to post-experimental surveys, it is not the implementation cost, but the associated risks that act against it in the majority of marketing cases, as seen earlier. On the design of experimentation side, deception is a method commonly used in marketing, but less frequently in social psychology. On of the reason is that marketing has seen a steady rise in the consumer behavior domain which studies individuals rather than organizations and strategy, while on the other hand social psychology seeks to understand cognition and behavior as they naturally occur in a social context. As such, deception has been challenged on methodological grounds but also on ethical ones, and other research strategies have been favoured instead, such as role-playing, for example (Klein, 2014). Deception is thus not only ethically objectionable, but methodologically delicate, as discussed previously. Deception is all the less justified from an ethical point of view since the methodological gains are questionable (Smith et al., 2009). For example, in the case of recruiting participants on specialised discussion forums, where they are asked questions on a topic of particular interest to them, the risks of suspicion appear high and the consequences thereof are potentially very damaging. Indeed, some participants will seek to know the true motivations of the researcher. As they are on a discussion forum which, by definition, is a place promoting discussions, they will not only be able to discuss their assumptions but, in addition, possibly deter other participants from answering, or even encourage them to sabotage. Moreover, in such a case a possible debriefing procedure appears difficult to implement, since the data collection takes place over time. A discussion forum therefore appears as a particularly dangerous context for the use of deception. If, at the beginning of the introduction of deception in marketing, it was already clear that the latter was a source of problems (Sawyer, 1975), the context of recruitment of participants on discussion forums existing today exacerbates them. Thus, in the case of experimentations taking place on the Internet, the costs (or rather risks) of such a procedure for the control of demand artefacts can all the more exceed its profits. Table 2 summarises the different criteria for determining the effectiveness of deception in a given situation according to a cost-benefit approach.

Table 2
Assessment of the Risks of Demand Artefacts

Risks of demand artefact	Lower	Higher	
Criteria	Lower		
Type of experimental design	Between subjects	Within subjects	
Type of sample	Non-student	Student	
Type of Dependent Variable	Dependent behavioural Variables	Dependent cognitive variables	

Sources: Sawyer, 1975, Orne, 1962.

### 5. Alternative of the Scenario Method

Waiving deception may imply that respondents are instead presented openly hypothetical scenarios. In marketing, such procedures are called scenario method or role-playing method, since the latter implies that the respondents imagine being in a situation in which they are not in reality. Bolton, Warlop and Alba (2003) even use the term "paradigm of scenarios". Traditionally used in the literature on service encounters (e.g., Bitner, 1990; A. K. Smith, Bolton & Wagner, 1999; Surprenant & Solomon, 1987), the scenario method is currently used in several other areas, such as consumer loyalty (Wagner, Hennig-Thurau, & Rudolph, 2009), relationship marketing (Melancon, Noble & Noble, 2011), price management (Drèze & Nunes, 2004), distribution (Rungtusanatham, Wallin, & Eckerd, 2011), and retailing (Mukhopadhyay & Johar, 2009). Although generally associated with quantitative approaches, the scenario method is also used in qualitative studies (e.g., Grønhøj & Bech-Larsen, 2010). This method has also been used in social psychology for several decades (see, e.g., Freedman, 1969; Kwon & Weingart, 2004; Robinson & Close, 2001; Stolte, 1994), in which it is also called the "vignette research" (Stolte, 1994) or "vignette-based methodology" (Robinson & Close, 2001), where "vignette" is a written scenario. In the literature using the scenario method, the two main concerns are to ensure, on the one hand, an acceptable level of realism in the scenarios, and on the other hand, a certain involvement of respondents. Indeed, although at least two studies, one in marketing and the other in psychology, have shown that the scenario method may yield similar results situation (Robinson & Close, 2001; Surprenant & Churchill Jr, 1984), verifying the realism of the scenarios and the involvement of respondents allows for reducing the risks of demand artefacts (Darley & Lim, 1993). In order to simultaneously increase realism and the involvement of the respondents, but also their ability to respond, Smith, Bolton and Wagner (1999) have asked them to appoint a service recently used and have then presented a scenario where they had to imagine going back to the hotel or the restaurant itself and experiment a hypothetical service encounter. In the same vein, Mukhopadhyay and Johar (2009) have imposed a purchase decision on respondents, and then asked them to give reasons for a decision that they had not really taken. The reasons per se had no interest to researchers in marketing, but were to be used to increase the involvement and the realism of a decision that the respondents had not taken. Another possible approach, but a costly one, is media production of video recordings of service encounters (e.g., Sparks, Bradley, & Callan, 1997). The realism of the scenarios and the involvement of the respondents can also be increased by compatibility between a context and a sample. For example, Dabholkar (1996) chose post-secondary students for a study on selfservice technology.

The realism of the scenarios can also be validated by groups of discussion, which play the role of pilot study at this point. The aim is to establish different realistic scenarios in the eyes of the participants and discussion groups and, particularly, that none of them gives rise to massive rejection. It is a verification of realism initially more thorough than what is usually performed in pilot studies in marketing, as suggested by Darley and Lim (1993). As to the realism of the task itself, either to evaluate hypothetical scenarios, we can ensure a proximity between the task requested and what the respondents do in real life, not only by the choice of our sample, like Smith, Bolton and Wagner (1999) and Dabholkar (1996), but also by the choice of data collection method, in this case by discussion forums. As a matter of fact, a discussion forum, by definition, consists of people who discussed a particular topic of concern to them. Developing hypothetical scenarios is probably, for the majority of the members of these forums, a normal and pleasant activity. If the scenarios are realistic, and the task of assessing a scenario appears as a "natural" activity for the members of the forum in question, waiving deception appears as a methodologically reasonable choice.

Furthermore, regarding the involvement of the respondents, the latter is fostered if there is compatibility between the context of the research and the study population, like Smith, Bolton and Wagner (1999) and Dabholkar (1996). If there is a good compatibility between the subject of the study and the study population, the use of the scenario method is less prone to bias, according to the criteria provided by Sawyer (1977). First, the subjects play their own role as a fervent supporter

of a particular trademark, and not, for example, the role of a car salesman. Secondly, there is little chance that the subject contains socially undesirable elements. Thirdly, the context is familiar to respondents, where they have "a basis for their projection". Fourthly, the scenarios have good chances to appear as simple to the eyes of these connoisseurs of the subject. In addition, the context in which individuals react to the scenario has an effect on the quality of the answers. Responding to scenarios in a quiet and isolated environment minimises the respondents' tendency to simply seek satisfaction, the latter involving that respondents treat the information in a way less effective than in the reality (Stolte, 1994). However, it is reasonable to think that the majority of members of the discussion forums, who are of interest to the majority of researchers in marketing, frequent these environments in moments of rest or relaxation.

In addition to the methodological precautions discussed above to ensure the realism of the scenarios and the involvement of the respondents, it is possible to take other measures to minimise the risk that the respondents shall adopt an inadequate role. Among the roles that may be adopted by participants is that of the apprehensive subject, for whom projecting a good self-image will be a motivation likely to bias his answers. To minimise this apprehension, Sawyer (1975) suggests emphasising the status of the researcher and to guarantee anonymity. However, attempting to cheat the respondents on this point, for example by presenting the person responsible for the study as a student while he is a professor must be avoided, since a simple query on a common search engine would reveal the true status. A member of the discussion forum used for a study could conclude that the identity of the researcher is a lie, share this information with other members, and thus seriously jeopardise the data collection process. In addition, if it is necessary to ensure anonymity, Sawyer (1975) cautions on the fact of not encouraging too low an involvement by insisting on anonymity. Table 3 summarises the criteria of relevance of the scenario method as an alternative to deception.

Table 3

Evaluation of the Relevance of the Scenario Method

Relevance of the scenario method	Highoot	Lowest	
Criteria	Highest		
Role played by the participants	Own role (e.g.: fervent supporter of a trademark in particular	Fictional role (e.g.: seller)	
Type of topic addressed	No elements socially undesirable	Contains elements socially undesirable	
Context of the study	Familiar to the participants	Little familiar to the participants	
Perception of the scenarios by the participants	Simple	Complex	

Source: adapted from Sawyer, 1977.

