

THE ROLE OF CONTEXT IN KNOWLEDGE AND INNOVATION STRATEGIES: GLOBAL VS. EGYPTIAN SAMPLE

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Abstract

Management research on knowledge and organizational innovation (OI) is a vast field which covers numerous topics and occurs at multiple levels of analysis (Crossan & Apaydin, 2010). However, the role of context in this research has been underexplored. The importance of inclusion of context in management research has been repeatedly highlighted by Tsui and colleagues (2004) with reference to Chinese context. This paper investigates the role of context in development and implementation of knowledge and innovation strategies by benchmarking an Egyptian sample (8 companies) with the Global Sample (68 companies), using the Innovation Audit Instrument developed based on the Comprehensive Model of OI (Crossan & Apaydin, 2010). The results indicate that the Egyptian companies lag behind the Global Sample in all aspects of the determinants of OI: leadership, managerial levers and business processes. Their innovation strategies are based on exploitation rather than on exploration. Also, only one company was practicing *Sustainable* innovation strategy (as defined in Zona, 2009), while most had no explicit innovation approach. Increasing company awareness about the comprehensive model of innovation and the imperative of an explicit innovation strategy is one of the managerial implications of this study.

Keywords: Knowledge strategies, knowledge transfer, innovation, practice-based view

Introduction

Contextually Grounded Research

Tsui (2004) argues that organizations are open systems and thus context represents a major source of influence on the outcome of their activities. In the notion of ‘context’ she includes the current context (culture, the political and legal system, the stage of economic development) and the history, the geography and its ecology and all that have produced this context. The national culture can be an important boundary condition for the generalizability of the existing management theories (Hofstede, 1993). Tsui (2004) discussed three types of global management knowledge: context-free (theories that apply to all contexts), context bounded (apply in some contexts but not in others) and context-specific (applies only in one context). She repeatedly called for testing of management theories and models in different national contexts. This paper answers this call but comparing the results of innovation audit in the Egyptian sample with the Global sample.

Theoretical background

Comprehensive Model of Innovation

Innovation Audit questionnaire is grounded in the comprehensive innovation model developed by Zona (2009), and Crossan and Apaydin (2010). Based on a systematic review

of literature published over the past 27 years, this model synthesizes various research perspectives into a comprehensive multi-dimensional framework of organizational innovation –linking meta constructs of *Leadership, Managerial Levers, Business Processes* with *Innovation as a Process*, and *Innovation as an Outcome*.

According to the theory proposed by the authors, the comprehensiveness of the model is a necessary and sufficient requirement for success. A firm demonstrating innovation in all the components of the comprehensive framework (leadership, managerial levers, business processes and culture) will achieve sustainable innovation outcomes (Zona, 2009: 63). A comprehensive innovation strategy should include all components of the model. A partial innovation strategy, however, will include only some of them. For a firm to achieve sustainable innovation outcomes, both its *espoused* and *enacted* innovation strategies should be comprehensive and *congruent*.

Espoused and Enacted Innovation Strategies

In their seminal work, Argyris and Schon (1974) differentiate the espoused and enacted strategies. Espoused strategies are mental representations of an intended plan of action, while enacted strategies are those implemented in practice. The authors suggest that most of the time espoused and enacted strategies not only differ but also may be incompatible. Zona (2009) further classified innovation, into ‘espoused’ and ‘enacted’ and developed a 2x2 matrix along those two dimensions (Figure 1) (Zona, 2009: 63), using Argyris and Schon’s (1974) premise.

Each of the four quadrants in Figure 1 symbolizes either an incongruent or congruent state between the firm’s enacted and espoused innovation strategies. On one hand, leaders may have comprehensive innovation strategies but enact them only partially (*Symbolic Innovation*), while on the other hand, firms may de facto enact comprehensive strategies without realizing that their innovation strategies are comprehensive (*Spontaneous Innovation*). These two scenarios represent a case of incongruence between espoused and enacted innovation. Two congruent scenarios are having a partial innovation strategy and enacting it partially (*Sporadic Innovation*), or having a comprehensive innovation strategy and implementing it comprehensively (*Sustainable Innovation*).

