

A MULTINATIONAL COMMUNITY OF RESEARCHERS

# Global Manufacturing Research Group



<http://gmrg.org/>



- **Founders: Dr. Clay Whybark, University of North Carolina**
- **Dr. Boo-Ho Rho, Sogang University, Korea**
- **President: Thomas Kull, Arizona State University**

# Collected samples ~ 1000

2009	Frequency	Percent
Albany	15	1,5
Australia	50	5,0
Austria	17	1,7
China	57	5,7
Croatia	107	10,7
Finland	139	13,9
Germany	4	,4
Hungary	53	5,3
Ireland	51	5,1
Italy	54	5,4
Corea	115	11,5
Macedonia	39	3,9
Mexico	105	10,5
Sweden	32	3,2
Switzerland	31	3,1
Taiwan	50	5,0
USA	84	8,4
Total	1003	100,0

2012	Frequency	Percent
Australia	74	7,5
China	102	10,3
Croatia	113	11,4
Germany	45	4,6
Hungary	38	3,9
India	58	5,9
Ireland	30	3,0
Nigeria	49	5,0
Poland	80	8,1
Taiwan	40	4,1
Ukraine	50	5,1
USA	168	17,0
Vietnam	140	14,2
Total	987	100,0

We need more countries especially developed

# Procedure

- GMRG meetings, Skype communications and preparation of questionnaires
- Core module (obligatory for all)
- Operational practices
- Innovation
- Supply chain management
- Sustainability (included 2017 q.)
- Operations culture (excluded from 2017 q.)

# Questionnaire

- 12 pages
- Translation and back translation
- Collection of data extremely difficult
- Most questionnaires are completed during an on-site visit (43%) by the researcher, followed by Internet (29%) and mail surveys (23%) (Schoenherr and Narasimhan, 2012).

# GMRG dataset problem

- Data usually comes from Operations' manager of the plant
- That means single responder from a company
  - some journals consider it as a severe methodology problem

# If you join

- You have to officially join the group
- You have to collect minimum 30 cases
- It is sent to data collection manager
- In return you get data from all countries for the modules you collected

# Data collectors

- They have the data
- They usually meet at GMRG meetings and discuss possible collaborations
- They propose what to include in questionnaires
- It is a friendly group and a more family like gathering
- They are not banned to collaborate with outside partners in writing papers but they have no right to give data to researchers that did not gather data (they have to perform the analysis)



# Example

- I have the data
- You have an idea
- You approach me or any GMRG member for collaboration
- I do the analysis
- You include me as an author since I did the analysis
- You are then allowed to include more co-authors that are not data gatherers

# 12 condensed pages

we are  
working on  
shortening  
it

## Section I: Demographics

- DM01 Approx. atly how many employees work at the plant in total?  employees
- DM02 Approx. atly what percentage are direct production workers?  % of total employees
- DM03 What percentage of the direct production workers is temporary?  % of direct workers
- DM04 What percentage of plant ownership is international?  % of plant ownership
- DM05 What percentage of total sales does the most important product line represent?  % of sales
- DM06 For your plant's most important product line, what percent of sales come from (total number should be 100%):  
Domestic markets:  % of sales Export markets:  % of sales
- DM07 For your plant's most important product line, what percent of purchases come from (total number should be 100%):  
Domestic supplies  % Foreign supplies  %
- DM08 What percent of plant sales come from (total number should be 100%):  
Affiliates (within your firm)  % External (outside)  %
- DM09 What percent of plant sales come from (total number should be 100%):  
Industrial (B2B)  % Consumer (B2C)  % Government (B2G)  % Other  %
- DM10 What is the approximate average age (in years) of the plant's production equipment?  
 <4 y  4-5 y  6-7 y  8-10 y  11-15 y  16-20 y  more than 20 y
- DM11 What is the percentage of annual sales invested in new manufacturing equipment over past two years?  
 <5%  5-4%  5-7%  8-10%  11-15%  16-20%  more than 20%
- DM12 Considering your most important product line, the typical product life cycle is (check one box):  
 <1 year  1-2 years  3-4 years  5-6 years  >6 years
- DM13 What percentage of plant sales is currently from products that have been introduced in the last 2 years?  % of sales
- DM14 What ~~percentage~~ of the value of parts or components that comprise the plant's products are fabricated within the plant?  % of the value of parts or components
- DM15 What percentage of plant sales is from services provided by the plant?  % of sales
- DM16 What percentage of the plant's sales is the total manufacturing cost including manufacturing management as well as overhead (services: security, travel, etc. and indirect materials: Maintenance, Repair and Operations)?  % of sales
- DM17 What percentage of the plant's total manufacturing cost is for labor including manufacturing managers?  % of manufacturing cost
- DM18 What percentage of the plant's total manufacturing cost is for material?  % of manufacturing cost
- DM19 What percentage of the plant's total manufacturing cost is for overhead cost?  % of manufacturing cost
- DM20 The ratio of Cost of Goods Sold to Average Inventory value at cost is (COGS/Average Inventory)  turns per year
- DM21 What is the approximate distribution of the plant's inventory value? (total number should be 100%)  
Purchased materials and parts  % Work-in-process  % Finished goods  %

## Section II: Competitive Priorities, Context and Performance (CG)

- CG01 Please indicate the importance given to each of the following competitive goals by senior management (total number should be 100%)

# DATA

- We have data from the last round in 2012 which should be exploited as much as possible since it will soon become obsolete
- Next round is envisioned for 2017/18 for which you can join as a data gatherer

# Vision of GMRG group

- To research state of the art manufacturing in the world
- Publish in top journals – which is extremely hard because of the single responder problem
- But there is no such large data set anywhere in the world on manufacturing

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Gazette January 2017

Gazette February 2016

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## VISION STATEMENT

The Global Manufacturing Research Group (GMRG) is a multi-national community of researchers dedicated to the study and improvement of manufacturing supply chains world-wide. Through systematic study and research throughout the world, the GMRG aims to improve manufacturing supply chains through the development of theory and dissemination of results. By sharing ideas, results, and concepts with research colleagues and manufacturing executives around the globe, the GMRG serves to strengthen the linkage between research and practice.

# 2017 Annual Meeting, May 3-4 Bellevue, WA, USA

- (1) **The meeting will take place in the city center on May 3<sup>rd</sup> and 4<sup>th</sup>.** We also are seeking to arrange a Lean Production tour of Boeing's Renton facility. Planning for GMRG-6 is well underway, so we will be discussing that as well as presenting research. You can see our tentative agenda here:  
[https://www.dropbox.com/s/dm279gzdrzlapss/2017\\_GMRG%20-%20Agenda%20-%20r1.docx?dl=0](https://www.dropbox.com/s/dm279gzdrzlapss/2017_GMRG%20-%20Agenda%20-%20r1.docx?dl=0)
- (2) **Please register for the meeting as soon as possible. That helps greatly with our planning for meals, polo shirt, the tour, and more. We put a deadline for the polo shirts so to get a size mix and count on attendance before having to commit on the shirts. Download the registration from here:**

# Just a brief note for Croatian 2017 round

- We will include more questions in innovation module than the GMRG group envisioned
- Because we want to capture Industry 4.0 questions
- Intellectual capital
- Collaboration issues

# Thank you for your attention

- Any questions?