Web Appendix for “Design and Governance of Multichannel Sales Systems: Financial Performance Consequences in Business-to-Business Markets”

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Notes: Slope coefficients of direct (DCU) and indirect (ICU) channel usage on EBIT are displayed contingent on formalization (H_{1a} and H_{1b}), centralization (H_{2a} and H_{2b}), and information exchange (H_{3a} and H_{3b}). These coefficients are plotted at the average values of the moderators (μ) and up to three standard deviations around the mean (μ ± σ; μ ± 2σ; μ ± 3σ).
Further Information on the Validation Study

To test our predicted base line effects, we performed a validation study. Sales partners evaluated their information advantage over the manufacturer. In addition, sales partners evaluated their cooperation with the manufacturer, which represents a manifestation of moral hazard. The Appendix displays the respective items that we used. Since sales partners are nested within manufacturers, we performed hierarchical linear modeling. Specifically, we estimated the following regression equations:

1. \[ \text{InfoAd}_{i,j,k} = \beta_0 + \beta_1 \text{DCU}_i + \beta_2 \text{ICU}_i + \beta \text{Controls} + \varphi_i + \eta_{ij} + \chi_{i,j,k} \]

2. \[ \text{Coop}_{i,j,k} = \beta_0 + \beta_1 \text{DCU}_i + \beta_2 \text{DCU}^2_i + \beta_3 \text{ICU}_i + \beta_4 \text{ICU}^2_i + \beta \text{Controls} + \zeta_i + \Phi_{ij} + \theta_{i,j,k}, \]

where InfoAd is information advantage of the sales partner (evaluated by sales partner); Coop is cooperation of the sales partner (evaluated by sales partner); DCU (DCU$^2$) is direct channel usage (squared); ICU (ICU$^2$) is indirect channel usage indirect (squared); Controls refers to a set of control variables measured at the manufacturer (i.e., distribution selectivity, customer orientation, cost orientation, inverse Mills ratio), sales partner (i.e., switching costs, importance of the manufacturer, frequency of manufacturer change, customer orientation, and cost orientation), and industry levels (i.e., industry concentration); and \( \varphi, \eta, \chi, \zeta, \Phi, \) and \( \theta \) are residual error terms for sales partner \( k \), manufacturer \( j \), in industry \( i \).

Table 6 in the manuscript displays the results. In line with our prediction, we observe a negative relationship between direct channel usage and the sales partner’s information advantage over the manufacturer (Model 1: \( \beta_{\text{DCU}} = -.07, p < .05 \)), but no relationship with indirect channel usage (Model 1: \( \beta_{\text{ICU}} = -.10, \text{n.s.} \)). In addition, we find that effects on sales partner cooperation are not linear but display inverted U-shape relationships (Model 2: \( \beta_{\text{DCU}} = -.04, p < .01; \beta_{\text{ICU}} = - \)
.19, \ p < .01) which we illustrate in Figure W2.1. We also formally established that the inverted U-shaped relationships occur in our data range (Haans, Pieter, and He 2016; Lawrence et al. 2019; Vomberg, Homburg, and Gwinner 2020). The slope coefficient at the minimum value observed for direct channel usage [indirect channel usage] is significantly positive (\( b_{\text{low, DCU}} = \beta_{\text{DCU}} + \beta_{\text{DCU}^2} \times \text{DCU}_{\text{min}} = .51, \ p < .01 \)) [\( b_{\text{low, ICU}} = .35, \ p < .10 \)] and the slope at the maximum value is significantly negative (\( b_{\text{high, ICU}} = \beta_{\text{DCU}} + \beta_{\text{DCU}^2} \times \text{DCU}_{\text{max}} = -.38, \ p < .01 \)) [\( b_{\text{high, ICU}} = -.91, \ p < .01 \)]. In addition, both the turning point for direct (turning point on standardized data = 1.32) and indirect channel usage fall in our data range (turning point = .20).

