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Understanding channel purchase intentions

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7 Results and Discussion Study 2

This chapter examines the robustness of the findings of Study 1. The second study investigates the consumers' motivations to shop for management-related books at a specific pure e-tailer. As it does not have an offline counterpart, the well-known generalist bookseller from Study 1 is chosen to represent the offline store. First, the data collection is discussed, followed by a description of the characteristics of the e-tailer's customers. Next, the stages of the research procedure are followed. Finally, a comparison is made with the first study.

7.1 Data collection

The data were collected through an online questionnaire. A stratified sample was drawn that resembled the e-tailer's customer base in terms of number of purchases. As an incentive, an audio CD expressing the ideas of management guru Stephen Covey was sent to each potential respondent. An email invited 2,369 shoppers who had bought at least once through the website of the pure-play bookseller. A total of 437 (18.4%) questionnaires were filled in of which 434 were usable. The data were collected during June and July 2004.

7.2 Respondent characteristics

Table 7.1 compares the respondent characteristics of this study's sample with the online sample of Study 1. In this way, the *online* buyers from the generalist store are compared with those from the specialist website.

Table 7.1: Profile of the respondents for samples of Study 1 and 2

Socio-demographic variables		Sample Study 2		Online sample Study 1	
Gender	Male	302	70.1%	115	48.5%
	Female	129	29.9%	122	51.5%
Age	<19 years	27	6.2%	5	2.1%
	19-25 years	19	4.3%	51	21.5%
	26-40 years	183	41.9%	94	39.7%
	> 40 years	208	47.6%	87	36.7%
Income p.a.	Less than € 20,000	17	4.1%	42	18.9%
	€ 20,000 – €29,000	42	10.1%	60	27.0%
	€ 29,000 – €43,500	67	16.1%	54	24.3%
	€43,500 – €58,000	118	28.3%	31	14.0%
	€58,000 – € 72,500	63	15.1%	14	6.3%
	€72,500 or more	110	26.4%	21	9.5%
Education	Primary education	1	0.2%	2	0.8%
	Secondary education	8	1.9%	13	5.5%
	College	16	3.8%	34	14.4%
	Graduate	382	89.3%	171	72.1%
	Other	21	4.9%	17	7.2%

Compared with the online respondents in Study 1, the respondents of Study 2 are more likely to be male ($\chi^2(1)=30.8$, $p<.001$), are slightly older ($\chi^2(3)=53.3$, $p<.001$), have a higher income ($\chi^2(5)=108.2$, $p<.001$), and even higher levels of education ($\chi^2(4)=37.1$, $p<.001$). The characteristics of the average respondent in the second study resemble those of the typical online shopper (male, high income, well educated, between 30 and 40 years old). This finding is not surprising, as the target group of the e-tailer consists of managers who are well educated and have a high income.

The use of multiple channels was also investigated. Regarding their last management-related book purchase, 52% of the respondents indicated that they used the Internet prior to their *offline* purchase. This percentage is higher than that found in the first study (15%).

The respondents used the Internet to search for specific book content (47%), price (29%), background information (23%), book availability (22%), and to get inspiration (14%). Again, the respondents engaged in rather goal-oriented online search behavior. For the respondents who made their last purchase offline, the Internet played no substantial role in their decision making; an average of 3.28 was found on a scale from 1 (a marginal role) to 7 (a substantial role). It was also investigated whether online book purchases tended to be more goal-directed than offline book purchases. From the respondents who bought their last book online, 65.2% exactly knew which book to buy prior to purchase, whereas 62.5% of the people that bought their last book offline had a predetermined book in mind. The results indicate that consumers generally engage in goal-directed behavior when shopping for management-related books.

The respondents' prior online shopping experience was assessed. The large majority of the respondents (86.3%) indicated that they shopped online for products or services *different* than books. The sample of the second study had more experience than the online sample of Study 1 ($\chi^2(5)=46.2$, $p<.001$). Table 7.2 shows the total number of online purchase made *other* than books for the respondents of Study 2 and the online sample of Study 1.

Table 7.2: Prior online shopping experience (books excluded)

Total number of online purchases made	Sample Study 2 N=424	Online sample Study 1 N=239
0	13.7%	27.6%
1	1.7%	2.1%
2-3	10.8%	13.0%
4-6	16.5%	25.5%
7-10	19.1%	14.2%
> 10	38.2%	17.6%

7.3 Stage 1: Item analysis

Individual item analysis was performed on the like items of Study 1 (see Table 7.3). The respondents were asked to evaluate buying *management-related* books through the website of the e-tailer and through one of the stores of the generalist bookseller, described in Study 1.

