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Exploring the relationship between innovation and firms performances: case of a systematic review

Jamai K. [1 & 2], *Abidar A.* [2], *De Steur H.* [1], *Gellynck X.* [1]

[1] Department of Agricultural Economics, Ghent University, Belgium.
[2] Department of Rural Development Engineering, National School of Agriculture-Meknes, Morocco.

GHENT UNIVERSITY

FACULTY OF BIOSCIENCE ENGINEERING

National School of Agriculture-Meknes

Background

Impact of innovation on performance

Several studies emphasized the impact of innovation on performance :

✓But research gap is widely observed in this area.

✓Previous studies neither emphasized on the factors that influence innovation nor showed clearly how innovation affects performance *(Ndesaulwa A. P., & Kikula J., 2016).*

✓Empirical studies focused on relationship between few aspects of innovation types and a single performance aspect *(Günday, G. et al, 2011)*

✓There is a need of comparative research on the basis of sector…. *(Hassan M.U., et al., 2013),* seen that innnovation and performance vary with sector to sector *(Damanpour F., 1996; Vega-Jurado J. et al, 2008).*

Aim of study

Conduct a systematic review to explore the effects of innovation on the firms performances across industry

- ✓ Previous reviews on innovation-performance :
  Innovation in large sense *(Chen, 2017; Ndesaulwa, Kikula, 2016)*

- ✓ Our review :
  * Systematic review
  * Variety of innovation/performance indicators
  * Several industrial sectors