Methods

To assess the degree of comprehensiveness of espoused innovation strategies, the survey-based measurement instrument (Innovation Audit Tool), developed based on Crossan and Apaydin (2010) was used. The innovation audit tool (IAT) was administered to Egyptian companies, referred as the *Egyptian Sample* hereafter (Table 1). Establishing the degree of comprehensiveness of the enacted strategies was done based on a linguistic-physiological approach proposed in Zona (2009).

This analysis involved (a) using the comprehensive innovation framework to assess the degree of comprehensiveness of those companies’ innovation strategies; (b) applying IAT to benchmark them against the consolidated data of a *Global Sample*; (The Global Sample’s consolidated data is available from a research conducted by Crossan and Apaydin in 2008 which encompassed 68 publicly listed companies in 20 countries) and (c) employing a unique methodology, developed in Zona (2009), to assess the gap between their espoused and enacted innovation models and classify their innovation strategies according to Figure 1.

In the following sections we will benchmark and compare the Egyptian sample with the Global sample along each meta-construct of the comprehensive innovation model. Furthermore, we will present classification of these companies’ innovation models according to the 2x2 matrix in Figure 1.

Results

Benchmarking against the Global Sample

The comprehensive innovation framework was used to measure the degree of innovativeness of the Egyptian Sample; the data was then consolidated and juxtaposed against the Global Sample for benchmarking and analysis. Table 2 provides a summary of the Egyptian Sample benchmarked against the Global Sample. Companies that fell in the 'low percentile' of the Global Sample are represented with the letter L and those that fell in the 'high percentile' are represented with the letter H (Table 2). Descriptive statistics of the Global Sample's *Meta-Constructs*, *Innovation Outcomes*, and *Innovation Dynamics*; including Low and High percentile values; can be found in Table 3.

As depicted in Table 2, six of the eight companies fell in the low percentile of the *Meta-Constructs*, and two in the low percentile of *Innovation Outcomes*. On the other hand, two companies fell in the high percentile of the *Measures of Successful Innovation*, which indicated that their management are quite aware of what the necessary measures of successful innovation are, yet they scored low on mostly all other meta-constructs and dimensions, indicating that they do not apply their understanding of those measures to their innovation strategies.

Comparison of Means

Table 4 presents the means and standard deviations of the *Determinants and Dimensions of Innovation* of both the Global and Egyptian Samples at an aggregate level. The difference in standard deviations of the two samples is approximately 0.3, which can be attributed to the multiple-country effect in the Global Sample vs. a more homogeneous Egyptian Sample.

Meta-Construct: Leadership

Compared to the Global sample, the Egyptian sample had a lower mean (Table 4). In addition, five of the eight Egyptian companies fell in the low percentile of the Global sample (Table 2), indicating weaknesses in their leadership capabilities. Breakdown of the constituent elements of the *Leadership Meta-Construct*, showed that those five companies fell in the low percentile in regards to 'our leadership team creates an environment that fosters innovation,' and 'our leaders ensure individuals can make a difference in this organization.' This could indicate that the leadership capabilities necessary to foster and encourage innovation is lacking.

Meta-Construct: Managerial Levers

The Egyptian sample's Managerial Levers' aggregate mean was lower (2.955) than the Global sample mean (3.455) (Table 4). Furthermore, six of the eight Egyptian companies fell in the low percentile of the Global sample (Table 2). This combined with the analysis of the *Managerial Levers*' constituent elements indicates that Egyptian companies are unsure, whether or not, a vision for innovation exists, let alone communicated and, in turn, the support systems needed to capture and share ideas together with the reward systems that would motivate individuals to ideate and follow through with actions, are missing. Furthermore, those companies' organizational culture does not encourage innovativeness and risk-taking enough, rather it fosters submissiveness as indicated by seven of the eight Egyptian companies falling in the low percentile of the Global Sample in regards to the constituent element 'we hesitate to question others for fear of placing them on the defensive.' This could indicate that decision-making is centralized and bureaucratic to the extent that individuals hesitate to question others for fear of backlash, thus 'employees would not refer innovative personalities to their organization for employment.'

