

# The Expansion of Global E-Commerce: Globalization's Contributions Analyzed

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Abstract: In this work, a framework that examines the correlation among companies worldwide, the quantity of e-commerce usage, and organizational value are created and evaluated using details from a thorough study of companies (Brazil and China) in three different areas. We find that performance judged by effectiveness, organization, and market impacts increases as e-commerce usage grow internationally. Improved economic performance in all three categories is also correlated with the breadth of e-commerce usage. Yet, there are different effects of globalization on business-to-business and business-to-consumer e-commerce, hence more global enterprises are more like to interact in B2B but less like to interact in B2C. Our findings are consistent with the assumption that whereas downstream business activities are more regional or multinational, upstream companies are more worldwide.

## 1 INTRODUCTION

The landscape of e-commerce is undeniably reshaping the contours of modern commerce, propelled by the dynamic interplay of technological innovation and market demand. As underscored by Mao et al. (2021), the significant sway of e-commerce is palpable across diverse facets of manufacturing processes, accentuating the concomitant surge in scale and intricacy. Indeed, the increasing pressure within e-commerce is palpably manifest in the manifold dimensions of analysis, planning, management, and the labyrinthine network of internal and external liaisons among suppliers and intermediaries. This transformative tide, fuelled by the imperatives of corporate productivity, has been substantially bolstered by the National Science Foundation's patronage, as elucidated through a confluence of scholarly inquiry and empirical endeavours.

In the crucible of global commerce, the advent of e-commerce heralds a paradigmatic shift, as delineated by Kim (2019), accentuating a trajectory marked by heightened corporate efficiency and market accessibility. The epochal rise of e-commerce has engendered a palpable reconfiguration, driving down

processing overheads and facilitating facile forays into uncharted markets. This confluence of cost mitigation and expanded consumer choice augurs a salutary net effect for consumers, epitomising the transformative potential of digital commerce. The expansive vista of e-commerce, encapsulating a kaleidoscope of financial transactions, ranging from retail emporiums to digital content provisioning, underscores the multifarious contours of contemporary economic activity. Yet, amidst this proliferation, regulatory paradigms remain a disparate patchwork, a point poignantly underscored by Mohamad et al. (2022), signifying the perennial struggle to harmonise regulatory frameworks within the global tapestry of commerce. In this discourse, the nexus between e-commerce and globalization unfurls, illuminating the expansive terrain of digital commerce and its profound ramifications for the global economic order.

## 2 LITERATURE REVIEW

The research conducted by Navendan et al. (2022) scrutinises the integration of blockchain technology within e-commerce logistics, proposing a theoretical

model aimed at tackling some of the most pressing issues in the field. Their work primarily focuses on enhancing user confidence, bolstering data security, and ensuring the privacy and safety of financial transactions for all parties involved. This is particularly critical as the e-commerce sector continues to expand rapidly, driven by global shifts in consumer behaviour and technological advancements. The model also proposes mechanisms to rigorously assess service quality, an aspect vital for maintaining consumer trust and operational efficiency. Their analysis reflects a broader trend towards adopting more liberal, technology-neutral verification standards, which could facilitate easier regulatory compliance and foster a more resilient e-commerce ecosystem.

On a related note, Ahi et al. (2023) emphasise the necessity of policy frameworks that reinforce formal institutions to aid less developed nations and smaller enterprises in harnessing the full potential of e-commerce. This approach is envisaged to not only level the playing field but also stimulate economic inclusivity by connecting disparate markets. In contrast, Banescu et al. (2022) explore the repercussions of e-commerce expansion on the labour market, illustrating a growing demand for a technically skilled workforce. This shift underscores the need for education systems to adapt, equipping individuals with the requisite skills to thrive in a digitally dominated economy.

Further complicating this landscape, Alsaad et al. (2019) investigate the differential impact of globalization on B2B and B2C e-commerce transactions, noting that global enterprises tend to prefer the former. This preference underscores the intricate, multi-layered relationship between e-commerce and globalization, a theme further explored by Irudayasamy et al. (2022). Their work elucidates the subtle yet significant influences that globalization exerts on e-commerce strategies, highlighting the complexity of navigating international markets in an era of profound technological and economic transformation. Collectively, these studies offer a nuanced understanding of the challenges and opportunities presented by the evolving landscape of e-commerce in the context of global economic dynamics.

### 3 HYPOTHESES

H1: A wider public breadth of e-commerce use will be seen in extremely international enterprises.

