



**HAL**  
open science

## Reshoring of Service Operations: Evidence from a Delphi Study

Paolo Gaiardelli, Albachiara Boffelli, Matteo Kalchschmidt, Daniel Bellazzi,  
Simone Orom Samorani

► **To cite this version:**

Paolo Gaiardelli, Albachiara Boffelli, Matteo Kalchschmidt, Daniel Bellazzi, Simone Orom Samorani. Reshoring of Service Operations: Evidence from a Delphi Study. IFIP International Conference on Advances in Production Management Systems (APMS), Aug 2020, Novi Sad, Serbia. pp.617-624, 10.1007/978-3-030-57993-7\_70 . hal-03630872

**HAL Id: hal-03630872**

<https://inria.hal.science/hal-03630872v1>

Submitted on 5 Apr 2022

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution 4.0 International License

# Reshoring of service operations: evidence from a Delphi study

Paolo Gaiardelli<sup>1</sup>[0000-0002-2207-3628] Albachiara Boffelli<sup>1</sup>[0000-0001-9110-9658] Matteo Kalchschmidt<sup>1</sup>[0000-0001-7997-8535] Daniel Bellazzi<sup>1</sup> Simone Orom Samorani<sup>1</sup>

<sup>1</sup>University of Bergamo, Viale Marconi, 5 – 24044 Dalmine (BG), Italy  
paolo.gaiardelli;

albachiar.boffelli;matteo.kalchschmidt@unibg.it;

d.bellazzi@studenti.unibg.it; s.samorani@studenti.unibg.it

**Abstract.** The reshoring phenomenon has been explored mainly in the context of manufacturing, while research on business service still appears lacking behind. To address this gap, the article explores the reshoring phenomenon relevance in the context of business services. The research applies a Delphi method developed along three rounds involving a panel of 18 experts. The results show that, although still being in its infancy, the reshoring phenomenon will impact significantly business services in the next future, but with its own specificity, thus deserving dedicated future research streams. Particularly the experts highlight that the main drivers leading to business service reshoring are quite different with respect to ones identified in manufacturing reshoring literature. Moreover, this study indicates that service reshoring will be fundamental in all the business services in which the technology cannot be considered as the main driver for service delivery and that requires a strong human relationship.

**Keywords:** Service operations; Reshoring; Delphi-study.

## 1 Introduction

Attracted by internalisation and location advantages, many companies over the years have offshored their activities to low-wage countries [1], affecting not only manufacturing operations [2] but also business services [3]. The latter refers to all the activities supporting business through the delivery of intangible outcomes, such as maintenance, IT, R&D, marketing, customer service, finance and so forth. Recently many companies have started to bring back their activities to their home countries. This phenomenon, called reshoring, can be defined “as the voluntary partial or total relocation of business activities previously offshored, whether back home or to another location” to serve the local, regional or global demands [3]. While many studies have been developed to analyse the main characteristics of production reshoring, exploring its main factors [4, 5], the research on business service reshoring still appears lacking behind. This shortcoming may be due to the lack of systematic data available on the phenomenon, and its relatively small scale. To fill this gap, this paper provides an

exploration of main drivers and companies' characteristics shaping this phenomenon in the business service context, as a first step of a wider study on business service reshoring relevant factors, including barriers, enablers, and outcomes. The following research questions are addressed in this article: *What drivers are the most impacting on service reshoring? What are the company characteristics that influence the service reshoring phenomenon?*

To do so, a pool of academic and business experts in service management is involved in a three-round Delphi study to redirect existing theories in reshoring of production operations into the business service context. The achieved results allow to identify the main drivers and companies' characteristics affecting the phenomenon, as well as to trace its potential future scenarios and developments.

## 2 Literature review and conceptual model

Literature has mostly focused on identification of the drivers for reshoring [5]. Until now, the majority of the identified drivers have concerned the reshoring of manufacturing activities [5, 6]. While many of these drivers can apply also to service reshoring, some others can be attributed only to the manufacturing context, because they do not consider the specificity of services - namely, intangibility, inseparability, heterogeneity and perishability [7, 8]. Therefore, the full list of drivers' categories and their elements identified in manufacturing reshoring literature need to be further explored to test its significance into the service context. Table 1 reports the list of categories and the corresponding references.

