Online purchase intentions: A multi-channel store image perspective

Tibert Verhagen [a],[*], Willemijn van Dolen [b]

[a] Department of Knowledge, Information and Networks, Faculty of Economics and Business Administration, VU University Amsterdam, Amsterdam, Netherlands
[b] Department of Business Studies, University of Amsterdam Business School, Netherlands

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ABSTRACT

The advantages of the bricks-and-clicks retail format in the battle for the online customer has been widely discussed but empirical research on it has been limited. We applied a multi-channel store image perspective to assess its influence on online purchase intentions. Drawing on a sample of 630 customers of a large music retail store in the Netherlands, the results demonstrated that offline and online store perceptions directly influenced online purchase intention. In addition, our findings confirmed that offline store impressions were used as references for their online store counterparts. Synergy and reference effects are discussed.

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1. Introduction

Many research papers have discussed the impact of online stores on customer purchasing. A key limitation of these studies concerns their focus on the online store as a single channel, though a growing number of firms have moved to a bricks-and-clicks format. Building upon competitive advantages such as a stable customer base, experience, trust, financial resources, brand strength, and cross-promotional opportunities, these firms are likely to be the most successful.

Today, many consumers use both traditional outlets and virtual storefronts when engaging in purchase behavior. Being exposed to the two channels, consumer purchase behavior is affected by perceptions of both. Research on multi-channel purchasing has generally studied either the difference between the two purchase behaviors (e.g. [2,8]), or the relationships between multi-channel perceptions and channel-independent perceptions like satisfaction, loyalty (e.g. [24]) and retention (e.g. [29]). Except for a few studies of cross-channel service perceptions (e.g. [4,5]) and multi-channel trust (e.g. [14,19]) there are no empirical works addressing the extent to which bricks-and-clicks operations contribute to consumer online purchase behavior. Therefore, the influence of the bricks-and-clicks shopping environment on online purchasing needed to be empirically explored [6].

A study comparing the impact of traditional and online store images was considered of special interest [10]. Both images were assumed to affect online purchasing, but while relative consensus exists on the positive effect of an online store image on online purchases, the visual impact of traditional stores on online purchasing is not well understood. Thus adoption of a multi-channel store image perspective incorporating both channels was crucial.

Our approach therefore applied a multi-channel store image perspective to assess the impact of the overall impression of the offline and online store on consumers' online purchase intention. We consider those dimensions that have been found to influence the brick-and-click context. Based on a comparison of the influence of online and offline store attributes, we concluded that consumers may consider the same criteria in evaluating online and offline stores, but that they differ in their influence on online purchase intention. We suspected that the influence of offline store image on online purchase could be direct as well as mediated by the online store image.

2. Theoretical foundations and hypotheses

2.1. Offline store image and online store image

Many definitions of *store image* and *store attributes* exist but although these draw upon different perspectives, their essence is a total impression of tangible or functional factors (merchandise selection, prices ranges and store layout) *and* intangible or psychological factors (such as perceived manner of the sales staff,

* Corresponding author. Tel.: +31 20 5986059; fax: +31 20 5986005.
  E-mail address: tverhagen@feweb.vu.nl (T. Verhagen).

service level, and reputation). However, there is little consensus on how to measure it. We used a multi-dimensional construct consisting of: service, merchandise, atmosphere, and layout, dealing therefore with overall impressions of both bricks and clicks [17,20,27] but adding customer's perception of ease of online navigation.

2.2. The influence of online store image on online purchase intentions

Individual dimensions of online store image (quality of online service, merchandise quality, and website appearance) significantly influence online purchase intentions [1,7,21].

Thus we posited the following:

H1. Online service (a), online merchandise (b), online atmosphere (c), and online navigation (d) have a positive influence on online purchase intentions.

