The absorptive capacity as a key success factor in international strategic alliances: a study of Tunisian firms

Fadoua Hamdani*

Department of Management,
School of Business,
Sfax University,
Tunisia
Email: hamdeni.fadoua08@gmail.com
*Corresponding author

Lazhar Ayed

College of Business,
Umm Al Qura University,
KSA
and
Department of Marketing,
School of Business,
Sfax University,
Tunisia
Email: lazhar.ayed@gmail.com

Bronwyn Wood Aisha Boulanouar

Marketing Department at Sultan Qaboos University,
Waikato, New Zealand
Email: aishaofnz@gmail.com

Abstract: International strategic alliances (ISAs) are an engine of corporate business development in Tunisia. This research – in accordance with the knowledge-based view – seeks to identify the role of absorptive capacity as a key success factor. In a two-step process, qualitative research was first conducted to centre the research on the characteristics of the Tunisian context. This was followed by quantitative research using a SEM method with data collected from 119 Tunisian firms allied with foreign firms. Results show that alliance experience, and access to the knowledge of the ally, are the most important factors denoting absorptive capacity in this context. Companies engaged in ISAs, with much technological diversity, need to stimulate interest in research and development (R&D) to improve the abilities of their employees and keep them motivated. This leads to an internalisation of knowledge transfer which stimulates business development and leads to successful alliances in terms of effectivness and innovation.

Keywords: international strategic alliances; ISAs; absorptive capacity; strategic alliance success; learning.

Reference to this paper should be made as follows: Hamdani, F., Ayed, L. and Boulanouar, B.W.A. (2017) 'The absorptive capacity as a key success factor in international strategic alliances: a study of Tunisian firms', *J. International Business and Entrepreneurship Development*, Vol. 10, No. 2, pp.138–155.

Biographical notes: Fadoua Hamdani is a researcher in strategic management with a special interest in international business and she has practical experience in the management of international strategic alliances. She received her Master of Science in Business and International Economy: Information System and Strategy in 2010 and her PhD in Business in 2014 from the Faculty of Economics and Management (Sfax, Tunisia). She also has teaching experience since 2011 in the School Of Commerce (Sfax, Tunisia).

Lazhar Ayed received his BSc in Economics and Social Sciences from Tunis El Manar University in 1997 and his MBA in Marketing and Data Analysis from the University of Quebec at Montreal, Canada in 2002. He earned his PhD in Business Strategies from Tunis Al Manar University in 2009. His research thesis is done under the supervision of Canadian and Tunisian professors. He is now serving as an Assistant Professor (Visitor) of Strategies and Data Analysis in the College of Business at Umm Al-Qura University, KSA where he joined in 2012. He works as a Marketing Manager at CFH Security in Canada from 2000 to 2004, a Lecturer in the School of Economics and Commerce (Tunis, Tunisia) from 2004 to 2006, a Lecturer and Assistant Professor in the School of Commerce (Sfax, Tunisia) from 2006 to 2012.He teaches principles of management, data analysis, research methodology, cost accounting, etc. He has published books and scientific papers in different journals.

Bronwyn Wood Aisha Boulanouar has a consulting, research and teaching background in consumer research, especially consumer values, and with a special interest in Islamic marketing. She serves as Associate Editor of the *International Journal of Islamic Marketing and Branding*, and on the Senior Editorial Advisory Board of the *Journal of Islamic Marketing*. She is also Country Chair (Oman) for the Global Islamic Marketing Conference.

1 Introduction

This paper aims to examine the role of absorptive capacity in the success of international strategic alliances (ISAs) from the knowledge-based view.

ISAs are considered an effective way to take up the challenges of globalisation with particular regard to those related to technological development: this is an important lever for competitiveness and business development in firms through the acquisition of new knowledge and ideas (Doz and Hamel, 1998; Oreal, 2008; Blanchot et al., 2008). Consequently, the importance of these international alliances is growing in developing countries such as Tunisia. Working in collaboration with international business partners leads to the expansion of ideas, expertise and the generation of innovative plans which help to generate stakeholder value. Inadequacies in resources, a situation that has increased following the revolution in Tunisia, in parallel with an intellectual and cultural revolution, mean that ISAs are a recommended course for local companies in light of the opportunities they offer, especially in terms of the transfer of new knowledge and also of sharing resources.

The ability to acquire both new knowledge and new ideas from a foreign partner, and then to transform this into products, processes and organisational systems, is the definition of the absorptive capacity (David and Foray, 2002).

This improvement in the absorptive capacity for allied firms encourages exploration and description of possible approaches to enhance ISAs successes through maximising absorptive capacity in a developing country (such as Tunisia). Therefore, it is important to find out the nature of the impact of the absorptive capacity on the success of the ISAs.