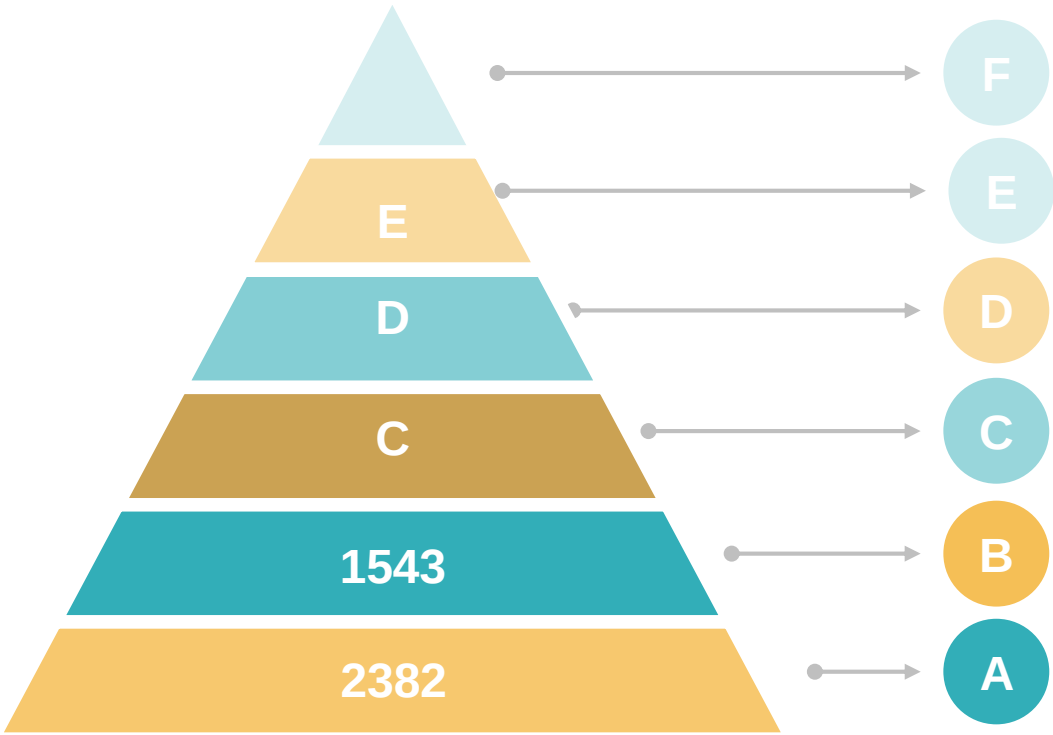
Article search

Web of science
Science direct

Syntax

Innovation
Performance
Industry

Methodology Chart



F — **n= 51 (up to now)**
Articles included in systematic review

E — **n=**
Studies removed

D — **n=**
Abstracts excluded

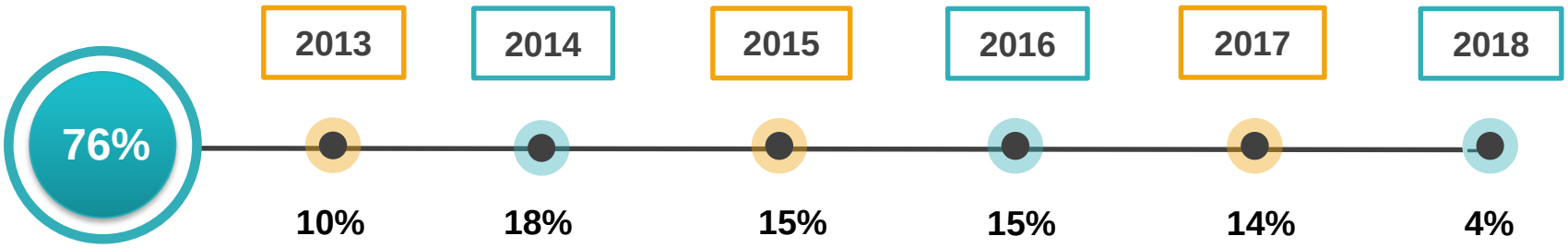
C — **n=**
Titles excluded

B — **n= 839**
Double removed

A — **n= 2382**
References identified from database searching

Study characteristics

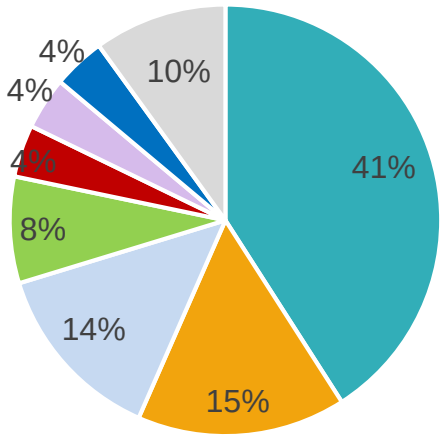
- **Year of publication (n=51)**



24% of articles was published before 2013

Study characteristics

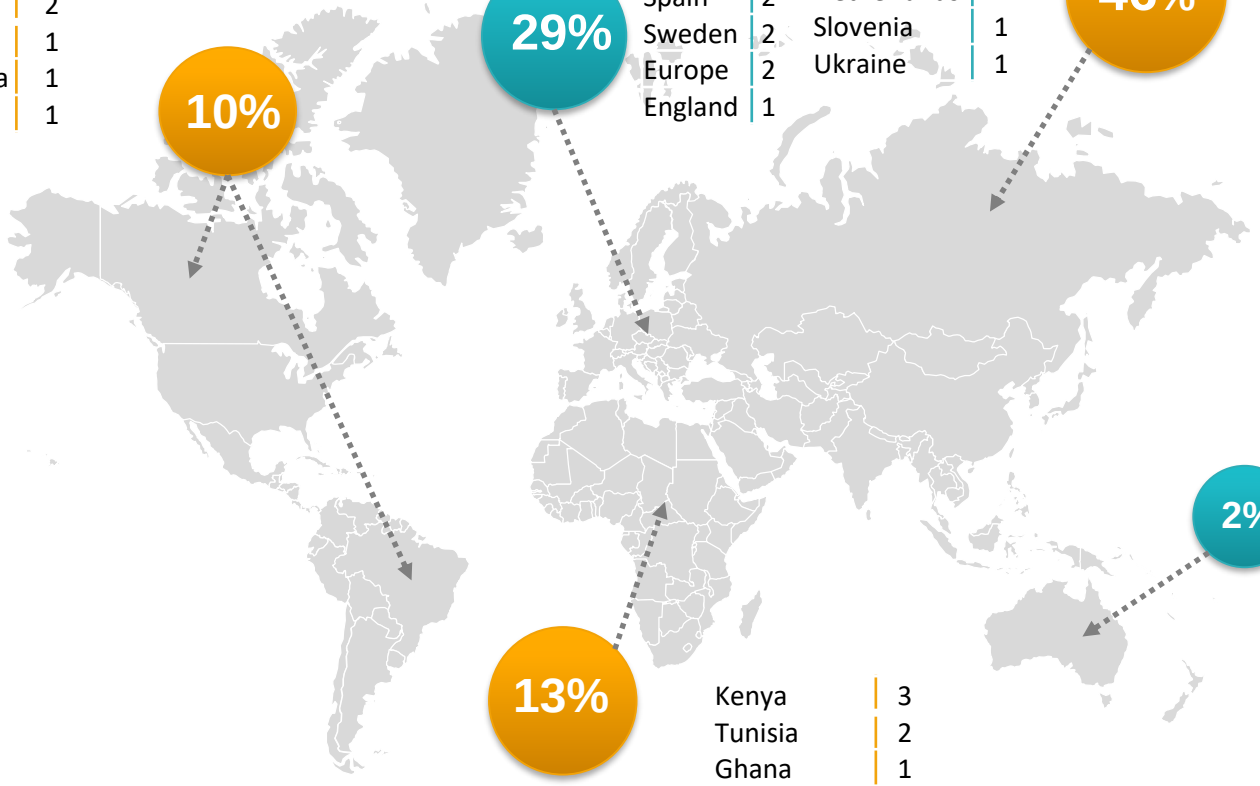
- **Sectors (n=51)**



More than one sector	
Manufactoring	Construction
Food	Pharmaceutical
Service	Mining and quarrying
Textiles & clothing	Information & communication
Financial & insurance	Electricity, transportation…
41% = 21 cases	

