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Channel integration puzzle: internal obstacles, industry drivers and omnichannel capabilities

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Abstract

Purpose – In this paper, we aim to advance the research on how companies navigate channel integration by examining the internal and external challenges they encounter. Specifically, we investigate how internal obstacles and external industry drivers affect the level of channel integration.
Design/methodology/approach – In our quantitative study, we collected the relevant data from 412 firms operating in over 20 diverse industries and offering both online and offline channels. We also explore how organizational omnichannel capabilities moderate the relation between internal and external factors and the level of channel integration.
Findings – Our results indicate that channel integration is hindered by internal barriers, including limitations in operational efficiency, strategy and organizational culture. Additionally, external pressures stemming from industry-specific factors contribute to these challenges. Conversely, positive influences may arise from micro-environmental factors, such as an existing customer base already literate with omnichannel solutions or competitors advanced in omnichannel strategies.
Originality/value – To evaluate the effects of channel integration, we examine its influence on performance across multiple dimensions (short-term, long-term and comparative), extending prior research that has predominantly emphasized short-term performance metrics.

Keywords Omnichannel adoption, Organizational omnichannel capabilities, Channel integration
Paper type Research article

Introduction

Omnichannel is considered the post-pandemic new normal, both for retailers and consumer behaviours (Alexander and Varley, 2025; Sharma and Dutta, 2025; Sharma and Fatima, 2024;

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Hickman *et al.*, 2020; Silva *et al.*, 2024). The technological advances and the proliferation of channels create ongoing opportunities for testing and switches in the channel portfolio (Sharma and Fatima, 2024; Yin *et al.*, 2022). Such variability makes the challenge of channel integration everlasting and scholars examine it from various theoretical and practical perspectives, with the seminal works of Verhoef *et al.* (2015), Cao and Li (2015), or Neslin *et al.* (2006). Despite numerous studies on omnichannel in the retailing stream (Yan *et al.*, 2021; Oh *et al.*, 2012; Sharma and Fatima, 2024; Alexander and Varley, 2025; Silva *et al.*, 2020), research on how companies manage channel integration, what obstacles they encounter, and how they overcome them seem to be underdeveloped (Radomska *et al.*, 2025). Scholars have applied various standpoints to investigate operational factors impacting channel integration (de Borba *et al.*, 2021). However, despite previous suggestions that its level may be sensitive to various internal influences (Hajdas *et al.*, 2022), the relations between these constructs have not been fully investigated. Thus, our first research question considers: (RQ1) *What is the relationship between the level of channel integration and internal obstacles firms face when going omnichannel?*

Scholars argue that the degree of omnichannel implementation may vary depending on the industry's features (Sharma and Dutta, 2025; Iglesías-Pradas *et al.*, 2021; Hajdas *et al.*, 2022; Silva *et al.*, 2020). However, these suggestions have not been sufficiently explored. Despite scholars' suggestions about the potential role of industry's features in the degree of omnichannel implementation (Iglesías-Pradas *et al.*, 2021; Hajdas *et al.*, 2022), a broader perspective verifying these suggestions is lacking, leaving the question of whether all industries are equally prone to omnichannel operations unanswered. Therefore, our second research question is: (RQ2) *How do industry characteristics affect channel integration efforts?*

According to Akter *et al.* (2024) and Barbosa and Casais (2022), a particular organizational capability can lower the transformational hurdles of integrating channels. However, the exact role of these capabilities in managing internal struggles and responding to external challenges remains understudied. Our study fills this gap and explores omnichannel management capabilities beyond the single industry context. Therefore, our final research question is: (RQ3) *How do organizational capabilities contribute to overcoming internal barriers and dealing with external challenges when integrating channels?*

We aim to verify and explain if and how internal barriers and external factors, such as industry characteristics, contribute to the level of channel integration. The scope of our quantitative study covers 412 firms operating in over 20 diverse industries [1]. We investigate how our respondents evaluate the nature of their industries in terms of the competition, demand, internationalization practices, etc. We then compare these findings with how they evaluate their channel integration efforts. Our investigation allowed us to gain a bigger picture of how various industry characteristics affect channel integration possibilities. We contribute to extant omnichannel scholarship with a validated framework showing the scope of internal obstacles, specific organizational capabilities (organizational omnichannel capabilities) to overcome them, as well as the external industry drivers affecting the level of channel integration. We also empirically investigate the relationship between the level of channel integration and firm performance, a complex construct characterised by relatively high dynamics, where short-term successes are not always sustained in the long run (Ricciardi *et al.*, 2022). Given that research typically adopts a static, short-term approach (Tagashira and Minami, 2019), we selected a more comprehensive perspective when investigating the outcomes of channel integration efforts. For this reason, in this study, we adopt three perspectives: short-term, long-term, and comparative performance.