Figure W2.1: INVERTED U-SHAPED EFFECTS ILLUSTRATED

Notes: We display the inverted U-shaped effects between direct (indirect) channel usage (standardized data) and sales partner cooperation with the manufacturer (backtransformed data for dependent variables to ease interpretation). For indirect channel usage, the turning point lies close to the lower end of our observed data range: we predominantly observe negative effects of indirect channel usage on sales partner cooperation with the manufacturer.

Therefore, low to moderate levels of direct channel usage increase cooperation (reduce moral hazard) potentially due to a manufacturer’s increased ability to detect moral hazard. However, high levels of direct channel usage likely provoke competition, lowering cooperation.
While for direct channel usage, negative effects set in only for high levels, negative effect already sets in for comparatively low values of indirect channel usage (Figure W2.1). Thus, in line with our prediction, we observe pre-dominantly, negative effects of indirect channel usage.

**Replication of Main Analysis for Sales Partner Outcomes**

An important question that our findings may prompt is what the performance outcomes are for sales partners (Sa Vinhas and Heide 2015; Wathne et al. 2018). We asked key informants to determine their companies’ target achievements with regard to profit, sales volume, growth, and overall performance with the respective manufacturer. Key informants therefore evaluated the target achievement of their individual channel. Sales partner performance represents a rather objective construct, alleviating concerns about a key informant bias (Homburg et al. 2012). Our measurement is in line with prior research (e.g., Grewal et al. 2013; Sa Vinhas and Heide 2015), but we acknowledge the limitation of sales partners evaluating their own target achievement. However, requesting this information from manufacturers was not feasible, as it would have resulted in a significant increase in questionnaire length.

Table W2.1 displays the resulting performance effects for sales partners. The effects of indirect channel usage are moderated in the same way as in the manufacturer study. Specifically, formalization ($\beta_{ICU \times Form} = .22, p < .05$) strengthens the performance effects of indirect channel usage, while centralization ($\beta_{ICU \times Cent} = -.34, p < .01$) and information exchange ($\beta_{ICU \times Info} = -.11, p < .01$) weaken the performance effect of indirect channel usage. Though not statistically significant, the interactions between direct channel usage and centralization ($\beta_{DCU \times Cent} = .03$, n.s.) and information exchange ($\beta_{DCU \times Cent} = -.09$, n.s.) point in the same direction as in the manufacturer study. However, while formalization lowers the effect of direct channel usage on manufacturer performance, it strengthens the effects of direct channel usage on sales partner
performance ($\beta_{DCU \times Form} = .13, p < .01$).

### Table W2.1: CONTINGENCY EFFECTS OF MULTICHANNEL DESIGN ON SALES PARTNER TARGET ACHIEVEMENT

| Independent Variables | Model 1 | Model 2 |
|-----------------------|---------|---------|
| Direct channel usage  | 0.08**  | 0.09    |
| Indirect channel usage| 0.17**  | 0.05    |
| **Governance Mechanisms** |
| Formalization         | 0.06    | 0.60*** |
| Centralization        | -0.20***| -0.58** |
| Information exchange  | 0.08**  | 0.05    |
| **Multichannel Design \times Governance Mechanism** |
| Indirect channel usage \times formalization | 0.23**  | 0.22**  |
| Indirect channel usage \times centralization | -0.36***| -0.34***|
| Indirect channel usage \times information exchange | -0.09** | -0.11***|
| Direct channel usage \times formalization | 0.07*   | 0.13*** |
| Direct channel usage \times centralization | 0.03    | 0.03    |
| Direct channel usage \times information exchange | -0.02  | -0.09   |
| **Control Variables** |
| Switching costs (Sales partner level) | 0.29*** | 0.20**  |
| Importance of manufacturer (Sales partner level) | 0.18**  | 0.14*   |
| Frequency of manufacturer change (Sales partner level) | 0.05    | 0.07*   |
| Customer orientation (Sales partner level) | 0.20*** | 0.24*** |
| Cost orientation (Sales partner level) | 0.10    | 0.09    |
| Distribution selectivity (Manufacturer level) | 0.00    | 0.04    |
| Information asymmetry (Manufacturer level) | 0.11**  | 0.03    |
| Contractual binding (Manufacturer level) | 0.00    | -0.05   |
| Enforcement (Manufacturer level) | -0.03   | 0.03    |
| Governance expenses (Manufacturer level) | -0.06   | -0.10   |
| Industry concentration (Industry level) | -0.01   | 0.08    |
| **Endogeneity Correction** |
| Direct channel usage (residual) | -0.02   |       |
| Indirect channel usage (residual) | 0.09    |       |
| Formalization (residual) | -0.36** |       |
| Centralization (residual) | 0.14    |       |
| Information exchange (residual) | -0.09   |       |
| IMR (sales partner data) | 0.01    | 0.11   |
| Constant | -0.01   | -0.01  |
| Pseudo-R$^2$ | .35     | .36    |
| N        | 170     | 170    |

