Determinants of Innovation in Tunisian Hotels

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ABSTRACT

The objective of this paper is the measurement of the innovation's degree and its impact on performance of Tunisian hotels between 3 and 5 stars after the revolution happened on 2011 (in 2015 the number of Tunisia hotels is about 409 hotel: 3, 4 and 5 stars). For this study, our model used is based on and their determinants (12 determinants are used and classified in 3 categories: internal, external and environmental factors). To sum up those variables and to be sure about the future results we used the ACP method. Based on our results obtained, both internal and contextual factors are important for the innovation and the performance of Tunisian hotels.

Keywords: Innovation; Innovation determinants; Innovative capability

INTRODUCTION

"Many hotel companies prefer in the crisis situations, survival to innovation while to overcome the crisis must focus on innovation".

Since the mid 1980s, there are many transformations and challenges that they have been taking a big place and which have a highlighted innovation as a crucial emerging force for the international competitive position of tourism companies and tourist destinations [1-5].

The research in relation with innovation in the industry of tourism has growing and taked a big place in the recent years [6] and various aspects related to this area have been treated in the literature [7]. To be able to understand innovation patterns in almost touristic companies, it is fundamental to develop an innovation policy that can contribute to increase the level of tourism and the competitiveness in firms and the profitability [5,8].

Although tourism sector is very special and it is the sector that requires analysis of a divergent nature (Song, Dwyer, Li et al., 2012), the convergent focus brings general knowledge on innovation nearer to the tourism research and could be of a great interest [5].

Also the issue of the path to competitiveness of economies especially for the enterprises that are exposed to international competition goes through innovation. This enables enterprises to adapt quickly to the pace of the technological change and in order to increase competitiveness.

Tourism in Tunisia is one of the important sectors of the economy of Tunisia and a source of foreign currency for the country. Tourism has a ripple effect on other economic sectors, such as transport, communications, crafts, commerce and construction.

As all we know, the touristic sector in Tunisia is in a bad situation especially after the revolution happened on 2011. Also caused to the terrorism, in particular after the last terrorist act happened in Sousse had weakened the touristic sector and the Tunisian economy. So in this case, the innovation can be an important solution or one of many ways that can contribute on the amelioration of the hotel's situation to overcome this bad period.

The next Table 1 shows us the occupancy rates in Tunisian Hotels after the revolution of 2011 in details (ONTT, 2017).

As we can see in this table, we remark low rates of occupancy during 2011 to 2015. In this case, the analyze of the innovative capability in Tunisian hotels and its relation and impact on business performances can be a solution to ameliorate the situation of tourism in Tunisia.

So the objective of this research is, first of all to analyze the innovative capability in Tunisian hotels and its impact on performance knowing that there is no study done in Tunisia related to this research. Also to be sure about our determinants selected in this research we used the ACP's method to be able to sum up our determinants in just four determinants because we founded in the beginning twelve determinants from different articles and sectors. To this end, two stage models were formulated. The first one explains the degree (level) of innovation and the second model present the impact of this level on performance in these Hotels.

Another important objective of our research is to undertake the study of innovation through a multivariate analysis of the factors (determinants) that can influence the innovative outcomes.

Our contribution in this research is first of all the measurement of

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Table 1: Occupancy rates in Tunisia (2011 to 2015).

Indicators	2011	2012	2013	2014	2015
Tunis – Zaghouan	35.1	37.2	37.7	34.1	18.1
Nabeul – Hammamet	34.6	42.4	42.2	40.1	22.9
Sousse – Kairouan	32.1	48.9	53.1	50.6	23.5
Yasmine Hammamet	36.4	53.3	52.3	46.9	30.2
Monastir – Skanès	38.7	59	60.2	59.9	24.1
Mahdia-Sfax	33.3	46.1	49.9	46.5	19.3
Jerba-Zarzis-Gabès	40.5	36.1	47.7	50.6	17.7
Gafsa -Tozeur	13.9	13.3	18.2	18.1	7.1
Sbeitla-Kasserine	12.9	19.3	18.6	17.1	16
Bizerte-Bejà	11.8	13.8	14.1	19.2	17.1
Tabarka-Ain Draham	20.2	24.6	25.7	25.2	23.8
Average occupancy in Tunisia	28,13	35.81	38.15	37.11	19.92

the innovation's degree specifically after the revolution of 2011. The second contribution can be detected on variables used to do the measurement: we selected many factors related to touristic sector from different articles and we tried to select the most important factors that they can have a big chance to be significant between them to do our measurement. Another important contribution, that there are few researchers that they did a similar research specifically in hotels.

