

EXPORT BEHAVIOR OF FIRMS IN ILLINOIS: DESCRIPTIONS AND NORMATIVE PRESCRIPTIONS

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Abstract

The popular wisdom is that once the business is well established, the domestic-based firm turns its sights to the opportunities in global markets. However, an empirical analysis of 2.16 million businesses in the state of Illinois revealed that only 2.4% of businesses engage in exports. Is it plausible for the state of Illinois to initiate and maintain export behavior of firms using *advice and information*? We believe that this could be done using ‘informational stimuli’ and ‘attention-directors’ (ISAD). The ISAD framework is built on three related steps: supply facts necessary for decision; provide a frame of reference for thinking, and teach approved solutions. Extant research suggests that most firms do want to export and increase their revenue but are hesitant because of a lack of knowledge about environmental conditions and consequences related to global trade. The ISAD approach presented in this paper is designed to break this ‘hesitation’ behavior of firms and encourage them to export.

1. Introduction

It is now a well-established fact that businesses strive for continuous, regular income rather than short-period, maximum profits (Marne and Target, 2011). From a motivational standpoint, it means that businesses strive to avoid problems such as decline in profits, losses, bankruptcy, etc. Other than pecuniary motives, businesses also aim to occupy an esteemed, a high, or an outstanding position in its ‘group’, a non-pecuniary motive (Wells and Fox all, 2012). We posit that exporting is one way to achieving this ‘esteemed’ position. In other words, exporting is not an end-in-itself; it is a means to a broader end.

The salience of pecuniary and non-pecuniary motives for a business is determined by contextual factors. To elaborate, a business with insufficient capital will hardly pay attention to market expansion strategies; the focus will be on serving existing markets that contribute to liquidity, and solvency. In contrast, non-pecuniary motives may be salient for a well-established business operating under prosperous conditions.

To test this kind of reasoning, and to profile export businesses in Illinois, we use data from the US Census survey of business owners and self-employed persons (US Census Bureau, 2012). Specifically, using the public use micro-data sample (PUMS), we explore the export behavior of respondents to the survey. Research questions that guided data analysis include:

1. Which industry sectors contain a larger proportion of venturesome businesses or exporters?
2. Is number of years in business a good predictor of a firm’s export activities?
3. What business characteristics differentiate born-global businesses from other exporters (traditional-idea exporters)?

4. What demographic traits describe the owners of export businesses?
5. Is there an association between the export activities of a business and its servicing of non-English-speaking customers?

Sciences are of two kinds: theoretical and practical. Practical propositions are stated in a form: “In order to produce such and such a state of affairs, such and such must be done”. Although the focus of this paper is on normative prescriptions for global, market expansion strategies (see section 4), it is based on organizational theory; descriptions of the export behavior of businesses (section 3).

