

Clarifying the Role of Reshoring in Global Manufacturing Strategy



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Agenda

- Background
- Research Questions
- Developing the Framework and Conceptual Model
- Research Design
- Results and Discussion

Background - Managerial Problems

1980s

Offshoring



2005

Increased problems and challenges



2010

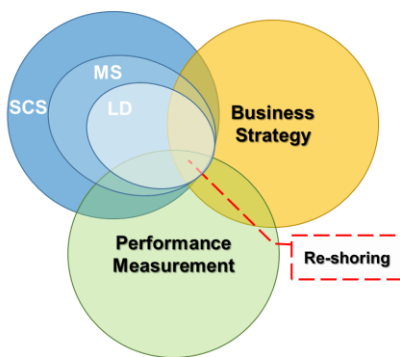
Reshoring



- Communication and culture problems
- Poor products' quality
- Increased labour cost
- Increased transportation cost
- Flexibility and responsiveness.

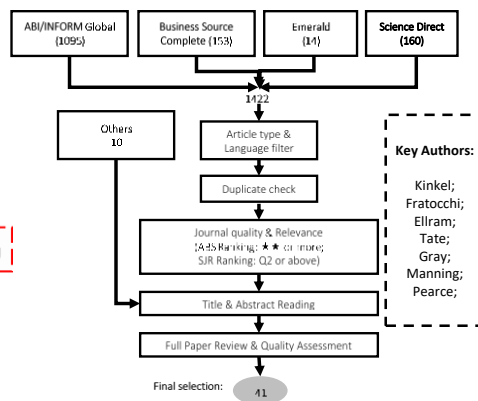


Literature Review – Mapping the Fields



SCS – Supply Chain Strategy
 MS – Manufacturing Strategy
 LD – Location Decision

Mapping the Fields



Key Authors:
 Kinkel;
 Fratocchi;
 Ellram;
 Tate;
 Gray;
 Manning;
 Pearce;

Reshoring Literature Review Summary

(P.S. All the fields in left side has been reviewed in the similar way, here just take re-shoring as the example)

Literature Review– Research Aims

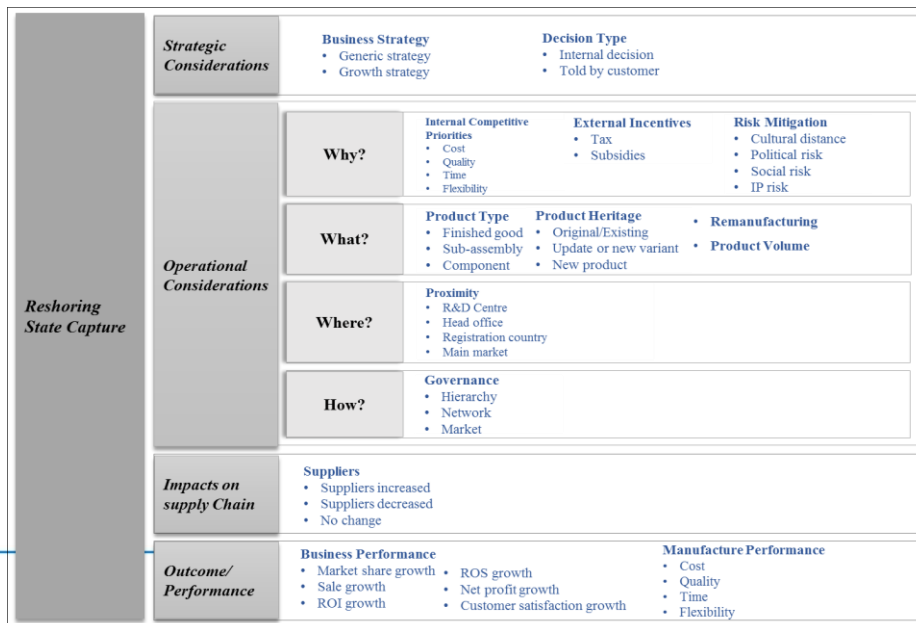
■ **Academic Gaps:**

- Reshoring is not a well-defined concepts. It lacks the clarification of the definitions and the current state.
- Literature always discusses about reshoring drivers and phenomenon, but lack focus on reshoring procedure, products, impacts and the role of reshoring, as one type of location strategies, played in global manufacturing strategy.
- Most literature are developed based on the literature review. Few of them have the empirical evidence of primary data from Survey/Interview.

