Pathways of Offline-Online and Online-Offline Channel Integration in Omni-channel Retailing

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Abstract:

Retailers increasingly use multiple channels to provide consumers with integrated and congruent services. However, knowledge on consumer responses to simultaneously perceived but different options of channel integration is still scarce. In this study, the pathways through which offline-online integration options or online-offline ones transform into offline and online purchase intentions (PI) are studied. Moreover, whether and how perceived channel congruence changes the pathways is shown. The authors draw on accessibility-diagnosticity theory and data on 716 consumer evaluations of leading omni-channel fashion retailers. Results indicate offline-online integrations' diagnosticity for offline PI through offline and online marketing offers; for online PI through online offers only. For online PI pathways of online-offline integration are not crosswise at all. Moreover, initial results show a moderating role of perceived channel congruence. Important implications for retailers emerge.

Keywords: Offline-Online and Online-Offline Channel Integration, Channel Congruence, Omni-channel Retailing.

Track: Retailing & Omni-Channel Management

1. Introduction

Retailers seek to enhance consumers' purchase intention by integration of channels (Li et al., 2018). The latter, i.e., the degree to which channels interact with each other (Bendoly et al., 2005), occurs in case of sale channels at least in two directions. Offline-online channel integration refers to the provision of access to and knowledge about the online store at the offline store, whereas online-offline channel integration refers to the provision of access to and knowledge about the offline store at the online store (Herhausen et al., 2015). Both types of channel integration can act as crucial information that provides consumers with access to retailers' channels and related offers. These offers or marketing-mix attributes serve as diagnostic functions through which channel integration becomes valuable for consumers, and thus enabling them to evaluate retailers in purchase decisions (He & Oppewal, 2018). Retailers realize the importance of channel integration. H&M, for example, reported a drop in sales in 2017, but now wants to accelerate its online revenue with channel integration. In the same year, Gap and ZARA showed spectacular sales and are experimenting with online-offline channel integration (e.g., click&collect), whereas Sephora successfully rolled out offline-online channel integration by providing offline terminals leading to its online shop (Forbes, 2017, 2018).

Scholars acknowledge channel integration as an important option. However, respective effects on consumer behavior were mostly examined from a holistic, undirected perspective of channel integration, i.e., not differentiating both directions of integration (see Table 1). Few scholars distinguish online-offline and offline-online integration, but analyze one of both only, moreover with different results (e.g., significant Herhausen et al. 2015 vs. insignificant Gallino & Moreno 2014)

	Channel integration	Direct effect model	Mediation model
undirected		Melis et al. (2015)*; *Yan, Wang, and Zhou (2010)*	Bendoly et al. (2005)*; *Cao and Li (2015);* Chiu et al. (2011); Emrich, Paul, and Rudolph (2015)*; Frasquet and Miquel (2017)*; Li et al. (2018)*; Oh, Teo, and Sambamurthy (2012)*; Schramm-Klein et al. (2011)*;Shen et al. (2018)*; Zhang et al. (2018)*
directed	**OF-ON**	Bhargave, Mantonakis, and White (2016)*	-
	ON-OF	*Gallino and Moreno (2014)*;* Gao and Su (2017)*; Jara et al. (2018)	Herhausen et al. (2015)*
	OF-ON & ON-OF	**-**	**This study**

Note: Authors in italic analyze performance outcomes (not behavioral ones). *Studies included in the references.

Table 1. Literature review on channel integration

In reality, consumers perceive retailers' offline-online and online-offline integration directions simultaneously. The latter have distinct but simultaneous options of channel integrations, e.g., providing online terminals in offline stores and information through offline store locators in online channels. Scholars call for research on the application of channel integration directions (Shen et al., 2018; Zhang et al., 2018). Adding offline-online channel integration into pure online studies, for example, will lead to change former results (Herhausen et al., 2015; Li et al., 2018). Moreover, scholars have mostly hypothesized indirect effects of channel integration. Fewer

conceptualize direct ones but indicate indirect effects as well (e.g., OF-ON: Bhargave et al. 2016; ON-OF: Gao and Su 2017). We therefore understand both directions of channel integration as easy accessible information for consumers, which becomes diagnostic in decision situations only via the perceived offline and online offers of an omni-channel retailer.