**Table 1.** Drivers' categories from reshoring literature.

<b>Category</b>	<b>Examples</b>	<b>References</b>
Managerial mistakes	Offshoring implementation mistake, overhasty offshoring effect	[3, 5]
Cost	Labour costs' gap reduction, sourcing and administrative costs	[5, 9]
Market characteristics	Host market size reduction, new market penetration opportunity, capacity availability	[5]
Service level	Higher service level, reduced responsiveness	[5, 9]
Innovation-related	Innovation potentiality loss, open innovation	[5, 6]
Risk-related	Exchange rate, political and social risks	[5, 6]
Supply chain-related	Higher delivery time, synergies across the value chain	[5, 10]
Entrepreneurial-related	Emotional elements, focus on core activities, pursue of the initial offshoring strategy	[3, 11]

In recent contributions, scholars claimed that contingency theory is a relevant theoretical lens when considering location decisions [12]. This theory assumes that organizations adapt their structures to maintain fit with changing contextual factors, so as to

attain high performance [13]. Then, identifying important contingency variables that distinguish between contexts emerges as fundamental to explain a phenomenon in light of the contingency theory [14]. In line with [3], five factors can be considered as relevant in defining the context of reshoring, namely company's sector, company's size, the offshoring duration (i.e. the length of stay in the offshore country), the previous experience in moving services across national borders, and the type of service. All of them will be considered as characteristics possibly affecting the service reshoring phenomenon, as reported in the conceptual model (Figure 1).

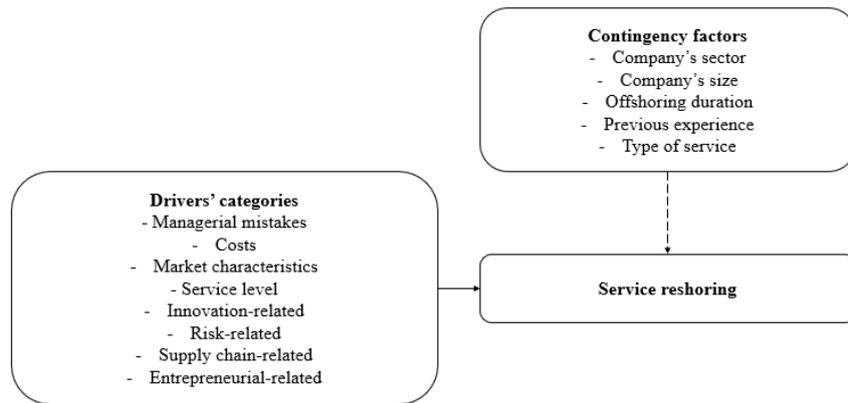


Fig. 1. Conceptual model

### 3 Research methodology

The main goal of this research is to reach a consensus on a complex, interdisciplinary problem that, due to the lack of systematic data available and its relatively small scale, cannot be answered through empirical evidence. Therefore, a Delphi study was identified as the most suitable approach to develop the exploration. A Delphi study can be described as a qualitative forecasting technique based upon a systematic, anonymous and iterative communication process among a representative group of experts [15]. According to the goal of this research, a modified e-Delphi method was adopted. Characterised by a mix of pre-selected items and open qualitative questions derived from a literature analysis and structured according to the research model, the e-Delphi study was carried out in three rounds and involved a panel list of 18 experts coming from industry and academia. Selection of each members was carried out in order to consider different viewpoints of the topic under investigation, thus reducing "certain polarization of preferences and responses" [16]. Moreover, the total number of participants was identified in order to reduce potential individual biases that can distort the aggregate responses [17, 18]. The panel of experts includes both practitioners with an academic background and strong involvement in research, and scholars with a background in service or in reshoring and ongoing collaborations within industry. Table 2 reports the descriptive characteristics of the panel of experts.