■ **Research Aims:**

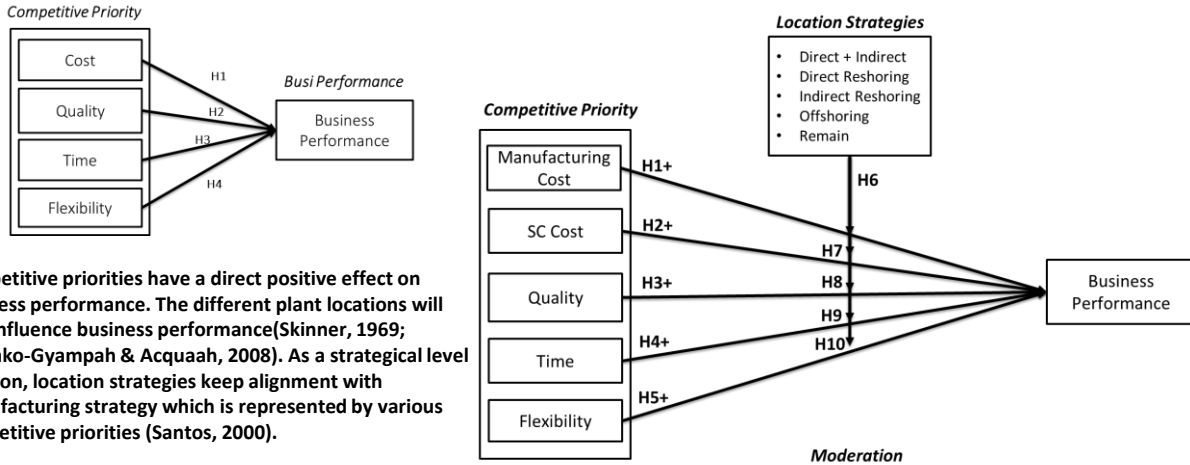
- *To clarify the current state of manufacturing reshoring in the UK;*
- *To identify what are the key complete priorities that affect business performance, based on different location decision strategies.*

Reshoring State Exploration Framework



Theoretical Model and Hypotheses

Literature Review: since the measurements of competitive priorities has been developed by Ward (1998), there is a lot literature discuss the correlation between competitive priorities (CP) and Business Performance (BP). It has been justified the CP has positive affect on business performance (Ward et al., 1995; Amoako-Gyampah & Acquah, 2008; Rosenzweig et al., 2003; Kathuria, 2000).



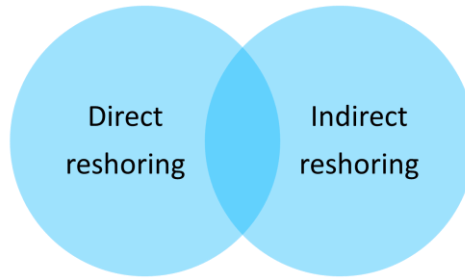
Competitive priorities have a direct positive effect on business performance. The different plant locations will also influence business performance (Skinner, 1969; Amoako-Gyampah & Acquah, 2008). As a strategical level decision, location strategies keep alignment with manufacturing strategy which is represented by various competitive priorities (Santos, 2000).