Table 7.3: Means, standard deviations, and mean differences

Items ^{a,b}	Store ^{c,d}	Website ^{c,d}	Website-Store ^e
SQ1	5.32 (1.24)	4.83 (1.17)	.48***
SQ2	4.88 (1.30)	4.41 (1.09)	.47***
SQ3	5.75 (1.08)	5.36 (1.12)	.39***
SQ4	5.42 (1.25)	4.38 (1.10)	1.04***
SQ5	5.13 (1.26)	5.10 (1.16)	.03
Enjoy1	5.42 (1.43)	4.49 (1.30)	.93***
Enjoy2	5.48 (1.30)	4.84 (1.23)	.64***
Enjoy3	5.20 (1.43)	4.93 (1.22)	.27**
Enjoy4	4.62 (1.56)	4.58 (1.41)	.04
Risk1	1.57 (1.35)	3.43 (1.76)	-1.85***
Risk3	2.15 (1.00)	3.49 (1.24)	-1.34***
Risk4	2.00 (1.15)	3.22 (1.51)	-1.23***
Time1	4.57 (1.56)	2.35 (1.10)	2.22***
Time2	4.16 (1.44)	3.61 (1.17)	1.55***

Table 7.3: Means, standard deviations, and mean differences (continued)

Items ^{a,b}	Store ^{c,d}	Website ^{c,d}	Website-Store ^e
MQ 1	4.44 (1.53)	5.79 (.99)	-1.35***
MQ2	4.43 (1.51)	5.70 (1.04)	-1.27***
Price1^f	4.06 (1.32)	3.68 (1.17)	.38***
Price2^f	3.98 (1.37)	3.43 (1.17)	.55***
PV1	5.17 (1.16)	5.21 (1.10)	-.04
PV2	4.65 (1.27)	4.86 (1.20)	-.21***
PV3	4.40 (1.23)	4.65 (1.20)	-.25***
Int1	4.19 (1.66)	5.26 (1.30)	-1.07***
Int2	4.15 (1.56)	5.16 (1.34)	-1.00***
Int3	3.70 (1.56)	4.97 (1.35)	-1.28***

* $p < .05$; ** $p < .01$; *** $p < .001$

Notes:

- SQ=Service quality; Enjoy=Enjoyment; Risk=Perceived risk; Time=Time/effort costs; MQ=Merchandise quality; Price=Monetary price; PV=Perceived value; Int=Purchase intentions.
- Each item (e.g. SQ1) is measured in the offline and online context; a total of 24 pairs of items are represented. Reverse-scaled items (Price1, Price2, Time1 and Time2, see section 5.3) were recoded during data entry for consistency.
- Item means are based on 7-point Likert scale (1=totally disagree, 7=totally agree).
- Standard deviations are displayed between brackets.
- Figures in bold represent significant mean differences measured through paired-sample t -tests. Sample sizes for paired t -tests ranged from 399 to 430 respondents, because of missing data.
- Price level refers to the end price consumers have to pay. Respondents were instructed to take into account the delivery costs.

The perceptual differences of the customers of the website are similar to those of the online buyers in Study 1. Customers of the website generally find that the offline store outperforms the website in terms of service quality, enjoyment, and risk, but that they are compensated for by saving much time and effort. Remarkably, the customers also perceive the website to deliver the management books against lower prices³³ and, hence, they expect to receive more value for money through the website. However, the difference is not substantial in absolute terms, showing that the two booksellers are not capable of clearly differentiating their offerings in terms of value for money. As expected, customers perceive the website to deliver a superior assortment, and this may be a strong motivation to shop online. They appear to be loyal towards the website, as their intentions are higher for the website than for the store.

7.4 Stage 2: Exploratory factor analysis

The second step involved exploratory factor analyses with principal axis factoring and oblique rotation, with the scree test criterion to identify the number of factors to extract (Hair et al. 1998). The same items used in the first study were used to examine the exogenous and endogenous part, namely: (1) antecedents of perceived value and intentions, and (2) perceived value and intentions. Relatively clean factor solutions were found (see Appendix VI). In the second study, the same problems arose concerning the number of extracted dimensions regarding perceived value and purchase intentions. In the first study, a two-factor solution was found, as perceived value of the generalist bookseller's store and website loaded on the same factor. In the second study, it was expected that perceived value from the store would be perceived differently from perceived value from the website. However, again a two-factor solution was found in each context, only distinguishing between intentions and perceived value (see Appendix VI). Moreover, the inclusion of both value constructs in the CFA models would lead to mixed and confounding results (e.g. negative error variances, standardized loadings above 1). Perceived value from the store and perceived value from the website were positively correlated ($\rho=.60$), suggesting that consumers predominantly base their value perceptions on the product category, i.e.

³³ For newly published books fixed prices are operative for the first two years. Next, these books account for a considerable part of e-tailer's sales. Nevertheless, customers generally believe that the website delivers books against lower prices than the store.

whether they believe the books themselves are worth their money. Based on these results, it was decided to perform subsequent CFAs without the value derived from the competing channel. Overall, the results confirm the same underlying factor structure as found in Study 1. Next, the scales were again found to be reliable with alpha coefficients ranging from .65 to .93. This provided additional support for the research model.

7.5 Stage 3: Confirmatory factor analysis

7.5.1 Model-fitting procedure

After performing listwise deletion, each sample consisted of 406 respondents. The same items found in Study 1 were subjected to CFA. Again, maximum likelihood (ML) was used as estimation method. Multivariate normality was investigated and subsequent analyses showed no severe deviances from multivariate normality. Although the chi-square statistics showed that the models were significant ($p < .001$), the fit indices provided evidence that the hypothesized models fitted the data well (see Table 7.4).