### 6. Conclusions

This article emphasised the idea that the systematic use of deception in experimentations is unjustified. When almost systematically using this procedure when feasible, this paper proposes the systematic recourse to a cost-benefit analysis, in arguing that the prevalence of the demand artefacts is relatively low, and that its consequences are tacitly overvalued. We have highlighted the weaknesses and disadvantages of deception, methodological procedure commonly used both from the ethical and methodological point of view, at the micro and macro level, and proposed less costly methods of control of demand artefacts. Hence, the force of these arguments in favour of a cost-benefit approach makes it plausible that the systematic application of these two procedures in scientific literature is less a question of strength of scientific arguments than political victory of the proponents of utmost methodological rigour, facilitated by a general willingness to promote the scientific nature of a particular discipline. Although the good faith of these researchers is beyond doubt, the rigour seems to have a disproportionate importance when addressing the relevance and clarity in the research. If strengthening the scientific status of a discipline is an important objective, the methodological sophistication has costs, including the decline in the relative importance of the subject studied and of the substantive contributions of the research (Lehmann, McAlister, & Staelin, 2011). In research, rigour must not become an end in itself and methodological elegance must have precedence on the socio-political relevance of the research, so that our research continues to have an impact on society, our ultimate objective.

Conflicts of interest: none

### **Endnotes**

- 1. This figure corresponds to articles that have "considered demand artifacts", except for those that merely indicated it as a limitation in the research. Thus, this figure may include any a priori or a posteriori procedure. Hence, this evaluation is considered to be a very moderate assessment of the occurrence of post-experimental surveys.
- 2. These authors used the same methodology as Kimmel (2001, 2004) so that results are comparable.

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## The role of digital mediation devices in the satisfaction of art museum audiences

## Le rôle des dispositifs numériques de médiation dans la satisfaction des publics de musée d'art

#### Résumé:

Les effets des « self-service technologies » (Curran et Meuter 2005) sur la valeur et la satisfaction issue d'une expérience de service (Lin et Hsieh 2007 ; Mencarelli et Rivière 2014 ; Meuter et al. 2003) ont peu été étudiés dans le domaine des arts et de la culture. En conséquence cette recherche interroge les effets de l'utilisation d'un dispositif numérique de médiation sur l'expérience de visite muséale et sur la satisfaction globale des publics. Les résultats de l'analyse des données issues de 916 questionnaires collectés auprès des visiteurs du musée du Louvre Lens démontrent que l'utilisation d'un dispositif numérique de médiation pendant l'expérience de visite muséale n'impacte pas significativement la satisfaction globale des publics à l'égard de la visite.

Mots clés : expérience, satisfaction, self-service technologies, étude quantitative, musées

#### Abstract:

The effects of «self-service technologies» (SST) (Curran and Meuter 2005) on the value and satisfaction of service experience (Lin and Hsieh 2007; Mencarelli and Rivière 2014; Meuter et al. 2003) have been little studied in the arts and culture field. The research explores the effects of the use of a digital mediation device on the museum experience and on the overall satisfaction of the public. The results of the analysis of 916 questionnaires collected from visitors to the Louvre Lens museum show that the use of a digital mediation device during the museum visit experience does not significantly impact overall public satisfaction with the visit.

Key words: experience, satisfaction, self-service technologies, quantitative, museums

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### Introduction

Les effets des technologies digitales, d'une part, sur les sources de la valeur attachée à un objet de consommation (Mencarelli et Rivière 2014), d'autre part, sur la satisfaction retirée d'une expérience (Lin et Hsieh 2007 ; Meuter et al. 2003 ; Sabadie et Vernette 2003) ont régulièrement été démontrés dans le champ des services. Cependant, peu de recherches (Collin-Lachaud et Passebois 2008; Jarrier 2015; Jarrier, Bourgeon-Renault et Belvaux 2019; Petr et Ngary 2012) étudient ou mesurent ces effets ans le domaine des arts et de la culture. Or, de nombreux dirigeants d'institutions muséales, réputées en France, croient fortement en la capacité des dispositifs numériques de médiation à enrichir l'expérience de visite et à satisfaire des publics divers. « Les nouvelles technologies enrichissent de manière importante les façons dont nous pouvons observer et nous engager avec l'art. En conséquence, nous pouvons proposer l'expérience de visites de plus en plus diverses à des publics diffé- rents, et développer des engagements multiples à la fois pour enrichir les expériences et élargir les publics in situ et en ligne » (Roel Amit, Directeur-adjoint en charge du numérique, à la Direction des publics et du numérique de la Réunion des Musées Nationaux - Grand Palais) . Les professionnels des musées ont-ils raison d'accorder tant de crédit à l'offre de médiation numérique ? Afin d'apporter des éléments de réponse à cette question, cette recherche interroge le rôle de ces « self-service technologies » (SST) (Curran et Meuter 2005 ; Lin et Hsieh 2011) dans la satisfaction globale des publics, en prenant en compte la distinction faite notamment par Hume et Mort (2008) entre le service central (œuvres exposées) et les services périphériques (billetterie, vestiaire, restauration, parking, dispositifs numériques de médiation, etc.).

Plus précisément, cette recherche vise à répondre aux questions suivantes : l'utilisation d'un dispositif numérique de médiation (application mobile, tablette tactile, table multi-joueurs, etc.) impacte-t-elle l'expérience de visite muséale ? L'expérience vécue et la satisfaction envers le dispositif utilisé constituent-elles des variables explicatives de la satisfaction globale des publics à l'égard de l'offre muséale (œuvres exposées) ?

Les développements méthodologiques et les traitements statistiques menés sur des données issues de 916 questionnaires collectés auprès des visiteurs du musée du Louvre Lens ont permis de tester les hypothèses de la recherche relatives aux variables explicatives de la satisfaction globale des publics à l'égard de la visite muséale. Bien que des bénéfices expérientiels liés à l'expérience d'usage d'un dispositif numérique de médiation (apprentissage et construction de sens favorisés, meilleure orientation spatiale, renforcement du plaisir ressenti, attention davantage focalisée et distorsion du temps favorable à l'évasion mentale) aient été identifiés par des recherches

The effects of digital technologies both on the sources of the value attached to a consumer object (Mencarelli and Rivière 2014) and on the satisfaction derived from an experience (Lin and Hsieh 2007; Meuter et al. 2003; Sabadie and Vernette 2003) have regularly been demonstrated in the field of services. However, little research (Collin-Lachaud and Passebois 2008; Jarrier 2015; Jarrier, Bourgeon-Renault and Belvaux 2019; Petr and Ngary 2012) studies or measures these effects in the field of arts and culture. Even so, many heads of renowned museum institutions in France firmly believe in the ability of digital mediation devices to enhance the visitor experience and satisfy diverse audiences. «Newtechnologies significantly enrich the ways in which we can observe and engage with art. As a result, we can offer the experience of increasingly diverse visits to different audiences, and develop multiple commitments both to enrich the experiences and expand audiences in situ and online» (Roel Amit, Deputy Director in charge of digital technology, at the Audience and Digital Department of the Réunion des Musées Nationaux - Grand Palais). Are museum professionals right to give so much credit to the digital mediation offer? In order to provide some answers to this question, this research examines the role of these «self-service technologies» (SST) (Curran and Meuter 2005; Lin and Hsieh 2011) in the overall satisfaction of the public, taking into account the distinction made by Hume and Mort (2008) between the central service (works on display) and peripheral services (ticketing, cloakroom, restaurant, parking, digital mediation devices, etc.).

More specifically, this research aims to answer the following questions: Does the use of a digital mediation device (mobile application, touch tablet, multiplayer table, etc.) have an impact on the museum experience? Do the experience and satisfaction with the device used constitute explanatory variables for the overall satisfaction of the public with the museum's offer (works exhibited)?

Methodological developments and statistical processing carried out on data from 916 questionnaires collected from visitors to the Louvre Lens Museum made it possible to test the research hypotheses relating to the variables that explain the public's overall satisfaction with the museum visit.

Although experiential benefits related to the experience of using a digital mediation device (learning and construction of favoured meanings, better spatial orientation, reinforcement of perceived pleasure, more focused attention and distortion of time favourable to mental escape) have been identified by previous research (Ben Nasr, Hallem and Lagier. 2018; Jarrier 2015; Jarrier, Bourgeon-Renault and Belvaux 2019), this research shows that the experience with these technologies is no more satisfying than an open house (no significant difference). Consequently,

antérieures (Ben Nasr, Hallem et Lagier. 2018 ; Jarrier 2015 ; Jarrier, Bourgeon-Renault et Belvaux 2019), la présente recherche démontre que l'expérience vécue avec ces technologies n'est pas plus satisfaisante qu'une visite libre (différence non significative). En conséquence, la satisfaction globale des publics est liée, prioritairement, à l'offre centrale du musée (œuvres exposées), les dispositifs numériques de médiation ne constituant que des éléments d'une offre périphérique proposée par les professionnels.