The purpose of the study is to investigate how absorptive capacity can both help firms in ISAs and lead to their success. Our research questions are:

1 How can we explain the success of ISAs in the Tunisian context?

2 What are the prerequisites for assessing the absorption capacity and its components in this context?

3 How can we consider the absorption capacity as a key success factor of Tunisian ISAs?

To answer these questions, both qualitative (exploratory research/action research and interviews) and quantitative (confirmatory) research methods are employed to illuminate the issue. Initially, a literature review is presented, followed by the research design and the methodological treatment. Findings are then presented and discussed. Finally, we conclude by identifying limitations and avenues for future research.

2 Literature review

We define a strategic alliance (SA) as a cooperative agreement between two or more organisations characterised by the sharing of physical and/or intangible resources (Blanchot et al., 2008), implicit or explicit strategic objectives, and innovation.

The learning aspect is what distinguishes SA from other forms of partnerships, such as networks (Benoit and Milena, 2009). The existing literature has been able to identify two types of relationships between learning and SA.

First, Doz (1996) shows that the SA success depends on learning. According to author the successful alliance projects are highly scalable and go through a series of interactive learning reassessment and adjustment cycles. However, projects that are in difficulty, in contrast, are very inertial, with little learning or diverging learning between cognitive understanding and behavioural adaptation, or frustrated expectations.

In contrast, the alternation of activities that promote learning by processing and by transfer such as SA form a learning factor (Chevalier, 2004).

In addition, a SA with a foreign partner can create a forced knowledge transfer: the foreign ally may require the use of new working procedures to conform to its standards, or new technologies or even new skills (which can be transferred through training, according to Hamdeni and Affes, 2012). Doz and Hamel (1998) consider ISAs as responses to globalisation and trade in economic activities and technologies. According to Bencharif and Belkahia (2009), to take up the challenges created by the acquisition of knowledge and technological accumulation, Maghreb countries will radically improve their knowledge economy. It is a major challenge that can only be addressed by building a true culture of collaboration and partnership.

Indeed, knowledge transfer promotes advantages for a company situated in a developing country. These benefits include technology transfer, growing autonomy for companies called to compete in an area of globalisation, innovation and an increase in individual, collective and organisational performance (Mustar and Pénan, 2001).

The exploitation of these benefits can lead to the ISAs success provided they have good absorptive capacity.

Companies with strong absorptive capacity are better able to identify external knowledge and to exploit it to lead to a successful SA. A company that has one or more foreign partners has to stimulate its absorptive capacity to benefit from knowledge transfer, it is then embodied in developing products, processes and organisational systems (David and Foray, 2002; Akmal and Desalegn, 2014).

Multiple conceptual and/or empirical research has discussed the concept of organisational absorptive capacity according to different theoretical perspectives: theories of learning, managerial cognition, dynamic capacities, innovation, human resources (Cohen and Levinthal, 1990; George et al., 2001; Zahra and George, 2002;Chauvet, 2003; Minbaeva et al., 2003; Schmidt, 2005; Matusik and Heeley, 2005; Zahra, 2005; Sampson, 2007; Xia and Roper, 2008; Murovec and Prodan, 2008; Alan et al., 2008; Sazali, 2009; King and Lakhani, 2011; Flatten, 2011; Omar et al., 2011; Lin et al., 2012).

A synthesis of this research distinguishes the existence of two main models conceptualising absorptive capacity. The first is to use items that operationalise the acquisition, assimilation, transformation and exploitation of new knowledge (George et al., 2001; Zahra and George, 2002; Chauvet, 2003; Zahra, 2005; Flatten, 2011). The second is to use other variables related to the theoretical perspective such as learning theory: prior learning, adoption, invention, experience, technological distance, R&D, or human resources theory: capacity and motivation of employees, ability of individual absorption (Cohen and Levinthal, 1990; Minbaeva et al., 2003; Schmidt, 2005; Matusik and Heeley, 2005; Sampson, 2007; Xia and Roper, 2008; Murovec and Prodan, 2008; Alan et al., 2008; Sazali, 2009; Omar et al., 2011; King and Lakhani, 2011; Flatten, 2011; Lin et al., 2012).

The distinction between these two methods does not prevent the overlapping of the two methods with regard to, particularly, the ability of employees.

For research situated in an inter-organisational context, R&D (Cohen and Levinthal, 1990; Xia and Roper, 2008; Lin et al., 2012), ability of employees, motivation of employees (Minbaeva et al., 2003; Omar et al., 2011) and technological diversity (Sampson, 2007; Lin et al., 2012) are the dimensions of absorptive capacity.

3 Research approach and methodology

As stated earlier, our research consisted of two phases. The first, an action research stage, involved seven months of professional experience in a project designed to build a base of operations for oil and gas in Tunisia (action research). This project was the subject of an ISA between a Tunisian, and two multinational, companies. After this exploratory experience we conducted interviews with the managers of allied Tunisian and foreign companies regarding their two international alliances in Tunisia.