Table 7.4: Fit indices for store and website

Fit indices	Store N=406	Website N=406
χ^2	273.70	251.43
<i>Df</i>	142	142
χ^2/df	1.93	1.77
GFI	.94	.94
AGFI	.91	.92
NNFI	.96	.96
CFI	.97	.97
RFI	.91	.91
SRMR	.047	.042
RMSEA	.048	.044

Note: GFI=Goodness of Fit Index; AGFI=Adjusted Goodness of Fit Index; PGFI=Parsimony Goodness of Fit Index; NNFI=Non-Normed Fit Index; CFI=Comparative Fit Index; RFI=Relative Fit Index; SRMR=Standardized Root Mean Residual; RMSEA=Root Mean Square Error of Approximation.

7.5.2 Assessment of convergent validity, discriminant validity and reliability

Convergent and discriminant validity were checked in the same manner as in the previous chapter. Convergent validity was established as the factor loadings were high and significant ($p < 0.001$) in both contexts (Anderson and Gerbing 1988). All constructs except service quality for the website exceeded the recommended AVE level of .50 (see Table 7.5). Discriminant validity was established as the confidence intervals (\pm two standard errors) of each pairwise correlation did not include the value of 1.0 (Anderson and Gerbing 1988). Next, collapsing any pair of constructs into a single factor significantly worsened the fit (De Haes et al. 2004). Finally, in most cases the squared correlation between two constructs (see Table 7.6) did not exceed the AVE for each of the two constructs. Only one pairwise correlation (i.e. between service quality and price for website) did not meet this criterion. The construct reliabilities also demonstrated sufficient reliability, as they exceeded the recommended .60 level (Bagozzi and Yi 1988). Again, the measurement model showed evidence for sufficient convergent and discriminant validity, as well as reliability.

Table 7.5: Item loadings, construct reliabilities and AVE

	Store N=406		Website N=406	
	Standardized loading ^{a,b,c}	AVE ^d	Standardized loading ^{a,b,c}	AVE ^d
Service quality	.76	.52	.63	.36
SQ2: high-quality services ^e	.64		.59	
SQ4: willingness to respond	.78 (11.16)		.53 (7.87)	
SQ5: reliability/fulfillment	.73 (10.88)		.67 (9.10)	
Merchandise quality	.92	.86	.90	.82
MQ1: good selection	.91		.89	
MQ2: wide selection of interesting books	.94 (20.49)		.92 (17.13)	
Monetary price	.70	.54	.67	.50
Price1: low price level (r)	.79		.71	
Price2: attractive offers (r)	.67 (10.36)		.71 (9.55)	

Table 7.5: Item loadings, construct reliabilities and AVE (continued)

	Store N=406		Website N=406	
	Standardized loading ^{a,b,c}	AVE ^d	Standardized loading ^{a,b,c}	AVE ^d
Perceived risk	.78	<i>.64</i>	.78	<i>.64</i>
Risk3: purchasing uncertainty	.70		.85	
Risk4: things can easily go wrong	.89 (7.38)		.75 (7.74)	
Time/effort costs	.82	<i>.69</i>	.75	<i>.60</i>
Time2: shopping efficiency (r)	.72		.85	
Time2: requires not lot of time/effort (r)	.93 (9.51)		.69 (9.34)	
Enjoyment	.87	<i>.69</i>	.82	<i>.61</i>
Enjoy1: shopping is fun	.83		.62	
Enjoy2: shopping is enjoyable	.84 (18.31)		.82 (12.50)	
Enjoy3: shopping is interesting	.82 (17.79)		.88 (12.63)	
Value for money	.86	<i>.68</i>	.87	<i>.69</i>
PV1: value for money	.70		.69	
PV2: price/quality ratio	.89 (15.77)		.93 (15.99)	
PV3: get versus give	.87 (15.58)		.86 (15.61)	
Purchase intentions	.89	<i>.72</i>	.86	<i>.68</i>
Int1: shopping likelihood	.90		.83	
Int2: willing to recommend	.81 (20.34)		.78 (16.64)	
Int3: future purchase intent	.84 (21.59)		.86 (18.00)	

Notes:

- Figures in bold represent construct reliabilities, which were calculated based on the formula provided by Hair et al. (1998, p. 624).
- Figures between brackets represent *t*-values of the factor loadings. The first item of each construct was used as a reference item.
- Based on one-tailed test, *t*-values greater than 1.65 are significant at $p < .05$; *t*-values greater than 2.33 are significant at $p < .01$.
- The average variance extracted (AVE) was calculated based on the formula provided by Fornell and Larcker (1981).
- For the exact wording of the items, see Table 5.1.

7.5.3 Assessment of correlations and multicollinearity

Table 7.6 shows the correlations between the latent factors for the offline and online context. The correlations in this study are somewhat lower than in the first study. Most pairwise correlations ranged from .20 to .50. Again, the highest correlations were between price and value for money (i.e. $\rho_{store} = -.66$ and $\rho_{website} = -.60$). The relatively low correlations between the latent constructs of the shopping experience costs and benefits support the idea that these are distinct constructs.