Measurements

Constructs	Measurements	Constructs	Measurements
Manufacturing Cost	- Reduce production costs - Reduce labour costs - Increase labour productivities	Time	- Increase delivery speed - Reduce production lead time
SC Cost	- Reduce coordination of operation cost - Reduce taxes and tariff - Reduce transportation costs - Reduce overhead costs - Ensure conformance to produce specifications	Flexibility	- Make rapid design changes - Adjust capacity quickly - Make rapid volume changes - Make rapid product mix changes - Make rapid timing of delivery changes
Quality	- Ensure accuracy in manufacturing - Offer consistently low defect rates - Provide reliable products - Improve supplier quality assurance	Business Performance	- Return on sales (ROS) - ROS growth - Return on Investment (ROI) - ROI growth - Pre-tax return on assets (ROA)

Direct and Indirect Reshoring

- Direct reshoring refers to the physical re-location of offshored manufacturing activities back to the UK;
- indirect reshoring is to keep or increase manufacturing activities in the UK *instead of* moving them abroad after a serious consideration of foreign locations.



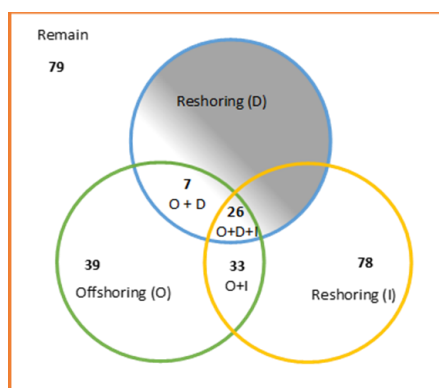
Groups

Groups	Offshoring (O)	Direct Reshoring (D)	Indirect Reshoring (I)	Companies Activities
Group A (O+D+I)	√	√	√	Companies who have offshored and then engaged in both direct reshoring and indirect reshoring
Group B (O+D)	√	√		Companies who have offshored and then only engaged in direct reshoring
Group C (O+I)	√		√	Companies who have offshored and then only engaged in indirect reshoring
Group D (I)			√	Companies who have only engaged in indirect reshoring
Group E (O)	√			Companies who have only offshored
Group F (Remain)				Companies who never engaged in offshoring or reshoring

Data Collection Summary

- ▶ Data collection period: mid October – mid December 2016
- ▶ Data collected through Survey
- ▶ All UK-based manufacturers (identified through a number of sources and databases) were targeted.
- ▶ Only senior managers with a high level of awareness of their company's manufacturing location decisions were invited to participate.
- ▶ 652 companies started the survey
- ▶ 297 completed, 262 suitable for analysis

Only 13% companies have directly reshored...

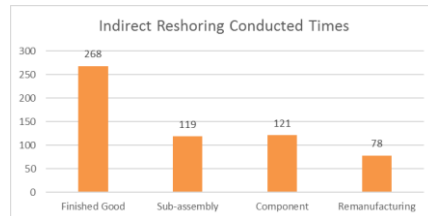
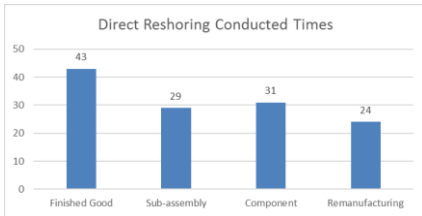


O+R+I: 9.92%
O+R: 2.67%
O+I: 12.60%
I: 29.77%
O: 14.89%
Remain: 34.15%

55% companies have reshored but 52% of this is 'indirect' reshoring

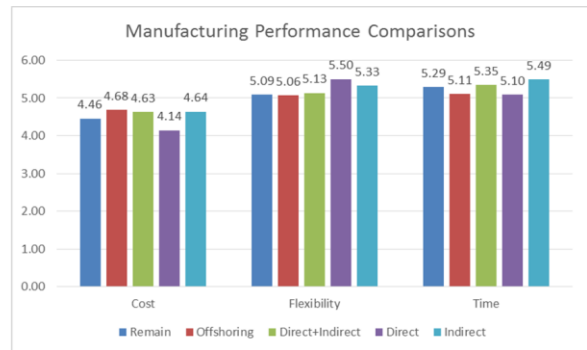
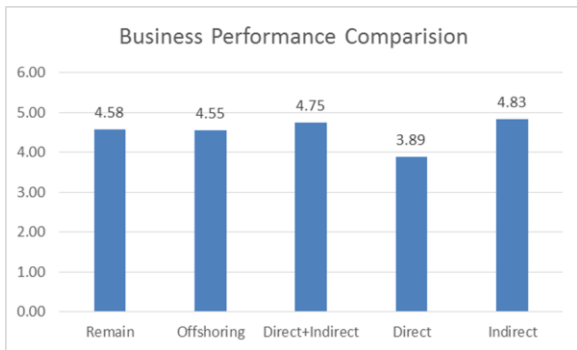
What has been indirectly reshored?