* $p < .10$, ** $p < .05$, *** $p < .01$.

Notes: We display standardized coefficients with standard errors clustered at the industry level. Model 1 contains an inverse Mills ratio (IMR) to account for potential selection effects due to a lack of sales partner data. Model 2 additionally accounts for endogeneity through a control function approach for multichannel structure and governance mechanisms.
As an additional endogeneity check, we rely on Gaussian copulas (Ebbes, Papies, and Van Heerde 2016; Park and Gupta 2012), an instrument-free method that has recently been employed in the channel context (Carson and Ghosh 2019). Gaussian copulas directly model the joint distribution of potentially endogenous variables and the errors term by including additional regressors. We include $\text{Copula}_{DCU} = \Phi^{-1}[H_{DCU}(DCU_i)]$, $\text{Copula}_{ICU} = \Phi^{-1}[H_{ICU}(ICU_i)]$, $\text{Copula}_{\text{Form}} = \Phi^{-1}[H_{\text{Form}}(\text{Form}_i)]$, $\text{Copula}_{\text{CENT}} = \Phi^{-1}[H_{\text{CENT}}(\text{CENT}_i)]$, and $\text{Copula}_{\text{INFO}} = \Phi^{-1}[H_{\text{INFO}}(\text{INFO}_i)]$ in Equation 6 instead of the residuals ($\theta$). Here, $\Phi^{-1}$ is the inverse of the cumulative distribution function, and $H(\cdot)$ represent the empirical cumulative distribution functions of direct channel usage, indirect channel usage, formalization, centralization, and information exchange. No separate copula terms are required for interaction terms (Papies, Ebbes, and Van Heerde 2017).

Because this method assumes that the potentially endogenous regressor consists of an exogenous part, which is nonnormally distributed, and a normally distributed endogenous part, the model-identifying assumption is that the potentially endogenous regressor is nonnormally distributed (Gielens et al. 2018). Shapiro–Wilk tests support nonnormality for direct ($W = .7121; p < .01$), indirect channel usage ($W = .8732; p < .01$), formalization ($W = .9672; p < .01$), and information exchange ($W = .9299; p < .01$). However, these tests fail to reject the null hypothesis of normality for centralization ($W = .9876; p > .10$). Therefore, we also estimate a model in which we rely on instrumental variables for centralization (specified in the main body of the text, Equation 5) in combination with Gaussian copulas for the remaining variables.

Channel literature has previously used combinations of an instrumental variable and instrument-free approach (e.g., Kashyap and Murtha 2017). Overall, the Gaussian copula models replicate the findings from our main study (Table W3.1).
### Table W3.1: CONTINGENCY EFFECTS OF MULTICHANNEL DESIGN ON EBIT MARGIN: GAUSSIAN COPULA APPROACH