THEORETICAL FRAMEWORK

Literature review

The classical definition of innovation is presented by Rogers, "innovation can be a service or product, idea, process or practice that is perceived as new by customers and potential customers" [9]. According to Martinez et al., innovation is the development of an invention (s), or bright creative idea (s) for making it into useful product(s) or service(s) [10]. Çelikb and Topsakal, on the other hand, define innovation as doing many activities with the objective of the creation new process of productions [11].

The hotel industry innovation determinants

In this research we try to do an interaction of three categories of variable: internal factors (innovative capability), environment factors and external factors

Internal factors (innovative capability)

The innovative capability is first of all the capacity of developing new services or products that they can satisfy the market needs; secondly the capacity of applying appropriate process technologies to produce these new services or products; also the capacity of adopting and developing a new product and processing technologies to satisfy the future needs of customers; and finally the innovative capability is the capacity of responding to the accidental technology activities and unexpected opportunities created by competitors [12].

Knowledge

Researches done by Romijn and Albaladejo and Wonglimpiyarat indicate that innovative capability expends on the knowledge that allows us to create or improve other new technologies and influences technological development or the position of patents

[13-15]. The manifestation of knowledge is a key aspect of innovative capability which has been the focus of much research in the field [13]. So knowledge can depend on the learning capability that is the capacity of the identification, exploitation and assimilation of a new knowledge essential for a competitive success of a firm.

Human skills

This determinant includes the level of staff training and of creativity. It constitute a source of new ideas in an enterprise because it is the most flexible to acquire a new knowledge and enhance ability to question the dominant norms and create new ways of thinking in individuals. [16,17]. The study of Pfeffer in the United States in 1998 was 'To build profits you should put people first'. One of explanations suggest by him reads as follows: "the success comes from delivering value to your customers and the ability to deliver value comes from having sound conceptions of what customers want and value also how to organize and manage people to produce this value". For him, how to organize and manage people is also a topic of human factors. Also, many studies about the tourism industry done by Walsh et al.; Dwyerand Edwards; Ordanini and Parasuraman, have shown that the employee is a critical element in generating innovation [18,19]. So the human skills can depend on the staff training and level of training and professional qualifications and creativity.

Entrepreneurship orientation

The definitions of entrepreneurship cover a broad range of processes and activities, including the exploration of opportunities (Kirzner, 1979; Stevenson and Jarillo, 1990; Nasution et al.), the innovation and the creation of an organization (Gartner, 1988 and Nasution et al. 2011), the creation of new visions (Timmons, 1990), and risk taking (Stevenson &Jarillo, 1990). Hornaday (1992); Echols and Neck (1998) and Nasution et al. assert that the essence of entrepreneurship is innovation which aims to create economic value that provides profits for the market [20]. So, to sum up, the entrepreneurship orientation combines the proactiveness, the autonomy and the risk taking.

Organizational quality

The adoption of innovation is intended generally to contribute to the effectiveness or performance of the adopting organization. So innovation means changing an organization and a response to changes in its external or internal environment or as a preemptive action taken to influence an environment. In general, for Hage (1980) the most stable environments change. So, organizations adopt innovations continually over time. The most important thing is that there is a relationship between innovation and organization: it means that organizational innovation is the subject to influences in different categories, including the organizational, individual and environmental. Many studies abound on the importance of organizational factors such as working groups, hierarchy power, strategic direction and quality standards being innovative firms.