The aim of the action research phase was to live the context of the international alliance and monitor the phenomena of learning and knowledge transfer in this alliance. A number of issues were highlighted through this process. First, an international alliance

presents an opportunity for continuous learning for the employees of the Tunisian company. Secondly, the response to procedural requirements and practices of the multinational requires this continuous learning of new knowledge, creating an iterative necessity within the ISA.

This knowledge is transferred through quality procedures, working documents, sites of multinational companies and their databases (which are more or less accessible), and also through 'word of mouth' (regular and special training, daily, weekly, and monthly meetings).

Thirdly, the governance of the alliance relationships of multinational firms has an impact on the process of knowledge transfer. Therefore, these multinationals tried to enhance this transfer in order to see the project succeed despite the confidentiality of some knowledge.

The action research phase allowed us to build two interview guides oriented on these findings: one for the managers of the Tunisian firms and the other for the managers of the foreign firms.

We interviewed three managers and three engineers involved in two ISAs in Tunisia. Two of the interviewees were affiliated with multinationals. Following a process of thematic analysis, we were able to identify several issues.

Firstly, the governance of alliance relationships by foreign companies extends significantly beyond the terms of the contracts to reach as far as inside the internal management of Tunisian companies. This practice occurs as foreign companies seek a guarantee of the performance of the Tunisian partners' work.

Secondly, these alliances are the real motors for the transfer and the learning of various skills and are very important for business development in Tunisia, especially given the technological diversity among the allies.

Thirdly, the knowledge transferred to Tunisian companies through these alliances can be classified into two types: know how (technical knowledge, quality or safety); and also know being (new culture that forces employees to develop their performance).

The mode of knowledge transfer is via documents, software, databases, machines, products, or by word of mouth (training, formal and non-formal meetings, events).

However, foreign companies restrict access to knowledge by providing only the information necessary for the performance of the work at hand, which can be an obstacle hindering the transfer of knowledge and skills development of Tunisian companies.

In fact, according to our exploratory theoretical study, knowledge transfer promotes advantages for the company from the developing country side of the equation. These benefits include technology transfer, the growing autonomy of companies called on to compete in the area of globalisation, innovation and an increased individual, collective and organisational performance (Mustar and Pénan, 2001). The exploitation of these benefits can lead to significant ISA success, provided the firm has a good absorptive capacity.

In the second phase, confirmatory research, we looked both to the literature and to our first phase to choose two factors of absorptive capacity – namely, alliance experience and knowledge access – and four dimensions of the absorptive capacity – namely, R&D, employees' ability motivation of employees and technological diversity.

Table 1 Concepts and variables

Variables	*Items*	*Operationalisation*	*References*
Factors of absorptive capacity	Alliance experience	1 ISA number	Sampson, R. (2007)
		2 ISA age	King and Lakhani (2011)
	Knowledge accessibility	Extent of knowledge access	Marchand et al. (2007)
		Degree of access to partner knowledge	Developed
		Degree of access to partner databases	Developed
Absorptive capacity	Technological diversity	1 Type (s) of technological diversity (MCQ with five choices)	Errabi and Lebas (2009)
		2 Technological distance	Lin et al. (2012)
		3 Total difference in technology category	
	R&D	1 Investment in R&D	George et al. (2001)
		2 Intensity of R&D	Xia and Roper (2008)
	Ability of employees	1 Competence of employees	Minbaeva et al. (2003)
		2 Training	
		3 Level of education	
	Motivation of employees	1 Degree of compensation based on performance	Minbaeva et al. (200)3
		2 Degree of promotion according to merit	
Success of the alliance	Effectiveness and improvement of the alliances	1 Degree of achievement of the major goal of the alliance	Das and Teng (2003)
		2 Degree of improvement of the alliance	Lin et al. (2012)
	Innovation	1 Product innovation	Murovec and Prodan (2008)
		2 Innovation in process	

The dimensions of the success of SA considered are the effectiveness of the alliance and innovation through the alliance.

3.1 Variables and hypothesis

Abreu et al. (2006) and King and Lakhani (2011) support the hypothesis of the effect of alliance experience on absorptive capacity. Indeed, the repeated commitments in SA allow the company to create codified routines, policies and procedures, as well as tacit knowledge with respect to the overall management of the alliance (Rothaermel and Deeds, 2006).

The experience stated in our assumptions pertains to the experience that Tunisian companies could acquire following international alliances.

Based on the theory of learning and what was developed, we suggest that the absorptive capacity of the firm develops through repeated commitments to alliances over time hence the hypothesis:

H1 The alliance experience has an impact on the absorptive capacity of the knowledge of the receiving company.

From this general hypothesis we have derived four assumptions regarding each component of absorptive capacity: the ability of employees, employee motivation, R&D and technological diversity. However, the relationship of alliance experience with the technological diversity and employee motivation are not discussed in the literature hence, this research will, similarly, not examine these concepts.