In addition, four of those companies also fell in the low percentile when it came to *'encouraging employees to take time away from their daily work to explore innovative possibilities.'* On the other hand, only two companies fell in the low percentile when it came to *'having an environment in which people feel that anything is possible'* which is in agreement with the low percentile attained in regards to *'our leadership team creates an environment that fosters innovation.'*

Meta-Construct: Innovation as a Process

Six of the eight Egyptian companies fell in the low percentile of the Global sample (Table 2), that combined with a lower aggregate mean compared to the Global sample (Table 4), led to further analysis of the constituent elements.

Breakdown of this Meta-Construct showed that seven of the eight Egyptian companies do not rely on external sources for inspiration, thus reducing the number of epiphanies that could result, as indicated by their low percentiles. In alignment with a lack of vision for innovation, Egyptian companies are slow to anticipate and respond to shifts in consumer behavior which is further aggravated by a lack of innovation champions that would see projects through or the necessary measures to benchmark such innovations.

Meta-Construct: Innovation as an Outcome.

The survey addressed three types of innovation outcomes: *Incremental Innovation*, *Breakthrough Innovation* and *Business Model Innovation*. Table 3 lists the Global Sample's descriptive statistics of those three types of outcomes.

Incremental and breakthrough innovation. In regards to *Incremental Innovation*, only one company fell in the low percentile, in addition, the mean of the Egyptian Sample was *greater* than that of the Global Sample (Table 2 and Table 4). As for *Breakthrough Innovation*, two companies fell in the low percentile of the Global Sample and its mean was less than the Global Sample's mean.

Further analysis of the Incremental and Breakthrough constituent elements indicated that Egyptian companies are certain that their product/service innovations are purely incremental and their likelihood of creating market disruptions is slim. Moreover, their view of whether or not, their competitors are agile in imitating their incremental innovations, is divided. This emphasizes that their incremental innovations are tactical rather than strategic and as a result does not necessarily disrupt the local competitive landscape.

The number of companies in the low and high percentiles of both samples indicated that the Global companies are more likely to introduce disruptive innovations that allow them to exploit opportunities and sustain their competitive advantage, while Egyptian companies are more prone to be blindsided by industry disruptions rather than take a proactive stance. Thus, it can be concluded that competitive rivalry does little, if anything, to enhance their capacity to innovate.

Business model innovation. Both Egyptian and Global Sample means were close with a difference of 0.069 (Table 4). Furthermore only two companies fell in the low percentile of the Global Sample (Table 2). Breakdown and analysis of the constituent elements indicated that Egyptian companies perceive themselves as more adept at defining new business models than competitors and consider those models as revolutionary within their industries. Yet they do not believe that competitors invest too much effort in gathering intelligence on their business models to be able to replicate them. The last two statements show some form of contradiction, indicating several possibilities: those companies may be unaware of the competitive dynamics around them, they misconstrue the value of their business models, or their business models are easy to replicate.

Furthermore, the results indicated that Egyptian companies do not put much weight on the capacity of their innovations to fundamentally change the way they run their business. Thus, their innovations are more customer-oriented rather than business process-oriented.

Innovation Dynamics

The following sub-sections compare the Egyptian Sample's innovation measures, supports, and barriers to those of the Global Sample; based on ranking and means.

Measures of successful innovation

Using a Likert 5-point importance scale (1-Not Important, 5-Extremely Important), measures of successful innovation were ranked. Listed in Table 5 are those measures and their ranking (1- highest) for both samples, along with their means.

From Table 5, it can be noted that both samples ranked *customer satisfaction* as the most important measure of successful innovation, while *new products/services/processes produced* and *market share* occupied the second and third positions. While a comparison of means indicated that Egyptian companies put more weight on the importance of *market share*, *financial impact of ideas submitted by employees*, *innovations as percentage of revenues and profits*, and *spin-offs/new operations based on new products* as successful measures of innovation; than did the Global Sample.