### Cadre theorique

### Approche conceptuelle de l'expérience de visite muséale

La visite d'un musée plonge le public dans une époque fictive et sécurisante (Deloche 2010). Lors de cette expérience, l'individu construit, de manière individuelle ou collective, le sens de sa visite (Martin 2011). O'Neill (2007) explique que l'apprentissage et la découverte sont au cœur de cette expérience, bien que cette dernière ne se limite pas à ces seuls bénéfices. En effet, selon l'auteure, les traces personnelles profondes qu'elle laisse chez le visiteur dépendent de l'orientation intellectuelle de ce dernier à travers plusieurs facettes : cognitive (comparaison d'œuvres), affective (appréciation esthétique) et imaginaire (interprétation personnelle issue de la culture de l'individu). Par ailleurs, un visiteur s'approprie l'espace muséal et les dispositifs interactifs par le biais des mouvements de son corps et de sa réflexion (Schmitt 2012) et ressent diverses émotions (dépaysement, stimulation, surprise, divertissement). L'expérience de visite muséale procure un moment de découverte, sentiment de bienêtre et de ressourcement mental, et contribue également à améliorer les relations interpersonnelles (Ben Nasr, Hallem et Lagier 2018 ; Packer 2008). Être à l'écoute des proches avec lesquels on visite un musée est un élément moteur pour certains visiteurs. Dès lors, chacun « bricole » sa visite (trajectoire, rythme, durée, interactions avec les objets culturels ou avec autrui) en fonction du rôle qu'il choisit de jouer temporairement ou tout au long de son parcours : explorateur, chercheur d'expérience, facilitateur, fan, régénérateur, pèlerin respectueux et chercheur d'affinité (Falk et Dierking 2016). L'ensemble des recherches précédemment citées nous invite à retenir une définition holiste de l'expérience de visite muséale, et à l'appréhender à travers six dimensions : affective (stimulation, découverte, évasion, fascination, etc.), cognitive et rhétorique (observation, raisonnement, apprentissage, mémorisation, introspection), symbolique (représentations symboliques et métaphoriques, image de soi), sociale (échanges avec les autres visiteurs), spatiale (stratégies de déambulation) et temporelle (gestion de la durée de la visite).

the overall satisfaction of the public is linked, as a matter of priority, to the museum's central offer (works on display), with digital mediation systems only constituting elements of a peripheral offer from professionals.

#### Theoretical framework

### Conceptual approach to the museum visit experience

A visit to a museum plunges the public into a fictional and reassuring time (Deloche 2010). During this experience, museum-goers, individually or collectively, construct the meaning of their visit (Martin 2011). O'Neill (2007) explains that learning and discovery are at the heart of this experience, although it is not limited to these benefits alone. Indeed, according to the author, the deep personal marks the experience makes on visitors depend on various facets of their intellectual orientation: cognitive (comparison of works), affective (aesthetic appreciation) and imaginary (personal interpretation from the individual's culture). In addition, visitors appropriate the museum space and interactive devices through body movements and reflection (Schmitt 2012) and they experience various emotions (change of scenery, stimulation, surprise, entertainment). The museum visit experience provides a moment of discovery, a sense of well-being and mental rejuvenation, and also helps to improve interpersonal relationships (Ben Nasr, Hallem and Lagier 2018; Packer 2008). Listening to the friends and relatives with whom they visit a museum is a driving force for some visitors. From then on, everyone «tinkers» with their visit (trajectory, rhythm, duration, interactions with cultural objects or with others) depending on the role they choose to play temporarily or throughout their journey: explorer, experienced researcher, facilitator, fan, regenerator, respectful pilgrim and affinity researcher (Falk and Dierking 2016). All the above-mentioned research invites us to adopt a holistic definition of the museum visit experience and to understand it through six dimensions: emotional (stimulation, discovery, escape, fascination, etc.), cognitive and rhetorical (observation, reasoning, learning, memorization, introspection), symbolic (symbolic and metaphorical representations, self-image), social (exchanges with other visitors), spatial (walking strategies) and temporal (managing the duration of the visit).

### Explanatory factors for satisfaction with the museum visit

The effects of digital technologies both on the sources of the value attached to a consumer object (Mencarelli and Rivière 2014) and on the satisfaction derived from an experience (Curran and Meuter 2005; Lin and Hsieh 2007,

### Facteurs explicatifs de la satisfaction à l'égard de la visite muséale

Les effets des technologies digitales, d'une part, sur les sources de la valeur attachée à un objet de consommation (Mencarelli et Rivière 2014), d'autre part, sur la satisfaction retirée d'une expérience (Curran et Meuter 2005 ; Lin et Hsieh 2007, 2011 ; Meuter et al. 2003 ; Sabadie et Vernette 2003) ont régulièrement été démontrés dans le champ des services.

Plus particulièrement, Caldwell (2002) a identifié les caractéristiques d'une exposition jugée de qualité par les publics d'un musée : l'exposition artistique (art classique ou moderne) ou historique (période reconnue) doit être intéressante, éducative, divertissante et adaptée aux enfants. Enfin, l'influence positive de la qualité perçue sur la valeur perçue (Aurier et al. 2004) et sur la satisfaction (Oliver 1997) a été démontrée y compris dans le secteur touristique (Bigné et al. 2001 ; Chen et Chen 2010) ou muséal (Harrison et Shaw 2004 ; Martin-Ruiz et al. 2010).

L'approche expérientielle appréhende la valeur issue d'expériences cumulées et d'immersions dans un acte de consommation (Holbrook 1994). La valeur est une préférence relative comparative, personnelle et situationnelle caractérisant l'expérience d'un sujet en interaction avec un objet. La typologie de la valeur propose trois axes possibles de valorisation d'une expérience (intrinsèque/extrinsèque, actif/réactif, orientée vers soi/orientée vers les autres) et identifie huit composantes de la valeur (efficience, excellence, statut, estime, jeu, esthétique, éthique et spiritualité).

Dans le domaine culturel, de nombreuses typologies de la valeur ont été mises en évidence. L'expérience de visite muséale offre une valeur fonctionnelle (qualité des œuvres exposées et des services proposés aux publics), sociale (interactions entre compagnons de visite) émotionnelle (admiration, étonnement, surprise et plaisir), épistémique (curiosité, nouveauté) et conditionnelle (dépendante des facteurs situationnels liés à la politique tarifaire ou à l'affluence entre autres) (Bourgeon et al. 2006; Passebois 2010). Ben Nasr, Hallem et Lagier (2017) mettent en évidence que l'utilisation d'une application mobile muséale contribue à l'accroissement de différentes sources de la valeur perçue (pédagogique, récréative, sociale, de personnalisation).

Les développements précédents font apparaître une fréquente mobilisation des concepts de qualité et de valeur perçue dans le domaine des arts et de la culture. Or peu de recherches mesurent la satisfaction envers l'expérience culturelle (Hume et Mort 2008) ou muséale (Ben Nasr, Hallem et Lagier 2018 ; Jarrier 2015 ; Jarrier, Bourgeon-Renault et Belvaux 2019) en prenant en compte

2011; Meuter et al. 2003; Sabadie and Vernette 2003) have regularly been demonstrated in the field of services.

In particular, Caldwell (2002) identified the characteristics of an exhibition that museum audiences consider to be of high quality: the artistic (classical or modern art) or historical (recognized period) exhibition must be interesting, educational, entertaining and child-friendly. Finally, the positive influence of perceived quality on perceived value (Aurier et al. 2004) and satisfaction (Oliver 1997) has been demonstrated, including in the tourism (Bigné et al. 2001; Chen and Chen 2010) or museum (Harrison and Shaw 2004; Martin-Ruiz et al. 2010) sectors.

The experiential approach apprehends the value resulting from accumulated experiences and immersion in an act of consumption (Holbrook 1994). Value is a relative comparative, personal and situational preference characterizing the experience of a subject in interaction with an object. The value typology proposes three possible axes for valuing an experience (intrinsic/extrinsic, active/reactive, self-directed/or oriented towards others) and identifies eight components of value (efficiency, excellence, status, esteem, play, aesthetics, ethics and spirituality). In the cultural field, many typologies of value have been highlighted. The museum visit experience offers a functional value (quality of the works exhibited and the services offered to the public), social value (interactions between visiting companions), emotional value (admiration, surprise, surprise and pleasure), epistemic value (curiosity, novelty) and conditional value (depending among other things on situational factors related to pricing policy or attendance) (Bourgeon et al. 2006; Passebois 2010). Ben Nasr, Hallem and Lagier (2017) point out that the use of a mobile museum application contributes to an increase in different sources of perceived value (educational, recreational, social, personal).