Contextual factors

Referring to Aldrich et al (1994); age and size can impact strongly organizations resources and performance. Firms grow in size, they reorganize their resources, and these new combinations require different practices of management to achieve success (Penrose, 1959; Miller and Friesen 1984). The same opinion of Buesa,

Molero (1998) and Schumpeter (1934), that age and size are a distinctly genetic nature and their relation with innovation has been contrasted specially in the case of size.

The literature cites several other contextual factors, such as financial resources, which also affect innovation (Furmanetal, 2002). And several other investigations have indicated a positive correlation between internal funding and innovative outcomes. Results have not been as conclusive for outside funding, as this aspect is influenced by factors like type of innovation for Dela Fuente and Galende (2003), characteristics of the life cycle and credit market of the business referring to Giudici and Paleari (2000). Other contextual factors presented in the literature review are cooperation with a focus on aspects like a level of formalization of the agreement and the dimension of collaborating businesses (Jarrillo, 1988; Tsai, 2001).

Environment factors

For Fernandez et al. and Audretsch, the characteristics of the environment, including the turbulence and market conditions, have been demonstrated to have a clear effect on activity and the intensity of innovation in firms. Also dynamics and rivalry of a competition are the representative of the institutional backing and the influence of uncertainty on innovative behavior in businesses, which it includes contextual factors like research centers and financial, patent systems, and tax support measures, that they are variables of environment in relation with the environment [21]. To recapitulate, environment factors are: rivalry, institutional support, regional factors and national and international factors.

METHODOLOGY

Data collection and simple

A survey is the methodological procedure that we used and applied through a questionnaire. The questionnaire (appendix 2) was presented and pretested among five directors of Tunisian hotels to be sure that the next respondents would understand it correctly. The information about the hotels was obtained from the 2015 Hostel Annual Report on hotels, tourism and leisure. The population comprised 150 hotels and the questionnaire was sent to all these hotels. Our data collection process was conducted from June 2016. We started our collection of information by the regional hotels (Sousse, Monastir, Nabeul...) and some other region like Tunis. To be clearer, for the nearby hotels we did some interviews with the directors of these hotels (16 interviews and the rest by e-mail). These interviews lasted between 15 to 20 minutes with some open questions (Appendix1). For the farther hotels like Kebelli, Tozeur... we sent the questionnaire (appendix) by e-mail and we requested the help of ONTT (National office of the Tunisian Tourism) to have the answers from hotels that we don't have the ability and no information about them. Finally, our collection was ended with the receipt of 70 questionnaires and all of these were considered valid. This corresponds to a response rate of 46, 67%.

Conceptual model and hypothesis

Cause of the low sample (our population is 409 hotels of 3, 4 and 5 stars and 70 hotels responded it means that response rate is about 17%) we use ACP to be sure of results obtained and to be able to sum up the twelve determinants selected in the beginning on just four determinants, so based on this methodology our hypothesis fixed are:

H1: INNOVATION HAS A POSTITIVE IMPACT ON PERFORMANCE.

H2: HUMAN SUPPORTS HAVE A POSITIVE IMPACT ON THE INNOVATION OF TUNISIAN HOTELS.

H3: EXTERNAL ORGANIZATIONAL SUPPORTS HAVE A POSITIVE IMPACT ON THE INNOVATION OF TUNISIAN HOTELS.

H4: REGIONAL AND MONETARY SUPPORTS HAVE A POSITIVE IMPACT ON THE INNOVATION OF TUNISIAN HOTELS.

H5: AGE HAS A NEGATIVE IMPACT ON THE INNOVATION OF TUNISIAN HOTELS.

To sum up, our hypothesis are presented in the next model

$$\text{Glob\_innov}_i = a_0 + a_1 HUMAN\_S_i + a_2 ORGAN\_S_i + a_3 REG\_MON_i + a_4 AGE_i + \varepsilon_i$$

Variables

The next part offers the description and scale of the dependent variable (global innovation=service+ process+ marketing+organizational) and independent variables (innovative capability, contextual factors and environment variables) of our model.

Description of dependent variable

We should note here, that all next questions used are measured by ordinal scale (1 to 5).