2.3. The influence of offline store image on online purchase intentions

We argue that the offline store image of bricks-and-clicks influences online purchase intention. The use of different channels to get information and to buy may provide consumers with economic benefits (e.g., online price may be lower) and psychological benefits (feeling smart and knowledgeable).

Although the influence may be bi-directional [28], research has provided only evidence of the effect of online searches on in store buying. Others (e.g. [3]) show that searching on the Internet may provide consumers with price-information, allowing them to obtain a better price in a store.

On the other hand, observations by DoubleClick [9] and iProspect [15] showed that a substantial number of consumers browsed and searched in offline stores, but bought online. This implied that consumers transferred their offline experience into online buying behavior. Also, certain financial providers give investment advice in a face-to-face setting but have moved their brokerage service (customer buying) to the web [23]. In our study, we addressed the influence of offline experiences on online buying behavior. Specifically, we hypothesized and tested the direct effect of offline store characteristics on online purchase intentions and of online store image on online purchase intention:

H2a. Offline service will have a positive influence on online purchase intentions.

H2b. Offline merchandise will have a positive influence on online purchase intentions.

H2c. Offline atmosphere will have a positive influence on online purchase intentions.

H2d. Offline layout will have a positive influence on online purchase intentions.

In addition to this direct effect, we expect an indirect effect of offline store image on online purchase intentions. So we expect that offline store image dimensions influence their online counterparts. Therefore, we hypothesized:

H3a. Offline service will have a positive influence on online service.

Table 1
Socioeconomic and demographic sample characteristics (*n* = 630).

	% of respondents (*n*)		% of respondents (*n*)
Gender		Owner Loyalty card	
Male	61.4% (*387*)	No	60.6% (*382*)
Female	38.6% (*243*)	Yes	39.4% (*248*)
Age		Time online per day	
10–14	2.1% (*13*)	<30 min	4.6% (*29*)
15–24	38.6% (*243*)	30 min	9.7 (*61*)
25–34	26.3% (*166*)	1 h	21.4 (*135*)
35–44	18.3% (*115*)	2 h	26.5% (*167*)
45–54	11.7% (*74*)	3 or >hours	37.8% (*238*)
>55	3.0% (*19*)		
Frequency of buying CDs		Frequency of visiting the online CD store	
Never	10.4% (*66*)	Never	1.3% (*8*)
<Once per year	12.9% (81)	<1 to 2 times per month	6.0% (*38*)
1–6 times per year	44.3% (*279*)	1 to 2 times per month	24.1% (*152*)
Once per month	21.3% (*134*)	Weekly	36.3% (*229*)
Two times per month	6.3% (*40*)	A couple of times per week	25.7% (*162*)
Once or more per week	4.8% (*30*)	Daily	6.5% (*41*)
Amount of money spend on CDs per month		Internet experience	
0–5 Euro	13.7% (*86*)	Very inexperienced	2.4% (*15*)
6–10 Euro	13.7% (*86*)	Inexperienced	0.8% (*5*)
11–20 Euro	29.4% (*185*)	Neutral	14.6% (*92*)
21–30 Euro	17.2% (*109*)	Experienced	56.7% (*357*)
31–40 Euro	10.3% (*65*)	Very experienced	25.6% (*161*)
41-50 Euro	8.6% (*54*)		
>50 Euro	7.1% (*45*)		
Number of CDs bought via the physical CD outlet during the last year		Number of CDs bought via the online CD store during the last year	
None	10% (*63*)	None	34.4% (*217*)
One	11.7% (*74*)	One	16% (*101*)
Two	14.1% (*89*)	Two	17.5% (*110*)
Three	11.6% (*73*)	Three	7.8% (*49*)
Four	11.7% (*74*)	Four or more	24.3% (*153*)
Five or more	40.8% (*257*)		
		Subscription to digital newsletter	
		No	7.3% (*46*)
		Yes	92.7% (*584*)

H3b. Offline merchandise will have a positive influence on online merchandise.