- More than one sector
- Food industry
- Banking sector
- Insurance
- Manufacturing
- high-tech industry
- Exporting firm
- Others

Result Continent/Country of studies



USA	2
Canada	1
North America	1
South America	1

France	3
Spain	2
Sweden	2
Europe	2
England	1

Germany	1
Netherlands	1
Slovenia	1
Ukraine	1

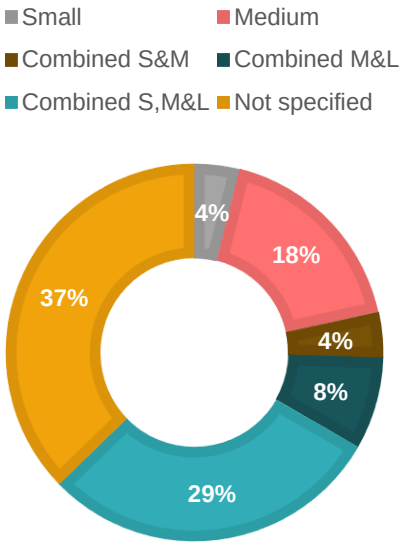
Turkey	6
China	5
Malaysia	4
Indonesia	2
Taiwan	2
Korea	1
Pakistan	1
Sri Lanka	1
Vietnam	1

Kenya	3
Tunisia	2
Ghana	1
South Africa	1

Australia	1

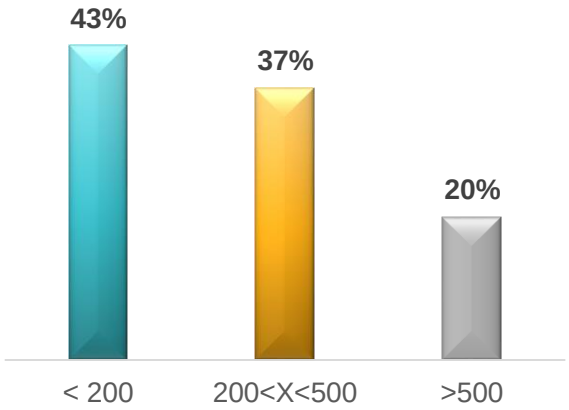
Study characteristics

Firm size (n=51)



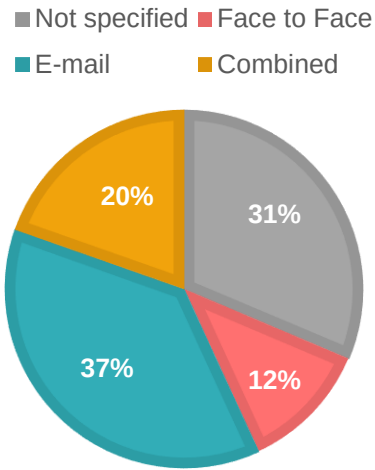
Only 22% of the sample focused on a specific firm size.

Sample size (n=51)



Samples bigger than 200 firms present more than half 57%.

Interview type (n=51)



Direct interviews present only 12% (6 cases)

Result Innovation - Performance

Innovation indicators

Innovation indicators	Amount	%
Innovation	21	21%
Product innovation	28	28%
Process innovation	18	18%
Marketing innovation	17	17%
Organizational innovation	15	15%
Total	99 *	100%