Service innovations

For this dependent variable, we asked 5 closed questions. The objective of those questions is to know if the directors of hotels introduced new services or done transformations or changes to existing services for their clients. Also, if services was introduced can be compared to their competitors or not, and if those services can make changes to hotels.

Process innovations

Here, we asked 2 closed questions, with the objective to know if directors update their service delivery methods to increase services productivity rendered and if they incorporate technology to improve efficiency (min costs ...) and the quality of services of hotels.

Marketing innovations

In this part, we asked 5 closed questions to know the level of dynamism in the development and the utilization of new sales channels (potentiating of the Internet as a sales channel, presence on social networks). Next questions have the objective to know if directors introduced new methods for the pricing of their services, if those services have been new for the tourism sector, and if their competitors used those marketing methods as reference point. The last question was asked to know if there are introductions of new ways of managing external relations with other companies in relation to public institutions (new alliances, forms of cooperation, etc.

Organizational innovations

In this type of innovation, we asked 2 closed questions. The first question is if directors of hotels have introduced new practices in

the organization of work or procedures (new quality management practices, information systems and knowledge management, etc.) and for the second one if the new organizational methods that they have incorporated have been pioneers for other hotels.

Global innovation

It was measured by the average of all innovation types.

Description of independent variable

Knowledge

Directors are asked if they:

- train their staff for the emergence of new technologies in this sector.

- are very knowledgeable about the strengths and weaknesses of their competitors.

- are well aware about the information on the technological developments affecting the sector.

- keep information about final and intermediate customers (tour operators, travel agencies, etc.)

- know the regulations and standards associated with the hotel business.

Human skills

In this part, directors are asked if:

-they attach importance to on-the-job apprenticeship for non-managerial positions, managerial positions and to the intrinsic motivation of the staff.

-the creativity is used as a criterion of promotion and rewards of taking risk.

-their employees are creative and bright.

-the interacting with colleagues can be an effective way of funding new ideas.

Entrepreprenuship orientation

This independent variable helps us to know if:

-employees on hotels are encouraged to take responsibility of their work and are expected to work with minimal of supervision.

-the uncertainty in hotels is treated as a challenge.

-the failure is seen as a learning experience.

-the hotel emphasizes the chances of success rather than the risks of failure.

-directors are looking for new opportunities related to current operations and for opportunities to improve the performance of the hotel.

-directors are the first to introduce new services in their hotels.

-directors are ahead of their competitors to respond to market challenges.

Organizational quality

Here, we asked about:

-the influence of hierarchical control on the structure of the company is important.

-employees: they received benefits and bonuses related to their outstanding performance or not.

-the security is guaranteed for employees in hotels.

-directors: they have permanent groups and teams specializing in communications systems or not.

-the official certificate of quality: it is obtained or not.

- *Size:* is the number of employees of this hotel (2016).

- *Funding:* the amount spent on innovation funding.

- *Cooperation:* selection between 7 cooperators presented (*appendix 2*).

- *Age:* the number of activity years of this hotel.

- *Rivalry and dynamics of competitor:* the level of competitive rivalry is high in the market.

- *Institutional support:* the amount giving by the state to innovate or not.

- *Regional factors:* Sahel region / other regions.

- *National and international factors:* National or international hotels.

RESULTS

Descriptive statistics

Based on Table 2 and according to the results obtained from the 70 directors of Tunisian hotel (3, 4 and 5 stras), the innovation level in hotels is average (all innovation types are between 3, 28 and 3, 90) and globally is about 3,58. It means that hotel managers give an equal importance to all types of innovation. The same thing for the occupancy rate and it is a logical result. It is average and there are some hotels that are completely full (100%) and others with a low rate (5%). So here we can say based on those results that the majority of Tunisian hotels should need more innovation and creation to increase the occupancy rate.

The correlation is significant at the level of 0.01

As we can see in this Table 3, all innovation types have a positive impact on the performance of Tunisian hotels at the level of 0.01 and the most important impact between them is the service and marketing innovation. Then we have the process and the organizational innovation. Also, the application of the four types of innovation at the same time have a higher impact (global innovation = 0,627). So, based on this table, we can say that innovation is positively correlated to performance.