Table 7.6: Correlations between latent factors after CFA

	SQ ^{a,b,c}	MQ	Price	Risk	Time	Enjoy	PV	Int
Service quality		.51 (.06)	-.60 (.07)	-.39 (.07)	-.50 (.08)	.37 (.07)	.45 (.07)	.48 (.06)
Merchandise quality	.43 (.06)		-.37 (.07)	-.27 (.06)	-.46 (.08)	.47 (.07)	.30 (.06)	.38 (.07)
Monetary price	-.49 (.07)	-.39 (.06)		.12 (.07)	.25 (.08)	-.27 (.07)	-.60 (.06)	-.24 (.08)
Perceived risk	-.30 (.07)	-.18 (.06)	.03 (.07)		.22 (.07)	-.24 (.07)	-.28 (.06)	-.29 (.05)
Time/effort costs	-.21 (.06)	-.33 (.05)	.26 (.07)	.07 (.07)		-.42 (.07)	-.28 (.06)	-.40 (.08)
Enjoyment	.49 (.06)	.39 (.06)	-.28 (.07)	-.31 (.07)	-.23 (.06)		.22 (.08)	.46 (.06)
Perceived value	.42 (.06)	.28 (.05)	-.66 (.06)	-.24 (.06)	-.22 (.06)	.29 (.06)		.21 (.06)
Purchase intentions	.46 (.05)	.53 (.05)	-.27 (.07)	-.14 (.06)	-.46 (.06)	.51 (.05)	.26 (.06)	

Notes:

- a. Correlations offline context below diagonal, correlations online context above diagonal.
- b. Standard errors are displayed between brackets and were derived by bootstrapping with 500 replications.

Multicollinearity was checked both through regression with unweighted scales and through correlation analyses. No severe problems were encountered as the highest correlation between the independent factors was $\rho = .60$ (i.e. between service quality and price for the website), and the highest VIF value was 1.50.

7.6 Stage 4: Multiple group CFA

Before addressing the structural invariance tests, the baseline models were established (Hypotheses 1-8). The revised model (three added relationships, see Chapter 6) was tested in the online (website) and offline (store) context. Figure 7.1 displays the final model.

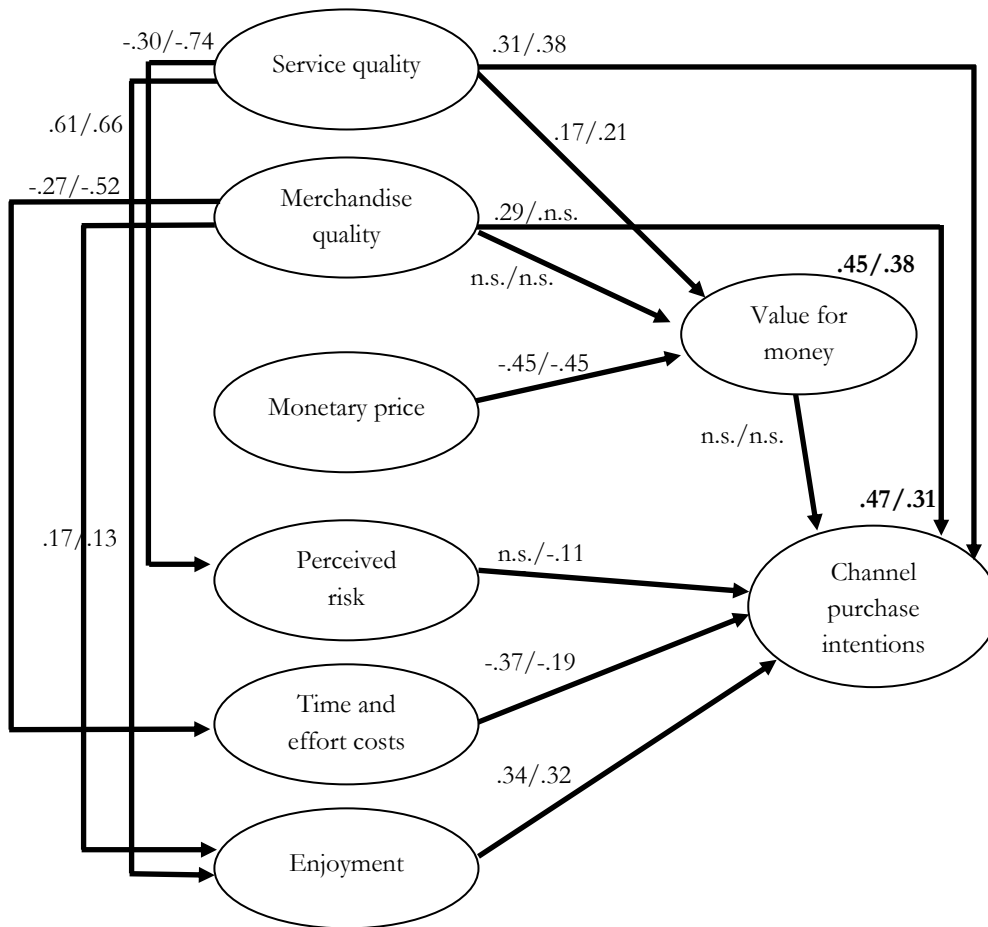


Figure 7.1: Coefficients for the online/offline context for base model

Notes: The unstandardized structural coefficients are displayed for the store/website. Figures in bold represent the percentage of explained variance in the endogenous variables. N.s. represents coefficients that are not significant from zero at a .05 significance level based on one-tailed tests.