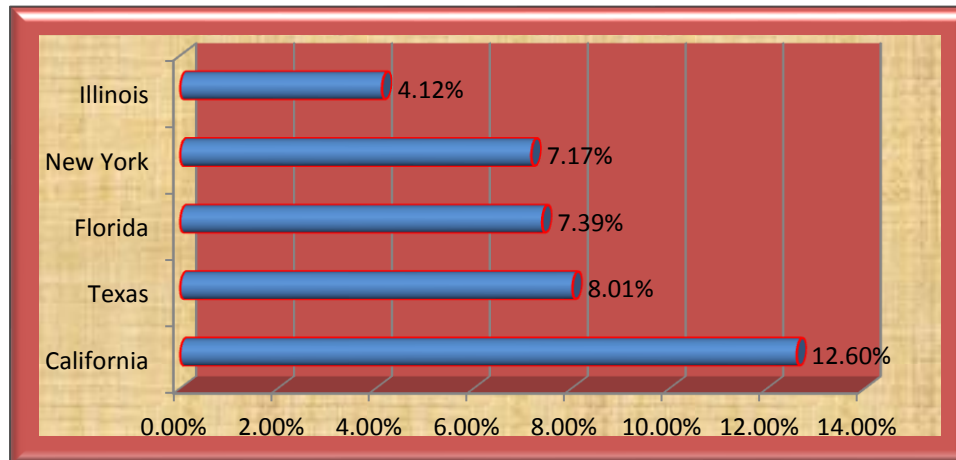
2. Methodology

The PUMS file created for the Survey of Business Owners and Self-Employed Persons (SBO) consists of more than 2.16 million records (see <http://www.census.gov/econ/sbo/pums.html>) representing 26.39 million firms; the weighted sample. The data file provides information about businesses in all the 20, two-digit, NAICS sectors (Table 1). Figure 1 shows that more than one-in-three of these businesses are located in California, Florida, Illinois, New York and Texas. We query this database to gain insights about the export behavior of Illinois businesses. Inferences are based on descriptive measures such as the correlation coefficient.

Table 1: Businesses in PUMS Classified Using NAICS Codes

NAICS Code	NAICS Title	Frequency of Firms Weighted Sample	Percent
11	Agriculture	254,812	1.00
21	Mining	117,372	0.44
22	Utilities	19,344	0.07
23	Construction	3,354,627	13.00
31	Manufacturing	588,895	2.00
42	Wholesale	704,086	3.00
44	Retail	2,627,797	10.00
48	Transportation	1,236,902	5.00
51	Information	365,891	1.00
52	Finance	965,999	4.00
53	Real estate	2,450,215	9.00
54	Prof. Services	3,723,234	14.00
55	Management of companies	15,893	0.06
56	Admin services	2,095,378	8.00
61	Education	569,301	2.00
62	Healthcare	2,262,711	9.00
71	Arts	1197616	5.00
72	Accommodation	744280	3.00
81	Other services	3,088,079	12.00
99	Public Admin	9807	0.04
	Total	26,392,237	

Figure 1: Salient Business Population Centers



3. Profile Analysis of Illinois Businesses: Descriptions of Exporters

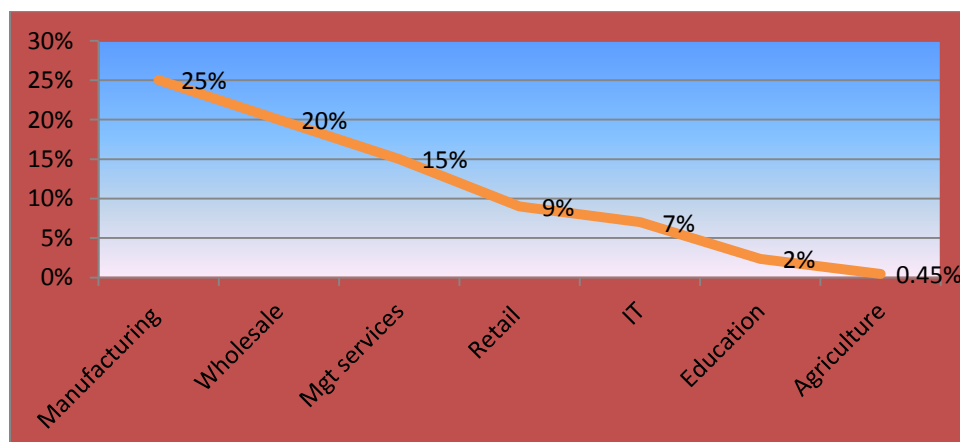
The need to profile export businesses stems from the economic benefits that they provide to community(s). Specifically, on average, an export business in Illinois:

1. generates eight times more sales revenue than a non-exporter (\$3.56 million per year for an exporter, and \$0.43 million for a non-exporter);
2. provides employment to 12 people; a non-exporter employs only three persons, and
3. spends \$559,000 per year on payroll; the same figure for a non-exporter is \$88,000 per year.

(i) Who exports the most?

