

Empirical Study of East Asian International Relationships: Focused on *Diaoyu Islands* Dispute through Digital Tools

東亞國際關係實證—數位工具下的釣魚台事件

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Abstract(Background)

Since 2012, *Diaoyu (Sankaku in Japanese) Islands* dispute become an important issue in recent East Asian international and cross-strait relations. Both China and Japan starts diplomatic and military acts and it undoubtedly affect the security of Taiwan. This study will examine if the acts of nations could be explained by international relationship (IR) theory by using the digital tool.

Question 1: What is “Power of the State” and how to calculate?

IR researchers have designed lots of “Power Index” and do know “who has how much power”, but still do not know when or how they use or not use their power.

Question 2: If we cannot answer Q.1, can we claim the theory “Balance of Power(BOP)” is useful in IR Studies?

This paper attempts to solve this problem by other perspective, as “Balance of Relationships(BOR),” which asserts that relationships always can be exchanged and more flexible and easier to be observed than “Power”.

Question 3: If we claim “BOR” works, can we do it in practice?

Yes, We Can. By DATABASE and Digital Tools.

Then we make an Index of BOP.

$$C[T_{n+1} - T_n] = C_1[\Delta T] \dots \dots \dots (1)$$
$$C_1[\Delta T > 0 \rightarrow 1, \Delta T = 0 \rightarrow 0, \Delta T < 0, \rightarrow -1] \in C_2[T_{i(1,0,-1)}] \dots \dots \dots (2)$$
$$\sum_1^n C_3[T_{ii(1,-1)}] = \text{Index of BOP Place}_{T_1}^{T_n} \dots \dots \dots (3)$$

Index of BOP *Diaoyu*₂₀₁₂₀₁²⁰¹⁵⁰⁵ (US-CN) = 8
Index of BOP *Diaoyu*₂₀₁₂₀₁²⁰¹⁵⁰⁵ (US-JP) = 10
Index of BOP *Diaoyu*₂₀₁₂₀₁²⁰¹⁵⁰⁵ (JP-CN) = 20
Index of BOP *Diaoyu*₂₀₁₂₀₁²⁰¹⁵⁰⁵ (JP-TW) = -16
Index of BOP *Diaoyu*₂₀₁₂₀₁²⁰¹⁵⁰⁵ (US-TW) = -2
Index of BOP *Diaoyu*₂₀₁₂₀₁²⁰¹⁵⁰⁵ (TW-CN) = -16

Step 3. Make Index of BOP.

For Example, We Can Try to Calculate.

表三、C₂相關系數組合表

皮爾森相關系數, n=40	C ₂ (JP)	C ₂ (CN)	C ₂ (US)	C ₂ (TW)
C ₂ (JP)	1			
C ₂ (CN)	.671**	1		
C ₂ (US)	.551**	.583**	1	
C ₂ (TW)	.271	.225	.254	1

** . 相關性在 0.01 層上顯著（雙尾）。

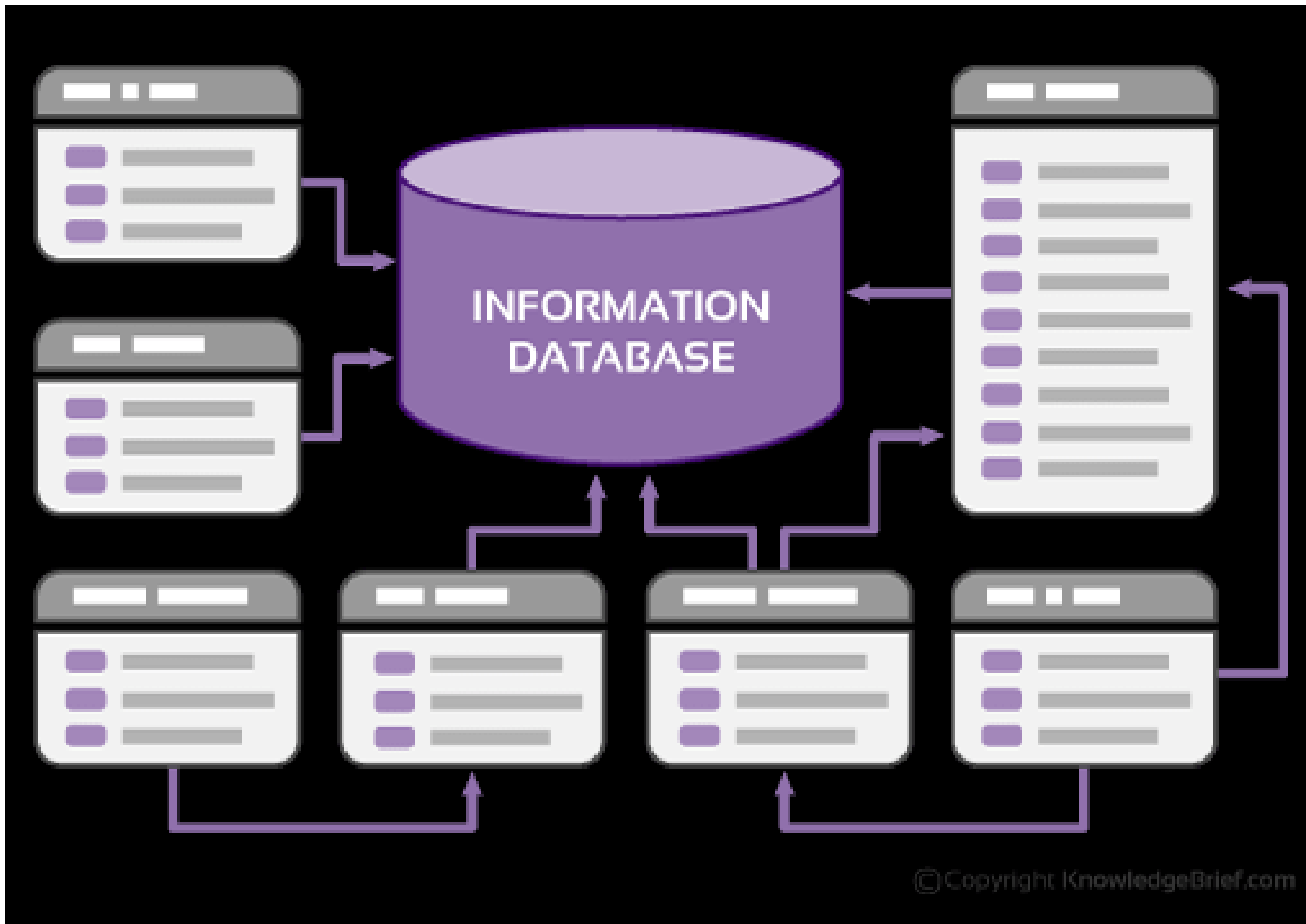
Figure: Pearson’s Correlation Coefficient