		Finished Good	Sub-assembly	Component	Remanufacturing
Direct Resoring	Times	43	29	31	24
	Percentage	33.9%	22.8%	24.4%	18.9%
Indirect Resoring	Times	268	119	121	78
	Percentage	45.1%	20.0%	20.4%	13.1%



- 33 Companies have engaged in the direct reshoring
- 127 times reshoring has been conducted
- On average, each company conducts reshoring 3.8 times
- For directed reshoring, finished good is the main reshored product
- 137 Companies have engaged in the indirect reshoring
- 594 times indirect reshoring has been conducted
- On average, each company conducts indirect reshoring 4.3 times
- For indirect reshoring, finished good is the main reshored product

Reshoring business performance is better than that of the remain companies and much better than those offshored; offshored companies do best on cost, but Reshored (indirect or direct) companies do best on flexibility and delivery time.



In conclusion, in the next 5 years...

- ▶ 70% will consider **indirect** reshoring
- ▶ 20% will consider **direct** reshoring

Factor and Reliability Analysis

Construct	Mean	Std. Dev	MC	SCC	Q	DT	F	BP
Manufacturing Cost (MC)	4.78	1.37	0.801 (0.737)					
SC Cost (SCC)	3.84	1.51	.545***	0.802 (0.662)				
Quality (Q)	5.91	1.03	.411***	.402***	0.859 (0.756)			
Delivery Time(DT)	5.18	1.46	.327***	.378***	.323***	0.847 (0.826)		
Flexibility (F)	4.42	1.60	.266***	.384***	.302***	.570***	0.895 (0.782)	
Business Performance (BP)	4.70	0.92	.249***	.214***	.240***	.316***	.334***	0.903 (0.797)

*Significant at $p < .10$. **Significant at $p < .05$. ***Significant at $p < .01$.

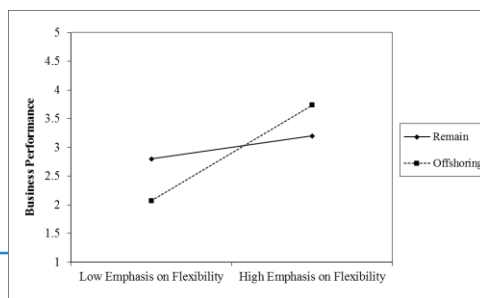
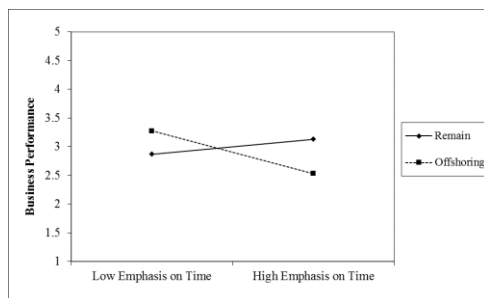
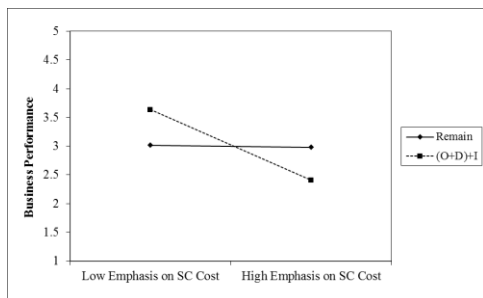
Regression Results – Use Remain as the reference group