Table 2: Innovation rates.

	N	Minimum	Maximum	Average	Ecart type
Sce_innov	70	1,00	5,00	3,6029	0,97950
Pro_innov	70	1,00	5,00	3,9071	0,93751
Mkg_innov	70	1,00	5,00	3,5629	0,79074
Org_innov	70	1,00	5,00	3,2857	0,91117
Glo_innov	70	1,10	5,00	3,5896	0,77481
Tx occu 06-2016	70	5,00%	100,00%	58,6874%	21,43957%
N valide	70				

Table 3: Impact of innovation on performance.

Innovation types	Impact on performance
- Sce_innov	0,622**
- Pro_innov	0,471**
- Mkg_innov	0,605**
- Org_innov	0,454**
- Glo_innov	0,627**

Table 4: Matrix of components explained.

Variables	Components			
	1	2	3	4
KNOWLEDGE	0,946	0,065	0,107	0,035
HUMAN_SKI	0,928	0,057	0,125	0,081
ENTRPNSHP	0,932	0,149	0,016	-0,097
ORG_QUALI	0,898	0,208	0,022	0,032
SIZE	0,494	0,289	0,156	-0,294
FUNDING	0,007	0,027	**0,828**	-0,012
COPERATION	0,343	0,688	0,104	-0,045
AGE	0,054	0,051	0,130	0,921
RIV_DY_CO	0,766	0,138	0,255	-0,037
INST_SUPP	0,172	0,798	0,164	0,326
REG_FACTO	0,198	0,068	0,710	0,114
INT_FA	0,289	0,670	0,321	-0,296

In this case, H1 is accepted. It means that when the hotels are more innovative so their performance will increase.

Linear regression model (ACP method)

Two remarks here:

- We used the methodology of ACP for three reasons: firstly to be sure that our results related to our regression model are true and certain. Secondly, because we have a low sample (just 70 hotels). Finally to sum up variables that was explained on the theoretical part and to reduce our hypothesis (Table 4).

So, our model is created based on the results obtained in Tables 5 and 6.

- We note here that we have taken all axes that their **λ** is >1.

As we can see referring to these two tables (Table 4 and 5), we can detect four axes and we can classify them in four categories:

Let's start with the first level, referring to Table 5 we have taken all axes that their **λ** is >1, so there are knowledge (94%), human skills (92%), entrepreneurship orientation (93%), organizational quality (89%) and rivalry and dynamics of competitors (76%). We can say that those determinants represent the human side and innovation can depend first of all on them and they can be classified within the category named "human support". This factor "human support" conserves referring to the Table 5, 41, 80% of the initial inertia.

For the second level, the most important signification is related to the external organizational support such as cooperation, institutional support and international factors. In this level, organizational side conserves 12, 62% of the initial inertia. (54, 43% for the first and the second axes).

The third level is related to the regional and monetary support, it means that the external side is in relation with the regional factors.

Table 5: Total variance.

Variables	Total	Variance%	%cumulate
1	5,017	41,809	41,809
2	1,515	12,621	54,431
3	1,243	10,362	64,793
4	1,132	9,434	74,227
5	0,846	7,049	81,276
6	0,742	6,187	87,463
7	0,472	3,937	91,401
8	0,397	3,310	94,710
9	0,335	2,794	97,504
10	0,143	1,193	98,698
11	0,092	0,763	99,460
12	0,065	0,540	1, 00,000

Table 6: Innovation determinants regression model summery. Source: Own elaboration.

Model	B	T	sig
(Constant)	3,368		0,000
HUMAN SUPPORT	0,593	0,689	0,000***
EXTERNAL ORGANIZATIONAL SUPPORT	0,193	0,224	0,015**
REGIONAL AND MONETARY	-0,014	-0,016	0,860
AGE	-0,263	-0,305	0,001***

*p-Valuer0.1; **p-Valuer 0.05; ***p-Valuer 0.01

Global innovation	
R2	0,618
Sig	0,000

Table 7: Reliability test.