Theoretical background and hypotheses development

Internal perspective: strategic and operational obstacles

Internal obstacles to channel integration exhibit a dual nature: strategic or operational (Hajdas *et al.*, 2022). The strategic obstacles include misaligned corporate motivations (Hübner *et al.*, 2016), resulting from a siloed nature of channel management (Picot-Coupey *et al.*, 2016),

which may lead to a gap between marketing and sales (Rouziès *et al.*, 2005) or logistics and marketing (Oh *et al.*, 2012), as well as to structural conflicts between business units regarding channel autonomy (Larke *et al.*, 2018) or between physical and digital channels (Xu and Cao, 2019). Conflicting interests across various channels are mainly caused by an inconsistent strategy (Lewis *et al.*, 2014), including the lack of an effective communication strategy (Webb, 2002) and the lack of coherence between the long-term vision and short-term actions (Chopra, 2016). The lack of vision is considered the most severe strategic challenge (Ye *et al.*, 2018).

The operational issues are the second group of internal obstacles to achieving a high level of channel integration. Among them, data integration seems to be the main challenge due to more data fuelling databases (Brynjolfsson *et al.*, 2013). Integrative technologies (Iftikhar *et al.*, 2019) aligning the data flows require not only vast financial investment (Herhausen *et al.*, 2015) but also skills. Retailers often struggle with selecting and implementing the adequate integrative technology, which hampers the investment in technological omnichannel solutions (Zimmermann *et al.*, 2023). Another significant type of operational barriers firms face when integrating the channels are the reverse channel problem (Tanriverdic and Aydın, 2023; Risberg, 2022), structuring and allocating resources across channels (Lewis *et al.*, 2014) as well as measuring the channel's efficiency (Cai and Choi, 2023). Such measurement is challenging as a single channel may support the performance of the overall omnichannel system but it may not be profitable in isolation (Hajdas *et al.*, 2022).

Furthermore, the internal obstacles faced by firms transitioning to omnichannel are latent constructs – complex and not directly measurable – covering two major dimensions: (1) operational efficiency and (2) strategy and organizational culture (Radomska *et al.*, 2025). Further studies are needed to confirm the exact relation between the internal obstacles, the level of channel integration, and overall firm performance. Therefore, we hypothesise that:

H1. Internal obstacles negatively impact the level of channel integration.

External perspective: Industry drivers

The degree of omnichannel implementation may vary significantly depending on the distinctive features of each industry (Hajdas *et al.*, 2022; Iglesías-Pradas *et al.*, 2021) or product type (Sharma and Dutta, 2025). Such a suggestion aligns with studies that highlight that strategic choices, in general, are highly context-dependent (Elliott *et al.*, 2018). Previous qualitative studies indicate that product-related, competitive, market-related, and legal factors are key omnichannel industry drivers influencing channel integration (Hajdas *et al.*, 2022). However, further research—particularly quantitative—is needed to validate these findings. Consequently, we conceptualise the industry driver as a factor determining the feature of the industry, neutral in its nature. Only its specification exposes whether such industry features work in favour or against a particular strategy (omnichannel in our case). Industry drivers specification can be done based on binary oppositions. For example, an industry driver can be the nature of demand for a given good (local or global demand), and it cannot be hypothesised that the nature of demand has a positive effect on omnichannel. However, it can be hypothesised that, for example, global demand (binary opposition of a local demand) is conducive to omnichannel, and local demand (binary opposition of a global demand) is hindering omnichannel. That is why our hypothesis for this variable is neutral, and we hypothesise the following:

H2. Industry drivers impact the level of channel integration.

The moderating effect of organizational omnichannel capabilities

Dynamic capabilities are key in omnichannel management (Akter *et al.*, 2024; Li *et al.*, 2023). However, previous examinations of the relationship between dynamic capabilities and channel integration yield ambiguous results. For example Hossain *et al.* (2020a, b) and Bahar *et al.*

(2021) perceive channel integration as the dynamic capability allowing firms to coordinate resources and processes across channels or to create new resources configuration in omnichannel marketing. Akter *et al.* (2024) describes the omnichannel management capability as a dynamic capability, whereas others scholars (Cao and Li, 2015; Tagashira and Minami, 2019) consider channel integration as a digital strategy to support omnichannel marketing.

Based on previous literature (Akter *et al.*, 2024; Li *et al.*, 2023; Hossain *et al.*, 2020a, b; Barbosa and Casais, 2022; Solem *et al.*, 2022), we argue that some specific omnichannel organizational capabilities may influence the relationships between the level of channel integration and both managing internal obstacles and dealing with external challenges. Barbosa and Casais (2022) show, for example, how retailers overcome various barriers by integrating information technology, accomplishing organizational changes, and optimising customers' feedback. It suggests that a particular set of capabilities may lower firms' transformational barriers when integrating channels. We argue that firms that develop their organizational omnichannel capabilities related to omnichannel management are more resourceful in terms of dealing with both internal obstacles and industry drivers hindering channel integration. Those organizational capabilities are considered organizational omnichannel capabilities, defined as "*the ability of a retailer's marketing channels to provide the same level of service, assortment, notification (informing), return and delivery options from the consumers' perspective*" (Yumurtacı Hüseyinoğlu *et al.*, 2018). Therefore, we hypothesise that:

H3. Organizational omnichannel capabilities weaken the negative impact of internal obstacles on the level of channel integration

H4. Organizational omnichannel capabilities moderate the relationship between industry drivers and the level of channel integration

Level of channel integration and performance

Channel integration can be defined as a firm's ability to provide customers with a seamless purchasing experience across channels (Sousa and Voss, 2006). Yan *et al.* (2021) and Stojković *et al.* (2023) suggest that an integrated channel approach leads to better overall performance, attracting consumer demand. Oh *et al.* (2012) showed the positive impact of retail channel integration on firm competencies and performance. Thus, increasing channel integration levels is mainly aimed at maximising firm performance (Kolbe *et al.*, 2022). It is important to note that firm performance is a multidimensional construct, encompassing various aspects such as financial results, firm power, and profitability (Ricciardi *et al.*, 2022). In addition, firm performance should be viewed as a dynamic concept that evolves over time in response to market and internal changes (Klimas *et al.*, 2024). Therefore, we assume that:

H5a. The level of channel integration positively impacts comparative performance.