One-in-four manufacturing businesses engage in exports (25%). In contrast, very few agribusinesses are global (0.45%). In all, 2.4% of Illinois businesses engage in exports; this is the median value for all of the 20, two-digit NAICS sectors (nationally, the median is 3.24%). Overall, there is a 60% chance that a randomly selected exporter in Illinois belongs to the manufacturing, wholesale, or the professional services sector (Figure 2).

Figure 2: Export Activities: Examples of High, Median, and Low Performers



(ii) Born Global?

The popular wisdom is that once the business is well established, the domestic-based firm, with strong skills, solid financial capability, and a sound product, turns its sights to the opportunities in global markets (Daft, 2010). The question is, are their “born-global” firms?

Of the approximately 27, 000 exporters who responded to questions about business-establishment date, 2000 (8%) are born global. Though small, with total average sales of \$1.49mil (Table 2), these firms are successfully competing globally in manufacturing, wholesale/retail, and professional services. In general, the younger the business, the more active it is globally (correlation between year of inception and export activity, $r = .18$); this empirical finding challenges the ‘traditional idea’ that exports is the domain of established firms. At least two factors are associated with the rise of born globals: changing consumer tastes, and modern communication and information technology. To elaborate, more and more of present-day customers demand tailor-made products. These ‘niche markets’ have become an attractive source of opportunities for small and medium-size firms which are more flexible than their larger competitors to adapt product offerings to meet emerging market needs. Similarly, global market information, once a source of competitive advantage of large, vertically integrated companies, is now available for firms of any size. Put another way, the latest telecommunications and computer technology enables firms of any size to manage business systems that extend beyond their own boundaries.

Table 2: Export Intensity: Born Global versus Traditional-Idea Exporters

Exports as a % of Total Sales	Percentage of Born Globals in the Category (Mean Revenues in \$000)	Percentage of Traditional-Idea Exporters in the Category (Mean Revenues in \$000)
1 to 9	56 (1,169)	71 (10,102)
10 to 19	11 (78)	11 (8,565)
20 to 49	12 (49)	7 (8,294)
50 to 100	21 (196)	10 (2,577)
Total	2039 firms (1,492)	6521 firms (29,538)

In sum, born global is business response to the world’s rapidly changing consumer tastes, and easy access to global market research. This ‘purposive’ behavior of business raises questions about the organizational correlates of born globals. These are addressed below.

(iii) What are the characteristics of born globals?

The concept of ‘purposiveness’ in export behavior supposes rational decision making on the part of the firm. This includes: (a) listing of all modes of global trade (direct marketing, licensing, etc.), (b) determination of all the consequences of each of those strategies, and (c) the comparative evaluation of these consequences (Johansson, 2008). However, environmental situation might limit the alternatives that are available.

To elaborate, consider Table 3; it shows the ‘organizational situation’ facing born globals and the traditional-idea exporters. A typical born global has one owner whereas a traditional-idea exporter has two. While it is true that businesses in general rely on owners’ personal finances for

startup capital, a larger proportion of born globals (approximately one-in-four of the firms) have used personal or business credit cards to secure startup capital.

Table 3: Organizational Context of the Exporters

What was the Source(s) of Capital used to Start the Business?	Born Global	Traditional-Idea Exporters	Difference in % Points
Median number of owners	1	2	NA
Personal Savings	76%	58%	18
Credit Cards	29%	5%	24
Personal Assets	12%	14%	-2
Home Equity Loan	11%	7%	4
Business Loan from Bank	4%	16%	-12

Given this environment or organizational situation, we argue that the owner(s) will exhibit *docility*; that is, the owner observes the consequences of her business tactics (for example, outsource a business function to a company outside the US) and adjusts them to achieve the desired end (for example, establish manufacturing operations outside the US)¹. This ‘learning’ may be from a previous experience, or ideational: the owner may trace in her mind the consequences of each behavior alternative and select one of them without actually trying any of them out. Since graduate education develops in a person productive thinking (acting in line with well-known theories or principles), we posit that:

H₁: Compared to traditional-idea exporters, a larger proportion of born global owners would have had previous ownership of a business or been self-employed.