H3c. Offline atmosphere will have a positive influence on online atmosphere.

H3d. Offline layout will have a positive influence on online navigation.

3. Method

3.1. Research design

We adopted a survey design to relate the variables. The population consisted of 1500 registered customers of one of the largest bricks-and-clicks music retail stores in the Netherlands. It has a network of 190 physical outlets and a webstore to serve Dutch customers. Customers received an e-mail invitation to participate in the test; this merely involved clicking on a hyperlink which took them to an online questionnaire. Thus participation was voluntary and thus there was little probability of conditioning to bias the data [26]. As an incentive, respondents were placed in a raffle of a book gift-certificate worth 100 Euro. The questionnaire contained a set of socio-demographics questions followed by a portion addressing perceptions of offline and online store image and customer's online purchase intention.

3.2. Measures

The measures of the offline store image dimensions {*offline store service*, *offline store merchandise*, *offline store atmosphere* and *offline store layout*} were derived from the literature. All are part of reliable validated store image scales [11,12,18,22,25]. Following the majority of store image researchers, we applied tailored semantic differentials as measurement technique.

The measure for *online store service* was based upon the work of Wolfinbarger and Gilly [31] and Van der Heijden and Verhagen [27]. The measures for *online store merchandise*, *online store atmosphere* and *online store navigation* were also taken from Van der Heijden and Verhagen but the target specificity was slightly adapted to make them more applicable to purchasing compact discs via a particular webstore. The measure of online purchase intention was based on work of Jarvenpaa et al. [16], adjusted to our context of by adding the product category (a compact disc) and changing the specific time horizons (*three months*, *the next year*) to (*Short term*, *Longer term*).

4. Results

4.1. Demographics of the respondents

Of the 1500 panel members contacted, 685 responded and, of these, 630 completely filled in the questionnaire. Since the extent

Table 2
Convergent validity and reliability statistics (*n* = 630).

Construct (no. of items)	Items	Factor loadings (PLS)	α	Composite reliability	AVE
Online store service	(1) Unwilling to help– willing to help	0.88	0.86	0.91	0.78
	(2) Unfriendly—friendly	0.91			
	(3) Less knowledgeable—very knowledgeable	0.86			
Online store merchandise	(1) Little information about the CDs—much information about the CDs	0.84	0.80	0.87	0.63
	(2) Little value for money—a lot of value for money	0.81			
	(3) Uninteresting offers—interesting offers	0.85			
	(4) Bad alignment with my interests—good alignment with my interests	0.68			
Online store atmosphere	(1) Boring site—fun site	0.92	0.90	0.94	0.84
	(2) Unattractive site—attractive site	0.91			
	(3) Little pleasure to browse through—great pleasure to browse through	0.90			
Online store navigation	(1) Hard to use—easy to use	0.85	0.91	0.93	0.73
	(2) Bad representation of the CDs—good representation of the CDs	0.89			
	(3) Hard to navigate the site—easy to navigate the	0.85			
	(4) Inflexible site—flexible site	0.85			
	(5) Hard to learn how to use the site—easy to learn	0.84			
Offline store service	(1) Unfriendly personnel—friendly personnel	0.91	0.94	0.95	0.78
	(2) Few helpful salesmen—Many helpful salesmen	0.93			
	(3) Bad service—good service	0.88			
	(4) Bad reputation—good reputation	0.82			
	(5) Unknowledgeable sales personnel—knowledgeable sales personnel	0.85			
	(6) Slow checkout—fast checkout	0.90			
Offline store merchandise	(1) Uninteresting products—interesting products	0.88	0.86	0.90	0.90
	(2) CDs I don't want—CDs I want	0.81			
	(3) Little value for money—much value for money	0.80			
	(4) Bad buys on products—good buys on products	0.86			
Offline store atmosphere	(1) Dull store—bright store	0.92	0.87	0.92	0.80
	(2) Unattractive store—attractive store	0.92			
	(3) Old-fashioned—modern	0.92			
Offline store layout	(1) Unorganized layout—well organized layout	0.91	0.88	0.93	0.81
	(2) Crowded shopping—spacious shopping	0.87			
	(3) Messy—neat	0.92			
Online purchase intention	How likely is it that you would...		0.78	0.87	0.69
	(1) consider purchasing a CD from this website in the longer term?	0.76			
	(2) consider purchasing a CD from this website in the short term?	0.87			
	(3) return to this store's website?	0.87			