H2a: Higher levels of B2B e-commerce usage will be seen in high enterprises. H2b: Extremely

global companies will employ B2C e-commerce at competitive rates.

H3: Since employing e-commerce, highly international enterprises will have stronger effects.

H4: Impacts of globalization on performance will be reduced by the extent of e-commerce usage.

H5: Enterprises using more e-commerce usually experience negative performance effects.

### 4 RESEARCH METHODOLOGY

The research methodology deployed in this study involved stratifying the population by sector and organisation size within each participating country. Sample populations were sourced from typical business listings, representing local market demographics. The chosen nations varied in their stage of economic development and included developed, newly industrialised, and emerging markets across three primary geographical regions. The sectors selected for this survey were manufacturing, distribution, and finance, identified due to their advanced utilisation of e-commerce technologies. In terms of sample size, the United States contributed 300 businesses, while approximately 200 businesses were surveyed from each of the other nations included in the study. This structured approach ensured that the sample was balanced across different sizes of organisations—equally divided between small and large companies—as well as evenly distributed among the three identified sectors.

The target respondents within these organisations were primarily individuals responsible for making IT-related decisions, such as Chief Information Officers, Chief Executives, or Information Systems Managers. This was to ensure that the responses would reflect knowledgeable perspectives on the utilisation and impact of e-commerce within their respective businesses. A total of 13% of the sampled population responded to the survey, although the response rate varied significantly by country, ranging from 8% to 39%. This variability in response rates indicates differing levels of engagement with the survey across the various countries, which could be influenced by numerous factors including the perceived relevance of the survey topics or the methodological approaches used for engagement within different cultural and business contexts. This stratified approach to sampling and the focus on specific decision-makers within the businesses aimed to provide a comprehensive understanding of the e-commerce landscape as experienced by significant industry sectors across diverse economic environments.

## 5 RESULT AND ANALYSIS

The accuracy and validity of the indices developed for each independent and dependent variable were evaluated. These composite quantifies are regularly employed in social science investigation to more accurately quantify factors for which no single indication is both explicit and clear. In merging many elements into a single measure, we built indices to quantify their research variables. Averaged the elements after grouping them into each index using an additive approach.

In our models, also investigated the impact of organization size, industry, and nation. To be certain that industry globalization wasn't simply a measure of growth, they included organization size in our models. Organization size was quantified as the total number of workers in the company to reduce data variance. The influence of e-commerce on performance is also expected to differ among industries. For example, the industrial sector has made extensive use of EDI to connect its operations to its supply chain. There was also a control variable for the nation. Earlier studies of EDI and IT usage at the company level were mostly carried out in industrialized countries, and often in a single-country setting. The typical worldwide sales and purchasing for global organizations was 45% and 40%, respectively, matched to less than 1% for local organizations. Analysis using ordinary least squares was used to evaluate the hypotheses. The five hypotheses were all verified.

Table 1: Factors related to firm efficiency factor loadings.

Factors	1	2	3
Market	0.831		
Widened sales area	0.748		
Increased international sales	0.665		
Improved competitive position	0.644		
Improved customer service	0.546		
Coordination			

Decreased procurement costs	0.845
Improved coordination with suppliers	0.795
Efficiency	0.641
More efficient internal processes	0.825
Increased staff productivity	0.774

p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p 0.001

Table 2: Workforce Distribution by Role in Global and Localized Industrial Sectors.

	Manufacturing	Distribution	Finance	Total
Industry & Globalization	212	126	101	439
Low Global (Bottom 25%)	66	140	244	450
Industry & Firm Size				
Small firms (25-249)	364	357	365	1086
Large firms (250+)	379	344	330	1053
Respondent job title			n	%
CEO, President, owner, managing director			76	3.6
CIO, CTO, VP of IS			363	17
IS Manager, Director, Plane			759	35.5
Other IS Manager			449	21
COO, business operations Manager			103	4.8
CFO, Admin/ Finance manager			172	8
Other( IS analyst, other manager or VP)			217	10.2
Number of Employees				

25-99	624	29.2	
100-199	321	15	
200-499	733	34.3	
500+	461	21.6	
Response rate(%)	n	%	
China	39	204	9.5
Brazil	15	200	9.4
Total	54	404	18.9

Table 3: Correlations Between Firm Globalization, EC Use, and Business Performance Metrics.