H₂: Compared to traditional-idea exporters, a larger proportion of born global owners would have masters, doctorate, or professional degree.

An equally important mechanism that could be used to explain born globals export behavior is the principle of association: a combination of stimuli which has accompanied an act will on its recurrence tend to be followed by that act (Guthrie, 1960). Thus, for example, if the owner of a born global is of Hispanic origin, it is highly likely that she would have had experience in dealing with Hispanic business / customers, and this association may result in her positioning the business globally. This kind of reasoning leads to the hypotheses:

H₃: Compared to traditional-idea exporters, a larger proportion of born global owners will be of non-white race.

H₄: There will be a positive association between the export intensity of born globals and their dealings with the non-English-speaking customers.

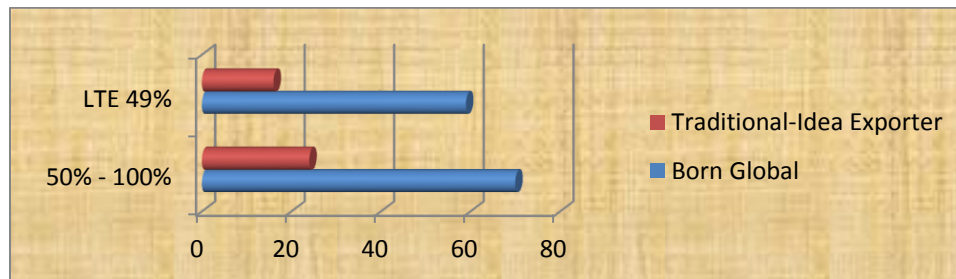
¹ Docility will be motivated by risk perceptions associated with investing personal money in the business. Psychological theory posits that the more vividly the consequences of losing in a risky venture are visualized – either through past experience of such consequences or for other reasons – the less desirable does the risk assumption appear (East, 2007); docility is a response to the ‘risk’ stimulus.

The results of the hypothesis H₁, H₂, and H₃ are presented in Table 4; these concern tests of differences in proportions. Figure 3 is a graphical representation of the results of H₄. Note that the empirical tests are in accord with our *a priori* predictions.

Table 4: Characteristics of Born Globals

Hypothesis	Born Global (%)	Traditional-Idea Exporter (%)	Difference in % Points: col2–col3	Statistical Test Based on Chi-Square, χ^2
H ₁ : Compared to traditional-idea exporters, a larger proportion of born global owners would have had previous ownership of a business or been self-employed	41 (n=1559)	23 (n=5794)	18	$\chi^2 = 202.6$; significant at the 0.01 level.
H ₂ : Compared to traditional-idea exporters, a larger proportion of born global owners would have masters, doctorate, or professional degree.	27 (n=1594)	21 (n=5814)	6	$\chi^2 = 26$; significant at the 0.01 level.
H ₃ : A larger proportion of born global owners will be of non-white race.	12 (n=2039)	2 (n=6521)	10	$\chi^2 = 370.71$; significant at the 0.01 level.

Figure 3: Export Intensity and Non-English Speaking Customers: Results of H₄



Note: LTE 49% means that exports constitute less than or equal to 49% of company sales. Similarly, the 50% - 100% category refers to exports as a % of total sales. Correlation = 0.57 was computed using the expression:

$C = \sqrt{\frac{\chi^2}{\chi^2 + f}}$ where, χ^2 = Chi-square = 83.41, and f = number of observations used in the computation = 169.

4. Implications

The born globals are one chapter in a bigger story about the salience of exports in a connected world. Our empirical analysis demonstrates that, on average, an exporter outperforms a non-exporter in sales revenue. Yet, only 2.4% of Illinois firms engage in exports. We believe that most firms do want to export and increase their revenue but are hesitant because of lack of knowledge about environmental conditions and consequences related to global trade.