Thus, we aim to advance extant knowledge by analyzing whether and how the underlying pathways transform both directions of integration into omni-channel purchase intention. In doing so, we offer new insights on differentiated integration effects on consumer behavior. We further add to an accessibility-diagnosticity theoretical rational (Feldman & Lynch, 1988) in an omni-channel context. Channel integration as an easily accessible information becomes diagnostic for purchase intentions through channel specific marketing-mix attributes, suitable for the evaluation of retailers' offers and relevant for purchasing behavior (Blut, Teller, & Floh, 2018). We also study crosswise effects (e.g., offline-online integration-offline offers and online offers-online purchase intention). Those are important, because consumers base their purchase intentions on perceived channel integration options and channel offers in omni-channel retailing. By highlighting the pathways, we provide managers with more confidence in implementing channel integration options and in synchronizing marketing-mix attributes (Melis et al., 2015).

Additionally, channel congruence, i.e., similar structure and characteristics of channels (Bezes, 2013), is likely to be an important boundary condition for the pathways analyzed. Perceived channel congruence, characterizes specific information that is stored in consumers' minds (Wang, Beatty, & Mothersbaugh, 2009), and thus acts as a diagnosticity multiplier. We therefore initially ask whether the pathways vary due to the degree of perceived channel congruence. In doing so we extend research on congruence to an integrated channel context.

2. Conceptual framework and hypotheses development

2.1 Framework and theory

To address our research aims, we build on accessibility-diagnosticity theory (Feldman & Lynch, 1988). In Figure 1 we propose indirectly effects of offline-online and online-offline integration through offline and online marketing-mix attributes on offline and online purchase intentions, i.e., the likelihood that consumers use retailers' channels for purchasing products (Herhausen et al., 2015). Retailers' channel congruence affects the underlying pathways.

According to the accessibility-diagnosticity theory the likelihood that a person uses information about an object for decision making depends on the information's accessibility (ease of retrieving specific information) and diagnosticity (extent to which the inferences based on this information are adequate to make a decision; Lynch, Marmorstein, & Weigold, 1988). In our context, the probability that both integration directions are used as accessible information to

evaluate retailers is a function of the channel integration's accessibility and diagnosticity. Consumers are known to base their purchase intention on the respective channel marketing-mix (e.g., Breugelmans & Campo, 2016). They link channel integration to specific channel marketing-mix attributes to make it a piece of diagnostic information. Moreover, perceived channel congruen nce changes the likelihood that consumers will consider engaging in channel integration, as perceived channel congruence influences how information is subsequently processed (Bezes, 2013; Wang et al., 2009).

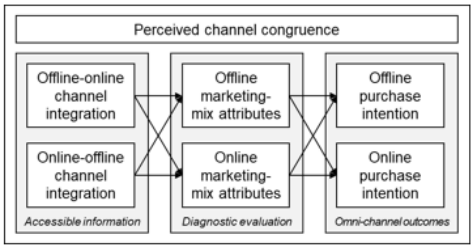

Figure 1. Conceptual Framework

2.2 Hypotheses development

We believe that although retailers' channel integration is an accessible information (Gao & Su, 2017), it is not directly relevant to consumers' behavioral intentions because it is not naturally diagnostic in omni-channel retailing for making purchase decisions. Theoretically, offline-online channel integration becomes diagnostic when consumers link this information to the respective retailers' channel offers. We thus do not hypothesize direct integration-purchase intention-links, but test them. We differentiate offline purchase decisions and online ones.