| Independent Variables | Model 1 | Model 2 | Model 3 |
|-----------------------|---------|---------|---------|
|                       | B       | SE     | B       | SE     | B       | SE     |
| **Multichannel Design** |         |         |         |         |         |         |
| Direct channel usage  | .16**   | (.07)  | .67     | (.54)  | .67     | (.56)  |
| Indirect channel usage| -.10*   | (.08)  | .19     | (1.26) | .38     | (1.09) |
| **Governance Mechanisms** |         |         |         |         |         |         |
| Formalization         | -.11    | (.12)  | -.00    | (.35)  | .53*    | (.36)  |
| Centralization        | .03     | (.13)  | 1.52**  | (.86)  | -.59**  | (.30)  |
| Information exchange  | .23***  | (.07)  | -.33*   | (.22)  | -.39*** | (.24)  |
| **Multichannel Design × Governance Mechanism** |         |         |         |         |         |         |
| Indirect channel usage × formalization | H_{1a} | .25**  | (.12)  | .30***  | (.13)  | .31***  | (.13)  |
| Indirect channel usage × centralization | H_{2a} | -1.11** | (.07) | -.11*   | (.07)  | -.13**  | (.06)  |
| Indirect channel usage × information exchange | H_{3a} | -1.4*** | (.05) | -.17*** | (.06)  | -.20*** | (.06)  |
| Direct channel usage × formalization | H_{1b} | -1.9*** | (.08) | -.93*** | (.08)  | -.96*** | (.08)  |
| Direct channel usage × centralization | H_{2b} | .49***  | (.08)  | .46***  | (.09)  | .48***  | (.07)  |
| Direct channel usage × information exchange | H_{3b} | .41***  | (.16)  | .48***  | (.17)  | .51***  | (.14)  |
| **Control Variables** |         |         |         |         |         |         |
| Prior performance     | .39***  | (.09)  | .43***  | (.07)  | .40***  | (.08)  |
| Distribution selectivity| -.11   | (.11)  | -.10    | (.10)  | -.01    | (.12)  |
| Information asymmetry  | -.08    | (.08)  | -.08    | (.09)  | -.24*** | (.10)  |
| Contractual binding    | -.08    | (.08)  | -.04    | (.07)  | -.05    | (.07)  |
| Enforcement            | .09     | (.08)  | .10     | (.08)  | .29***  | (.12)  |
| Governance expenses    | -.11    | (.12)  | -.11    | (.10)  | -.11    | (.11)  |
| Customer orientation   | -.07    | (.06)  | -.10    | (.06)  | -.07    | (.06)  |
| Cost orientation       | -.07    | (.10)  | -.08    | (.09)  | -.08    | (.09)  |
| Industry concentration  | -.06    | (.06)  | -.09    | (.06)  | -.04    | (.05)  |
| **Endogeneity Correction** |         |         |         |         |         |         |
| Direct channel usage (copula) |        | -.49   | (.55)  | -.42    | (.57)  |
| Indirect channel usage (copula) |        | -.36   | (1.26) | -.46    | (1.07) |
| Formalization (copula)    | -.16    | (.37)  | -.33    | (.38)  |
| Centralization (copula)   | -1.49** | (.79)  |        |         | .45**   | (.23)  |
| Centralization (residual) |        |        |         |         |         | .45**   | (.23)  |
| Information exchange (copula) |        | .57    | (.20)  | .67***  | (.20)  |
| IMR (secondary data)      | -.02    | (.18)  | -.04    | (.19)  | .02     | (.17)  |
| IMR (sales partner data)  | -.12    | (.13)  | -.14*   | (.11)  | -.01    | (.13)  |
| Constant                 | -.06    | (.06)  | -.08*   | (.06)  | -.08**  | (.04)  |

* p < .10, ** p < .05, *** p < .01.

Notes: We display standardized coefficients with standard errors clustered at the industry level. Model 1 contains inverse Mills ratios (IMRs) to account for potential selection effects due to a lack of secondary performance data and sales partner data. Model 2 additionally accounts for endogeneity via Gaussian copulas for multichannel design and governance mechanisms. Because a nonsignificant Shapiro–Wilk test fails to reject the null hypothesis of normality for centralization, we reestimated Model 2 relying on the control function approach for centralization (main model). We included the residual of centralization in Model 3 instead of the Gaussian copula term.
Web Appendix W4: Multichannel Characteristics: Alternative Specifications

Summary

Instead of an entropy measure (Table 4), we could rely on alternative specifications. Specifically, we tested three alternative specifications:

- Herfindahl–Hirschman index (HHI) (Table W4.2)
- Number of channels × proportion of sales volume in channel category (Table W4.3)
- Number of channels (Table W4.4)

Overall, we observe consistent results. While the entropy and the HHI specifications consider the relative revenue contribution per channel, the number of channels × proportion of sales volume measure considers the revenue contribution at the level of the channel category (direct vs. indirect). Finally, the number of channels specification does not consider the relative revenue contribution at all. Model fit comparisons reveal that the entropy and the HHI specifications result in the highest R-square values. Thus, they deliver support for considering relative revenue contribution at the channel level.