Consumer behavior principles could help tackle this export ‘inaction’ issue. To elaborate, consumer behavior is studied using two sets of mechanisms (Rossiter, 1996):

1. those that initiate behavior in a particular direction, and
2. those that cause behavior to persist in a particular direction once it has been turned in that direction.

Behavior-initiating mechanisms are largely external to the object (business, in our case); for example, government financial assistance for export-market development may influence a business to exports its products (cf. the DCEO-OTI’s STEP grant program²). In contrast, behavior-persistence is mostly internal; it could be thought of as the psychological makeup of the owner(s); one such psychological variable would be ‘innovative and international’ mindset. Is it plausible for the state of Illinois to initiate and maintain export behavior of firms using *advice and information*? We believe that this could be done using ‘informational stimuli’ and ‘attention-directors’ (ISAD).

The ISAD framework is built on three related steps: supply facts necessary for decision; provide a frame of reference for thinking, and teach approved solutions. In a recent publication, Stephenson and Pundit (2008) claim that companies underinvest or fail to act on important global social, environmental and business trends. The reason: lack of skills and resources. The proposed ISAD methodology not only closes the information gap, but also provides businesses with the frameworks needed to interpret the information.

To illustrate, consider the following economic trend or prediction:

In a decade or so, annual consumption in emerging markets would reach \$30 trillion, from the present \$12 trillion (Strategy Practice, 2012).

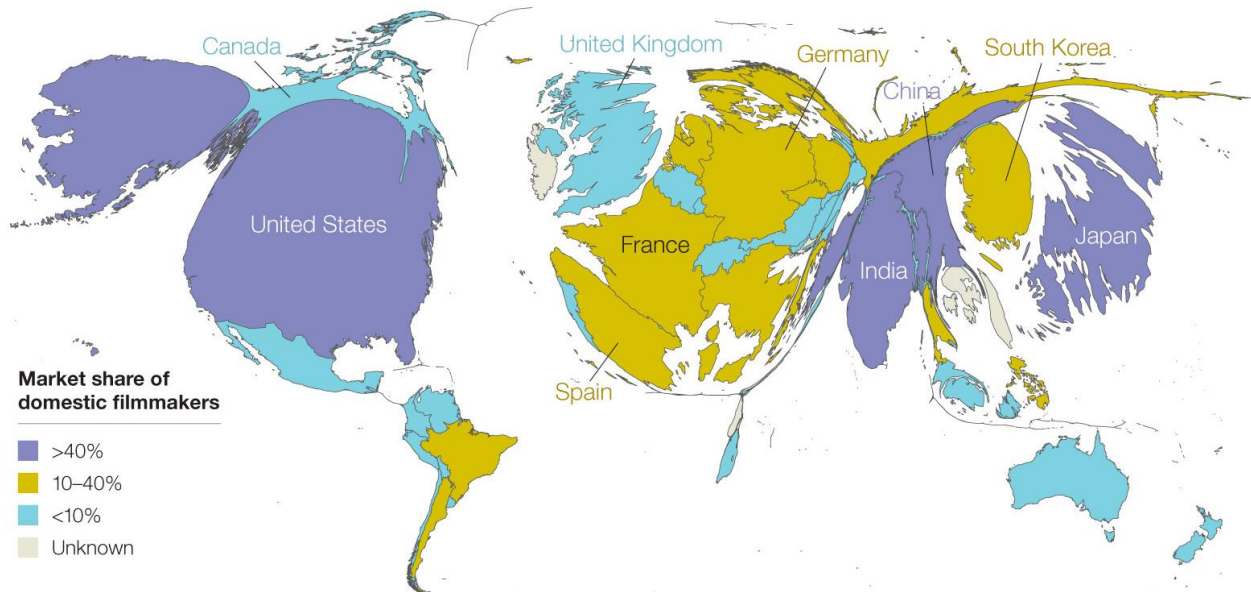
But how could a business assess the impact of this trend on its operations? One option would be to adopt best practices. For example, a recent survey of 1416 executives around the world shows that to capture growth from emerging markets, businesses are building a local presence, developing joint ventures with local companies, recruiting talent from emerging markets, and developing new business models (Dye and Stephenson, 2010).