Several authors such as Rothaermel and Deeds (2006), Zahra et al. (2006) and Tijani (2011) have discussed the association between experience and the ability of employees, which is the subject of the first sub hypothesis:

$H_{1'}$ Experience of an alliance has an impact on the ability of employees.

Sampson (2007) examines the effect from the alliance experience on R&D, and Schmidt (2005) on experience. Therefore, both authors inform the sub-hypothesis:

$H_{1''}$ Experience of an alliance has an impact on R&D.

Relationships between the variable alliance experiences are identified; in the following we are interested in the second variable prior to the absorptive capacity.

Knowledge can be acquired only if it is accessible, but accessibility does not guarantee learning: learning effectiveness is paramount. Indeed, because of differences in abilities, access to knowledge does not always lead to its acquisition. Many authors have studied the link between access to knowledge in SA's and absorptive capacity (Simonin, 1999; Jabar et al., 2011). Indeed, alliances play an important role as mechanisms for access to knowledge. In the context of ISAs characterised by increased technological diversity, foreign strategic allies are aware of the value of their knowledge and remain reticent regarding their making it available. However, the potential receivers of knowledge recognise the value it holds is even seeking access to knowledge in order to assimilate it.

Based on qualitative analysis and the theory of knowledge-based view, this research supports the hypothesis:

H2 Access to knowledge in ISAs has an impact on the absorptive capacity of the knowledge of the receiving company.

The relationship between access to knowledge with regard to R&D is not discussed in the literature, nor in this research. However, the association between access to knowledge and the ability of employees is considered by Simonin (1999) and Jabar et al. (2011) hence the sub-hypothesis:

$H_{2'}$ Access to knowledge in ISAs has an impact on the ability of the employees of the receiving company.

Accessibility of knowledge in ISAs may be at the base of the efforts of companies receiving knowledge to motivate their employees (Simonin 1999; Jabar et al., 2011), leading to the sub-hypothesis:

$H_{2'}$ access to knowledge in ISAs has an impact on employee motivation.

In addition, the relationship between technological diversity and accessibility to knowledge is highlighted in our qualitative research. In examining these concepts in the literature, this interference is initiated by Cohen and Levinthal (1990), followed by Sampson (2007). According to these authors and due to the asymmetry of knowledge between the allies, if technological diversity is weak or nonexistent, access to knowledge will have no meaning. This leads to the third assumption, justified by the knowledge-based theory (KGB):

H3 Technological diversity among allied companies has an impact on access to knowledge.

Most contemporary companies claim that the development of the ability of employees lies at the heart of their values statements and strategies. Morgan (2006) states that the level of an employee's ability is related to international development. Yet, according to the same researcher, the concept of capacity and its practice remain perplexing and even unclear, especially in international development. Its inherent substantive content is related to the development of human resources (Morgan, 2006). Based on the theory of human resources we propose the following hypothesis:

$H_{4'}$ The ability of employees has an impact on the effectiveness of ISAs.

The association between the ability of employees and innovation is defended by the works of Cohen and Levinthal (1990) and in the works of Xia and Roper (2008). In fact, innovation is the implementation of a product (good or service), and a new or significantly improved processes, a new organisational method in business practices, a workplace organisation or external relationships (OECD). This implementation is inevitably dependent on the capacity of human resources to ensure the internalisation of the novelty in its practices. To examine this, we propose the following hypothesis:

$H_{4''}$ The ability of employees has an impact on innovation in the ISA.

The motivation of employees is determinative of the absorptive capacity insofar as individuals should have a simultaneous ability and a willingness to learn and use new knowledge. According to Minbaeva (2005), human resource management which includes improving the capacity and motivation of employees' receipt of knowledge, presents the key to the success of the transfer and the internalisation of external knowledge. Therefore, companies that value the capacity development of their employees and ensure their motivation promote an environment of learning and improve knowledge transfer.

This research work adopts this perspective, namely the role of human resource management in the absorptive capacity through variables such as training, evaluation and motivation in order to ensure a better outcome. We, therefore, propose the following hypothesis:

$H_{5'}$ Employee motivation has an impact on the effectiveness of ISAs.

The link between motivation and innovation is even older than the theory of economic development. Indeed, innovation is subject to creativity, invention and dissemination that require not only the ability of employees, but also their motivation (Schumpeter, 1934). This suggests the following hypothesis:

$H_{5''}$ Employee motivation has an impact on innovation in ISAs.

R&D was conceived as a generator of new information, to improve the ability of the firm to assimilate and exploit existing information – namely, absorptive capacity. Cohen and Levinthal (1990) argue for the effect of investment and the intensity of R&D on the effectiveness of corporate earnings. Xia and Roper (2008) show that the continuity of R&D influences the outcomes of SA's in the biopharmaceutical industry.