The above developments reveal a frequent mobilization of the concepts of quality and perceived value in the field of arts and culture. However, few studies measure satisfaction with the cultural (Hume and Mort 2008) or museum (Ben Nasr, Hallem and Lagier 2018; Jarrier 2015; Jarrier, Bourgeon-Renault and Belvaux 2019) experience by taking into account the impact of the use of digital mediation devices.

### Role of digital mediation devices in the museum visit experience and public satisfaction

Recent research (Lemoine and Salvadore 2018; Tan 2017; Tussyadiah and Zach 2012) confirms both positive (discovery, shared experience) and negative (loss of the exotic and extraordinary character of the destination, low sense of escape) effects of using a smartphone during a

l'incidence de l'utilisation des dispositifs numériques de médiation.

# Rôle des dispositifs numériques de médiation dans l'expérience de visite muséale vécue et la satisfaction des publics

De récentes recherches (Lemoine et Salvadore 2018 ; Tan 2017; Tussyadiah et Zach 2012) confirment des effets positifs (découverte, expérience partagée) mais également négatifs (perte du caractère exotique et extraordinaire de la destination, faible sentiment d'évasion) de l'utilisation d'un smartphone lors d'une expérience touristique. Lemoine et Salvadore (2018) ont affiné la compréhension de ces résultats ambivalents en distinguant les effets de trois familles d'usages du smartphone (orientation spatiale et déplacement, organisation et coordination, recherche d'informations localisées) sur l'expérience touristique. Plus particulièrement, les usages du smartphone influencent positivement les dimensions découverte et sociale de l'expérience touristique mais ne contribuent pas toujours à la satisfaction envers les services mobiles (les effets perçus sur la dimension sociale ayant un impact négatif sur la satisfaction). Toutefois, ces recherches portent sur l'expérience d'une destination touristique exotique et non spécifiquement sur l'expérience de visite muséale.

Concernant cette dernière, il ne semble pas émerger de consensus quant aux effets positifs ou négatifs de l'utilisation de dispositifs numériques de médiation sur l'expérience vécue. En effet, si Petr et Ngary (2012, p. 14) concluent que la mise à disposition de tablettes tactiles aux publics « n'a pas d'impact sur la qualité de l'expérience vécue au cours de la visite [et] ne représentent pas de réel renouvellement », d'autres recherches plus récentes (Ben Nasr, Hallem et Lagier 2018 ; Jarrier 2015 ; Jarrier, Bourgeon-Renault et Belvaux 2019) démontrent empiriquement l'existence de bénéfices expérientiels liés à l'usage des technologies muséales (apprentissage et construction de sens favorisés, meilleure orientation spatiale, renforcement du plaisir ressenti, attention davantage focalisée et distorsion du temps favorable à l'évasion mentale).

En outre, peu de recherches ont étudié l'incidence de l'utilisation de dispositifs numériques de médiation sur la satisfaction des publics. La satisfaction résulte de la comparaison entre la performance perçue après la consommation et les attentes préalables (Oliver 1980). Lorsque la performance perçue est supérieure aux attentes préalables du consommateur, ce dernier est satisfait. La satisfaction est alors considérée comme un état cognitif influencé par d'autres états cognitifs antérieurs. D'autres recherches considèrent que la satisfaction est également

tourist experience. Lemoine and Salvadore (2018) have refined the understanding of these ambivalent results by distinguishing the effects of three families of smart-phone uses (spatial orientation and travel, organization and coordination, search for localized information) on the tourism experience. In particular, smartphone usage positively influences the discovery and social dimensions of the tourism experience but does not always contribute to satisfaction with mobile services (perceived effects on the social dimension having a negative impact on satisfaction). However, this research focuses on the experience of an exotic tourist destination and not specifically on the museum experience.

With regard to the latter, there does not seem to be any consensus about the positive or negative effects of the use of digital mediation devices on the lived experience. Indeed, while Petr and Ngary (2012, p. 14) conclude that the provision of tactile tablets to audiences "has no impact on the quality of the experience during the visit [and] does not represent a real renewal", other more recent research (Ben Nasr, Hallem and Lagier 2018; Jarrier 2015; Jarrier, Bourgeon-Renault and Belvaux 2019) empirically demonstrates the existence of experiential benefits related to the use of museum technologies (learning and construction of favoured meanings, better spatial orientation, reinforcement of the pleasure felt, more focused attention and distortion of time favourable to mental escape).

In addition, little research has been done on the impact of the use of digital mediation devices on audience satisfaction. Satisfaction results from the comparison between perceived performance after consumption and prior expectations (Oliver 1980). When the perceived performance is higher than the consumer's previous expectations, the consumer is satisfied. Satisfaction is then considered a cognitive state influenced by other previous cognitive states. Other research considers that satisfaction is also determined by emotions (Oliver 1997) related to pleasure (feeling of well-being, contentment, happiness) and stimulation (sensory and activity) (De Rojas and Camarero, 2008). Consequently, satisfaction is a positive psychological, cognitive and emotional state of consumers following an experience lived in accordance with their expectations (Derbaix 2010; Oliver 1997; Vanhamme 2004).

In the cultural field (theatre), Hume and Mort (2008) point out that satisfaction with the service distinguishes between the central service (the play, the actors and the staging) and the peripheral services (ticket office, cloakroom, restaurant, parking, etc.). According to them, an individual who is closely involved in a cultural institution positively assesses the quality of the central and

déterminée par des émotions (Oliver 1997) ayant trait au plaisir (sentiment de bien-être, de contentement, de bonheur) et à la stimulation (sensorialité et activité) (De Rojas et Camarero, 2008). En conséquence, la satisfaction est un état psychologique positif, cognitif et affectif du consommateur suite à une expérience vécue conforme à ses attentes (Derbaix 2010 ; Oliver 1997 ; Vanhamme 2004).

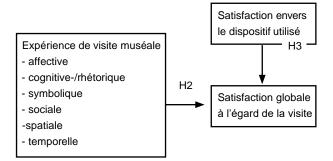
Dans le champ culturel (théâtre), Hume et Mort (2008) rappellent que la satisfaction à l'égard du service distingue le service central (la pièce, les acteurs et la mise en scène) et les services périphériques (billetterie, vestiaire, restauration, parking, etc.). Selon eux, un individu fortement engagé dans une institution culturelle évalue positivement la qualité de l'offre centrale etpériphérique, ce qui influence ensuite favorablement la valeur perçue du service, puis la satisfaction de l'individu. Concernant la visite muséale, Eidelman, Jonchery et Zizi (2012) concluent qu'un niveau élevé de satisfaction résulte, tout d'abord, d'une offre centrale jugée enrichissante sur le plan culturel, puis, d'une offre périphérique confortable, et, enfin seulement, des outils de médiation proposés. Les auteurs constatent que les dispositifs médiatiques d'aide à la visite ne font pas l'unanimité en raison de leur nombre insuffisant ou de leur manque de praticité perçu par un visiteur sur cing. Avec l'innovation constante dont font preuve les institutions muséales ces dernières années, il fait sens de continuer à interroger l'expérience vécue par les publics avec les dispositifs numériques de médiation proposés et la satisfaction qu'ils en retirent.

#### Modele et hypotheses de la recherche

#### Modèle théorique

Nous proposons de modéliser l'influence des dispositifs numériques de médiation sur l'expérience de visite muséale et la satisfaction des publics (Figure 1).

Figure 1 : Modèle théorique de la recherche



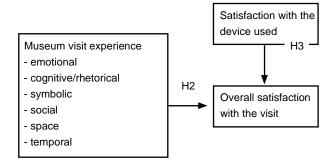
peripheral offer, which then favourably influences the perceived value of the service, and then the individual's satisfaction. Concerning the museum visit, Eidelman, Jonchery and Zizi (2012) conclude that a high level of satisfaction results, first, from a central offer considered culturally enriching, then from a comfortable peripheral offer, and finally only from the mediation tools offered. The authors find that media devices to support visits are not unanimously accepted because of their insufficient number or lack of practicality, as perceived by one in five visitors. With the constant innovation that museum institutions have shown in recent years, it makes sense to continue to question the experience of the public with the digital mediation systems offered and the satisfaction they derive from them.