H5b. The level of channel integration positively impacts short-term performance.

H5c. The level of channel integration positively impacts long-term performance.

Research design

Sample and data collection

We have collected data from companies with two established channels (offline and online for the same products), deploying a random sampling method. The sampling frame covered 71,000 companies as the population of Polish online shops. The planned sample size was calculated as 383 with a confidence level of 95%, and an assumption of 50% response distribution, with the acceptable margin of error being 5% (Roasoft, 2023). Our final sample was higher than expected and included 412 valid responses. While calculating the research

sample, we followed the study claiming that 19% of Polish retailers allow customers to shop as omnichannel (Mierwinski, 2022). At the end of 2021, the number of retail stores in Poland was estimated at 376,000 (Mazurkiewicz, 2022). Three reasons justify choosing Polish retail as the research context: (1) the overall retail market in Poland continues to grow (Retail Market in Poland, 2024), (2) the number of e-commerce users in Poland is expected to grow to 20.1 million in 2029 (Statista, 2024a) and (3) due to the COVID-19 pandemic, bidirectional transitions were observed in Polish e-commerce sector – many traditional retail chains shifted sales online, while many online retailers developed the offline channels (Statista, 2024b).

The data collection was outsourced to a professional agency, and the data-gathering phase covered informants holding leading positions dealing with channel integration (IT, sales, marketing) and having expert knowledge (Bagozzi *et al.*, 1991). We used the mixed-mode survey (CATI, CAWI, PAPI, and CAPI) (De Leeuw, 2005) and a 7-point Likert symmetric scale (ranging from 1 – I strongly disagree to 7- I strongly agree) as a recommended measurement approach in social sciences (Taherdoost, 2019), including research applying structural equation modelling (Tarka, 2017).

Conceptual model and construct operationalization

We have developed a conceptual model tracing hypothetical links between the considered theoretical constructs – Figure 1.

We have adopted the scales validated by Radomska *et al.* (2025) to measure the internal obstacles. To measure the level of channel integration, we have used the scales validated by Cao and Li (2015) and Shi *et al.* (2020). We have used the catalogue of items proposed by Luo *et al.* (2016), Oh *et al.* (2012), and Von Briel (2018) to measure the organizational omnichannel capabilities. To measure the performance, we have used the three scales derived from Ben-Oz and Greve (2015), and Czakon *et al.* (2023) for long and short-term performance, supplemented by items used to measure the comparative performance from Czakon *et al.* (2020), as each of the scales captures a distinct yet interrelated aspect of firm performance, thus offering a more comprehensive perspective. On the one hand, short- and long-term focused scales refer to self-assessment of performance with respect to aspects evaluated over a shorter and longer time horizon, respectively. On the other hand, comparative scale refers to the assessment of performance in relation to – that is, in comparison with – the firm's main direct competitors. The inclusion of the perception of relative standing not only complements the

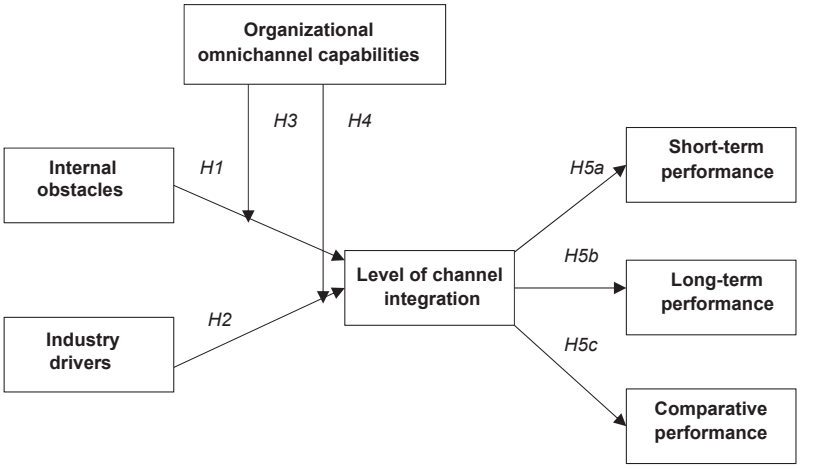

Figure 1. Conceptual model. Source: Authors' own work

assessment of short-term and long-term performance but also aligns with performance measurement approaches adopted in prior seminal academic research (e.g. Morgan *et al.*, 2009). Finally, a scale to measure industry drivers was based on the literature (Hajdas *et al.*, 2022), and it consisted of 12 items. To discover which sub-constructs can be included in the industry drivers, we conducted an exploratory factor analysis (EFA).