Therefore, R&D plays a very important role in the effectiveness of alliances. Hence the formulation of the next hypothesis, which has its foundations in the knowledge-based view:

$H_{6'}$ R&D has an impact on the effectiveness of ISAs.

Abreu et al. (2006) and Lin et al. (2012) discuss the impact of the intensity of R&D on innovation performance. Knudsen et al. (2001) conducted a hypothetical-deductive research on a sample of 577 alliances. Following this they validated a set of results regarding R&D and absorptive capacity. These researchers have shown that high intensity R&D, in the context of participation in SA's and openness to sharing knowledge, are important for innovation performance.

Based on these works, the next hypothesis is as follows:

$H_{6''}$ R&D has an impact on innovation in ISAs.

When technological diversity increases, coordination becomes more important, and the bilateral contract becomes less attractive than the fair joint venture (Sampson, 2007). In addition, Lin et al. (2012) claimed that inter-firm learning opportunities are positively correlated with technological diversity, as innovations or new combinations are possible when diversity increases, so this relationship may not be monotonic. Based on the theory of the knowledge-based view and what has been advanced, research helps to support the hypothesis:

H7 technological diversity among allied companies has an impact on the success of the ISA.

The range of technological diversity may encourage these companies to benefit from collaboration in terms of objectives and improvement (Lin et al., 2012), hence the sub-hypothesis:

$H_{7'}$ Technological diversity among allied companies has an impact on the effectiveness of the alliance.

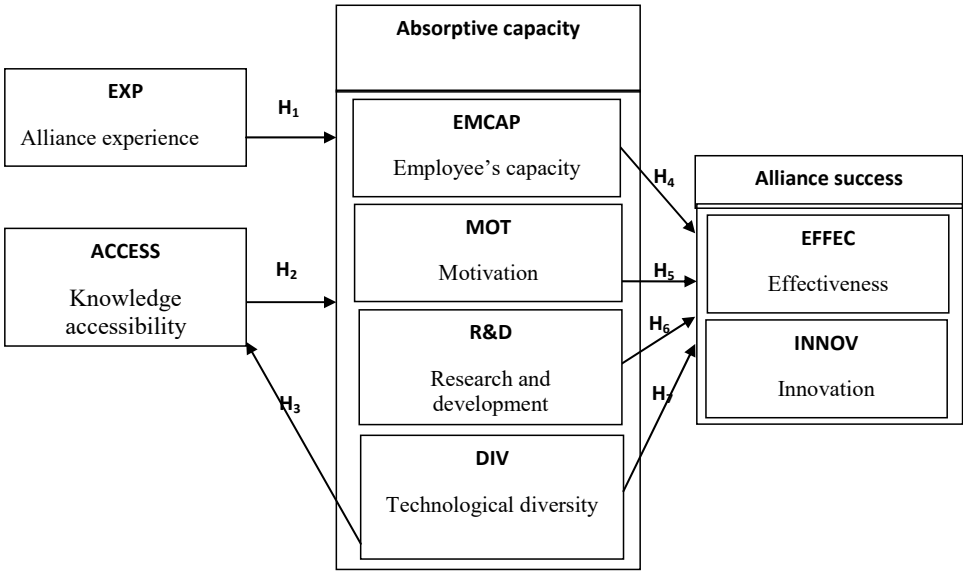
The association between technological diversity and innovation was explored by Sampson (2007) and Lin et al. (2012). These authors argue that the allied companies with significant technological diversity earn more from their collaboration in terms of innovation; hence the sub-hypothesis:

$H_{7''}$ Technological diversity among allied companies has an impact on innovation in the company receiving knowledge.

3.2 Results

In our research work, we proposed testing the model on ISAs in Tunisia owing to the obvious richness of the context in terms of opportunities for learning, particularly after the recent revolution.

Figure 1 Research model



To test the validity of the research model, we applied an exploratory factor analysis of all the measurement items in order to verify the structure of the constructs. The items are factored as the cumulative variance equals to 76.924% and the Keyser Meyer Olkin to 0.729. To assess the quality of the measurement model and test the hypotheses of the research, structural equations are solicited (AMOS 20).

3.3 The measurement model results

The first step undertaken was to evaluate the quality of model fit through three types of indices: adjustment absolute indices, incremental indices and parsimonious indices (Akrout, 2010).

The goodness fit of the measurement model is acceptable. All fit indices are consistent with standards (Akrout, 2010). Indeed, GFI, NFI, TLI and CFI are greater than 0.9. The AGFI, meanwhile, is 0.789, judged as acceptable by Didellon and Valette-Florence (1996) as long as it is close to '0.9'. The ECVI PNFI, PCFI and PGFF indicate good parsimony of the model.

Measurement scales of the variables are reliable as the Cronbach alpha values indicate (> 0.7) (Evrard et al., 2003). The test of validity of these scales checks on the suitability between constructs and measurements. This validity is of two types: convergent validity and discriminant validity.