### Research model and hypotheses

#### Theoretical model

We propose to model the influence of digital mediation devices on the museum experience and public satisfaction (Figure 1).

Figure 1: Theoretical research model



#### Research hypotheses

The influence of digital mediation devices on the dimensions of the perceived value of the visiting experience was qualitatively assessed. While the literature review conducted by Collin-Lachaud and Passebois (2008) identifies positive effects of multimedia and immersive technologies on perceived value (aesthetic, playful, social, intellectual and spiritual connection, self-expression and nostalgia), Coutelle-Brillet et al's (2018) qualitative research highlights contrasting effects (positive and negative) of the use of augmented reality when visiting the Château de Chambord. Despite perfectly convergent results, the literature agrees that perceived value is an antecedent to satisfaction. It therefore seems likely that the benefits identified by the above-mentioned research may directly influence the satisfaction of visitors who use

#### Hypothèses de recherche

L'influence des dispositifs numériques de médiation sur les dimensions de la valeur perçue de l'expérience de visite a été appréhendée de façon qualitative. Si la revue de la littérature réalisée par Collin-Lachaud et Passebois (2008) identifient des effets positifs des technologies multimédia et immersives sur la valeur perçue (esthétique, ludique, lien social, intellectuelle et spirituelle, expression de soi et nostalgie), la recherche qualitative de Coutelle-Brillet et al. (2018) met, en revanche, en évidence des effets contrastés (positifs et négatifs) de l'utilisation de la réalité augmentée lors de la visite du château de Chambord. En dépit de résultats parfaitement convergents, la littérature s'accorde à considérer la valeur perçue comme antécédente de la satisfaction. Dès lors, il apparaît probable que les bénéfices identifiés par les recherches précédemment citées puissent influencer directement la satisfaction des visiteurs qui utilisent des dispositifs numériques de médiation. En conséquence, nous émettons l'hypothèse suivante :

H1: Une expérience de visite muséale vécue avec un dispositif numérique de médiation génère une plus grande satisfaction globale qu'une visite libre (effectuée sans utiliser d'outil).

L'expérience vécue avec une technologie de libre-service (borne automatique, serveur vocal, application mobile, etc.) détermine l'attitude de l'utilisateur envers celle-ci ainsi que son intention de la réutiliser (Curran et Meuter 2005 ; Lin et Hsieh 2007). Plus particulièrement, Lin et Hsieh (2011) ont démontré que les dimensions de la qualité perçue d'une SST (fonctionnalité, plaisir, confidentialité, confiance, design, praticité et possible personnalisation) impactent positivement la satisfaction de l'usager. Dans le champ culturel, la qualité de l'offre centrale et l'offre périphérique influencent toutes deux favorablement la valeur perçue du service et la satisfaction de l'individu (Hume et Mort 2008). Bien qu'Eidelman, Jonchery et Zizi (2012) constatent qu'un niveau élevé de satisfaction résulte, tout d'abord, d'une offre cen- trale jugée enrichissante sur le plan culturel, puis, d'une offre périphérique confortable, et, enfin seulement, des outils de médiation proposés, d'autres recherches plus récentes (Lemoine et Salvadore 2018) démontrent que la dimension découverte de l'expérience touristique favorisée par l'usage d'un téléphone mobile a un impact positif sur la satisfaction. En prenant appui sur ces dernières recherches issues de l'approche expérientielle du tourisme, et en l'appliquant aux cas d'une visite muséale, nous formulons l'hypothèse suivante :

digital mediation devices. Consequently, we make the following hypothesis:

H1: A museum visit experience lived with a digital mediation device generates greater overall satisfaction than an open house visit (carried out without the use of a tool).

The experience with self-service technology (kiosk, voice server, mobile application, etc.) determines the users' attitude towards it and their intention to reuse it (Curran and Meuter 2005; Lin and Hsieh 2007). More specifically, Lin and Hsieh (2011) have shown that the dimensions of the perceived quality of an OHS (functionality, pleasure, confidentiality, trust, design, convenience and possible customization) have a positive impact on user satisfaction. In the cultural field, the quality of the central and the peripheral offers both have a positive influence on the perceived value of the service and individual satisfaction (Hume and Mort 2008). Although Eidelman, Jonchery and Zizi (2012) note that a high level of satisfaction re-sults, first, from a central offer that is considered culturally enriching, then from a comfortable peripheral offer, and finally only from the mediation tools proposed, other more recent research (Lemoine and Salvadore 2018) shows that the discovery dimension of the tourist experience promoted by the use of a mobile phone has a positive impact on satisfaction. Based on this latest research from the experiential approach to tourism, and applying it to museum visits, we formulate the following hypothesis:

H2: Satisfaction with the digital mediation device used positively influences the individual's overall satisfaction with the museum visit.

#### **Quantitative study**

To test these hypotheses, a quantitative study was carried out between January 2015 and March 2015 with visitors to the exhibition «Des animaux et des pharaons» proposed by the Louvre Lens Museum. A face-to-face questionnaire was administered to 916 visitors in the area adjacent to the exhibition exit. The sample is suf- ficiently representative of the audiences of art museums in France, in terms of familiarity, age, profession, level of education and mode of support (Appendix A), taking into account the surveys of audiences of cultural organisations (Donnat 2008; Gottesdiener, Vilatte and Vrignaud 2008; October 2009).

The sample consists of a group of non-users (439) and a group of users (477), the latter having used either a mobile (322) or fixed (155) tool, or both (104). The mobile tool, consisting of a multimedia guide, was offered free of charge to each visitor; the fixed tool, placed at various

H2: La satisfaction envers le dispositif numérique de médiation utilisé influence positivement la satisfaction globale de l'individu à l'égard de la visite muséale.

#### **Etude quantitative**

Pour tester ces hypothèses, une étude quantitative a été réalisée entre janvier 2015 et mars 2015 auprès de visiteurs de l'exposition « Des animaux et des pharaons » proposée par le musée du Louvre Lens. Un questionnaire a été administré en face à face, auprès de 916 visiteurs, dans l'espace jouxtant la sortie de l'exposition. L'échantillon s'avère suffisamment représentatif des publics des musées d'art en France, en termes de familiarité, d'âge, de profession, de niveau d'études et de mode d'accompagnement (Annexe A), compte tenu des enquêtes portant sur les publics d'organisations culturelles (Donnat 2008 ; Gottesdiener, Vilatte et Vrignaud 2008 ; Octobre 2009).

L'échantillon se compose d'un groupe de non utilisateurs (439) et d'un groupe d'utilisateurs (477), ces derniers ayant utilisé soit un outil mobile (322), soit fixe (155), soit les deux (104). L'outil mobile, consistant en un guide multimédia, était proposé gratuitement à chaque visiteur; l'outil fixe, disposé à divers endroits de l'exposition, proposait le même contenu à travers un écran tactile de grande taille, favorisant ainsi l'utilisation par plusieurs individus. Les répondants ont donc choisi librement de visiter le musée de façon autonome ou en utilisant un outil numérique de médiation.

L'expérience de visite muséale a été évaluée ainsi que la satisfaction de l'individu par rapport à son vécu et à l'égard du dispositif numérique de médiation. Dans ce but, ont été utilisées des échelles de mesure proposées par des travaux antérieurs (Jarrier 2015 ; Lin et Hsieh 2007 ; Plichon 1999 ; Annexe B). Plusieurs variables de contrôle ont également été mesurées : optimisme technologique, maîtrise informatique, densité perçue, pression temporelle, ainsi que les principales variables socio-démographiques. Après avoir vérifié les qualités psychométriques des mesures multidimensionnelles par des méthodes exploratoires (ACP et alpha de Cronbach), des analyses confirmatoires PLS (Annexe B) ont été menées et ont confirmé les normes attendues en termes de fidélité et de validité (convergente et discriminante).

## Une expérience de visite muséale vécue avec un dispositif numérique de médiation est-elle plus satisfaisante qu'une visite libre ?

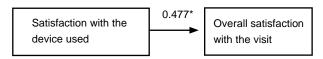
Afin de tester notre seconde hypothèse, nous examinons la valeur des coefficients de régression reliant les composantes de l'expérience de visite muséale à la satisfaction globale par rapport à la visite muséale. Puis nous compa-

places in the exhibition, offered the same content through a large touch screen, thus facilitating use by several individuals. Respondents therefore freely chose to visit the museum independently or using a digital mediation tool. The museum visit experience was evaluated as well as individuals' satisfaction with their experience and with the digital mediation system. To this end, measurement scales proposed by previous work were used (Jarrier 2015; Lin and Hsieh 2007; Plichon 1999; Appendix B). Several control variables were also measured: technological optimism, computer literacy, perceived density, time pressure, and the main socio-demographic variables. After verifying the psychometric qualities of multidimensional measurements by exploratory methods (ACP and Cronbach alpha), confirmatory PLS analyses (Appendix B) were conducted and confirmed the expected standards of accuracy and validity (convergent and discriminating).