HHI Specification

In Table W4.1, we illustrate our calculations with the set of the same fictitious manufacturers as in our entropy measurement (Table 4). To calculate separate measures for direct and indirect channels, we rescale the reported revenues to the respective channel category (direct: j = 1; indirect: j = 2). Specifically, we divide the observed measures by the proportion of sales volume generated in each channel category ($\frac{p_{ij}}{\sum p_{ij}}$). For example, 10% of Manufacturer A’s sales volume stems from wholesalers ($p_{2,2} = 10\%$) and 30% from indirect channels ($\sum p_{i,2} = 30\%$). Thus, wholesalers account for one-third of Manufacturer A’s revenues from indirect channels.
Thus, we employed the same approach as for the entropy measure: rescaled values in Table W4.1 are the same as in Table 4.

We calculate standard HHI on those rescaled values by summing the squared rescaled values \( \left( \sum \left( \frac{p_{ij}}{\sum p_{ij}} \right)^2 \right) \). Because we are interested in a diversity and not a channel concentration measure, we subtract this sum from 1 (e.g., Fang et al. 2016; Fang, Palmatier, and Grewal 2011; Fang, Palmatier, and Steenkamp 2008; Wuyts, Dutta, and Stremersch 2004). Finally, in line with our entropy-measure specification, we adjust our measure by the overall importance of direct or indirect channels.

\[
(1) \quad DCV_{j=1} = \sum p_{ij} \left( 1 - \sum \left( \frac{p_{ij}}{\sum p_{ij}} \right)^2 \right), \quad \text{and} \quad ICV_{j=2} = \sum p_{ij} \sum \left( 1 - \left( \frac{p_{ij}}{\sum p_{ij}} \right)^2 \right),
\]

where \( p_{ij} \) refers to the amount of sales volume the manufacturer reports for sales channel \( i \) (\( i \in 1 \) [direct sales force], ..., 11 [external online shops]) in channel category \( j \) (\( j \in 1 \) [direct channel] or 2 [indirect channel]). Table W4.1 provides the resulting measure. We estimated our model (Equation 6, main body of the manuscript) with the alternative HHI operationalization and replicated all our findings (Table W4.2).
### Table W4.1: ILLUSTRATION OF HHI SPECIFICATION

|                     | Manufacturer A | Manufacturer B | Manufacturer C | Manufacturer D | Manufacturer E |
|---------------------|----------------|----------------|----------------|----------------|----------------|
|                     | $p_i$           | $\frac{p_{ij}}{\sum p_{ij}}$ | $p_i$           | $\frac{p_{ij}}{\sum p_{ij}}$ | $p_i$           | $\frac{p_{ij}}{\sum p_{ij}}$ |
| **Direct distribution channels** |                 |                 |                 |                 |                 |
| Direct sales force  | 65%            | .86             | 40%            | .33            | 40%            | .17            |
| Own outlets        | 5%             | .01             | 10%            | .02            | 30%            | .10            |
| Own telephone sales/call centers | 5% | .01 | 10% | .02 | 12% | .02 |
| Own direct marketing |                 |                 |                 |                 |                 |
| Own online shops   | 10%            | .02             |                 |                 |                 |
| **Indirect distribution channels** |                 |                 |                 |                 |                 |
| Retailers          | 20%            | .44             | 20%            | .44            | 2%             | .44            |
| Wholesalers        | 10%            | .11             | 10%            | .11            | 1%             | .11            |
| External sales representatives |                 |                 |                 |                 |                 |
| External telephone sales |                 |                 |                 |                 |                 |
| External direct marketing |                 |                 |                 |                 |                 |
| External online shops |                 |                 |                 |                 |                 |
| **Direct channel usage** | 70% · (1.00 − .87) = | .13 | .43 | .67 | .00 | .00 |
| **Indirect channel usage** | 30% · (1.00 − .55) = | .14 | .14 | .01 | .18 | .80 |