Table 7.7: Fit indices for offline and online context

Fit indices	Store N=406	Website N=406
χ^2	322.51	301.40
<i>Df</i>	155	154
χ^2/df	2.08	1.96
GFI	.93	.93
AGFI	.90	.91
NNFI	.95	.95
CFI	.96	.96
RFI	.91	.90
SRMR	.061	.060
RMSEA	.052	.049

In the structural model, the error variance of one item (Time2) appeared negative in the offline context. This is known as a Heywood case and can be solved by fixing the error variance to a positive value (Hair et al. 1998). In this case, the error variance was set equal to the error variance in the measurement model of the confirmatory factor analysis in which it was positive. By fixing the error variance, one degree of freedom is saved.

The models showed acceptable fit indices for the store and website (see Table 7.7). Table 7.8 and 7.9 show the unstandardized and standardized structural relationships and their *t*-values. For the offline context, the predictors account for 47.3% and 30.8% of the variance associated with offline and online purchase intentions, respectively. Next, the results also indicated that the predictors explained a reasonable amount of variation in offline perceived value ($R^2=.448$) and online perceived value ($R^2=.378$).

Table 7.8: Structural coefficients for the offline context for base model

Structural relationships offline context N=406	Unstandar- dized structural coefficient	Standar- dized structural coefficient	t-value	Hypothesis testing
Antecedents of Perceived value (R²=.448)				
H2a: Service Quality → Perceived value	.17	.17	2.52	Supported
H3a: Merchandise Quality → Perceived value	-.01	-.02	-.35	Not supported
H4: Price → Perceived value	-.45	-.58	-6.57	Supported
Antecedents of Purchase intentions (R²=.473)				
H1: Perceived value → Intentions	-.04	-.02	-.42	Not supported
H5: Perceived risk → Intentions	.06	.03	.62	Not supported
H6: Time/effort costs → Intentions	-.37	-.28	-5.75	Supported
H7: Enjoyment → Intentions	.34	.28	4.87	Supported
H2b: Service quality → Intentions	.31	.17	2.36	Supported
H3b: Merchandise quality → Intentions	.29	.27	5.03	Supported
Antecedent of Risk (R²=.116)				
H2c: Service quality → Perceived risk	-.30	-.34	-4.57	Supported
Antecedents of Enjoyment (R²=.297)				
Service quality → Enjoyment	.61	.42	6.07	-
Merchandise quality → Enjoyment	.17	.21	3.56	-
Antecedent of Time/effort costs (R²=.112)				
Merchandise quality → Time/effort costs	-.27	-.33	-6.03	-

Note: Based on one-tailed tests, *t*-values greater than 1.65 are significant at $p < .05$; *t*-values greater than 2.33 are significant at $p < .01$.

The hypotheses were tested through one-tailed *t*-tests at a significance level of .05. In both contexts, three out of ten proposed relationships appeared insignificant. In both contexts, merchandise quality was not a predictor of perceived value, and perceived value did not predict purchase intentions. For the offline context, perceived risk did not affect purchase intentions, whereas in the online context merchandise quality did not have a direct impact on intentions. Of particular interest was the robustness of the three added relationships that were required to reach acceptable fit indices in the first study. The three relationships were found to be significant again for the online and offline context. Thus, support was found for the robustness of the added relationships.

Table 7.9: Structural coefficients for the online context for base model

Structural relationships online context N=406	Unstandar- dized structural coefficient	Standar- dized structural coefficient	t-value	Hypothesis testing
Antecedents of Perceived value (R²=.378)				
H2a: Service quality → Perceived value	.21	.16	1.80	Supported
H3a: Merchandise quality → Perceived value	.03	.03	.48	Not supported
H4: Price → Perceived value	-.45	-.50	-5.45	Supported
Antecedents of Purchase intentions (R²=.308)				
H1: Perceived value → Intentions	-.06	-.04	-.65	Not supported
H5: Perceived risk → Intentions	-.11	-.11	-1.72	Supported
H6: Time/effort costs → Intentions	-.19	-.17	-2.63	Supported
H7: Enjoyment → Intentions	.32	.24	3.52	Supported
H2b: Service quality → Intentions	.38	.20	1.92	Supported
H3b: Merchandise quality → Intentions	.11	.09	1.20	Not supported
Antecedent of Risk (R²=.167)				
H2c: Service quality → Perceived risk	-.74	-.41	-5.46	Supported
Antecedents of Enjoyment (R²=.306)				
Service quality → Enjoyment	.66	.47	5.06	-
Merchandise quality → Enjoyment	.13	.14	1.97	-
Antecedent of Time/effort costs (R²=.226)				
Merchandise quality → Time/effort costs	-.52	-.48	-8.40	-

Note: Based on one-tailed tests, *t*-values greater than 1.65 are significant at $p < .05$; *t*-values greater than 2.33 are significant at $p < .01$.