Convergent validity determines how far measurements of the same concept by different methods are convergent. To do so, the calculation of the average variance extracted is of prime importance.

All the values of Joreskög Rhô φ corresponding to each latent variable indicate that the average variance extracted are all above 0.5, hence the convergent validity of the measurement scales is verified (Fornell and Larker, 1981).

All values of chi square of measurement models with constraints exceed those of the same models without constraints; hence the verification of the discriminant validity measurement scales according to the approach of Bagozzi (Akrout, 2010).

3.4 The structural model results

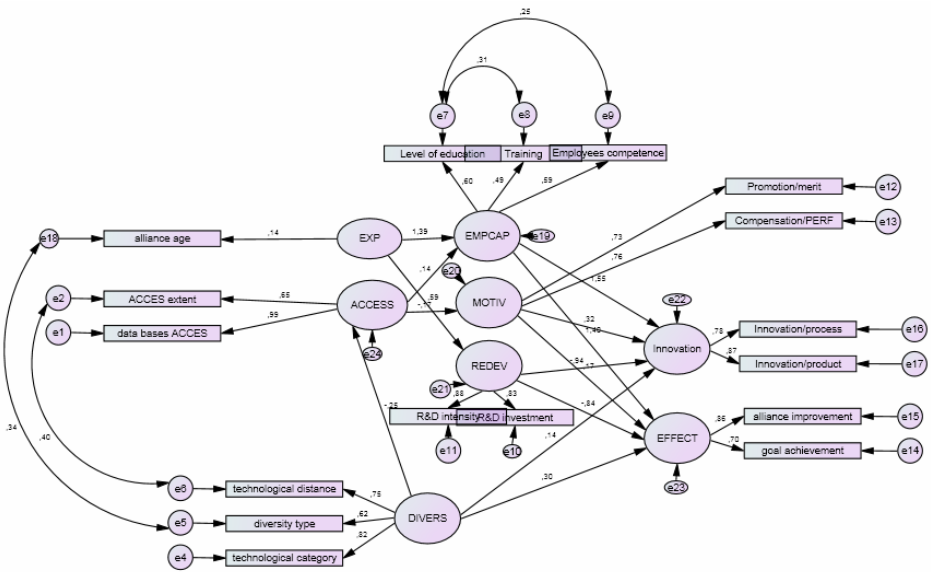
The evaluation of goodness fit of the structural model (Table 2) requires the verification of three types of indices: absolute fit indices, incremental indices and parsimonious indices (Akrout, 2010).

Table 2 Goodness of fit of the structural model

Types of indices	*Indices*	*Values*
Absolute fit indices	CMIN (chi square)	1.553
	GFI	0.871
	AGFI	0.806
	RMSEA	0.068
Incremental indices	NFI	0.821
	CFI	0.925
	TLI	0.899
Parsimonious indices	ECVI	2.207 < 2.593
	PNFI	0.616
	PCFI	0.693
	PGFI	0.580

Notes: DM: default model; SM: saturated model.

Figure 2 Structural model (see online version for colours)



The fit indices are consistent with the standards adopted by Akrout (2010) which proves the goodness of fit of the structural model. However, this adjustment supposes covariance between the latent variable which supposes a covariance between the errors of the technological diversity items with the items of seniority, accessibility and employees' capacity. The structural model is shown in Figure 2.

The research hypotheses are tested through the method of structural equations. The test results of the hypotheses are presented in the Table 3.

Table 3 Hypotheses testing

Hypotheses				*Estimate*	*S.E.*	*C.R.*	*P*	*Testing at the level of 5%*
EMPCAP	<---	EXPER	$H_{1'}$	3.202	3.396	.943	.346	Not confirmed
REDEV	<---	EXPER	$H_{1'}$	2.950	1.399	2.108	.035	Confirmed
CAPEMP	<---	ACCESS	$H_{2'}$	.069	.033	2.084	.037	Confirmed
MOTIV	<---	ACCESS	$H_{2''}$	–.126	.085	–1.487	.137	Not confirmed
ACCESS	<---	DIVE	H_3	–.280	.145	–1.923	.054	Confirmed
EFFEC	<---	EMPCAP	$H_{4'}$	2.291	.535	4.281	***	Confirmed
INNOV	<---	EMPCAP	$H_{4''}$	2.553	.635	4.023	***	Confirmed
EFFEC	<---	MOTIV	$H_{5'}$	.183	.115	1.590	.112	Not confirmed
INNOV	<---	MOTIV	$H_{5''}$	.346	.122	2.835	.005	Confirmed
EFFEC	<---	REDEV	$H_{6'}$	–.627	.228	–2.748	.006	Confirmed
INNOV	<---	REDEV	$H_{6''}$	–.706	.260	–2.714	.007	Confirmed
EFFEC	<---	DIVE	$H_{7'}$	.267	.093	2.880	.004	Confirmed
INNOV	<---	DIVE	$H_{7''}$	.128	.086	1.488	.137	Not confirmed

4 Discussion

According to these results the experience of an alliance being formed gradually over time may cause activities in R&D. Furthermore, the seniority of the alliance may also lead to enhancing the quality of these activities in R&D.