In offline purchase decisions consumers, theoretically, rely on offline (vs. online) marketing-mix diagnosticity, while crosswise effects of offline- and online marketing-mix seem to be obvious in omni-channel retailing. This assumption is important as they dominate the paths to behavior. For example, offline-online integration as an easy accessible information has strong links to offline marketing mix evaluations and weaker to online marketing mix evaluations. Undoubted, the path to offline purchase intention will be stronger via the offline (vs. online) marketing mix. Similar, online-offline integration is stronger linked to online (vs. offline) marketing-mix evaluations, while the diagnosticity of the offline marketing-mix is by nature stronger. We therefore assume a stronger pathway of online-offline integration to offline purchase intention via the offline marketing-mix evaluations.

This theoretical rational is novel. Empirically only Bhargave et al. (2016) find a direct link between offline-online channel integration and offline purchase intention, while online-offline integration is relatively weakly linked to offline outcomes (Herhausen et al., 2015). Real crosswise relationships are viewed for holistic, undirected integrations only (e.g., Emrich, Paul, & Rudolph, 2015). Thus, we propose the following:

H1: Offline-online channel integration positively affects consumers' offline purchase intention through (a) offline marketing-mix and (b) online marketing-mix, (c) whereas the effect will be stronger through the offline marketing-mix.
H2: Online-offline channel integration positively affects consumers' offline purchase intention through (a) offline marketing-mix and (b) online marketing-mix, (c) whereas the effect will be stronger through the offline marketing-mix.

For online purchase decisions a similar theoretical rational occur. The easy accessible online-offline integration becomes more diagnostic via the online marketing mix. The pathways of the offline-online integration will be dominated by the strong online offers-online intention-link. Once more, relative strong online-offline integration-online outcome-links are evident (e.g., indirectly through quality and risk; Herhausen et al., 2015), not so offline-online integration-online outcome-links. Crosswise relationships are illustrated for holistic, undirected integrations only (e.g., Frasquet & Miquel, 2017). Thus, we propose the following:

H3: Online-offline channel integration positively affects consumers' online purchase intention through (a) online marketing-mix and (b) offline marketing-mix, (c) whereas the effect will be stronger through the online marketing-mix.
H4: Offline-online channel integration positively affects consumers' online purchase intention through (a) online marketing-mix and (b) offline marketing-mix, (c) whereas the effect will be stronger through the online marketing-mix.

Next, we analyze how the pathways differ due to increasing perceived channel congruence. The latter, theoretically, acts as a diagnosticity multiplier. Congruent channels of omni-channel retailers provide consumers with more information and facilitate consumers' cognitive efforts (Bezes, 2013). The accessibility of channel integration increases, as does the likelihood of the use of both integration directions in decision situations. The diagnosticity multiplier effect increases the diagnosticity of marketing offers in both offline and online decisions as well.

Studies underline the role of congruence for influencing the processing mode consumers choose for evaluations (Bezes, 2013; Wang et al., 2009). We hypothesize the following:

H5: For retailers with increasing perceived channel congruence, (a) offline-online channel integration and (b) online-offline channel integration contribute equally to offline purchase intention through the offline and online marketing-mix.
H6: For retailers with increasing perceived channel congruence, (a) offline-online channel integration and (b) online-offline channel integration contribute equally to online purchase intention through the offline and online marketing-mix.

3. Empirical study

3.1 Sample selection

We focus the fashion sector for two reasons. Over 45 (15) percent of offline (online) sales is done in online-offline (offline-online) channel integration situations (in Germany see Planet Retail, 2017). The top four retailers were selected (due to sales) as their established images and offline and online integration options are better known and as our choice supports perceived and objective integration and congruency measures (Landers et al., 2015). This procedure is superior to focus one retailer only and to those on various ones selected by consumers. We are able to control for retail specific results in alternative models and to compare perceived and objective measures. However, challenges occur to our quota sampling procedure (acc. to gender and age; N=966). Trained interviewers conducted face-to-face in-home interviews (due to better data

quality und reduced possible non-response biases; Heerwegh, 2009). In a screening phase respondents were first asked to name fashion retailers and based on a list – including the preselected ones – which they knew and which they have used offline and online. Respondents who had at least occasionally shopped at the retailers' channels were questioned. 762 respondents knew at least two retailers and we chose one randomly to be evaluated. Still 24 incomplete cases occurred and 22 striking cases were identified by testing normality of the data and by using Mahalanobis distance, leading to 716 observations. We chose the mean-adjusted maximum likelihood estimator, because our data deviated from multivariate normality. Chi-square difference tests for chi-square approximation of goodness-of-fit tests were conducted with scaling corrections.