Note: Except for online purchase intention (7-point Likert scale), all constructs were measured using 7 points semantic-differentials.

Table 3
Test of discriminant validity: AVE's versus cross-construct squared correlations.

Construct	Online store service	Online store merchandise	Online store atmosphere	Online store navigation	Offline store service	Offline store merchandise	Offline store atmosphere	Offline store layout	Online purchase intention
Online store service	**0.78**								
Online store merchandise	0.36	**0.63**							
Online store atmosphere	0.47	0.32	**0.84**						
Online store navigation	0.41	0.26	0.38	**0.73**					
Offline store service	0.29	0.19	0.18	0.16	**0.78**				
Offline store merchandise	0.36	0.41	0.26	0.22	0.36	**0.90**			
Offline store atmosphere	0.24	0.19	0.25	0.17	0.37	0.39	**0.80**		
Offline store layout	0.28	0.17	0.22	0.18	0.39	0.39	0.42	**0.81**	
Online purchase intention	0.13	0.17	0.15	0.13	0.09	0.18	0.06	0.06	**0.69**

Note: the bold scores are the AVE's of the individual constructs. On the diagonal are the squared correlations between the constructs.

of missing data was small, no patterns were observed, and the remaining sample was sufficiently large to apply a complete case approach (see [13]). Of course, there may still have been a bias due to self-selection. We continued with the 630 cases and computed sample demographics. Table 1 displays them.

The demographics suggest a bias towards young and experienced Internet users, mostly male, who purchased compact discs in both on- and off-line settings. Since the majority of the respondents were familiar with purchasing via both sites of the music store, there may have been bias towards repeat purchases.

4.2. PLS path modeling

PLS modeling was applied to validate the model and test the hypotheses. Given our focus on explaining and attributing variance to the two modes of purchase, PLS was preferred over other methods. Moreover, it has been recommended in situations where the goal is on prediction when prior theory and knowledge are limited. The analysis was run in two stages [30]: first, to assess the validity and reliability of the measurement model and second to assess the structural model. Smart PLS (version 2.0.M3) from the University of Hamburg was used in the analysis.

4.2.1. Test of validity and reliability

Factor loadings, Cronbach's alpha, composite reliability and AVE were computed: see Table 2.

The results indicated convergent validity of all measures, except for one item; all factor loadings (PLS) exceed the 0.70 criterion and the AVE-scores surpassed the recommended level of 0.50. Moreover, the composite reliability scores provided further support for the validity of the scales.

Next, we assessed the discriminant validity. We studied the within-construct item loadings and compared these to across-construct item loadings. Since all within-construct item loadings were high, and substantially lower than their cross-loadings, discriminant validity could be assumed. Supplementary support for discriminant validity was provided by a study of the squared correlations between the constructs and a comparison of these scores with the individual AVE's (see Table 3).

For each pair, both individual AVE's exceeded the value of the squared correlations, confirming discriminant validity.