**Prior Measures**

|                  | Manufacturer A | Manufacturer B | Manufacturer C | Manufacturer D | Manufacturer E |
|------------------|----------------|----------------|----------------|----------------|----------------|
| Number of direct channels | 2             | 4              | 4              | 0              | 0              |
| Number of indirect channels | 2             | 2              | 2              | 2              | 5              |
| Proportion indirect | 30%           | 30%           | 3%             | 100%           | 100%           |

Notes: All manufacturers in our sample have at least one indirect channel and, on average, employ two direct and two indirect channels. We illustrate our calculations for Manufacturer A. Our study respondents report the proportion of sales volume they generate in each channel. With the reported values, we calculate each channel’s ($i$) proportion of sales volume ($p_i$) relative to the overall channel category ($\frac{p_{ij}}{\sum p_{ij}}$), that is, direct versus indirect channel ($j$). We calculate HHI from these values separately for direct and indirect channels. Finally, we scale the resulting measures by the overall importance of the channel category (direct vs. indirect channels). A comparison between Manufacturer B and Manufacturer C indicates that the novel measures better differentiate the two sales systems than counting the number of channels. A comparison between Manufacturer D and Manufacturer E indicates that the novel measures better differentiate these channels than focusing on the percentage of revenues from indirect channels.
Table W4.2  
CONTINGENCY EFFECTS OF MULTICHANNEL DESIGN ON EBIT MARGIN:  
CHANNEL USAGE: HHI SPECIFICATION

| Independent Variables | Model 1 |          | Model 2 |          |
|------------------------|---------|----------|---------|----------|
|                        | B       | SE       | B       | SE       |
| **Multichannel Design**|         |          |         |          |
| Direct channel usage   | .15**   | (.07)    | .07     | (.23)    |
| Indirect channel usage | -.11*   | (.07)    | -.19    | (.23)    |
| **Governance Mechanisms**|         |          |         |          |
| Formalization          | -.03    | (.11)    | .21     | (.30)    |
| Centralization         | -.02    | (.12)    | -.51*   | (.35)    |
| Information exchange   | .18***  | (.06)    | .09     | (.11)    |
| **Multichannel Design × Governance Mechanism**| |          |         |          |
| Indirect channel usage × formalization | H1a    | .24**   | (.12)   | .24**   | (.12) |
| Indirect channel usage × centralization | H2a    | -.11** | (.06)   | -.13**  | (.06) |
| Indirect channel usage × information exchange | H3a    | -.15*** | (.05)   | -.14*** | (.06) |
| Direct channel usage × formalization | H1b    | -.72*** | (.04)   | -.73*** | (.05) |
| Direct channel usage × centralization | H2b    | .41***  | (.08)   | .40***  | (.07) |
| Direct channel usage × information exchange | H3b    | .29***  | (.12)   | .32***  | (.10) |
| **Control Variables**|         |          |         |          |
| Prior performance      | .40***  | (.09)    | .36***  | (.11)    |
| Distribution selectivity| -.11    | (.11)    | -.08    | (.14)    |
| Information asymmetry  | -.08    | (.08)    | -.19**  | (.09)    |
| Contractual binding    | -.07    | (.07)    | -.06    | (.10)    |
| Enforcement            | .11     | (.09)    | .23*    | (.16)    |
| Governance expenses    | -.11    | (.12)    | -.07    | (.16)    |
| Customer orientation   | -.07    | (.06)    | -.05    | (.06)    |
| Cost orientation       | -.06    | (.10)    | -.08    | (.10)    |
| Industry concentration | -.07    | (.06)    | -.06    | (.06)    |
| **Endogeneity Correction**|         |          |         |          |
| Direct channel usage (residual) |       |          | .14     | (.16)    |
| Indirect channel usage (residual) |       |          | .12     | (.20)    |
| Formalization (residual) |       |          | .06     | (.17)    |
| Centralization (residual) |       |          | .42*    | (.27)    |
| Information exchange (residual) |       |          | .10     | (.10)    |
| IMR (secondary data)   | -.02    | (.17)    | -.06    | (.20)    |
| IMR (sales partner data) |       |          | -.12    | (.13)    |
| Constant               | -.07*   | (.06)    | -.08**  | (.04)    |
| R²                     | .56     |          | .58     |          |
| N                      | 103     |          | 103     |          |