3.2 Measurement and method

We relied on (seven-point likert-type) scales from previous studies. Purchase intention was measured channel specifically with three items: If I found something I like, it's (1) likely, (2) probably, (3) possible, that I'll shop at [retailers'] offline/online store (Kwon & Lennon, 2009). Pretests lead us to choose three items for offline-online and online-offline channel integrations, respectively: When I purchase from [..] offline store (1) I can inform myself about its online store, (2) I have access to its online store, (3) the employees are helpful when using its online store. When I purchase from [..] online store (1) I can pick up the product from its offline store, (2) I can return the product in its offline store, (3) I can change the product in its offline store (adapted from Bendoly et al., 2005). We measured perceived key attributes of the offline and online marketing-mix: assortment, price, layout and communication. The latter do not cover the full domain of offers, but represent typical actions (Blut et al., 2018; Yoo, Donthu, & Lee, 2000). Perceived channel congruence is measured with three items (e.g., The offline and online store of [..] are similar; The services/functions in offline and online stores of [..] are consistent; The online store represents the offline store of [..]; Badrinarayanan et al., 2012). The reliability of the measurements was ensured as was the corrected item-to-total correlations (all≥.555), factor loadings (all≥.539), construct reliability and validity (all≥.796) and convergent validity.

CMV issues were successfully addressed, as was endogeneity with the instrumental variable approach (online service quality for offline-online and offline store accessibility for online-offline channel integration). We used covariates because purchase intention is likely to be affected by gender (0/1 = male/female) and age. We also controlled for internet experience and consumers' familiarity with the retailer. For the control of firm specific results, we used dummy variables.

4. Results

Model 1 shows no direct effect of offline-online and online-offline channel integration on purchase intentions. Indirect-only-mediation occurs (Zhao, Lynch Jr, & Chen, 2010; see Table 2).