**Table 2.** Experts' characteristics.

<b>Characteristic</b>	<b>Categories</b>	<b># of experts (%)</b>
<b>Nationality</b>	Italian	10 (56%)
	European (excluding Italy)	4 (22%)
	Extra-European	4 (22%)
<b>Years of experience</b>	Less than 5	6 (33%)
	Between 5 and 10	5 (28%)
	More than 10	7 (39%)
<b>Professional role</b>	Academic	15 (83%)
	Practitioner	3 (17%)
<b>Background/field of expertise</b>	Reshoring	6 (33%)
	Service	12 (67%)

## 4 Results and discussion

### 4.1 Identification of most impacting drivers

Starting from the main drivers identified from the literature of manufacturing reshoring, we collected quantitative data from the experts. In the first round of the Delphi method, a first evaluation of all the drivers on a 1-5 Likert scale (ranging from 1 = 'very low' to 5 = 'very high' impact) was asked. In the second round, the medians of the whole panel were transparently communicated [19]; on average, 11 experts over 18 did not change their answers and the standard deviation of the answers decreased by 9%. In the third round, the drivers were divided into most impacting (the ones with median higher than 3) and least impacting (the ones with mean lower than 3). All the experts were asked to indicate whether they agreed to include the first group as impacting drivers and exclude the second one [19], and eventually to revise their evaluation on the single drivers. On average, 15 experts over 18 did not change their evaluation and the standard deviation of the answers furtherly decreased by 4%. The drivers that resulted to be critical for the business service reshoring phenomenon, with a mean above 3.5 and a median of 4.0, are the reduction in the labour costs' gap (mean 3.82, median 4), the higher service level and responsiveness that can be reached in the home country (both mean 3.76, median 4), the increased possibility to innovate and differentiate from competitors at the home country (mean 3.53, median 4), the risks connected with the cultural differences (mean 3.76, median 4), the higher delivery time for the provision of the service from the host country (mean 3.76, median 4) and the change in the business strategy (mean 3.94, median 4). The only excluded category was the market characteristics, but it is important to specify that the experts gave for granted the fact that the main market was in the home country.

### 4.2 Assessment of the effect of companies' characteristics

Concerning the contingency factors considered, the same procedure adopted for the drivers' analysis was followed: first evaluation in the first round, feedback and possi-

bility to revise the answer in the second round (on average 11 out of 18 experts did not change their answers), and confirmation of inclusions and exclusions in the third round. Along the process the average standard deviation reduced from 1.38 to 1.14. In the end, company's sector and the offshoring duration resulted to be highly relevant in influencing the service reshoring decision. Concerning the type of service instead, we were interested to know what type of business services were the most likely to be reshored. As a consequence, in the first round an open question was asked and the replies were collected and categorized. In the second and third rounds the experts were asked to order the type of services according to their likelihood of being reshored. Without any doubt the types of business services most likely to be reshored are the customer service and the maintenance, where the contact with customer is fundamental to enhance service quality.

### 4.3 Analysis of future scenarios

In order to reach the maximum exploitation of the experts' opinions, we also asked experts to provide a qualitative assessment of future scenarios concerning the phenomenon of business service reshoring. The answers collected in the first round, were then categorized and proposed again for a quantitative assessment in the following rounds. In this case, the future scenarios were rated on a Likert scale from 1 ("Completely disagree") to 5 ("Completely agree"). Table 3 reports the descriptive statistics of the categories of topics and some among the most relevant examples of future scenarios provided by the experts.

**Table 3.** Descriptive statistics of the future scenarios' categories.

Categories	Examples	A	M	SD
Alternatives to reshoring	"Other types of location decisions are more likely to happen (nearshoring, offshoring to another country, etc.)"	3.44	4	0.95
Economics	"Offshoring is not economically convenient anymore"	2.38	2	0.63
Enablers	"Digital technologies (e.g. AI systems, digital presence) may reduce the need for reshoring"	3.56	4	0.94
Governance	"Relational issues with offshored suppliers and the willingness to decrease the supply chain complexity are important for service reshoring"	3.16	3	0.84
Service as the core business	"As more and more firms 'servitize', there will be a change in the level of reshoring as firms realize the amount of 'local' support that needs to be provided"	3.25	3	0.88
Triggers	"Service reshoring as a result of higher labour costs, more responsiveness to the local market, need of better interaction between customer care and R&D"	3.39	3	0.86
Type of activities	"Highly strategic services should be moved closer to customers in order to increase their value and time performance"	3.67	4	0.93