	Cronbach's Alpha
Sce_innov	0,885
Pro_ innov	0,720
Mkg_innov	0,819
Org_innov	0,785
Knowledge	0,821
Human skills	0,915
Entrepreneurship orientation	0,887
Organizational quality	0,804

Here, the conservation of the factor is about 10, 36% of the initial inertia.

Finally, the fourth level is relative to the age factor. It conserves 9, 43% of the initial inertia.

First, human support is the most significant factors (Table 6).

Also the external organizational is significant. We can remark also that these two factors have a positive impact on innovation, which means that an important part of innovation is coming from them: an augmentation of one unit at the innovation's level needs and augmentation of 0,59% from human support and for the external organizational support just 0,19% from the organizational support. So, H2 and H3 are accepted.

Secondly, there is no signification and impact of the regional and monetary support. So it is not true that the funding is the most

important to be able to innovate or that innovation depend only on money. Also the idea that hotels in regional emplacement are more innovative than other hotels is false. In this case H4 is rejected.

Finally, the age is significant but it has a negative impact on innovation. It means that whenever the hotel is old so the opportunity to innovate decreases and the reverse is true. So H5 is accepted.

The results showed that these models explain an important part of the variance in global innovation such adjusted R2 equals 0.618 with p<0.000.

The Cronbach's alpha values (Table 7) were all greater than 0.80 except the process and organizational innovation. Composite reliability for process (0,720) and organizational innovation (0.785) also exceeded the minimum value considered reliable (0.7). The average variance extracted was greater than 0.7 in all scales, so it exceeds the recommended threshold of 0.5 fixed by Fornell and Larcker; Murat and Birdogan [22-24].

The reliability of the scales was assessed using the Cronbach's alpha coefficient and by calculating the composite reliability and average variance extracted.

The Cronbach's alpha is used to be sure that our questions are clear and acceptable (Table 8).

Table 8: Hypothesis summary.

Hypothesis	Support
H1: Innovation has a positive impact on performance.	Accepted
H2: Human supports have a positive impact on the innovation of Tunisian hotels.	Accepted
H3: External organizational supports have a positive impact on the innovation of Tunisian hotels.	Accepted
H4: Regional and monetary supports have a positive impact on the innovation of Tunisian hotels.	Accepted
H5: Age has a negative impact on the innovation of Tunisian hotels.	Accepted

DISCUSSION

This paper describes and contrasts a model explaining the relationship between innovation and innovative outcomes of Tunisian hotels. The complete model proposed, provides a satisfactory explanation for the innovative outcomes of hotels. Three categories of explanatory variables are used: innovative capability, contextual factors and environment factors. For this purpose, we use a multiple linear regression model. An initial linear regression confirmed the validity of the conceptual model based on innovative capability. Calculations of the p-value for coefficients of regression revealed that the most influential variables are also the most significant. The significant negative variable is the age with a positive impact on global innovation. This result is very important because it demonstrates that more hotels are old so the capability to be innovative decrease, in this case for the old hotel, it should innovate to survive and the creation of new hotels is necessary with the objective of the amelioration of Tunisian hotels situations. The model demonstrates clearly the importance of variables related to human skills (those variables are the most favorable and presented the higher signification) and the elimination of the idea that innovation is based on funding and regional factors should be applied [25-30].

The positive things in this research that; it was a positive relation between innovation and the performance of Tunisian hotels. So innovations can an important solution to grow up the touristic sector because clients choose their destination by their needs and with the admission of new innovations related to services, processes, marketing and/ or organizational the rate of clients will increase and the same thing for the occupancy rates so the performance of Tunisian hotels increase and in results Tunisia can survive because our country is based on especially on touristic sector [31-35].

As it is known the objective of our research is the measurement of innovation degree in Tunisian hotels (of course if the measurement presents some positive results so it means the existence of new innovations or some higher amelioration of innovation) [36-40]. So, we should note that there are some innovation detected with the interviews doing directly with directors of Tunisian hotels and able to detect the existence of those innovations (or not) and to demonstrate the true relation between the quantitative results (done by questionnaire) and the reality, we asked some open questions to the directors of hotels and our objective here is to know their innovations (or their future innovations) with some explanations [41-45].