Independent Variables	Dependent Variables (Business Performance)			
	Model 1	Model 2	Model 3	Model 4
Company Industry	.268**	.172	.187	.119
Company Size	-.196	-.146	-.149	-.136
Manufacturing Cost		.120*	.126*	.181
SC Cost		-.017	-.003	-.069
Quality		.078	.077	.115
Delivery Time		.132*	.116	.298*
Flexibility		.201***	.193***	.007
Direct+Indirect			.200	.028
Indirect			.183	.181
Offshoring			-.097	-.100
Manufacturing Cost x Direct+Indirect				.273
SC Cost x Direct+Indirect				-.596*
Quality x Direct+Indirect				-.062
Delivery x Direct+Indirect				.142
Flexibility x Direct+Indirect				-.082
Manufacturing Cost x Indirect				-.122
SC Cost x Indirect				.157
Quality x Indirect				-.111
Delivery Time x Indirect				-.285
Flexibility x Indirect				.228
Manufacturing Cost x Offshoring				.016
SC Cost x Offshoring				.146
Quality x Offshoring				.168
Delivery Time x Offshoring				-.503**
Flexibility x Offshoring				.633**
Adj R ²	.018	.148	.150	.178
ΔR ²	.026	.145	.012	.075
F change	3.353**	8.65***	1.241	1.554*

Items in parenthesis indicate their corresponding hypothesis.

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

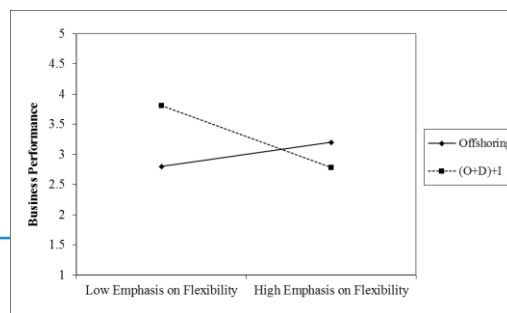
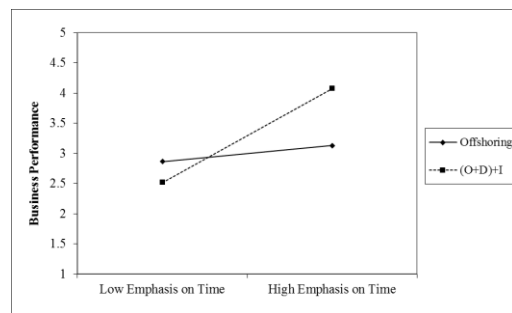
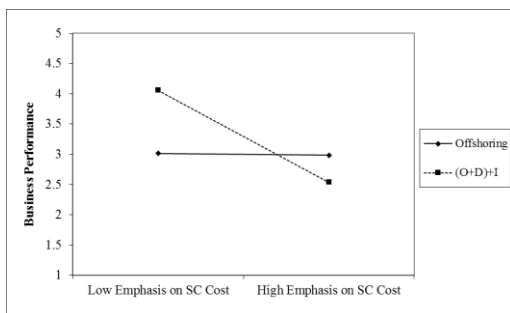
Regression Plots – Use Remain as the reference group



Regression Results – Use Offshoring as the reference group

Dependable variable	Interaction	Independent variable value	Moderator Value	Interaction Value
BP	Manufacturing Cost x Direct+Indierct	-0.017	0.297	-0.742**
	Time x Direct+Indierct	0.132	0.297	0.645**
	Flexibility x Direct+Indierct	0.201	0.297	-0.715**

Regression Results – Use Offshoring as the reference group



Summary

This work contributes to the reshoring literature by enriching the definition of reshoring, mapping the current state of reshoring in the UK, and justifying the moderation relationship among CPs, BP and location strategies.

- It is not necessary to put over attentions on SC cost.
- Offshored the companies should focus in improving flexibility capability.
- Reshored companies should focus on improving delivery time, and do not over restrict on SC cost reduction

Thank you