In general, the alliance challenge is more favourable to the development of employee skills the Tunisian context when knowledge of the foreign ally is at the disposal of employees.

Moreover, to achieve the objectives of the alliance and reach its improvement, firms rely on human resources potential. Also, the innovation through the alliance depends on the employees' ability to develop, learn and internalise new knowledge from the foreign ally as part of the alliance. The internalisation of new knowledge requires that these employees use new procedures or technologies work and create new products or services. However, to undertake these substantial changes and give rise to innovation, firms are expected to invest in improving the capacities of their employees through the proper selection of new staff and the training of existing staff.

Similarly, results showed that motivation is a key factor for innovation. These firms, by ensuring relatively stable characteristics in their employees are considered as a necessary incentive for innovation.

The Tunisian firms in the sample failed to promote the factors of motivation in order to exploit the access to knowledge of the foreign allies: when knowledge of the foreign company is accessible, Tunisian companies do not encourage motivation in their employees to promote learning.

Motivation is built up based on the attention that firms pay to several dimensions such as compensation according to performance and promotion based on merit (Gharbi and Ayed, 2012). Thus, the ability and motivation of employees appear to be two components of the absorptive capacity and key success factors of ISAs in this context.

In addition, according to these results the investment and the intensity of R&D are important for the internalisation of new knowledge and the success of the alliance (H_5 confirmed). This impact has not been verified by Xia and Roper (2008) concerning the intensity of the R&D, but these researchers has verified the continuity of the R&D impact on the performance of the alliance (sample: 325 alliances). Lin et al. (2012) have shown that R&D alliances, in particular, are more suitable than other types of partnerships in terms of effectiveness.

Technological diversity is recommended in the choice of the foreign ally in the light of its effect on the effectiveness of the alliance, which is verified in the context of ISAs in Tunisia.

Although these alliances provide a fertile environment for trade and prosperity, these companies fail to exploit the technological diversity for innovation, according to the results.

This does not mean that employees of Tunisian firms are taking advantage of this contact by learning new knowledge only. To achieve innovation, learning will be followed by an internalisation of this knowledge (Ritala and Hurmelinna-Laukkanen, 2013). The internalisation of new knowledge requires that employees use these new procedures or technologies of work and develop new products or services.

4.1 Research implications

This research has three main implications: ISA case of action research in the case of ISAs, exploration of managers who are engaged or interested in ISA, and research in absorptive capacity and the success of ISAs.

Concerning action research, a new procedure for billing was applied in this ISA and the Tunisian company was able to take advantage of this.

In the managerial domain, a document containing the managerial recommendations is available to companies that participated in this survey and expressed their interest in the results.

Theoretically, our concept of absorptive capacity includes two theories: the theory of human resource management and the knowledge-based view. However, according to the literature review of inter-organisational contexts, researchers adopt one theory in their empirical studies of the absorptive capacity, despite the inclusion of many in the theoretical studies. We believe that of the absorptive capacity, this 'black box' that acts as a barrier or a moderator to the internalisation of knowledge (Ritala and Hurmelinna-Laukkanen, 2013), cannot be designed by neglecting either the strategic or the social aspects. The social aspect is concretised by taking into account the variables of the theory of human resource management. The strategic aspect of the absorptive capacity in research is accomplished by considering the activities of R&D. The focus on this dimension as an indicator of absorptive capacity, although it does not necessarily bring

immediate results, is justified considering new knowledge as a sustainable source of business development for companies.

5 Conclusions and recommendations

This research examined the impact of the organisational absorptive capacity on the success of ISAs taking into consideration learning benefits for business development in the Tunisian context. Based on exploratory action research, four key variables comprising the absorptive capacity have an impact on the success of the SA: R&D, competence of the employees, motivation of the employees and technological diversity. The effects of these variables are tested throughout the sample of 119 firms in Tunisia through using a SME approach.

Firstly, our research relates the absorptive capacity and the success of alliances to each other as a catalyst for business development. This issue, treated from the perspective of knowledge-based view, reflects the strategic importance of knowledge management for the firm. Indeed, the knowledge acquired and absorbed by the firm is of great importance for the success of the SA in terms of efficiency and innovation and, thus, for generating business development for the firm. ISAs promote the transfer of knowledge and expertise to Tunisian firms as well as contribute to the development of new products and technologies.