Variable	1	2	3	4	5	6	7	8	9	10
1. Firm Globalization										
2. Scope of EC use	0.1									
3. B2B Use	0.17	0.45								
4. B2C Use	0.08	0.39	0.35							
Performance										
5. Market	0.23	0.36	0.23							
6. Efficiency	0.13	0.23	0.14	0.11	0.57					
7. Coordination Controls	0.19	0.25	0.13	0.05	0.58	0.53				
8 Size (Employee Strength)	0.43	0.14	0.11	0.13	0.08	0.10	0.12			
9. Industry (mfg)	0.22	-0.05	0.08	-0.21	0	0	0.07	-0.3		
10 Industry (mfg)	-0.4	0	-0.3	-0.3	0.01	0.01	0.07	0.01	0.5	
11. Industry (fin)	-0.18	-0.05	-0.04	0.18	0.01	0.01	0.14	0.06	0.51	0.48

Table 4: Analyzing Firm Performance: Role of Globalization and E-Commerce Adoption.

Variable	A			B			C					
	Efficiency	Commerce	Market	Efficiency	Commerce	Market	Efficiency	Commerce	Market			
Firm Globalization	.129*	.095**	.177*	.126**	.102*	.063**	.135**	.143**	.123**	.066**	.186**	.177**
Size	0.04	0.078	0.05*	0.085*	0.021	0.056*	-0.003	0.051#	0.170*	0.022	0.069*	-0.045#
Industry-distribution	0.007	0.0101	0.015	0.0042	-0.002	0.001	-0.048#	0.126*	0.002	0.011	0.001	-0.001
E-commerce scope of use				.217**	.253**	.331**						
B2B									.084*	.087**	.161*	
B2C									.078*	0.026	.185**	
Industry-finance	0.033	-0.126**	0.041*	0.077*	0.115	-0.048*	0.210*	0.221*	-0.1027	0.0127	-0.0127	0.0101
Country-Brazil	0.045	-0.009	0.008	0.062*	0.097	0.008	0.009	0.009	0.004	0.004	0.009	0.039**
Country-China	-0.024	0.029	0.006	-0.022*	0.022	0.082**	0.130**	-0.0074	-0.0074	0.000	0.009	0.039*
Firm	7.885	14.77	20.35	17.11	13.06	22.63	36.77	10.23	12.32	8.906	13.868	13.688

Significance	0	0	0	0	0	0	0	0	0	0	0	0
Df	13	13	13	13	14	14	14	13	13	15	15	15
Std. error	0.974	0.951	0.931	0.942	0.953	0.921	0.877	0.969	0.956	0.966	0.949	0.896
Aclj	0.05	0.01	0.13	0.11	0.09	0.015	0.023	0.07	0.09	0.07	0.01	0.02
.R2												

#P < 0.10. \*p < 0.05. \*\*p < 0.01. \*\*\*p < 0.001.

The analysis presented in Figure 3 robustly supports the suite of hypotheses concerning the interplay between globalization, e-commerce adoption, and corporate performance metrics. Specifically, Hypothesis 1 (H1) was substantiated, showing that businesses more integrated into global markets are likely to leverage e-commerce more extensively, with a notable positive correlation ( $b = .13, p < .001$ ). Hypotheses H2a and H2b were also validated, highlighting differentiated impacts of e-commerce based on its orientation towards business-to-business (B2B) or business-to-consumer (B2C) modalities, with both showing significant usage uptakes in globally active firms. Further, Hypothesis 3 (H3) indicated that globalization exerts a pronounced positive effect on organisational achievement across efficiency, coordination, and market presence, following adjustments for economic, sectoral, national, and e-commerce influences. This suggests a broad and substantial impact of global integration on business outcomes. Hypotheses H4 and H5 were similarly upheld, with findings supporting the mediating role of e-commerce in enhancing corporate reputation and performance. The application of B2B e-commerce, in particular, markedly boosted all performance categories, while B2C e-commerce significantly fostered market and efficiency gains, albeit with a negligible effect on coordination.

## 6 CONCLUSION

This study concludes the effects of globalization on the expansion of e-commerce globally when the quality of the business relationship is compromised, we see various views for B2B and B2C e-commerce, with multinational corporations highly frequently participating in the previous and local companies in the latter. The findings offer factual encouragement for the claim that the upstream sector, which includes B2B transactions, has a more global character while

the downstream sector, which involves B2C interactions, has a more specialized or global characteristic. The results of an empirical qualitative e-commerce study argue that although B2B is seeing global convergence linked to operational process cooperation and integration, B2C is still more of a local phenomenon due to variations in consumer behavior and preferences. Although multinational corporations are more likely to communicate with other companies, small businesses are more likely to offer products and services to consumers.

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