Another option would be to apply scientific techniques and approaches to gain insights into the trend’s impact on company’s profits. For example, assume that a manufacturer in the automobile sector is interested in learning about the likely implications (opportunities) of hundreds of

² In Illinois, the Department of Community and Economic Opportunity (DCEO) in collaboration with the Office of Trade and Investments (OTI) administers the State Trade and Export Promotion (STEP) grants program.

millions of Indian and Chinese consumers buying cars for the first time. The first step in opportunity analysis would be to develop a rooted map for the product (Ghemawat, 2011). Briefly, a rooted map helps one visualize the global opportunities and threats for a product; opportunities for revenue growth, and threats from domestic or local competition. The starting point is to size countries according to their total industry or product category sales and color them based on the market share of their domestic firms. Figure 4 is an example of a rooted map for the global cinema market.

Figure 4: Rooted Map for Cinema Products



Next, we need to ascertain whether consumer needs in emerging markets are global or local, and their ability to afford a given product. A matrix framework such as the one given below will help in this exercise.

Middle-class consumers' ability to buy	Shape or localize	High	<ul style="list-style-type: none">• Home remedies• Ethnic snacks	<ul style="list-style-type: none">• Beer• Personal banking• Motorcycles	Create a platform
		Reinvent business model	<ul style="list-style-type: none">• Economy autos• Appliances	<ul style="list-style-type: none">• High-end consumer electronics• Luxury autos	Target niche
	Low		Local	Global	
	Middle-class consumers' needs				

The measures to construct the matrix can be obtained from published data. A good proxy for the need variable is the similarity of product offerings across geographies. Similarly, for ‘ability to buy’, category penetration and product availability could serve as proxy variables. Note that although the emerging market customers are aware of and have a fondness for global products, especially US products, the local competitors are aggressive. For example, the Chinese beverage maker Hangzhou Wahaha has built a \$5.2billion business against US competitors such as PepsiCo by targeting rural areas, filling product gaps that meet local needs, keeping costs low and appealing to patriotism (Court and Narashiman, 2010). However, by developing a perspective on whether consumer tastes are local or global and relating it to consumer affordability of the product, a business can determine strategies that will allow them to be successful in emerging markets.

In closing, consumer behavior literature states that if two or more needs become salient at the same time, the organism (in our case, organization) will attend to the most urgent need first (cf. the category need discussions in Rossiter (1996)). Most organizational needs are either problems or opportunities. Unattended problems will cause troubles. In contrast, opportunities that are attended to may increase the probability of survival. Our ISAD framework is designed to help businesses attend to the right export-opportunity cues.

We contend that in organizational decision making, the critical success factor is not information but attention. In fact, Simon (1994) posits that organizations can enhance the quality of their decisions by searching systematically, but selectively, among potential information sources to find out those that deserve most careful attention. However, since most organizations lack the skills and resources to scan selectively for global business opportunities (Becker and Freeman, 2006), it is our contention that the task of providing export intelligence to businesses be left to colleges and universities since it is they who serve as an ‘intelligence’ link to the community (Langley, 1987). How can colleges and universities proactively seek firms to offer export information and advice? Appendix 1 provides guidelines.

5. Summary

Here is how we would describe firm-level export activities in Illinois:

- ✓ The business is likely to be in the manufacturing, wholesale/retail, or the professional services sector;
- ✓ Sales turnover would be around \$3.5mil per annum;
- ✓ Likely to be an established business with two owners; and
- ✓ Bank loans would have contributed to the startup capital.