	Model 1			Model 2	Model 3	Model 4	Model 5
Effects	*β* *p*	*Diff. test*		*β* *p*	*β* *p*	*β* *p*	*β* *p*
OF-ON CI → OF Mix	.099 *			.130 ***	.136 **	.134 **	.130 ***
OF-ON CI → ON Mix	.197 ***			.224 ***	.249 ***	.250 ***	.224 ***
ON-OF CI → OF Mix	.074 ns			.074 *	.059 ns	.060 ns	.072 *
ON-OF CI → ON Mix	.118 *			.113 *	.105 *	.107 *	.113 *
OF Mix → OFPI	.244 ***			.195 ***	.244 ***	.232 ***	.167 ***
ON Mix → OFPI	.098 *			.124 **	.095 *	.097 ***	.123 ***
OF Mix → ONPI	-.002 ns			-.038 *	.036 ns	.004 ns	-.046 ns
ON Mix → ONPI	.382 ***			.391 ***	.391 ***	.258 ***	.369 ***
OF-ON CI → OFPI	.015 ns			.016 ns	.028 ns	.016 ns	.018 ns
ON-OF CI → OFPI	.028 ns			.033 ns	.036 ns	.029 ns	.028 ns
OF-ON CI → ONPI	.022 ns			.024 ns	.061 ns	.024 ns	.024 ns
ON-OF CI → ONPI	.044 ns			.044 ns	.056 ns	.041 ns	.040 ns
CON → OFPI	-			-.184 ***			
OF Mix × CON → OFPI	-			.090 †(.058)			
CON → OFPI					.025 ns		
ON Mix × CON → OFPI					-.074 †(.086)		
CON → OFPI						-.176 ***	
ON Mix × CON → ONPI						.231 ***	
CON → OFPI							.042 ns
ON Mix × CON → ONPI							.024 ns
Total indirect effects							
Total effect of OF-ON CI on OFPI	.044 *	t=2.437*		.053 ***	.057 **	.055 ***	.049 ***
Total effect of ON-OF CI on OFPI	.030 †(.058)			.029 *	.024 ns	.024 †(.081)	.026 *
Total effect of OF-ON CI on ONPI	.075 **	t=2.641*		.083 ***	.059 ***	.065 ***	.076 ***
Total effect of ON-OF CI on ONPI	.045 *			.041 *	.025 *	.028 *	.038 *
Indirect effects							
(H1a) OF-ON CI → OF Mix → OFPI	.024 *	(H1c)		.025 **	.033 **	.031 **	.022 **
(H1b) OF-ON CI → ON Mix → OFPI	.019 *	t=0.754ns		.028 **	.024 *	.024 **	.028 **
(H2a) ON-OF CI → OF Mix → OFPI	.018 ns	(H2c)		.015 *	.014 ns	.014 ns	.012 *
(H2b) ON-OF CI → ON Mix → OFPI	.012 †(.091)	t=0.616ns		.014 †(.058)	.010 ns	.010 †(.060)	.014 †(.054)
(H3a) ON-OF CI → ON Mix → ONPI	.045 *	(H3c)		.044 *	.044 *	.028 *	.042 *
(H3b) ON-OF CI → OF Mix → ONPI	.000 ns	t=2.276*		-.003 ns	-.003 ns	.000 ns	-.003 ns
(H4a) OF-ON CI → ON Mix → ONPI	.075 *	(H4c)		.088 *	.054 ***	.064 ***	.082 ***
(H4b) OF-ON CI → OF Mix → ONPI	.000 ns	t=3.467**		-.005 ns	.005 ns	.000 ns	-.006 ns
Covariates OFPI							
Gender	-.028 ns			-.030 ns	-.027 ns	-.028 ns	-.030 ns
Age	-.006 ns			.007 ns	.004 ns	.006 ns	.012 ns
Internet expertise	-.033 ns			-.032 ns	-.038 ns	-.036 ns	-.041 ns
Familiarity	.449 ***			.452 ***	.470 ***	.453 ***	.461 ***
Covariates ONPI							
Gender	-.081 *			-.084 **	-.076 *	-.080 *	-.083 **
Age	-.141 ***			-.136 ***	-.144 ***	-.139 ***	-.136 ***
Internet expertise	.050 ns			.048 ns	.045 ns	.057 ns	.048 ns
Familiarity	.323 ***			.329 ***	.359 ***	.305 ***	.321 ***

Structural model fits: Model 1: CFI .906; TLI .888; RMSEA .076; SRMR .123; $\chi^2(247) = 1270.897$; SCF = 1.06.
Notes: OF-ON CI=Offline-online channel integration; ON-OF CI=Online-offline channel integration; Mix=Marketing-mix; OFPI= Offline purchase intention; ONPI=Online purchase intention; CON=Perceived channel congruence; SCF=Scaling correction factor for MLM; Standardized coefficients are shown. Differences between indirect and total effects have been tested using t-tests.
ns = not significant; † p < .10; * p < .05; ** p < .01; *** p < .001.

Table 2. Results

The results support H1a and H1b. Offline-online channel integration affects offline purchase intention through offline and online marketing-mix (ß=.024; p<.05; ß=.019; p<.05). Offline-online integration is only by tendency more diagnostic through the offline (vs. online) marketing-mix, H1c is rejected (t=0.754; p>.10). The path of online-offline channel integration to offline purchase intention through offline marketing-mix is insignificant and through online marketing-mix minor significant (ß=.018; p>.10; ß=.012; p<.10; we reject H2a and support H2b. The differences are insignificant and H2c is rejected (t=0.616; p>.05). Online-offline channel integration does not support offline purchase intentions.