Spending on research and development ranked fifth, while *intellectual property* (e.g., *number of patents*) ranked eighth for Egyptian companies. On the other hand, based on a comparison of means, *intellectual property* (e.g., *number of patents*) was less important to the Egyptian Sample as a measure of successful innovation compared to the Global Sample, yet *spending on research and development*, carried more weight for the Egyptian Sample than for the Global Sample.

Supports for innovation

Using a Likert 5-point importance scale (1-Not Important, 5-Extremely Important), supports for innovation were ranked. Listed in Table 6 are those supports and their ranking –1 highest rank– for both samples, along with their means.

Based on a comparison of means, *redefining the organization's values*, *establishing innovation/creativity goals* and *establishing new idea review processes* were found to have equal importance for both samples (Table 6). In addition, Egyptian companies put more importance than their counterparts on *providing training in creative thinking and problem-solving* and *creating new incentive programs* as support mechanisms for innovation. On the other hand, the Global Sample put more importance than their Egyptian counterpart on *redesigning organizational structure or work flow*, *increasing employee involvement*, *identifying/attracting more creative talent*, and *encouraging employees to learn about areas outside of their expertise* as support mechanisms for innovation (Table 6).

Even though *developing leadership capability to foster innovation* ranked first for the Global Sample and second for Egyptian companies, the data showed a notable difference in their means (0.468). A similar difference of 0.415 was also noted in regards to *developing an organizational strategy for innovation*. However, it ranked fourth for the Global Sample and eighth for the Egyptian Sample, in its importance as a support for innovation (Table 6).

Barriers to innovation

Using a Likert 5-point scale (1-Not A Barrier, 5-Extremely High), barriers to innovation were ranked. Listed in Table 7 are those barriers and their ranking –1 highest rank – for both samples, along with their means.

Lack of leadership/management support ranked number one as a barrier to innovation for Egyptian companies and number three for the Global Sample, with a notable difference of 0.653 in their means. In addition, the data indicated *risk-averse culture* as the number one barrier to innovation for the Global Sample but ranked sixth for the Egyptian Sample (Table 7).

On the other hand, *new ideas threaten existing product lines* ranked the least important barrier to innovation for both samples; nevertheless, based on a comparison of their means, Egyptian companies consider it more threatening – a difference of 0.426 – than the Global Sample.

Classification of Egyptian Sample' Innovation Strategies

Employing a unique methodology, developed in Zona (2009), interviews were conducted to assess the gap between the companies' espoused and enacted innovation models. Based on this methodology, companies' innovation strategies were classified according to the 2x2 matrix in 1 and as a result, the eight companies were placed in the four quadrants.

Several conclusions can be made. First, the largest number of Egyptian companies had Symbolic innovation strategies, meaning that their understanding of what innovation is was better than what they were actually doing. An equal number of companies were in both Spontaneous and Sporadic quadrants thus either being spontaneously innovative or just randomly innovative. Only one company was practicing Sustainable innovation strategy. There was no an obvious connection between the industry and the type of innovation strategy. These results are not surprising given that innovation is a fashionable word and many tend to use it symbolically. Sporadic, or random, innovation is very much in line with the comparative results presented in previous sections. Increasing company awareness about the comprehensive model of innovation and the imperative of the consistency of the espoused and the enacted innovation strategies is just one of the benefits of these studies.

The results of this study were presented to the management of the Egyptian companies. Some of the suggestions included:

- Appointing a Chief Innovation Strategy Officer to drive the integration and adoption of innovation within the corporate strategy to sustain growth;
- Integrating innovation as a systematic business process within the company's processes to encourage and implement commercially viable ideas across company departments;
- Instilling innovation within HR Policy to facilitate the diffusion of innovation within the corporate culture;
- Moving towards a decentralized decision-making structure giving employees and leaders the freedom to improvise;
- Creating cross-functional teams to encourage ideation and brainstorming;
- Decreasing workload to space up for innovation and promoting Job Shadowing;
- Developing and utilizing crowd sourcing collaborative tools to accelerate innovation;
- Developing a reward system for innovation that is based on tangible and intangible recognition;
- Focusing more on breakthrough product innovations rather than incremental innovations to enrich the company's product portfolio;
- Encouraging front liners to tap into customer latent needs and offer solutions to satisfy these needs; and
- Decreasing reliance on third-party ideation and focusing more on internal ideation.