We employed non-orthogonal rotation because the dimensions of industry drivers showed high inter-item correlations (Watkins, 2021). Promax was used as the rotation method. We did not impose a number of factors, as the EFA aims to identify the structure of the latent theoretical construct. We assessed the adequacy of our data for sampling through the Kaiser-Meyer-Olkin (KMO) and Bartlett's test. The results confirmed that our data was appropriate for factor analysis, with a KMO value of 0.819 (greater than 0.5) and a statistically significant Bartlett's test result ($p = 0.00$, less than 0.5) (Hair *et al.*, 2019a). Three sub-constructs of industry drivers were identified: internationalization-related, micro-environment, and product-related industry drivers, covering respectively 4, 5, and 3 items (Table 1). We have evaluated these sub-constructs' potential risk of common method bias (CMB) using the unrotated factor solution and Harman's single-factor test (Sharma *et al.*, 2009). The analysis indicated that no single factor dominated the solution, and no general factor accounted for most of the covariance. There is no evidence of CMB, as the unrotated solution revealed 12 factors with eigenvalues greater than 1, collectively explaining 61.570% of the total variance. Additionally, the factor with the highest eigenvalue explained only 28.414% of the variance, well below half. These findings confirm the absence of CMB risk.

The testing of hypotheses involving latent variables, as well as the intention to jointly capture the relationships between all of the variables, determined the choice of structural equation modelling (SEM) as the method for hypothesis testing. Given that the primary goal of our investigation was to test theory-driven assumptions rather than prediction or theory development, our hypotheses were analysed using covariance-based structural equation modelling (CB-SEM) to evaluate the significance and quality of the developed and tested model (Hair *et al.*, 2019b). In line with the key assumptions of CB-SEM (Hair *et al.*, 2017), we first specified reflective measurement models and ensured that the measurement scales underwent multidimensional validation. We then applied 7-point measurement scales, which can be considered continuous and are required for parametric methods (Ibrahim, 2025). Finally, we ensured that the sample size was adequate for covariance-based SEM ($n = 412$ exceeds the recommended minimum of $n > 100$). In order to evaluate the model fit, we used typical complementary indicators including standardized χ^2, RMSEA, GFI, AGFI, IFI, TLI, CFI, PGFI, and PNFI. To enhance the model's fit, we conducted a modification index (MI) analysis (MacCallum *et al.*, 1992). Typically, if MI > 4, error covariances can be introduced within the factor. However, in our model, we applied a stricter criterion, using MI > 10.

All analyses have been done using IBM SPSS Statistics software (ver. 29) and IBM SPSS Amos (ver. 29). We present the final set of items in Table 1.

Results

Scales validation

We have validated the adopted measurement in several ways. First, we assessed the internal consistency of the measures by conducting a reliability test. All Cronbach's alpha values fall within the acceptable range, between 0.7 and 0.95, meeting the required standards (Hair *et al.*, 2019a). Next, we verified convergent validity by calculating standardised factor loadings, composite reliability (CR), and average variance extracted (AVE). All standardised factor loadings (except for DC1, DC2, and DP3 – removed from the final model) are above 0.5, as expected in the literature (Hair *et al.*, 2019a). The CR values (except for product-related industry drivers) are greater than 0.7 (Bagozzi *et al.*, 1991). All AVEs, except for product-related and micro-environment drivers and level of channel integration, are above 0.5 (Fornell and Larcker, 1981) (see Table 1). The convergent validity is still acceptable if the AVE is at

Table 1. Research results

Convergent and discriminant validity

	CR	AVE	Operational efficiency	Strategy and organizational culture	Micro-environment	Product-related	Internationalization-related	Level of channel integration	Short-term	Comparative	Long-term
Operational efficiency	0.945	0.635	0.797								
Strategy and organizational culture	0.936	0.596	0.612	0.772							
Micro-environment	0.722	0.468	−0.094	−0.283	0.684						
Product-related	0.561	0.395	0.333	0.128	0.382	0.628					
Internationalization-related	0.883	0.656	0.273	0.052	0.502	0.715	0.81				
Level of channel integration	0.908	0.473	−0.332	−0.482	0.398	0.17	0.136	0.688			
Short-term	0.855	0.598	−0.362	−0.421	0.53	0.118	0.175	0.648	0.773		
Comparative	0.854	0.597	−0.25	−0.403	0.514	0.218	0.211	0.532	0.716	0.772	
Long-term	0.853	0.592	−0.304	−0.395	0.587	0.159	0.206	0.672	0.767	0.754	0.769

Relationships between constructs in the structural model

Path (hypothesis)			Standardized parameter	Result of hypothesis testing
Internal obstacles				
Level of channel integration	←	Operational efficiency	−0.114**	H1: supported
Level of channel integration	←	Strategy and organizational culture	−0.162**	
Industry drivers				
Level of channel integration	←	Micro-environment drivers	0.241*	H2: partially supported
Level of channel integration	←	Internationalization-related industry drivers	−0.193*	
Level of channel integration	←	Product-related industry drivers	0.198*	
Organizational omnichannel capabilities				
Level of channel integration	←	Moderator capabilities-obstacles	0.117**	H3: supported
Level of channel integration	←	Moderator capabilities-drivers	−0.017	H4: rejected
Performance				
Short-term performance	←	Level of channel integration	0.882***	H5a: supported
Long-term performance	←	Level of channel integration	0.713***	H5b: supported
Comparative performance	←	Level of channel integration	0.776***	H5c: supported