* p < .10. ** p < .05. *** p < .01.

Notes: We display standardized coefficients with standard errors clustered at the industry level. Model 1 contains inverse Mills ratios (IMRs) to account for potential selection effects due to a lack of secondary performance data and sales partner data. Model 2 additionally accounts for endogeneity through a control function approach for multichannel design and governance mechanisms.
Table W4.3
CONTINGENCY EFFECTS OF MULTICHANNEL DESIGN ON EBIT MARGIN:
CHANNEL USAGE: NUMBER OF CHANNELS × PROPORTION SALES

| Independent Variables                      | Model 1 |          | Model 2 |          |
|--------------------------------------------|---------|----------|---------|----------|
|                                            | B       | SE       | B       | SE       |
| **Multichannel Design**                    |         |          |         |          |
| Direct channel usage                       | .12**   | (.07)    | .26     | (.33)    |
| Indirect channel usage                     | .01     | (.11)    | -.68*** | (.23)    |
| **Governance Mechanisms**                  |         |          |         |          |
| Formalization                              | -.07    | (.20)    | .27     | (.34)    |
| Centralization                             | .01     | (.23)    | -.51**  | (.31)    |
| Information exchange                       | .17**   | (.09)    | -.10    | (.21)    |
| **Multichannel Design × Governance Mechanism** |       |          |         |          |
| Indirect channel usage × formalization     | H1a     | .19      | .19     | (.16)    |
| Indirect channel usage × centralization    | H2a     | -.19***  | -.18*** | (.07)    |
| Indirect channel usage × information exchange | H3a     | -.10***  | -.11**  | (.04)    |
| Direct channel usage × formalization       | H1b     | -.48**   | -.49**  | (.24)    |
| Direct channel usage × centralization      | H2b     | .28**    | .31***  | (.13)    |
| Direct channel usage × information exchange | H3b     | .17*     | .14*    | (.11)    |
| **Control Variables**                      |         |          |         |          |
| Prior performance                          | .37***  | (.12)    | .31***  | (.12)    |
| Distribution selectivity                   | -.08    | (.10)    | -.20**  | (.11)    |
| Information asymmetry                      | -.08    | (.07)    | -.16*   | (.10)    |
| Contractual binding                        | -.14*   | (.09)    | .07     | (.15)    |
| Enforcement                                | .09*    | (.06)    | .26***  | (.10)    |
| Governance expenses                        | -.22*   | (.14)    | -.30*   | (.18)    |
| Customer orientation                       | -.07    | (.09)    | -.19**  | (.09)    |
| Cost orientation                           | -.05    | (.09)    | -.06    | (.09)    |
| Industry concentration                     | -.13**  | (.06)    | -.24**  | (.11)    |
| **Endogeneity Correction**                 |         |          |         |          |
| Direct channel usage (residual)            | -.13    | (.30)    |         |          |
| Indirect channel usage (residual)          | .69**   | (.31)    |         |          |
| Formalization (residual)                   | .01     | (.22)    |         |          |
| Centralization (residual)                  | .39*    | (.28)    |         |          |
| Information exchange (residual)            | .23     | (.18)    |         |          |
| IMR (secondary data)                       | .01     | (.12)    | -.01    | (.13)    |
| IMR (sales partner data)                   | -.13    | (.16)    | -.40*   | (.29)    |
| Constant                                  | -.04    | (.06)    | -.04    | (.06)    |
| R²                                         | .32     |          | .34     |          |
| N                                          | 103     |          | 103     |          |

* p < .10, ** p < .05, *** p < .01.