In both contexts, perceived value was determined by price ($\beta_{\text{store}} = -.45 / \beta_{\text{website}} = -.45$) and service quality ($\beta_{\text{store}} = .17 / \beta_{\text{website}} = .21$), but not by merchandise quality. Customers do not consider merchandise quality in their evaluation of value for money. Again, the constructions of online and offline perceived value appeared similar.

Merchandise quality, service quality, time/effort costs, and enjoyment directly impacted offline purchase intentions. Service quality, time/effort costs, enjoyment and risk affected online purchase intentions. Remarkably, merchandise quality did not impact the intentions to shop through the website. Most of the respondents agreed that the website offers a

good assortment (i.e. there is little variation in merchandise quality)³⁴. However, not all of the respondents have strong intentions towards buying through the website. Hence, for the customers an increase in merchandise quality does not lead to an increase in purchase intentions.

Like in Study 1, the value for money consumers receive did not alter consumers' purchase intentions to buy through a particular channel³⁵. The shopping experience costs and benefits, on the other hand, substantially impacted the intentions to shop through the website and store. Enjoyment ($\beta_{\text{store}}=.34/\beta_{\text{website}}=.32$) and time/effort costs ($\beta_{\text{store}}=-.37/\beta_{\text{website}}=-.19$) had a strong direct influence on the online and offline purchasing intentions. Risk only appeared to be a predictor of purchase intentions in the online context ($\beta_{\text{website}}=-.11$); compared with Study 1, risk played a less significant role in the second study. An explanation for this finding is that the respondents in the second study all had prior online shopping experience and may be less affected by risk, as they possess a stronger internal locus of control (cf. Hoffman et al. 2002).

Table 7.10 shows the total effects of the predictors on the online and offline purchase intentions. The total effects were similar to those of the first study. Again, service quality, merchandise quality, time/effort costs and enjoyment were the dominant predictors of purchase intentions in each context. A comparison of the unstandardized coefficients indicates that customers use corresponding criteria to determine online and offline purchase intentions. The standardized effects showed that offline purchase intentions were most strongly affected by merchandise quality (.42), service quality (.29), time/effort costs (-.28), and enjoyment (.28). Online purchase intentions were most strongly influenced by service quality (.46), enjoyment (.24), merchandise quality (.20), and time/effort costs (-.17). Like in Study 1, service quality had the strongest impact on purchase intentions, underlining the pivotal role it plays after a website presence has been established (cf.

³⁴ An investigation of the items pertaining to merchandise quality shows that approximately 70% of the respondents attribute a score of 6 or higher on each item.

³⁵ The models were again tested without the direct relationships of merchandise quality and service quality on purchase intentions. In the second study, the relationships between perceived value and purchase intentions remained insignificant in each context, confirming the weak influence of perceived value on purchase intentions.

Parasuraman et al. 2005). In the online context, it is thus essential to keep your promises, to provide high-quality additional services and to respond quickly to customer inquiries.

Table 7.10: Total (standardized) effects on purchase intentions for base model

Total effects on purchase intentions	Store N=406				Website N=406			
	Total effects	Direct effect ^a	Indirect effect	Total standardized effect ^b	Total effects	Direct effect ^a	Indirect effect	Total standardized effect ^b
Service quality	.49	.31	.18	.29 (2)	.66	.38	.23	.36 (1)
Merchandise quality	.45	.29	.16	.42 (1)	.25	.11 ^{n.s.}	.14	.20 (3)
Price	.02	-	.02	.01 (7)	.03	-	.03	.02 (7)
Enjoyment	.34	.34	-	.28 (4)	.32	.32	-	.24 (2)
Time/effort costs	-.37	-.37	-	-.28 (3)	-.19	-.19	-	-.17 (4)
Risk	.07	.07 ^{n.s.}	-	.03 (5)	-.11	-.11	-	-.11 (5)
Perceived value	-.04	-.04 ^{n.s.}	-	-.02 (6)	-.06	-.06 ^{n.s.}	-	-.04 (6)

Notes:

- a. N.s. represents coefficients of direct effects that are not significant from zero at .05 based on one-tailed tests.
- b. Figures between brackets indicate the ranking of each factor in explaining the endogenous latent variable.

Similar to the findings of Study 1, service quality had strong indirect effects on online and offline purchase intentions by altering perceptions of enjoyment and risk. Merchandise quality also demonstrated strong indirect effects, albeit they were less strong than the indirect effects of service quality. The results confirm that service quality and merchandise quality impact intentions beyond their direct impact.

Finally, the strong impact of enjoyment on purchase intentions in each context was replicated in the second study, although its effects were a bit less strong than in the first study. This decrease in importance can be explained as the act of buying management books tends to be less hedonic than the act of buying leisure books. An alternative

explanation relates to the type of respondents; in the first study offline buyers (i.e. those with no direct online shopping experience) were strongly affected by enjoyment in the online context, because of the lack of enjoyment. Those with direct online shopping experience, on the other hand, were not strongly affected by enjoyment. The respondents in the second study all shopped through the website once, and this might explain why they are less affected by enjoyment in the online context compared to those in Study 1. After addressing the total effects, the following section provides the formal tests regarding the relative strength of specific relationships that are expected to differ across contexts.