(*continued*)

Table 1. Continued

Items, constructs, sub-constructs, and Cronbach's alpha

Items	Code	Construct/sub-constructs with references	Cronbach's α
My company has inefficiency in logistics operations	OE8	*Operational efficiency* (Radomska *et al*., 2025)	0.949
My company has difficulty measuring the returned volume	OE3		
My company has misplaced products	OE6		
My company has product restocking problems	OE1		
My company has a store forecast imbalance	OE4		
My company has an increase in operating costs	OE2		
My company has difficulty with receiving orders	OE9		
My company has difficulty in managing the processing of order	OE10		
My company has high return costs	OE11		
My company has the risk of stockout	OE5		
My company has an inconsistent organizational strategy	SC8	*Strategy and organizational culture* (Radomska *et al*., 2025)	0.94
My company has an ineffective communication strategy	SC9		
My company has a low level of knowledge and information sharing between the departments	SC3		
My company has no measurement process for channel efficiency	SC11		
My company has misaligned corporate motivations	SC5		
My company has difficulties in providing a consistent consumer experience	SC1		
My company has no personnel skilled in channel integration capabilities	SC2		
My company has a problem with a willingness to share information or knowledge between employees or across different departments within a company	SC7		
My company has a low level of organizational learning competencies	SC4		
My company has different mindsets between departments concerning how to integrate the different channels	SC6		
In our industry, there is a global demand for our products	DI4	*Internationalization-related industry drivers* (Hajdas *et al*., 2022)	0.874
In our industry, marketing regulations are diversified across countries	DI10		
In our industry, tariffs and taxation systems are diversified across countries	DI11		
In our industry, currency is common across geographical markets	DI12		
In our industry, the customer needs for omnichannel are already developed	DC1	*Micro-environment drivers* (Hajdas *et al*., 2022)	0.751
In our industry, the customers are literate about various omnichannel solutions	DC2		
In our industry, our competitors are already using an omnichannel strategy	DC5		
In our industry, there are practices of cooperation with competitors (coopetition) related to building omnichannel solutions	DC6		
In our industry, logistics efficiency is high	DC7		
In our industry, there is a local demand for our products	DP3	*Product-related industry drivers* (Hajdas *et al*., 2022)	0.707
In our industry, products are perishable	DP8		
In our industry, products have a luxury appeal	DP9		

(*continued*)

Table 1. Continued

Items, constructs, sub-constructs, and Cronbach's alpha

Items	Code	Construct/sub-constructs with references	Cronbach's α
My company has a well-developed IT infrastructure	OC1	*Organizational omnichannel capabilities* (Luo *et al*., 2016; Oh *et al*., 2012; Von Briel, 2018)	0.947
My company has a well-developed enterprise resource planning	OC2		
My company has a well-developed supply-chain management systems (SCM)	OC3		
My company has a well-developed order-management systems	OC4		
My company has a well-developed data mining	OC5		
My company has a well-developed business intelligence	OC6		
My company has a well-developed customer relationship management (CRM)	OC7		
In my company, staff at the physical stores knows about the products/services provided at the Website	OC8		
In my company, the staff understands our cross-channel integration strategies	OC9		
In my company, the staff has the ability to implement our cross-channel integration strategies	OC10		
In my company, the staff is competent in the use of information technology to support our cross-channel integration strategies	OC11		
In my company, we have the ability to reduce distribution costs	OC12		
In my company, we have the ability to reduce customer service costs	OC13		
In my company, we have the ability to involve customers in personalizing their shopping experience	OC14		
In my company, we have the ability to differentiate our products/services from those of our competitors	OC15		
In my company, we have the ability to launch new marketing strategies	OC16		
In my company, we have the ability to provide new ways of performing transactions	OC17		
In my company, we have the ability to offer new ways of order fulfilment	OC18		
In my company, we have the ability to reallocate resources quickly in response to changes in market conditions	OC19		
In my company, we have the ability to adjust the organizational mindset to the major challenges in channel integration	OC20		
In my company, we have the ability to adjust C-level skills to the major challenges in channel integration	OC21		
In my company, we have the ability to adjust store associate skills to the major challenges in channel integration	OC22		
In my company, we have the ability to increase operational productivity in all channels	OC23		
In my company, we have the ability to enable integrated (multi) brand management in all channels	OC24		
In my company, we have the ability to enable real-time inventory management in all channels	OC25		
In my company, we have the ability to provide customer profiling in all channels	OC26		
In my company, we have the ability to optimize the conversion rate in all channels	OC27		
In my company, we have the ability to provide real-time analytics in all channels	OC28		
In my company, we have the ability to provide real-time information dissemination in all channels	OC29		

(*continued*)