Notes: We display standardized coefficients with standard errors clustered at the industry level. Model 1 contains inverse Mills ratios (IMRs) to account for potential selection effects due to a lack of secondary performance data and sales partner data. Model 2 additionally accounts for endogeneity through a control function approach for multichannel design and governance mechanisms.
### Table W4.4
CONTINGENCY EFFECTS OF MULTICHANNEL DESIGN ON EBIT MARGIN:
CHANNEL USAGE: NUMBER OF CHANNELS

| Independent Variables                              | Model 1 |          |          | Model 2 |          |
|---------------------------------------------------|---------|----------|----------|---------|----------|
|                                                   | B       | SE       | B        | SE      |
| **Multichannel Design**                           |         |          |          |         |
| Direct channel usage (number of direct channels)  | .04     | (.09)    | .05      | (.27)   |
| Indirect channel usage (number of indirect channels) | -.09    | (.11)    | -.96***  | (.35)   |
| **Governance Mechanisms**                         |         |          |          |         |
| Formalization                                     | -.04    | (.20)    | .20      | (.31)   |
| Centralization                                    | .02     | (.23)    | -.39**   | (.23)   |
| Information exchange                              | .05     | (.10)    | .08      | (.18)   |
| **Multichannel Design × Governance Mechanism**    |         |          |          |         |
| Indirect channel usage × formalization             | H1a     | .26*     | .24*     | (.19)   |
| Indirect channel usage × centralization            | H2a     | -.12**   | -.12**   | (.07)   |
| Indirect channel usage × information exchange      | H3a     | -.16**   | -.17**   | (.08)   |
| Direct channel usage × formalization               | H1b     | -.23*    | -.24*    | (.17)   |
| Direct channel usage × centralization              | H2b     | .13*     | .17**    | (.09)   |
| Direct channel usage × information exchange        | H3b     | .01      | .01      | (.07)   |
| **Control Variables**                             |         |          |          |         |
| Prior performance                                  | .34***  | (.12)    | .30**    | (.14)   |
| Distribution selectivity                           | -.09    | (.11)    | -.34***  | (.13)   |
| Information asymmetry                              | -.10*   | (.07)    | -.14**   | (.08)   |
| Contractual binding                               | -.13*   | (.09)    | .11      | (.19)   |
| Enforcement                                        | .03     | (.07)    | -.01     | (.13)   |
| Governance expenses                                | -.08    | (.17)    | -.28     | (.24)   |
| Customer orientation                               | -.03    | (.08)    | -.20**   | (.10)   |
| Cost orientation                                   | -.14    | (.14)    | -.08     | (.17)   |
| Industry concentration                             | -.09**  | (.05)    | -.11**   | (.06)   |
| **Endogeneity Correction**                        |         |          |          |         |
| Direct channel usage (residual)                    | .12     | (.19)    |          |         |
| Indirect channel usage (residual)                  | .75***  | (.24)    |          |         |
| Formalization (residual)                           | .05     | (.24)    |          |         |
| Centralization (residual)                          | .47**   | (.25)    |          |         |
| Information exchange (residual)                    | .04     | (.15)    |          |         |
| IMR (secondary data)                               | -.15    | (.22)    | -.11     | (.20)   |
| IMR (sales partner data)                           | -.06    | (.16)    | -.56*    | (.39)   |
| Constant                                           | -.04    | (.05)    | -.04     | (.04)   |
| R²                                                 | .27     |          | .30      |          |
| N                                                  | 103     |          | 103      |          |

* p < .10. ** p < .05. *** p < .01.

Notes: We display standardized coefficients with standard errors clustered at the industry level. Model 1 contains inverse Mills ratios (IMRs) to account for potential selection effects due to a lack of secondary performance data and sales partner data. Model 2 additionally accounts for endogeneity through a control function approach for multichannel design and governance mechanisms.
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