Finally, we assessed the reliability of the scales. The results strongly confirmed the reliability of the measures. Most Chronbach alpha's and composite reliability scores exceeded the advocated value of 0.80. Moreover, all AVE's surpassed the 0.50 guideline for reliability.
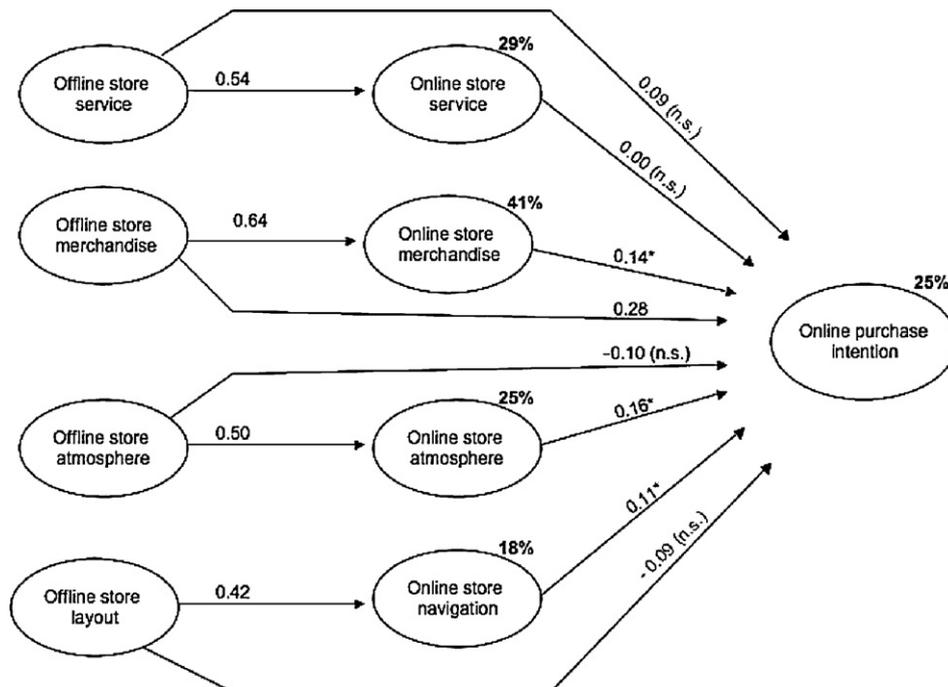

Fig. 1. Results structural PLS model. Path coefficients are significant at $P < 0.01$ ($T > 2.57$). Marked coefficients (*) are significant at $P < 0.05$ ($T > 1.96$). N.S. = non-significant. Percentages indicate variance explained.

4.2.2. The structural model

The bootstrapping technique (630 re-samples) was applied to estimate the standardized path coefficients and R^2 values. We used two-tail t-tests to evaluate the significance and effect sizes of the path coefficients. See Fig. 1 for the results, which show that the offline and online store image together explain 25% of the purchase intention variance.

The online store image variables that significantly affected the intention to purchase included: online store merchandise ($\beta = 0.14$, $p < 0.05$), online store atmosphere ($\beta = 0.16$, $p < 0.05$) and online store navigation ($\beta = 0.11$, $p < 0.05$). All the effects were rather moderate in nature. The results implied acceptance of Hypotheses 1b, 1c, and 1d, and rejection of Hypothesis 1a.

We observe that one offline dimension had a significant, rather strong, effect on the intention to buy: offline store merchandise ($\beta = 0.28$, $p < 0.01$). Other offline store image dimensions did not directly contribute to online purchase intention. These caused us to accept Hypothesis 2b and reject Hypotheses 2a, 2c, and 2d.

Finally, the results strongly confirmed the significant influence of offline on online store image. Each offline store image dimension explained a substantial amount of the variance of its online counterpart. Offline store merchandise had a very strong impact on online store merchandise ($\beta = 0.64$, $p < 0.01$; $R^2 = 0.41$). Moreover, strong effects were reported for the influences of offline store service on online store service ($\beta = 0.54$, $p < 0.01$; $R^2 = 0.29$), offline store atmosphere on online store atmosphere ($\beta = 0.50$, $p < 0.01$; $R^2 = 0.25$), and online store layout on online store navigation ($\beta = 0.42$, $p < 0.01$; $R^2 = 0.18$). These results implied acceptance of Hypotheses 3a, 3b, 3c, and 3d.