Table 1. Continued

Items, constructs, sub-constructs, and Cronbach's alpha

Items	Code	Construct/sub-constructs with references	Cronbach's α
My company has well-developed aligned services across channels	CI1	*Level of channel integration* (Cao and Li, 2015; Shi *et al*., 2020)	0.915
My company has a well-developed aligned price across channels	CI2		
My company has a well-developed aligned loyalty program across channels	CI3		
My company has a well-developed aligned assortment across channels	CI4		
My company has a well-developed integration of information systems across channels	CI5		
My company has a well-developed integration of a database of clients across channels	CI6		
In my company, the customer's interactions across different channels are integrated	CI7		
In my company, the descriptions of products are integrated across different channels	CI8		
In my company, new product launches are synchronous across different channels	CI9		
In my company, the product attributes can be equally allocated across different channels	CI10		
In my company, the promotion activities are aligned across different channels	CI11		
Meeting sales objectives	SP1	*Short-term performance* (Ben-Oz and Greve, 2015; Czakon *et al*., 2023)	0.759
Achieving sales growth	SP2		
Meeting profitability targets	SP3		
Increasing profitability	SP4		
Meeting the company's strategic goals	LP5	*Long-term performance* (Ben-Oz and Greve, 2015; Czakon *et al*., 2023)	0.863
Introducing new products/services	LP6		
Introducing more new service products than competitors	LP7		
New products/services achieve market success	LP8		
Sales	CP1	*Comparative performance* (Czakon *et al*., 2020)	0.856
Profit	CP2		
Market share	CP3		
Return on investment	CP4		

Note(s): The order of items is presented based on the level of factor loading
$^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$

Source(s): Authors' own work

least 0.4 and the CR exceeds 0.6 (Fornell and Larcker, 1981). This condition is satisfied for micro-environment drivers and level of channel integration, but not for product-related industry drivers. The square root of the AVE for each variable (except for product-related industry drivers) is higher than the absolute value of its correlations with any other variable, further confirming discriminant validity. The results of our analyses provide reliability support, as well as convergent and discriminant validity (except for product-related industry drivers).

Model testing

The structural model testing our hypotheses (H1–H5) is presented in Figure 2.

The model's goodness of fit was assessed using various indices. The standardised χ^2 (χ^2/df) is 1.785, well below the threshold of 5. The root mean square error of approximation (RMSEA) is 0.044, indicating a good fit. The lower bound of the 90% confidence interval (LO 90) is near zero (0.041), and the upper bound (HI 90) is significantly lower than the maximum acceptable value of 0.080 (0.047). The goodness of fit index (GFI) is 0.828, and the adjusted goodness of fit index (AGFI) is 0.804. Although these values are below the ideal value of 0.9, they are still considered acceptable according to Baumgartner and Homburg (1996), who suggest a minimum acceptable value of 0.8. Other fit indices also demonstrate a strong model fit, with the incremental fit index (IFI), Tucker-Lewis index (TLI), and comparative fit index (CFI) all reaching the required minimum of 0.9 (0.930, 0.923, and 0.930, respectively). Parsimony fit indices also meet the criteria for a well-fitting model, with the parsimony goodness of fit index (PGFI) and parsimony normed fit index (PNFI) both exceeding 0.6, at 0.726 and 0.776, respectively.

The analysed model achieved satisfactory fit measures based on the empirical data, providing a foundation for further analysis and the evaluation of research hypotheses. Table 1 presents the parameters for the paths defined in the model. Internal obstacles, i.e. operational efficiency, strategy, and organizational culture, negatively affect the level of channel integration (H1). Thus, hypothesis H1: *Internal obstacles negatively impact the level of*