Online purchase intention dependence on online-offline channel integration is significant for the online marketing-mix, but not the offline marketing-mix (ß=.045; p<.05; ß=.000; p>.10; H3a and H3b); supporting H3c (t=2.276; p<.05). Online purchase intention dependence on offline-online channel integration is significant for the online marketing-mix, but not the offline marketing mix (ß=.075; p<.05; ß=.000; p>.10 H4a-b). The differences are significant, as hypothesized in H4c (t=3.467; p<.05).

An alternative model with an overall channel integration measure shows only the obvious results: in offline decisions a stronger pathway via the offline marketing-mix and in online decisions a stronger pathway via the online marketing-mix emerges (offline insignificant). Our results are more insightful. Four further alternative models show no specific results due to the four retailers analyzed.

Regarding perceived channel congruence, we are able to present stepwise moderating results only. However, in offline decision situations the direct effects of integration on purchase intentions are still insignificant (see model 2-3). The indirect effect of offline-online channel integration in the tendency equally affects offline purchase intention through both marketing-mix attributes, supporting H5a-b (model 2-3). But, the moderation itself is not always significant.

The results do not support 6a-b. In online decision situations, the direct effects of integration on purchase intentions are still insignificant, but online-offline and offline-online channel integration contributes still more through online marketing-mix attributes (see models 4-5).

5. Discussion and conclusion

Regarding our *first research question*, we show that omni-channel retailers participate in channel integration indirectly through diagnosticity of marketing offers. In this respect, the theoretical accessibility-diagnosticity reasoning is supported. We in particular add to extant research by differentiating offline-online and online-offline channel integration paths.

For offline purchase decisions the diagnosticity of offline-online integration depends on offline and online marketing offers, what is not the case for online-offline integration. Various crosswise effects occur, which could not be addressed when conceptualizing channel integration as one holistic, undirected construct. The results of the total paths in the results table show clearly the dependence of offline purchase decisions on both offline-online and online-offline integrations, even when the first one is the stronger lever for omni-channel retailers.

For online purchase decisions online-offline integration becomes diagnostic only via the online marketing-mix (no crosswise effects occur), while offline-online integration is diagnostic via the crosswise effect through online marketing-mix only. However, the total pathway results underline the superiority of offline-online channel integration even for online purchase intentions.

However, we have studied only consciously pre-selected options of offline-online and online-offline channel integration. During a consumer journey different options of channel integrations exist, e.g., offline-online or online-offline information in the pre-purchase stage or offline and online collecting or returning behavior in the post-purchase stage (e.g., Cummins, Peltier, & Dixon, 2016; Oh, Teo, & Sambamurthy, 2012). We therefore call for studies differentiating those, more fine grained integration options in the pre-purchase, purchase, and

post-purchase stages, for example. In the two analyzed offline and online purchase decisions consumers seem to rely more on the offline-online channel integration despite the strong diagnostic role of offline and online marketing-mix respectively. We believe that our results are notable, because they enhance extant holistically integration studies (see the shortly mentioned alternative results) and those on one of the integration options only (e.g., Schramm-Klein et al., 2011; Zhang et al., 2018).

With respect to our *second research question* we indicate the moderating role of perceived channel congruence. In both decision situations, the direct effects of integrations on purchase intentions are still insignificant. In the offline decision situation, the effects of offline-online channel integrations are equally and online-offline channel integration gains importance. In the online decision situation, the general results do not change. Online-offline integration affects online offers only (e.g., Herhausen et al., 2015) as does the offline-online integration. But, we only analyze perceptions, while future research may study objective congruencies, for example.

For managers aiming to increase offline purchase intention our results indicate that offline-online integration is the strongest lever, as it is when aiming to increase online purchase intention. However, these levers are only valid without observing perceived congruency, for example.

Finally, our study is not without limitations. We focused a quota sample, not representing internet affine consumer groups, only four leading retailers in one industry. A finer grained conceptt-ualization of integration options in the customer journey was mentioned. Finally, reciprocal relationships between integration options and diagnostic offers are likely in omni-channel retailing.

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