The ‘novel’ consequence of our analysis of the SBO PUMS data is the identification of the born-global firms. Though small, with total average sales of \$1.49mil, these firms are successfully competing globally in manufacturing, wholesale/retail, and professional services. These one-owner firms are characterized by a larger proportion of non-white owners and masters, doctorate or professional degree holders who have the ability to build and rebuild small, adaptable, and dynamic global businesses.

Extant research on business climate suggests that two trends will be the most important ones for business to monitor during the next few years: the growing number of consumers in emerging economies, and the shift of economic activity from North America and Europe to Asia (Becker and Freeman, 2006). We believe that most Illinois businesses do want to export and increase their revenue but are hesitant because of lack of knowledge about environmental conditions and consequences related to global trade. The ISAD approach presented in this paper is designed to break this 'hesitation' behavior of firms and encourage them to export.

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Appendix 1: Target Market for ISAD

This section addresses the question, “How can colleges and universities proactively seek firms to offer export information and advice”. The two-part answer relies on:

1. Calibrating a dummy endogenous variable model for exports using SBO PUMS data; the objective is to use model results to predict ‘export’ group membership of any firm in the state, and
2. Provide advice and information (implement the ISAD model) to firms receptive of market expansion activities.

The methodology of step 1, a technical description of ‘clustering’ is given below. Step 2 uses the results of step 1 as follows:

- a) Data about firms in a region, for example, McDonough County, will be sourced from listings such as D&B files, and
- b) Input into the mathematical model and classified as potential exporters, or not;
- c) College/university faculty teaching applied project courses at the graduate level will initiate contact with the potential exporters, and
- d) With the help of graduate students implement the ISAD framework tailored to each of the potential exporter.

Technical Details of Step 1

Consider a nominal endogenous variable of the 1, 0 variety. View them as two groups G1 and G2. A measurement \mathbf{X} of p characteristics is observed for each of the groups; for example, personal income, spending on food, travel time to work, etc. The objective is to find a linear function $\lambda' \mathbf{X}$ that provides the best discrimination between G1 and G2.

The λ s are chosen by maximizing the ratio:

$$\phi = \frac{\text{Squared differences between the means of } y \text{ in } G1 \text{ and } G2}{\text{Variance of } y}, \text{ or } \phi = \frac{[\lambda'(\bar{x}_1 - \bar{x}_2)]^2}{\lambda' \Sigma \lambda}$$

Differentiating ϕ with respect to λ and equating the derivative to zero, we get (see Appendix 1 for derivations)

$$0 = \frac{2(\lambda'(\bar{x}_1 - \bar{x}_2))(\bar{x}_1 - \bar{x}_2) \cdot \lambda' \Sigma \lambda - 2 \Sigma \lambda (\lambda'(\bar{x}_1 - \bar{x}_2))^2}{(\lambda' \Sigma \lambda)^2}, \text{ or}$$

$$\Sigma \lambda (\lambda'(\bar{x}_1 - \bar{x}_2)) = (\bar{x}_1 - \bar{x}_2) \lambda' \Sigma \lambda$$

This gives the solution

$$(\bar{x}_1 - \bar{x}_2) = \Sigma \lambda, \text{ or } \lambda = \Sigma^{-1}(\bar{x}_1 - \bar{x}_2)$$

The means of the discriminant functions in G1, G2 are:

$$\bar{y}_1 = \lambda' \bar{x}_1 = (\bar{x}_1 - \bar{x}_2)' \Sigma^{-1} \bar{x}_1$$

$$\bar{y}_2 = \lambda' \bar{x}_2 = (\bar{x}_1 - \bar{x}_2)' \Sigma^{-1} \bar{x}_2$$

Given a new observations with characteristics x_0 , we compute:

$$y_0 = \lambda' x_0 = (\bar{x}_1 - \bar{x}_2)' \Sigma^{-1} x_0,$$

And assign it to G1 if it is closer to \bar{y}_1 or to G2 otherwise.