# Does satisfaction with the device used contribute positively to overall satisfaction with the visit?

In order to test our third and final hypothesis, we examined the significance of the overall structural model (Figure 2; Appendix C).

**Figure 2 :** Structural model of the relationship between satisfaction with the device used and overall satisfaction with the visit



<sup>\*</sup>significant at the 5% error threshold

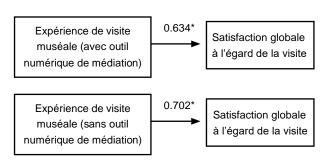
The one-dimensional constructs of use satisfaction and overall satisfaction with the museum visit have communalities greater than 0.5. In addition, R²s exceed the score by 0.1. All these elements attest to the significance of our model.

**Table 1 :** Structural coefficients of the relationship between satisfaction with the device used and overall satisfaction with the visit

	Path coefficient	T- Value
Satisfaction with the system used -> Overall satisfaction with the visit	0.477	5.511

rons les résultats de cette relation au niveau de l'échantillon des utilisateurs (n=477), puis au niveau de celui des non utilisateurs d'un outil interactif de médiation (n=439). Les deux modèles structurels relatifs à la relation entre le vécu de l'expérience de visite muséale (avec et sans outil) et la satisfaction globale des publics à l'égard de la visite (Figure 2) présentent des indicateurs de qualité satisfaisants (Annexe C).

**Figure 2 :** Modèles structurels de la relation entre l'expérience de visite muséale et la satisfaction globale à l'égard de la visite



<sup>\*</sup>significatif au seuil d'erreur de 5 %

Les communalités sont supérieures à 0,5 pour le vécu de l'expérience de visite muséale et pour la satisfaction globale. En outre, les R² calculés pour le vécu de l'expérience de visite muséale et pour la satisfaction globale excèdent le score de 0,1 pour nos deux échantillons (utilisateurs et non utilisateurs). L'ensemble de ces éléments atteste de la significativité de notre modèle.

**Tableau 1 :** Coefficients structurels de la relation entre l'expérience de visite muséale et la satisfaction globale à l'égard de la visite

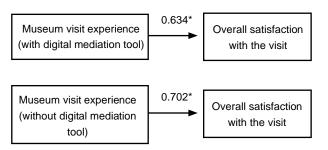
	Path coeff	Moyenne	Ecart type	T-value
Expérience de visite muséale (avec outil) -> Satisfaction globale à l'égard de la visite	0.634	0.630	0.065	8,801
Expérience de visite muséale (sans outil) -> Satisfaction globale à l'égard de la visite	0.702	0.705	0.062	11.249

The regression coefficient between satisfaction with the device used and overall satisfaction with the visit is significant at the 95% confidence level (Table 1), confirming our third and final hypothesis that the use of museum technologies is inherently a source of pleasure and satisfaction.

#### Is a museum visit experience with a digital mediation device more satisfying than an open house visit?

In order to test our second hypothesis, we examine the value of the regression coefficients linking the components of the museum visit experience to overall satisfaction with the museum visit. Then we compare the results of this relationship at the level of the user sample (n=477), then at the level of the non-users of an interactive mediation tool (n=439). The two structural models relating to the relationship between the experience of museum visits (with and without tools) and the overall satisfaction of the public with the visit (Figure 2) present satisfactory quality indicators (Appendix C).

**Figure 3 :** Structural models of the relationship between the museum visit experience and overall satisfaction with the visit



<sup>\*</sup>significant at the 5% error threshold

The communalities are greater than 0.5 for the experience of the museum visit and for overall satisfaction. In addition, the R²s calculated for the museum experience and overall satisfaction exceed the score of 0.1 for both our samples (users and non-users). All these elements attest to the significance of our model.

Nous avions postulé qu'une visite muséale vécue à l'aide d'un dispositif numérique de médiation serait plus satisfaisante qu'une visite autonome. Nous avons obtenu le résultat inverse, invalidant ainsi l'hypothèse 2. La relation positive entre l'expérience de visite muséale autonome et la satisfaction globale de l'individu est statiquement plus forte que celle qui relie l'expérience de visite muséale effectuée à l'aide d'un dispositif et la satisfaction globale à l'égard de la visite (0,702 ; p=11,249 > 0,634 ; p=8,801). Ce résultat démontre la robustesse de la conclusion des recherches d'Eidelman, Jonchery et Zizi (2012), à savoir le fait que la satisfaction des publics résulte tout d'abord de l'offre centrale (collections et bâtiment), puis du confort de l'offre périphérique considérée dans son ensemble et, en dernier lieu, des outils de médiation pro- posés. Ce résultat peut être relié aux multiples bénéfices (ressourcement mental, renforcement du lien avec les compagnons) d'une visite autonome identifiés par Packer (2008).

## La satisfaction envers le dispositif utilisé contribue-t-elle positivement à la satisfaction globale à l'égard de la visite ?

Afin de tester notre troisième et dernière hypothèse, nous avons examiné la significativité du modèle structurel global (Figure 3 ; Annexe C).

**Figure 3 :** Modèle structurel de la relation entre la satisfaction envers le dispositif utilisé et la satisfaction globale à l'égard de la visite



<sup>\*</sup>significatif au seuil d'erreur de 5 %

Les construits unidimensionnels de la satisfaction liée à l'usage et de la satisfaction globale à l'égard de la visite muséale présentent des communalités supérieures à 0.5. En outre, les R<sup>2</sup> excèdent le score de 0,1. L'ensemble de ces éléments atteste de la significativité de notre modèle.

**Tableau 2 :** Coefficients structurels de la relation entre la satisfaction envers le dispositif utilisé et la satisfaction globale à l'égard de la visite

	Path coefficient	T- Value
Satisfaction envers le dispositif utilisé -> Satisfaction globale à l'égard de la visite	0.477	5.511

**Table 2 :** Structural coefficients of the relationship between the museum visit experience and overall satisfaction with the visit

	Path coeff	Average	Standard	T-value
Museum visit experience (with tool) -> Overall satisfaction with the visit	0.634	0.630	0.065	8,801
Museum visit experience (without tools) -> Overall satisfaction with the visit	0.702	0.705	0.062	11.249

We had postulated that a museum visit experienced with the help of a digital mediation device would be more satisfactory than an autonomous visit. We obtained the opposite result, thus invalidating hypothesis 2. The positive relationship between the autonomous museum visit experience and the overall satisfaction of the individual is statically stronger than that between the device visit experience and the overall satisfaction with the visit (0.702; p=11.249 > 0.634; p=8.801). This result demonstrates the robustness of the conclusion of the research by Eidelman, Jonchery and Zizi (2012), namely the fact that public satisfaction results first of all from the central offer (collections and buildings), then from the comfort of the peripheral offer considered as a whole and, finally, from the mediation tools proposed. This result can be linked to the multiple benefits (mental rejuvenation, strengthening the bond with companions) of an autonomous visit identified by Packer (2008).

#### Conclusion

The research aimed to answer the following questions: Does the use of a digital mediation device impact the museum visit experience? Do the experience and satisfaction with the device used constitute explanatory variables for the overall satisfaction of the public with the museum's offer (works exhibited)? The literature, as well as the results of the analysis of the 916 questionnaires collected from the public at the Louvre Lens Museum, make it possible to make several contributions.

On the theoretical level, the research highlights the importance of apprehending and measuring the museum

Le coefficient de régression entre la satisfaction liée au dispositif utilisé et la satisfaction globale à l'égard de la visite est significatif au seuil de confiance de 95 % (Tableau 2), confirmant ainsi notre troisième et dernière hypothèse selon laquelle l'utilisation des technologies muséales constitue intrinsèquement une source de plaisir et de satisfaction.

#### Conclusion

La recherche avait pour objectif de répondre aux questions suivantes : l'utilisation d'un dispositif numérique de médiation impacte-t-elle l'expérience de visite muséale ? L'expérience vécue et la satisfaction envers le dispositif utilisé constituent-elles des variables explicatives de la satisfaction globale des publics à l'égard de l'offre muséale (œuvres exposées) ? La littérature, ainsi que les résultats issus de l'analyse des 916 questionnaires collectés auprès des publics du musée du Louvre Lens, permettent d'avancer plusieurs contributions.