As a result, two of the three firms asked for a repeat of the audit project a year later in order to assess the improvements.

Conclusion

The results of the innovation audit have revealed that the Egyptian companies generally consistently lag (with a lower standard deviation between results) behind the Global sample. The main problems were the lack of an appropriate leadership style and a risk-averse, traditional organizational culture. Innovation was usually understood in its incremental sense, as a problem fixing and improvement rather than as a breakthrough innovation. Underestimating the role of patents and intellectual property protection is consistent with this result. Egyptian companies seem to be locked in a traditional organizational view with no room for free experimentation with management forms and processes. On the other hand, the Egyptians themselves do not seem to lack creativity or desire to innovate, it is the organizational forms and cultures that seem to be the impediment.

The results of this research have important managerial implications. In terms of innovation as a practice, the Egyptian leaders and managers have a lot to learn, from understanding what innovation is and its role in sustainable performance, to really embracing new models of leadership and changing organizational culture to a freer, risk-taking environment where employees are not afraid to experiment and even fail.

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Espoused and enacted innovation strategies

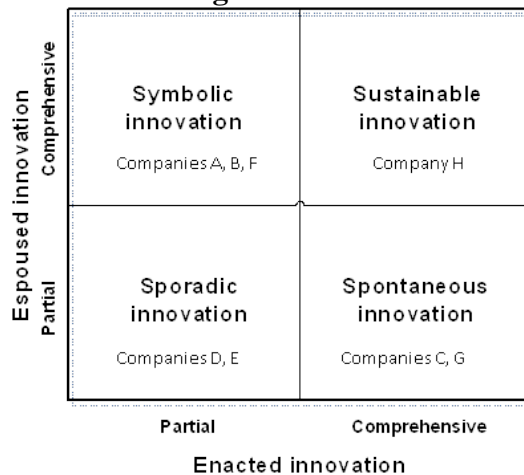


Figure 1

Table 1. The Egyptian sample

Industry	# Companies	Company	# Employees	# Surveys	# Interviews
Telecommunications	3	A	6,000	24	6
		B	2,500	26	5
		C	4,000	32	4
Information Technology	2	D	700	25	5
		E	500	22	2
Energy	1	F	10,000	16	5
FMCG	1	G	3,500	20	5
Packaging & Shipping	1	H	8,100	29	5

Table 2. Egyptian sample benchmarked against global sample

	Industry	Telecom			Information Technology		Energy	FMCG	Packaging & Shipping	Total Low
	Company	A	B	C	D	E	F	G	H	
Meta-Constructs	Leadership			L	L	L	L	L		5
	Managerial Levers		L	L	L	L	L	L	L	6
	Business Processes	L		L	L	L	L	L		6
Innovation Outcomes	Incremental Breakthrough Business Model		H		L	L	L			1
				L						2
Innovation Dynamics	Measures ^a				H		H			
	Supports ^b	L				L			L	3
	Barriers ^c		L	L		L	L	L		5

Note. L = Low Percentile (i.e. below 25th Percentile of Global Sample); H = High Percentile (i.e. above 75th Percentile of Global Sample); Empty Cells indicate within average zone. ^aMeasures of successful innovation. ^bSupports for innovation. ^cBarriers to innovation.