5. Discussion and conclusion

Impressions of both an offline and online store can influence consumer online purchase intentions. As such, our study contributed to the relatively unexplored field of the effect of bricks-and-clicks operations on online purchasing. Adoption of a multi-channel store image perspective verified the role of online store image as positive determinant of online purchase intentions and provided evidence for the direct and indirect role of offline store impressions.

Online store service did not have a significant effect on online purchase intentions. This might be explained by the fact that CDs are relatively low risk products, implying that service support is not likely to be needed. The results also indicated that the influence of offline store image on online purchase intentions could be direct as well as indirect. Offline store merchandise was the strongest direct determinant of online purchase intentions in our results, suggesting that consumers see the bricks-and-clicks format as an integrated system. Store atmosphere and layout might not directly affect purchase behavior but result in avoidance behavior when rated poor: a post hoc PLS analysis confirmed the possible effects of store atmosphere and store layout. Using mean scores of 4 (neutral) on the semantic differentials as cutoff values, we compared the outcomes for four subsamples: low store atmosphere ($M < 4$, $n = 49$) *versus* high atmosphere ($M > 4$, $n = 548$), and low store layout ($M < 4$, $n = 166$) *versus* high store layout ($M > 4$, $n = 395$). The comparisons showed a significant negative influence of poor store atmosphere ($\beta = -0.20$, $p < 0.01$), while a non-significant influence was found when store atmosphere was considered positive ($\beta = -0.10$, $p > 0.05$). Similarly, we found a significant negative effect of poor store layout on online purchase intentions ($\beta = -0.15$, $p < 0.01$) while positive evaluation of store layout did not contribute to online purchase intentions ($\beta = -0.09$, $p > 0.05$).

Our research results strongly confirmed the role of offline store service, offline store merchandise, offline store atmosphere and offline store layout as determinants of online store image. Again, this confirms that the offline and online store appear as part of the same bricks-and-clicks experience. Thus clicks-and-bricks retailers should recognize the relationships between their offline and online store image, and online purchasing, and could benefit from seamless integration of their operations.

To link offline and online store image, managers could link offline and online databases; they can remind online consumers of their offline purchases and inform them about interesting, similar, online offers.

6. Limitations

A limitation of the study was potential sample bias. The majority of the respondents had experience in purchasing via the *online* store we studied. This might make the findings about repeat purchase intentions less generalisable. Consumers who lacked experience with both channels were likely to depend profoundly on their online store image perception. This situation, almost equivalent to purchasing via a purely online store, demonstrates that the impact of offline store image was likely to be negligible while the effect of online store image was likely to be strong. Consumers who lack online purchase experience but who did have experience with a traditional outlet, however, were likely to rely substantially on their offline impressions. This might have an upward-biasing effect on the impact of offline store image on initial online purchase intentions.

Another limitation of this research concerns the small R^2 value of the key dependent online purchase intention. Possibly, other variables are needed to explain part of the remaining variance.

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Tibert Verhagen is assistant professor E-business at the Faculty of Economics and Business Administration of the VU University Amsterdam. He holds a Ph.D. in consumer online purchasing. His research interests include online consumer behavior, online retailing, online consumer communities, research methodology, and measurement validation. His research has been published in journals such as Information & Management and the European Journal of Information Systems.

Willemijn van Dolen, Ph.D., is associate professor of Marketing and Director of The Amsterdam MBA at the Faculty of Economics and Business Administration, University of Amsterdam. Her research interests include online consumer behavior, online commercial group chat, corporate social responsibility and measuring group dynamics through multi-level modeling. Her research has been published in journals such as Journal of Retailing, Business Strategy and the Environment, Journal of Economic Psychology, International Journal of Manpower, Journal of Business Research, Psychology & Marketing, and International Journal of Service Industry Management.