A. Testing the relative importance of criteria in the online and offline context

As outlined in the previous chapter, configural and metric invariance need to be established prior to testing structural relationships. After the omnibus test showed that the covariance matrices were not invariant, subsequent analyses were necessary to find the source of nonequivalence. The results indicated that full configural invariance was established, as the same pattern of salient and nonsalient lambdas was found. Moreover, the stacked model with 309 degrees of freedom (155 *df* for offline context, 154 *df* for online context) showed reasonable fit indices ($\chi^2/df= 2.02$, GFI=.93, CFI=.96, NNFI=.95, RMSEA=.035). Then, the metric invariance test showed that the model fitted well with the hypothesized model, after imposing the measurement items to be equal ($\chi^2/df= 2.05$, GFI=.93, CFI=.96, NNFI=.95, RMSEA=.036). In addition, the NNFI did not drop more than .01. However, the χ^2 difference test with 12 degrees of freedom appeared significant ($p<.001$). Nine out of twelve items appeared invariant (see Appendix III) and were set to be equal across contexts. Next, the hypotheses regarding the strength of structural relationships were tested (Hypotheses 12-15). More specifically, it was tested whether time/effort costs, perceived risk and merchandise quality had a stronger effect on purchase intentions, and whether enjoyment had a less pronounced effect in the online context. As a start, it was tested whether all structural coefficients were invariant across contexts. The chi-square difference test with 13 degrees of freedom appeared to be significant ($p<.001$), indicating that not all structural path coefficients were invariant. Next, to identify the source of nonequivalence, each separate relationship was constrained and set to be free (Byrne 2001). The difference in chi square with 1 degree of freedom was used to investigate whether the strength of relationship differed online versus offline (cf. Childers et al. 2001; Einwiller 2003). Just as in the first study, none of the four hypotheses were supported (see Table 7.11). The

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strength of the relationship between time/effort costs and purchase intentions was not significantly different across contexts ($\beta_{\text{store}}=-.36/\beta_{\text{website}}=-.20$, $p=.121$). Next, there was no significant difference between the strength of relationships between enjoyment and purchase intentions ($\beta_{\text{store}}=.37/\beta_{\text{website}}=.28$, $p=.366$). Although risk played a stronger role online, the difference was not significant ($\beta_{\text{store}}=.09/\beta_{\text{website}}=-.11$, $p=.106$). Finally, merchandise quality did not have a stronger direct effect on purchase intentions in the online context ($\beta_{\text{storeec}}=.29/\beta_{\text{website}}=.11$, $p=.077$). In contrary, merchandise quality seemed to more strongly impact intentions in the offline context, although this difference was just not significant. This unanticipated finding can be explained through the asymmetric impact of negative and positive attribute-level performance on purchase intentions (Mittal, Ross and Baldasare 1998). The asymmetric impact implies that a negative performance on an attribute has a greater impact on purchase intentions than a positive performance on that same attribute. Thus, customers are more strongly affected by negative performance than positive performance. For the respondents (i.e. the customers of the website) the store lacks a good assortment (see section 7.3), and this strongly reduces their offline purchase intentions. Hence, an increase in the merchandise quality of the store would strongly increase their offline purchase intentions.

The only structural relationships that significantly differed between contexts were (1) merchandise quality \rightarrow time/effort costs, and (2) service quality \rightarrow perceived risk. These two findings were also found in Study 1, giving additional support for these differences in the strength of these relationships. An examination of the coefficients (see Table 7.11) shows that in the online context service quality more strongly reduced risk than in the offline context. In addition, merchandise quality more strongly reduced time/effort costs in the online context, implying that improvements in merchandise quality in the online context lead to major time/effort savings.

Table 7.11: Tests of invariant structural relationships offline versus online context

	Hypothesis	Structural coefficient offline context ^{a,b}	Structural coefficient online context ^{a,b}	P-value	Hypothesis Testing
Time/effort costs → Intentions	H12: Stronger in online context	-.36	-.20	.121	Not supported
Enjoyment → Intentions	H13: Stronger in offline context	.37	.28	.366	Not supported
Perceived risk → Intentions	H14: Stronger in online context	.09 ^{n.s.}	-.11	.106	Not supported
Merchandise quality → Intentions	H15: Stronger in online context	.29	.11 ^{n.s.}	.077	Not supported
Service quality → Perceived risk	-	-.31	-.67	.002	-
Merchandise quality → Time/effort costs	-	-.27	-.52	.001	-

Notes:

- Unstandardized structural coefficients marginally differ from those in Table 7.8 and 7.9 due to the equality constraints of the factor loadings.
- N.s. represents coefficients that are not significant different from zero at .05.

B. Testing the moderating effect of prior online shopping experience in the online context

As discussed in Chapter 5, the second study is not possible to distinguish between those with direct experience and those who have not shopped through the website. To test for the moderating effect of prior experience, this study discerned between less experienced online buyers (offline buyers) and more experienced online buyers (online buyers) based on the number of online purchases other than books; less experienced online buyers had shopped online 6 times or less, whereas experienced online buyers had shopped more than 6 times. The samples included 168 less experienced buyers and 226 experienced online shoppers.