Unspecified innovation types 21%

Technological innovation represents 44%

Non-Technological innovation represents 32%

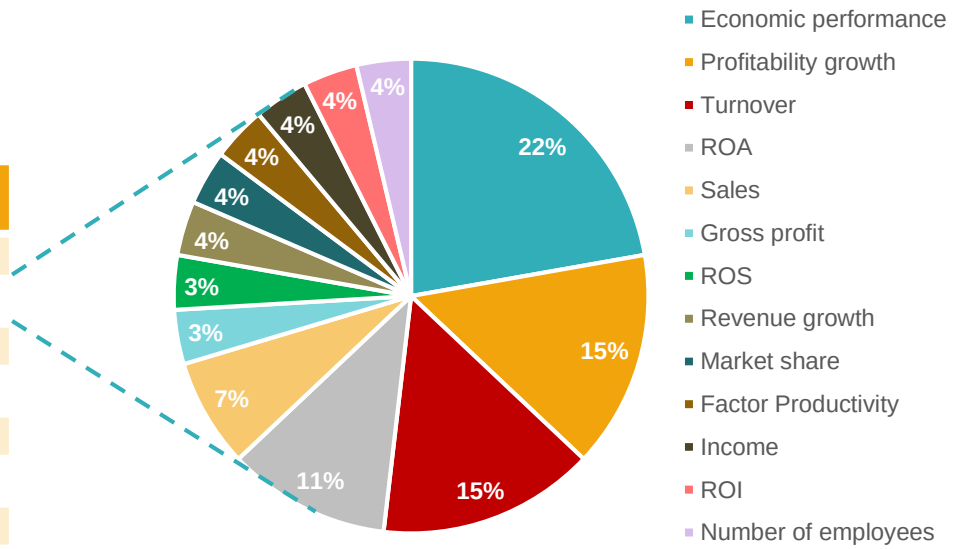
(*) : Some innovation indicators have been studied by several articles

Result Innovation - Performance

Performance indicators

Performance indicators	Amount	%
Performance	18	25%
Economic performance	24	33%
Innovative performance	6	8%
Market performance	8	11%
Production performance	4	6%
Environmental- Sustainable performance	4	6%
Organizational performance	3	4%
Internal business processes performance	2	3%
Learning performance	2	3%
Personal performance of the manager	1	1%
Total	72 *	100%

(*) : Some performance indicators have been studied by several articles



Result Innovation - Performance

Correlation model

Table 1: Innovation - Performance

Insurance	Manufacturing	Export Industry	High technology	Food industry	Banking	More than one sector
0,101-0,221	0,066-0,734	0,157-0,204	0,086-0,542	0,126-0,438	0,465	0,010-0,600

The effect of innovation on performance is more significant in these sectors

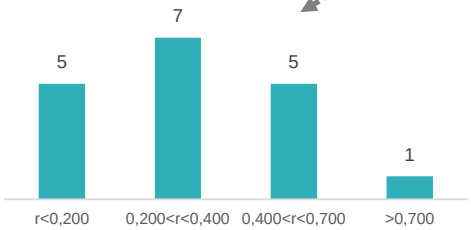
All these studies are statistically significant ($p < .05$) with positive Pearson's correlation coefficient (r) ranging from .066 to .734 as shown in table 1.

Result Innovation - Performance

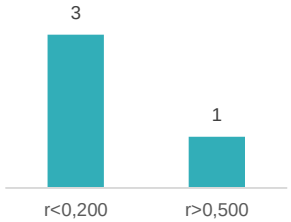
Correlation model

Table 2: Technological / Non-Technological innovation - Performance

Correlation	*Insurance*	*Manufacturing*	*Export industry*	*high-technology*	*Food industry*	More than one sector
Technological innovation		0,126-0,734	0,157-0,204	0,086-0,542	0,160-0,279	0,010-0,600
Non-Technological innovation	0,101	0,121-0,704	0,16	0,309	0,286-0,343	0,02-0,55



Result of 2 studies



Apparently, innovation categorized by type explains well the relationship between firm performance and technological innovation.

Result Innovation - Performance

Correlation model

Table 3: Technological innovation – Performance indicators

Correlation	*Manufacturing*	*Export ventures*	*high-technology*	*Food industry*	More than one sectors
T innovation – Economic performance	0,126-0,367	0,157-0,204	0,095-0,125	0,160-0,279	0,010-0,600
T innovation – Innovative performance	0,292-0,542				0,164
T innovation – Production performance	0,198-0,493				
T innovation – Market performance	0,149-0,734				

Economic performance is the most studied in the different sectors
Market & Innovative performance explain much more technological innovation in the manufacturing sector.

Result Innovation - Performance

Correlation model

Table 4: Non-Technological innovation – Performance indicators

Correlation	*Manufacturing*	*Export ventures*	*Food industry*
NT innovation- Economic performance	0,121-0,574	0,16	0,286-0,343
NT innovation- Innovative performance	0,216-0,622		
NT innovation- Production performance	0,153-0,466		
NT innovation- Market performance	0,066-0,704		

Few studies focus on the impact of non-technological innovation on performance.
Market & Innovative performance explain much more non-technological innovation in the manufacturing sector.

Conclusion

1

Contribution :

* Systematic review (Innovation/Performance/Different industry)

2

Finding :

* Innovation has a positive and moderate influence on the performance
* The impact of innovation depends on innovation types (Technological and Non-Technological).
    - ✓ Specific innovation/ performance
    - ✓ Specific sector

3

Future research :

* Non-technological innovation was less studying.
* Other indicators of performance other than economic performance.
* Carry out studies per sector based on size and age of firm.

Thank you for listening