Note: A=Average; M=Median; SD=Standard Deviation

In the end, we were able to develop a unique future scenario by summarizing the most relevant settings put forward by the experts: “Service reshoring will be fundamental in all those business services in which the technology cannot be the main driver and that requires a strong human relationship. This type of business services corresponds, usually, to the highly strategic and most customized ones which should be moved closer to customers in order to increase their value and time performance. Meanwhile, ancillary and routinary service works may follow a cost-based approach and can remain offshored or automated. An enabler of this scenario is, of course, the late trends in digital technologies which help in automatizing the service. Moreover, the scenario is incentivized by the recent trends in which service activities have been becoming the core activities of a company and this emphasizes more their reshoring”.

#### 4.4 Discussion

Our research pointed out that there are no driver’s categories characterizing reshoring of business services other than those already identified in the manufacturing sector. However, not all driver’s categories emerged as relevant. In particular, experts acknowledged that market characteristics are not so important for business services reshoring. Therefore, it can be stated that this phenomenon does not depend on market pressures, but rather derives from choices made directly by the companies to increase their competitiveness. In particular, the relocation of the service business activities to the place of origin, are related to the necessity to have a higher level of service, in terms of quality, speed and responsiveness. Indeed, by creating greater proximity between the service provider and the customer, their relationship is facilitated and communication between the two parties is made more effective, thus stimulating mutual involvement and more valuable processes. This result is in accordance also with service inseparability, a characteristic that presupposes services are place-dependent, i.e. they can only be used where they have been created. Therefore, this consideration adds an important contribution to previous literature on business services reshoring. In fact, as explained by [3], reshoring phenomenon of business services was previously generally interpreted as a reaction to failure or as a persistent strategy, namely keeping on pursuing the same objectives that led the offshoring decision. Instead, the results hereby provided prove the specificity of the business service reshoring phenomenon, being the main drivers substantially different from the motivations leading the manufacturing reshoring, namely quality and lead time issues [5, 12].

The higher importance that experts attributed to drivers related to the operational perspectives for service business reshoring is also consistent with service perishability. Indeed, this characteristic, implies the need for instant use of services and therefore a higher difficulty in planning resources to manage demand. Therefore, shortening of the service chain through reshoring makes it possible to centralize both front-office and back-office activities, making it easier to coordinate and plan service delivery, thus improving service speed and responsiveness. This result is also supported by the type of services that experts believe will be more easily transferred to the country of origin. These are solutions that require the direct presence of the service provider during delivery, such as customer service and maintenance management.

Finally, in line with the characteristic of service inconsistency, the centralization of activities, resulting from reshoring, on the one hand favors the standardization of back-office activities and on the other hand supports the mass customization as requested by the market. This aspect emerges as fundamental especially when considering business services that experts believe will be more likely to undergo a reshoring phenomenon. Nevertheless, the study suggests that all the considerations can be considered applicable, only in circumstances where technology does not intervene directly in service delivery, as the introduction of technological innovation in service delivery changes the intrinsic characteristics of the service itself [20].

## **5 Conclusions, limitations and further developments**

### **5.1 Theoretical and practical contribution**

The theoretical contribution of the study lies in the provision of a preliminary knowledge about the service reshoring, by leveraging on what has already been found and tested in the manufacturing context. The application of the Delphi method allowed to overcome the limitations surrounding the studied phenomenon (e.g., lack of secondary information, primary cases inaccessibility, dynamicity features). Furthermore, by relying on a panel of trustable experts, we were able to derive insights about the relevance and characteristics of the reshoring phenomenon in the service context. For managers, the study provides valuable insights about what elements to consider when assessing a reshoring decision (i.e. the drivers) and the characteristics of the context that they need to take care of.