Conclusion:

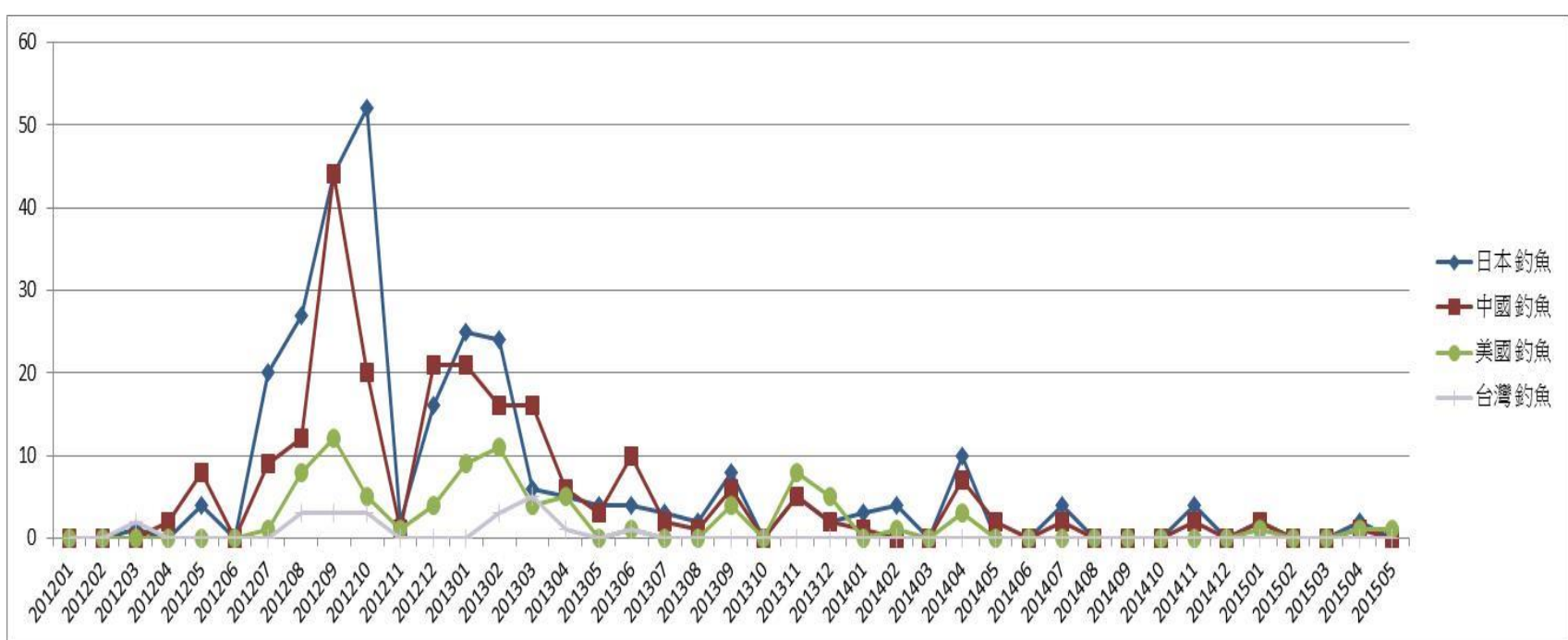
1. We Can Do Research on “RELATIONSHIPS” Instead of Power.
2. The “RELATIONSHIPS” can Be Transformed to Quantity and then Be Developed into an “Index”.
3. We Can Calculate with the “Index of RELATIONSHIPS”
4. Statistic Result Shows action are Significant Different between the Greats(US, China, JP) than Another (in This Case, Taiwan.)
5. Also We Can Do Another Topic with the Same Approach.
6. The Paper has Proved Database and Index Works on *Diaoyu Island as an IR Affair.*

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Step 1. Set Database from Media and etc....



Step 2. Find Co-exist Keywords by Digital Tools