To evaluate the moderating influence, the two subgroups were evaluated in terms of their unstandardized structural coefficients. The two separate baseline models had acceptable fit indices for the less experienced and experienced online buyers, respectively ($\chi^2/df=1.44/1.59$, GFI=.89/.91, CFI=.95/.95, RMSEA=.051/.051). After the omnibus test showed that the covariance matrices were not equivalent, configural invariance was examined. The stacked model with 308 degrees of freedom showed reasonable fit indices ($\chi^2/df=1.51$, GFI=.90, CFI=.95, NNFI=.94, RMSEA=.036), indicating that full configural invariance was established. Next, the metric invariance test showed that the model still fitted the data well after constraining the lambdas to be equal ($\chi^2/df=1.52$, GFI=.89, CFI=.95, NNFI=.94, RMSEA=.036). Moreover, the χ^2 difference test appeared insignificant ($\Delta \chi^2=18.80$ with 12 *df*, $p>.05$). From a practical perspective, it was also found that the factor loadings were equal, as the NNFI did not decrease more than .01 when the equality constraints were imposed (Little 1997). Consequently, the structural invariance tests were performed after configural and metric invariance were established. Table 7.12 displays the results of the hypotheses and two nonhypothesized significant differences.

In this study, experienced online shoppers unexpectedly appeared to be more strongly –but not significantly– affected by risk than those with less experience; hence, there was not support for Hypothesis 17. Statistical support was found that experienced online buyers rely more strongly on time/effort savings than those who have lesser experience. Therefore, H18 was supported. Similar to the findings of the first study, those with less online experience were more concerned with the level of enjoyment than those with more experience; this time, however, the difference was not statistically significant. Consequently, Hypothesis 19 could not be confirmed.

One nonhypothesized significant difference appeared that was also significant in the first study: service quality is more important to less experienced buyers than to more experienced online buyers. This is likely due to the strong reliance on the aspect of reliability/fulfillment. Experienced online shoppers can more easily rely on their prior experiences, and they are less likely to question whether e-tailers keep their promises. If e-tailers succeed in improving online service quality perceptions, it will strongly stimulate online purchase intentions for less experienced online buyers.

Table 7.12: Tests of invariant structural relationships offline versus online buyers

	Hypothesis	Structural coefficient offline buyers	Structural coefficient online buyers	P-value	Hypothesis testing
Perceived risk → Intentions	H17: Attenuated by prior online shopping experience	-.08 ^{n.s.}	-.19	.136	Not supported
Time/effort costs → Intentions	H18: Strengthened by prior online shopping experience	.05 ^{n.s.}	-.34	.009	Supported
Enjoyment → Intentions	H19: Attenuated by prior online shopping experience	.46	.21	.150	Not Supported
Service quality → Intentions	-	.72	-.06 ^{n.s.}	.048	-

Note: N.s. represents unstandardized coefficients that are not significant from zero at a .05 significance level based on one-tailed tests.

7.7 Stage 5: Discussion of findings

The second study provided support for the validity of the base model. A significant proportion of variance in channel purchase intentions was explained and most relationships that were found to be significant in the first study were confirmed by the data in the second study (see Appendix VII for an overview of the hypotheses). Of the 10 paths that were statistically significant in the *offline context* in Study 1, 9 were also significant in Study 2. The relationship between risk and intentions was significant in the first study, but not in the second. In addition to this, service quality had a direct impact in the offline context in the second study, whereas it did not in the first. Of the 12 paths that were significant in the *online context* in Study 1, 10 were significant in Study 2. Two paths

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regarding merchandise quality (i.e. merchandise quality → perceived value and merchandise quality → intentions) were significant in Study 1, but became insignificant in Study 2, probably due to the reasons discussed in section 7.6.

Similar to the first study, purchase intentions were predominantly defined by service quality, merchandise quality, enjoyment and time/effort costs. The results confirmed that enjoyment plays a significant role in shaping purchase intentions. Service quality and merchandise quality again had strong indirect effects in each context. Again, price and perceived value did not directly or indirectly alter purchase intentions in either context. It seems that altering the value for money through price reductions hardly stimulates consumers to use a particular channel. Financial incentives are less suited as a means to motivate them to use a particular channel.

Similar to the findings of the first study, customers did not appear to differ in their strength of motivations (i.e. risk, time/effort costs, enjoyment and merchandise quality) regarding the online and offline context. However, the same two significant differences regarding the strength of relationships in the first study appeared to be significant in the second study. In the online context service quality stronger reduced risk, and merchandise quality stronger affected time/effort costs. Overall, the results confirmed the similarity in the construction of online and offline perceived value and purchase intentions across contexts. Customers do not significantly differ in the weights they attribute to the factors, but rather attribute different scores to the performance of each channel on these factors.

The second study used a different approach to measure the moderating influence of prior online experience; the second study used a split sample based on the number of online purchases, whereas the first study based it on whether or not customers had prior shopping experience with the bookseller's website. To the extent that the results are comparable, the findings of the second study confirm that the influence of prior experience is relatively small. Again, the lack of enjoyment seems to harm those with less experience to a greater extent than those with more experience. The result was, however, not significant. Next, in line with the expectations, the second study showed that the more experienced shoppers rely more heavily on the time/effort costs than those with less experience. Finally, experienced and less experienced online buyers were equally affected by the level of risk.