### **5.2 Limitations and further developments**

Even if this research provides different insights for advancement of knowledge of service business reshoring, it presents some limitations that need further improvements. Although we carefully selected experts ensuring a mix of theoretical and practical expertise within the panel, the study involved mainly academics. Therefore, future works could address a more practical point of view, involving mainly managers and practitioners. Moreover, as this study lies on specific components of reshoring (drivers and contingency factors), future studies will explore other dimensions of the phenomenon including but not limited to barriers and outcomes. Finally, future research will have the opportunity to analyse how the pandemic will change companies' propensity to reshore their business services.

## **References**

1. Kinkel S, Maloca S (2009) Drivers and antecedents of manufacturing offshoring and backshoring-A German perspective. *J Purch Supply Manag* 15:154–165.
2. Fratocchi L, Di Mauro C, Barbieri P, et al (2014) When manufacturing moves back: Concepts and questions. *J Purch Supply Manag* 20:54–59.

3. Albertoni F, Elia S, Massini S, Piscitello L (2017) The reshoring of business services: Reaction to failure or persistent strategy? *J World Bus* 52:417–430.
4. Eisenhardt KM, Nujen BB, Halse LL, et al (2018) A New Paradigm for Systematic Literature Reviews in Supply Chain Management. *J Oper Manag* 9:37–46.
5. Barbieri P, Ciabuschi F, Fratocchi L, Vignoli M (2018) What do we know about manufacturing reshoring? *J Glob Oper Strateg Sourc* 11:79–122.
6. Wiesmann B, Snoei JR, Hilletoft P, Eriksson D (2017) Drivers and barriers to reshoring: a literature review on offshoring in reverse. *Eur Bus Rev* 29:15–42.
7. Kotler P (1994) *Marketing management, analysis, planning, implementation, and control*, Philip Kotler. London: Prentice-Hall International
8. Grönroos C (1990) *Service management and marketing: Managing the moments of truth in service competition*. Jossey-Bass
9. Stentoft J, Olhager J, Heikkilä J, Thoms L (2016) Manufacturing backshoring: a systematic literature review. *Oper Manag Res* 9:53–61.
10. Gray J V., Skowronski K, Esenduran G, Rungtusanatham MJ (2013) The reshoring phenomenon: What supply chain academics ought to know and should do. *J Supply Chain Manag* 49:27–33.
11. Kinkel S (2014) Future and impact of backshoring-Some conclusions from 15 years of research on German practices. *J Purch Supply Manag* 20:63–65.
12. Johansson M, Boffelli A, Olhager J, Kalchschmidt M (2019) *A Meta-Analysis of Reshoring Case Studies: The Influence of Contingency Factors on the Relocation Decision*. New Orleans
13. Donaldson L (2014) *The Contingency Theory of Organizations*
14. Sousa R, Voss CA (2008) Contingency research in operations management practices. *J Oper Manag* 26:697–713.
15. Kembro J, Näslund D, Olhager J (2017) Information sharing across multiple supply chain tiers: A Delphi study on antecedents. *Int J Prod Econ* 193:77–86.
16. Yaniv I (2011) Group diversity and decision quality: Amplification and attenuation of the framing effect. *Int J Forecast* 27:41–49.
17. Ogden JA, Petersen KJ, Carter JR, Monczka RM (2005) Supply management strategies for the future: A Delphi study. *J Supply Chain Manag* 41:29–48.
18. Huscroft JR, Hazen BT, Hall DJ, et al (2013) Reverse logistics: Past research, current management issues, and future directions. *Int J Logist Manag* 24:304–327.
19. Gordijn SJ, Beune IM, Thilaganathan B, et al (2016) Consensus definition of fetal growth restriction: a Delphi procedure. *Ultrasound Obstet Gynecol* 48:333–339.
20. Romero D, Gaiardelli P, Pezzotta G, Cavalieri S (2019) The Impact of Digital Technologies on Services Characteristics: Towards Digital Servitization. In: *IFIP Advances in Information and Communication Technology*. Springer, Cham, pp 493–501