Table 3. Global sample descriptive statistics

n=68	Meta-Constructs			Innovation Outcomes			Innovation Dynamics		
	Leadership	Managerial Levers	Business Processes	Incremental	Breakthrough	Business Model	Measure ^s ^a	Support ^s ^b	Barrier ^s ^c
M	3.780	3.455	3.584	3.219	3.522	3.414	3.565	3.671	3.243
SE	0.067	0.052	0.060	0.077	0.072	0.071	0.040	0.042	0.074
Mdn	3.767	3.438	3.598	3.279	3.409	3.396	3.578	3.688	3.400
Mode	3.500	3.938	4.250	3.000	3.200	3.523	3.750	3.864	3.800
SD	0.551	0.428	0.498	0.638	0.597	0.587	0.328	0.346	0.610
s ²	0.304	0.183	0.248	0.407	0.357	0.345	0.108	0.120	0.372
Range	2.444	1.985	2.393	3.020	2.644	2.595	1.598	2.129	2.958
CL (95.0%)	0.133	0.104	0.121	0.154	0.145	0.142	0.079	0.084	0.148
Minimum	2.556	2.515	2.607	1.424	2.231	2.155	2.694	2.871	1.200
25 th Percentile	3.415	3.197	3.237	3.715	2.231	3.040	3.388	3.480	2.851
75 th Percentile	4.216	3.712	3.929	2.923	3.854	3.784	3.776	3.864	3.667
Maximum	5.000	4.500	5.000	4.444	4.875	4.750	4.292	5.000	4.158

Note. ^aMeasures of successful innovation. ^bSupports for innovation. ^cBarriers to innovation.

Table 4. Aggregate means of Egyptian and global samples

		Egyptian Sample		Global Sample	
		<i>M^d</i>	SD	<i>M</i>	SD
Meta-Constructs	Leadership	3.098	0.228	3.780	0.551
	Managerial Levers	2.955	0.269	3.455	0.428
	Business Processes	3.007	0.236	3.584	0.498
Innovation Outcomes	Incremental	3.347	0.260	3.219	0.638
	Breakthrough	3.360	0.321	3.522	0.597
	Business Model	3.344	0.392	3.414	0.587
Innovation Dynamics	Measures ^a	3.659	0.122	3.565	0.328
	Supports ^b	3.568	0.208	3.671	0.346
	Barriers ^c	3.738	0.167	3.243	0.610

Note. ^aMeasures of successful innovation. ^bSupports for innovation. ^cBarriers to innovation. ^dBold numbers represent Egyptian Sample means that are greater than that of the Global Sample.

Table 5. Measures of successful innovation

Measures	Egyptian Sample		Global Sample	
	Rank	Mean	Rank	Mean
Customer satisfaction	1	4.355	1	4.385
Market share	2	4.181	3	3.853
New products/services/processes produced	3	4.017	2	3.928
Financial impact of ideas submitted by employees	4	3.730	4	3.456
Innovations as percent of revenues and profits	6	3.465	5	3.381
<i>Spending on research and development</i>	5	3.505	6	3.324
Spin-offs/new operations based on new products	7	3.211	8	3.019
<i>Intellectual property (e.g., number of patents)</i>	8	2.643	7	3.197

Table 6. Supports for innovation

Supports	Egyptian Sample		Global Sample	
	Rank	Mean	Rank	Mean
Developing an organizational strategy for innovation	2	3.506	4	3.921
Redesigning organizational structure or work flow	11	3.254	8	3.567
Increasing employee involvement	3	3.627	3	3.983
Identifying/attracting more creative talent	1	3.827	2	4.075
Redefining the organization's values	10	3.327	9	3.353
Establishing innovation/creativity goals	4	3.600	5	3.683
Establishing new idea review processes	7	3.526	6	3.627
Encouraging employees to learn about areas outside of their expertise	9	3.397	7	3.602
Providing training in creative thinking and problem-solving	6	3.553	10	3.310
Creating new incentive programs	5	3.579	11	3.250
Developing leadership capability to foster innovation	2	3.684	1	4.152

Table 7. Barriers to innovation

Barriers	Egyptian Sample		Global Sample	
	Rank	Mean	Mean	Rank
Insufficient resources	7	3.500	3.287	4
No formal strategy for innovation	9	3.495	3.193	7
Lack of clear goals/priorities	2	3.835	3.253	5
<i>Lack of leadership/management support</i>	1	4.037	3.384	3
Short-term mind-set	4	3.614	3.610	2
Structure not geared toward innovation	3	3.700	3.217	6
Too much management control	8	3.498	3.028	9
<i>Risk-averse culture</i>	6	3.562	3.612	1
Lack of rewards for creative behaviors	5	3.614	3.137	8