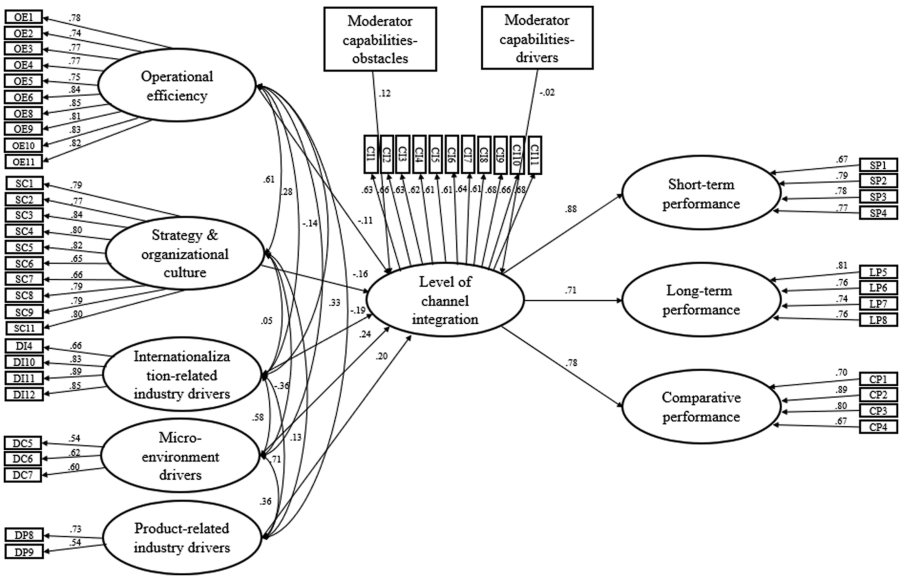

Figure 2. Structural model. Source: Authors' own work

channel integration has been supported. Regarding industry drivers (H2), micro-environment drivers have a significant positive effect on the level of channel integration. In contrast, internationalization-related industry drivers have a statistically significant negative impact on channel integration. Product-related industry drivers, which have a positive effect, did not meet the reliability criteria. Therefore, hypothesis H2: *Industry drivers impact the level of channel integration* has only been partially supported. Next, we tested whether organizational omnichannel capabilities moderate the impact of internal obstacles on channel integration (H3) and industry drivers on channel integration (H4). Hypothesis H3: *Organizational omnichannel capabilities weaken the negative impact of internal obstacles on the level of channel integration* has been positively tested, but H4: *Organizational omnichannel capabilities moderate the relationship between industry drivers and the level of channel integration* has not. It means that organizational capabilities mitigate the negative relationship between internal obstacles and the level of channel integration – the greater the level of organizational capabilities, the less impact internal obstacles have on the level of channel integration. However, organizational capabilities do not moderate the relationship between industry drivers and the level of channel integration. Finally, the impact of the level of channel integration on performance has been examined. It has been found to have a strong and statistically significant impact on comparative (H5a), short-term (H5b) and long-term (H5c) performance, highlighting its crucial role in driving firm performance and underlying competitiveness. Therefore, hypotheses H5a: *The level of channel integration positively impacts comparative performance*, H5b: *The level of channel integration positively impacts short-term performance*, and H5c: *The level of channel integration positively impacts long-term performance* have been supported. The results of all hypothesis testing are presented in Table 1.

Discussion and conclusions

Referring to our RQ1 and RQ2 our findings indicate that the level of integration is sensitive to the negative influence of internal obstacles (H1), and internationalization-related industry factors while remaining positively influenced by micro-environment drivers (H2). It confirms our conceptualization of an industry driver as a neutral factor reflecting a particular industry feature, which needs to be conceptualised on a scale of binary oppositions. Referring to our RQ3 we show that the negative impact of internal factors can be mitigated through the development of organizational omnichannel capabilities (H3), which largely include managerial capabilities, skills, and solutions related to channel management, coordination, as well as logistics and resource allocation. However, these capabilities do not moderate the effect of industry drivers on the level of channel integration (H4). Finally, we examine the factors directly and indirectly (using the lenses of internal and external factors) impacting multidimensionally perceived performance and demonstrate that channel integration is indeed a reasonable strategy for enhancing firm performance (H5a–c).

We expand a common, short-term approach to channel integration performance (Song *et al.*, 2019) by showing that the positive effects of channel integration are significant also in the long-term run. Achieving a certain level of retail complexity with integrated channels (e.g. physical store retailing, multichannel retailing, or omnichannel retailing) should be viewed as a long-term endeavour. It is typically the result of long-term efforts focused on allocating new resources and reallocating existing ones, where the benefits are realised over an extended period.

This research, on the one hand, contributes to the ongoing debate on the importance of internal factors, reinforcing earlier studies highlighting the significance of operational efficiency (de Borba *et al.*, 2021), strategic approach (Radomska *et al.*, 2025), and the role of organizational culture (Radomska *et al.*, 2025) for channel integration. On the other hand, in light of the conducted research, the level of integration, consistent with the previous suggestions by Hajdas *et al.* (2022), is also shaped by external factors, i.e. industry drivers.

However, contrary to conclusions drawn in previous studies (Hajdas *et al.*, 2022), this influence is not exclusively stimulating, as the significance of external factors proves to be more complex and not always positive. In the empirical context selected for this study, in line with logical expectations, factors related to internationalization (e.g. market and regulatory heterogeneity across countries) reduce the level of integration. Meanwhile, customer-related factors (e.g. customer knowledge and needs regarding omnichannel solutions) enhance it.

Theory contribution

First, we contribute to extant omnichannel scholarship by offering a validated framework showing that channel integration efforts are affected not only by the scope of internal obstacles, but also by external industry drivers. Moreover, our framework explains the role of organisational omnichannel capabilities in dealing with internal challenges and allows for meaningful capture of interaction dynamics between these variables in channel integration studies.

Second, our study introduces a new construct to the discussion on the challenges of channel integration. By conceptualising industry drivers and investigating this construct in a broad scope of industries, we claim that not all industries are equally welcoming in terms of omnichannel operations, confirming previous suggestions (Hajdas *et al.*, 2022; Iglesías-Pradas *et al.*, 2021). Our findings show that the micro-environment, including the omnichannel-literate consumer base and competitors, are the factors increasing the industry's omnichannel potential. On the other hand, the industries where international strategies dominate pose more challenges regarding channel integration. We hope our results will facilitate the debate on the role of contextual factors in omnichannel studies, as omnichannel theories dealing with multiple contexts are lacking, limiting our understanding of which theories are universal and which might be framed by the particular context(s). We, therefore, encourage to enhance contextual appreciation (McLaren and Durepos, 2019) in future omnichannel studies.

Third, we suggest refining the omnichannel organizational capabilities concept offered by Yumurtacı Hüseyinoğlu *et al.* (2018), which focused on external service and delivery issues. We consider the managerial ability to identify, understand, and navigate internal complexities crucial for omnichannel strategies and operations. We suggest that the refined concept covering both external customer services and internal managerial excellence, can offer greater explanatory power in terms of firms' advancements in channel integration efforts.