We remark that there are some new innovations (radical innovations for the Tunisian case) and important ameliorations on innovations (incremental innovations). The next Table 9 sums up all the innovations detected all through our research [46-50].

But we should note that many other hotels didn't accept to do a direct contact with us and others didn't give us answer to our questionnaire sent by e-mail [51-53].

Table 9: The innovations detected all through our research.

Radical innovation (Tunisian case)	
Services	- GPS Mark (global personalization at Starwood): this mark belongs to an international hotel chain. It is software and its role is the detections of all needs of the client (tourist) at any hotel he chooses of the chain at any destination country before his coming.. - Business hotel add a service of spa to its clients for more relaxation. - Health tourism and wellness which adds to tourism through a spa treatment center run by medical and paramedical staff highly qualified through ultra-modern and sophisticated equipment.
Process	- Security system.
Marketing	- "La veille marketing" based on social networks and new technologies. - Collaboration contract: the innovation here is based on operator tours and it means that the hotel selects the innovation to do after knowing the operator tour needs. - Marketing method based on North Africa region with software named "hub". - Hotel bed expedia: reservation online in real and dynamic time.
Organizationnal	Empowerment: is a management practice of sharing rewards, information, and a power with employees, so they can take the initiative and make some decisions with the objective of solving problems and improving service and performance. Fusion of the largest chain in the world: Start wood (chain1) bought Mariode (chain2).

Incremental innovations in:	
Services	- Hard rock café is a chain of theme restaurants. - All in soft: it is similar to all-inclusive and the absence of alcohol is the difference. - New software's reservation with more detail and facility. - Banking service to the hotel's interior. - Package online. - Balanced menu (to plan). - Free international calls.
Process	- A using of a procedure's manual named "Concorde". - Using of bangles. - Quality management. - Continuous training. - Satisfaction questionnaire. - International audit firm. - A management system relating to the chain. - Strategy of "best employee of the month and year".
Marketing	- Yield management. - Channel management. - Collaboration of the principal international sites of the chain. - Elaboration of partnership contracts and sponsorship with Tunisian and Algerian television to be able to present more products.
Organizational	- Effective monitoring model of staff compared to the budget.

CONCLUSION

Based on our research, innovation plays an essential role in explaining the innovative outcomes of hotels. On the other hand, few studies exist which investigate the innovative outcomes of based on innovation especially in Tunisian hotels and after revolution. The main contribution of this paper is the measurement of the innovation's degree specifically in this period because as all we know that the touristic sector is in a bad situation. In fact after the revolution on 2011, the terrorism in particular after the last terrorist act happened in Sousse, had weakened the touristic sector and the Tunisian economy so in this case, innovation can be an important solution or one of many ways that can contribute on the amelioration of the hotel's situation to overcome this bad period. The second contribution can be detected on variables used to do the measurement: we selected many factors related to touristic sector from different articles and we essayed to select the most important factors that can have a big chance to be significant between them to do our measurement. Another important contribution, that there are few researchers that they did a similar research specifically in hotels. Also, cause of the low sample we use ACP to be sure of results obtained and to be able to select just variables that can have a positive impact on innovation.

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Contribution statement

- The contribution to knowledge: for our research the contribution here is which variables between all variables used in our research can have a positive relation and a positive impact on all innovation (service, process, marketing and organizational innovation).

- The contribution to theory: the addition of new variables from different articles (creativity, regional factors, national and international factors…) and from different sectors and their combination of them (12 variables) on one sector (touristic sector). Those 12 variables are summarized in three categories: internal, external and environmental factors.

- The policy and practice contribution: for the policy, this research helps the government to know which variables can participate to ameliorate the innovative capability of Tunisian hotels. And for the practice contribution, the application of the ACP method to summarize variables used in just 4 variables (human supports, external organizational supports, regional and monetary supports and age) and to be sure about results obtained.

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