Sur le plan théorique, la recherche met en évidence l'intérêt d'appréhender et de mesurer l'expérience de visite muséale de façon holiste, en prenant en compte ses multiples dimensions : affective (stimulation, découverte, évasion, fascination, etc.), cognitive et rhétorique (observation, raisonnement, apprentissage, mémorisation, introspection), symbolique (représentations symboliques et métaphoriques, image de soi), sociale (échanges avec les autres visiteurs), spatiale (stratégies de déambulation) et temporelle (gestion de la durée de la visite).

Sur le plan empirique, la recherche démontre que l'utilisation du guide mobile augmenté, ainsi que des tables tactiles multi-joueurs, proposés par le musée du Louvre Lens, contribue à renforcer le plaisir associé à la visite et la compréhension des œuvres en dépit d'un léger effet de désocialisation. Cependant, ces bénéfices (affectifs et cognitifs) immédiats n'apparaissent pas suffisants pour faire d'une visite réalisée avec un dispositif numérique de médiation une expérience qui soit davantage satisfaisante pour les publics qu'une visite autonome. Bien que l'utilisateur apprenne de façon plus ludique sans voir le temps s'écouler, les dispositifs utilisés n'impactent pas fortement l'ensemble des composantes de son expérience, et peuvent parfois avoir des effets négatifs en entravant temporairement les échanges entre ses compagnons de visite. En conséquence, cette recherche partage les conclusions émises par Petr et Ngary (2012, p. 14) selon lesquelles la plupart des dispositifs numériques « ne représentent pas de réel renouvellement », et par Eidelman, Jonchéry et Zizi (2012) qui ont démontré que la satisfaction résulte d'abord de l'offre centrale, puis des services périphériques dans leur ensemble, et enfin seulement des dispositifs numériques de médiation. Comme Collier et Barnes (2015) l'indiquent, il ne suffit pas qu'une

visit experience in a holistic way, taking into account its multiple dimensions: emotional (stimulation, discovery, escape, fascination, etc.), cognitive and rhetorical (observation, reasoning, learning, memorization, introspection), symbolic (symbolic and metaphorical representations, self-image), social (exchanges with other visitors), spatial (walking strategies) and temporal (managing the duration of the visit).

Empirically, the research shows that the use of the enhanced mobile guide, as well as the multiplayer touch tables offered by the Louvre Lens Museum, contributes to enhancing the pleasure associated with visiting and understanding the works despite a slight desocialization effect. However, these immediate benefits (emotional and cognitive) do not seem sufficient to make a visit with a digital mediation device a more satisfying experience for the public than an autonomous visit. Although users learn in a more playful way without noticing the passage of time, the devices used do not have a significant impact on all the components of their experience, and can sometimes have negative effects by temporarily hindering exchanges among visiting companions. Consequently, this research shares the conclusions of Petr and Ngary (2012, p. 14) that most digital devices «do not represent a real renewal», and of Eidelman, Jonchéry and Zizi (2012) who demonstrated that satisfaction results first from the central offer, then from peripheral services as a whole, and finally only from digital mediation devices. As Collier and Barnes (2015) point out, it is not enough for a service experience to be pleasant and in line with expectations for it to be memorable, it must also delight and surprise the consumer. Thus, although the utilitarian and hedonic functionalities of museum technologies meet or exceed public expectations, the extraordinary and enchanting nature of a museum visit remains more closely linked to the works discovered and the exchanges between fellow visitors.

However, this research has some limitations. The sample size is large but does not prevent a possible selection effect from occurring. Indeed, we did not select a priori the visitors who would compose the non-user or user groups. For convenience, respondents were approached at the end of the exhibition. We then ensured that we interviewed a balanced number of individuals who had visited the museum freely or using a digital mediation device. In addition, young people, students, executives and families are slightly over-represented, while pensioners, couples and individual visitors appear under-represented, mainly because data was collected during a period including school holidays. Finally, the external validity of the research is limited to medium-sized museum institutions. Many research avenues are emerging as a result of this work. The stability of these results by age, gender or familiarity of individuals with museums and technologies remains to be confirmed. It would also be interesting to

expérience de service soit plaisante et conforme aux attentes pour qu'elle soit mémorable, elle doit en outre enchanter et surprendre le consommateur. Ainsi, bien que les fonctionnalités utilitaires et hédoniques des technologies muséales soient conformes aux attentes des publics, voire les dépassent, le caractère extraordinaire et enchanteur d'une visite muséale reste davantage lié aux œuvres découvertes et aux échanges entre les compagnons de visite.

Cependant, cette recherche présente certaines limites. L'échantillon est de grande taille mais ne permet pas d'éviter une possible survenance d'un effet de sélection. En effet, nous n'avons pas sélectionné à priori les visiteurs qui composeraient les groupes de non utilisateurs ou d'utilisateurs. Par convenance, les répondants ont été approchés à la sortie de l'exposition. Nous avons alors veillé à interroger un nombre équilibré d'individus ayant visité librement le musée ou à l'aide d'un dispositif numérique de médiation. Par ailleurs, les jeunes, les étudiants, les cadres et les familles sont légèrement sur-représentés tandis que les retraités, les couples et les visiteurs individuels apparaissent sous-représentés, notamment en raison d'une collecte de données réalisée pendant une période incluant des vacances scolaires. Enfin, la validité externe de la recherche est limitée aux institutions muséales de taille moyenne.

De nombreuses voies de recherches émergent suite à ce travail. La stabilité de ces résultats selon l'âge, le genre ou la familiarité des individus avec les musées et les technologies reste à être confortée. Il serait également intéressant d'inclure dans la recherche de nouveaux outils (réalité virtuelle et augmentée, hologrammes, robots-guides...). Enfin, d'autres conséquences de l'utilisation des technologies muséales, (telles que la surprise, l'enchantement, le transport narratif ou encore le souvenir de l'expérience) mériteraient d'être explorées.

include new tools (virtual and augmented reality, holograms, robotic guides, etc.) in the research. Finally, other consequences of the use of museum technologies, (such as surprise, enchantment, narrative transport or the memory of the experience) should be explored.

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## **Annexes**

## Annexe A. Structure de l'échantillon

Variables	Catégories	Louvre Lens (%)	
	Non public	22	
Familiarité	Occasionnels	39	
	Habitués	39	
0	Hommes	40	
Genre	Femmes	60	
	15-34 ans	40	
Âge	35-54 ans	21	
	55 ans et plus	39	
	Commerçant(e)	3,3	
	Cadres et professions intermédiaires/supérieures	31,6	
	Employé(e)	8,5	
Profession	Ouvrier(e)	1,3	
	Artisan(e)	0,2	
	Etudiant(e)	27,1	
	Inactif(ve)	0	
	Recherche d'emploi	4,7	
	Retraité(e)	23,3	
	Aucun diplôme	0,4	
A. 1177 1	Niveau Bac ou inférieur	38,6	
Niveau d'études	Bac à Bac+3	22,3	
	>Bac+3	38,7	
	Seul(e)	5,5	
	En couple	24,8	
Mode d'accompagnement	En famille	26,7	
. 3	Entre amis	21,8	
	En groupe	21,2	

## **Appendices**

## Appendix A. Sample structure

Variables	Categories	Louvre Lens (%)
	Non visitors	22
Familiarity	Occasional visitors	39
•	Regular visitors	39
•	Men	40
Sex	Women	60
	15-34 years old	40
Age	35-54 years old	21
3.	55 years and over	39
	Trader	3,3
	Middle/senior managers and professionals	31,6
	Clerical worker	8,5
Occupation	Manual worker	1,3
Occupation	Self-employed	0,2
	Student	27,1
	Inactive	0
	Job seeker	4,7
	Retired	23,3
	No diploma	0,4
	Baccalaureate or lower level	38,6
Level of education	Higher education	22,3
	Postgraduate education	38,7
	Alone	5,5
	As a couple / With partner	24,8
Social context	With the family	26,7
	With friends	21,8
	In a group	21,2