Finally, contrary to previous studies that captured performance as a static and a short-term state (Tagashira and Minami, 2019), our study adopted a more comprehensive approach (Ricciardi *et al.*, 2022), including three perspectives: short-term, long-term, and comparative performance to empirically investigate the effects of the level of channel integration, expanding existing findings (Yan *et al.*, 2021; Kolbe *et al.*, 2022) by confirming that the positive effects of channel integration fuel performance not only in the short term but also in the long-term run.

Together, our findings provide a robust conceptual and empirical basis for further developing omnichannel theory by making it more sensitive to context, offering multidimensional perspectives on performance, and improving our understanding of the internal capabilities that shape integration outcomes.

Managerial and social implications

We believe our findings suggest several courses of action for managers responsible for channel integration. First, to improve channel integration, omnichannel strategies should be tailored to industry-specific insights. Understanding the industry characteristics and aligning them with the operational systems of omnichannel implementation requires diversifying the KPIs used to measure the channel integration progress, especially in the case of diversified firms. Second, our study shows that some industries are more advanced in omnichannel solutions, therefore

they may serve as benchmarks for laggards in the field. Omnichannel managers should not only conduct competitive audits within their industry but also identify learning opportunities outside their domains to engage in cross-industrial transfers of knowledge and eventually advance their omnichannel practices.

Our study also offers several societal implications. First, although our results show that an existing customer base already literate with omnichannel solutions positively influences the level of channel integration, firms could increase their customer base by promoting digital accessibility and creating inclusive environments for other customer segments, including those with limited digital literacy (Klaus *et al.*, 2024). Second, our results show that a higher level of organizational capabilities dampens the adverse impact of internal obstacles on the level of channel integration. It may have implications for workforce transformation, managerial teaching, and training in terms of managerial roles, requiring reskilling into more cross-functional ones. Third, our results also have an environmental significance, as poor channel integration often leads to inefficient logistics, shipment, or increased product returns, which contributes to environmental harm. Our study may inspire greener organizational practices, which will eventually lead to reducing the carbon footprint of omnichannel solutions.

Limitations and further research

Some limitations of our study should be noted. First and foremost, the empirical context is limited to a single country. While this choice is justified by the high level of omnichannel adoption in the selected country and restricting retailing research to one country is relatively common (e.g. Stanca *et al.*, 2025), it nevertheless prevents drawing general conclusions. Therefore, conducting studies in other geographical contexts is recommended, for example, in a country or countries with significantly lower levels of omnichannel adoption. To achieve broader generalizations, since the present study has removed the limitation of a single industrial context, the next step should involve research that exceeds the boundaries of a single country. Alternatively, our results – particularly the industry drivers' role in channel integration – create research avenues for context-sensitive omnichannel studies that would result in theories that are contextually oriented.

Second, during the analysis, the risk of common method bias was assessed using Harman's single-factor test (following, for instance, Sharma *et al.*, 2009). While this approach is dominant in social science research, it is worth noting the recent methodological discussion indicating that this analytical approach alone is insufficient (Podsakoff *et al.*, 2024). Therefore, we recommend to adopt a broader perspective on CMB verification in future investigations (see, e.g. Sharma and Fatima, 2024).

Third, we have only focused our attention on profitability as the effect of channel integration. Although we referred to various profitability perspectives (regarding the horizon and the comparison to the competitors), it may remain limited. Future studies could be devoted to investigating other effects, such as the intangible firm value (Kang *et al.*, 2018).

Fourth, our sample covered retailers that have developed two channels (online and offline). However, although such focus is quite common (e.g. Zelke and Komor, 2025), a more nuanced and contextual study where the channel-specific goals and rewards (Berman and Theler, 2018) are investigated could bring more narrow but valuable idiosyncrasies.

Finally, this study explores the role of internal obstacles and industry divers in the context of omnichannel retailing. It may be valuable to replicate research in the novel context of experiential retail territories (ERT) (Alexander and Varley, 2025). Also, our study can serve as a preliminary step in the process of omnichannel industry drivers' scale development.

Ethical considerations

The research underpinning the article was positively evaluated by the Ethics Committee of the Wroclaw University of Economics and Business – decision no. 38/2022.

Data availability
The dataset is available here: https://data.mendeley.com/datasets/664bxtcw3r/1

Declaration of not using generative AI in scientific writing
We did not use generative artificial intelligence (AI) and AI-assisted technologies in the writing or subsequent stages of the research process. We used Chat GPT and Grammarly as tools for some proofreading (checking grammar and improving transparency) and some translations. After using Chat GPT/Grammarly for proofreading/translation purposes, we reviewed and edited the content if needed, and take full responsibility for the content of the article.

Submission declaration and verification
The manuscript has not been published previously, it is not under consideration for publication elsewhere, and its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out. If accepted, it will not be published elsewhere in the same form, in English, or any other language, including electronically, without the written consent of the copyright holder.

Notes

1. The investigated firms operate in industries such as computing, telecommunication equipment, electronics, musical instruments, photography and video, sports equipment, jewellery, beauty and cosmetics, wines, apparel, collectibles, pet items, automotive accessories, craft supplies, home and garden, office supplies, toys, arts, home furnishing, gifts and holidays, CDs and DVDs, books.

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