## Annexe B. Echelles de mesure et qualités psychométriques

	Param.	t-test	Alpha	CR	AVE
Expérience de visite muséale					
Affective			0,887	0,922	0,628
Je suis impressionné(e), admiratif(ve)	0,803	42,819			
Visiter ce musée est un plaisir	0,77	37,843			
Je suis enthousiasmé(e) par ce que je vois	0,852	54,331			
Je fais d'heureuses découvertes	0,83	52,658			
J'ai des « coups de cœur » pour des œuvres	0,779	31,24			
Visiter ce musée est une forme d'évasion, de rêve éveillé	0,717	23,627			
Visiter ce musée éveille mes sens	0,787	36,776			
Cognitive-rhétorique			0,653	0,828	0,616
Je comprends ce que je vois	0,832	39,952			
Je formule mes propres réponses	0,768	14,402			
Je devine ce qui est représenté	0,752	25,945			
Symbolique			0,697	0,798	0,569
Visiter ce musée dit un peu qui je suis (révélation de mon tempérament, de ma personnalité)	0,794	5,213			
Mon attitude permet aux autres d'en savoir plus sur moi	0,733	2,64			
Ma façon de me conduire dans ce musée dit des choses sur moi	0,735	4,755			
Temporelle	0,849	3,394	0,777	0,901	0,751
Je fais attention au temps que dure ma visite	0,865	3,939	-,	5,551	-,
Je gère la durée de ma visite	0.886	30,627			
Je contrôle le temps que je consacre à ma visite	0.838	34,082			
Sociale	0,000	04,002	0,784	0,872	0,693
Je converse avec les gens qui m'accompagnent	0,831	34,362	0,704	0,072	0,000
Je demande leur ressenti aux personnes qui m'accompagnent	0,829	33,08			
Je pose des questions à mes compagnons de visite	0,020	00,00			
Satisfaction envers le dispositif utilisé			0,825	0,943	0,812
Dans l'ensemble, je suis satisfait(e) du dispositif numérique utilisé pendant la			0,020	0,040	0,012
visite	0,949	17,292			
Le dispositif numérique utilisé pendant la visite dépasse mes attentes	0,930	6,695			
Le dispositif numérique utilisé pendant la visite est proche de l'idéal que je me fais					
de ce type d'outil	0,950	33,929			
Satisfaction globale à l'égard de la visite muséale			0,807	0,928	0.798
Je suis satisfait(e) de ce que j'ai vécu dans ce musée	0,725	8,354	,	,	
Si c'était à refaire, je reviendrais	0,798	17,132			
C'était une bonne idée quand j'ai décidé de venir dans ce musée	0,881	40,753			
Venir dans ce musée fut un bon choix	0,924	96,886			
Variables de contrôle	0,02.	00,000			
Optimisme technologique			0,723	0,845	0,602
La technologie me permet de faire les choses que je souhaite plus facilement et au moment où je le désire	0,917	12,228	5,125	5,5.5	0,002
La technologie m'aide à réaliser les changements nécessaires dans ma vie	0,712	6,928			
Les nouvelles technologies me facilitent la vie	0,677	3,56			
Maîtrise informatique	0,0	0,00	0,827	0,897	0,722
Je comprends le fonctionnement de nouveaux produits high tech sans l'aide des autres	0,919	9,209	0,027	0,001	0,122
Il me semble avoir moins de difficultés que les autres à faire fonctionner la technologie	0,803	3,69			
Les autres personnes me demandent conseil au sujet des nouvelles technologies	0,822	6,338	+		
Densité perçue	5,022	5,550	0,818	0,892	0,69
J'ai eu du mal à visiter le musée	0,913	11,875	0,010	0,032	0,09
			+		
La circulation dans le musée est difficile	0,913	11,908			
On act les une our les autres	0,633	2,803			
On est les uns sur les autres			0.7	0.70	0.700
On est les uns sur les autres  Pression temporelle  Au cours de votre visite, avez-vous eu le sentiment d'être pressé(e) ?	0,912	27,763	0,7	0,879	0,766

## Appendix B. Measurement scales and psychometric qualities

	Param.	test t-test	Alpha	CR	AVE
Museum visit experience					
Emotional			0.887	0.922	0.628
I am impressed, admiring	0.803	42.819			
Visiting this museum is a pleasure	0.77	37.843			
I am enthusiastic about what I see	0.852	54.331			
I make discoveries	0.83	52.658			
I have "favorites" for works	0.779	31.24			
Visiting this museum is a form of escape, a waking dream	0.717	23.627			
Visiting this museum awakens my senses	0.787	36.776			
Cognitive-rhetorical			0.653	0.828	0.616
I understand what I see	0.832	39.952			
I formulate my own answers	0.768	14.402			
I guess what's represented	0.752	25.945			
Symbolic			0.697	0.798	0.569
Visiting this museum says a little about who I am (revelation of my temperament,	İ				
of my personality)	0.794	5.213			
My attitude allows others to know more about me	0.733	2.64			
The way I conduct myself in this museum says things about me	0.735	4.755			
Temporal	0.849	3.394	0.777	0.901	0.751
I pay attention to the length of my visit	0.865	3.939			
I manage the duration of my visit	0.886	30.627			
I control the time I spend on my visit	0.838	34.082			
Social			0.784	0.872	0.693
I talk with the people who are accompanying me	0.831	34.362			
I ask the people accompanying me for their feelings	0.829	33.08			
I ask questions to my fellow visitors					
Satisfaction with the device used			0.825	0.943	0.812
Overall, I am satisfied with the digital device used during the visit	0.949	17.292			
The digital device used during the visit exceeds my expectations	0.930	6.695			
The digital device used during the visit is close to my ideal of this type of tool	0.950	33.929			
Overall satisfaction with the museum visit			0.807	0.928	0.798
I am satisfied with what I have experienced in this museum	0.725	8.354			
If I had to do it all over again, I'd come back.	0.798	17.132			
It was a good idea when I decided to come to this museum	0.881	40.753			
Coming to this museum was a good choice	0.924	96.886			
Control variables					
Technological optimism			0.723	0.845	0.602
Technology makes it easier for me to do the things I want to do and when I want to do them	0.917	12.228			
Technology helps me make the necessary changes in my life	0.712	6.928			
New technologies make my life easier	0.677	3.56			
Computer skills			0.827	0.897	0.722
I understand how new high-tech products work without the help of others	0.919	9.209			
It seems to me that it is easier than others to make technology work	0.803	3.69			
Other people ask me for advice about new technologies	0.822	6.338			
Perceived density			0.818	0.892	0.69
I had a hard time visiting the museum	0.913	11.875	-		
Traffic in the museum is difficult	0.913	11.908			
We're on top of each other.	0.633	2.803			
Time pressure			0.7	0.879	0.766
During your visit, did you have the feeling of being in a hurry?	0.912	27.763		2.3.0	00
Would more time have allowed you to make a better visit?	0.837	16.322			

#### Annexe C. Indicateurs de qualité du modèle structurel

La relation entre l'expérience de visite muséale effectuée avec un dispositif numérique de médiation et la satisfaction globale

Avec outils	Communalité	Redondance	R <sup>2</sup>
Normes	>0.5		
Expérience de visite muséale (avec outils)	0.504		
Satisfaction globale à l'égard de la visite	0.820	0.337	0.416

La relation entre l'expérience de visite muséale effectuée sans dispositif numérique de médiation et la satisfaction globale

Sans outils	Communalité	Redondance	R <sup>2</sup>
Normes	>0.5		
Expérience de visite muséale (sans outils)	0.533		
Satisfaction globale à l'égard de la visite	0.842	0.412	0.492

La relation entre la satisfaction envers le dispositif utilisé et la satisfaction globale à l'égard de la visite

	Communalité	Redondance	R <sup>2</sup>
Normes	>0.5		
Satisfaction envers le dispositif utilisé	0,702	0,798	0.847
Satisfaction globale à l'égard de la visite	0.832	0.399	0.485

#### Appendix C. Quality indicators of the structural model

The relationship between the museum visit experience with a digital mediation device and overall satisfaction

With tools	Communality	Redundancy	R <sup>2</sup>
Standards	>0.5		
Museum visit experience (with tools)	0.504		
Overall satisfaction with the visit	0.820	0.337	0.416

The relationship between the museum visit experience without a digital mediation device and overall satisfaction

Without tools	Communality	Redundancy	R <sup>2</sup>
Standards	>0.5		
Museum visit experience (without tools)	0.533		
Overall satisfaction with the visit	0.842	0.412	0.492

The relationship between satisfaction with the device used and overall satisfaction with the visit

	Communality	Redundancy	R <sup>2</sup>
Standards	>0.5		
Satisfaction with the device used	0.702	0.798	0.847
Overall satisfaction with the visit	0.832	0.399	0.485

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