Secondly, the development of the conceptual model for the research is original and promising. On the one hand, taking into account the experience of the alliance and access to knowledge is foundational to the company context prior to absorptive capacity. These factors prior to absorptive capacity are neglected in empirical works and their study remains limited in theoretical research studies. Only the research works of Liao et al. (2007) took into consideration the effect of the accessibility of knowledge on the absorptive capacity without being tested. In the context of our research, the effects of access to knowledge and experience of the alliance on the absorptive capacity are confirmed. On the other hand, the conception of success of the alliance, especially in research on absorptive capacity, in our research considered two theories: the managerial theory, which emphasises the effectiveness of the alliance, and the theory of innovation. This concept has given rise to a scale of measurement of the success of SA's composed of the two dimensions: effectiveness and innovation.

Finally, the methodological contribution of the study is made by following a mixed approach (qualitative and quantitative) characterised by a triangulation of empirical methods: research/action research, a survey using semi-structured interviews and a structured questionnaire. Research/action research allowed an approach where the researcher became an actor in the ISA. This rapprochement has facilitated the detection of key reflections in the research on knowledge transfer between multinationals and the Tunisian company. In fact, this transfer of knowledge, which is a common and easily detectable phenomenon, is followed by a 'forced learning' within the receiving Tunisian company in view of the quality requirements imposed by multinationals. The latter provides and controls the transfer by training, meetings and the follow-up. However, the benefits of knowledge transfer in ISAs related to business development depends on the absorptive capacity of receiving companies.

In view of these results, we suggest prescriptions classified according to a temporality alliance: before and during the alliance and other valuable prescriptions for both phases.

5.1 Phase one: before the alliance

To bypass the competition, accelerate business development and ensure internal growth, the choice of alliances with foreign companies is a major challenge and a primarily significant choice for the strategy.

We suggest that international alliances of firms in developing countries can extend their best knowledge, their innovations and, therefore, their business development.

The need, for a firm that wants to grow, is to transfer knowledge to their employees.

- Priority should be given to technological alliances with great diversity.
- In preparing the contract, companies must negotiate access to the knowledge of the foreign ally (databases, sites, documents, procedures, working methods, management software).

5.2 Phase two: during the alliance

After stabilising its alliance, the attention of the company should be directed to the requirements of knowledge transfer and the success of the alliance.

The proper conduct and continuity of these alliances allow for benefits from the experience of the alliance that develops the capacity to absorb new knowledge.

The reuse of knowledge acquired through previous alliances also allows companies to enjoy the experience of alliance.

Tunisian firms can enjoy the benefits of access to knowledge – in terms of effectiveness and innovation and, therefore, of business development – if they develop the ability of their employees and encourage their motivation.

To achieve this, we suggest:

- Stimulation of R&D activities in terms of intensity and investment.
- Entrepreneurs in developing countries should select skilled employees, consider evaluations of their performance and nurture the improvement of their capacities through training.
- They must also motivate their employees to achieve their strategic objectives through these alliances and maintain innovation in both product and process. To do this, companies need to motivate staff by the principles of the compensation based on the performance and promotion by merit.

Some recommendations here may be in place in terms of good managerial practices already used by some managers, but research has found that most companies do not employ such practices. These recommendations are scientifically approved in Tunisia through our research. Those recommendations will lead to successful international alliances through innovation in product and process, achievement and improvement of strategic objectives through these alliances and business development.

Our ultimate goal is to contribute to the business development of Tunisian companies and the evolution of a knowledge management culture specifically, in the context of the cultural-revolution.

This research project is limited by not considering a particular type of company involved in an ISA. The justification for this is the difficulty of identifying companies

with ISAs before the survey. Using a non-probability sampling strategy, of 300 companies visited we have had only 119 valid responses.

This research can be improved by taking into consideration firm type or special industry, which can influence the absorptive capacity and the success of the ISA.

Some questions for future research are:

- How can power relations influence absorptive capacity in ISA?
- Can strategic fit (Hamdeni, F. and Haddar, M., 2011) have a moderating effect between the absorptive capacity and success of an ISA?

References

Abreu, M., Grinevich, V., Kitson, M. and Savona, M. (2006) 'Absorptive capacity and regional patterns of innovation', *North American Regional Science Council (NARSC) Conference*, Toronto, 16–18 November.

Akmal S. and Desalegn A. (2014) 'Marketing strategy in emerging market alliance: a longitudinal study', *JIBED*, Vol. 7, No. 4, pp.309–325.

Akrout, F. (2010) *Les Méthodes des Équations Structurelles*, Première éd., ISBN: 978-9973-9900-1-3, URM, Tunisie.

Alan, J., Arnold, E., Chitravas, C. and Sardana, D. (2008) *Absorbing Innovation by Australian Enterprises: The Role of Absorptive Capacity*, Working paper: Report on the Project for the Department of Industry, Tourism and Resources, Don Scott-Kemmis Australian Centre for Innovation, Australia.

Bencharif, A. and Belkahia, K. (2009) 'Les technopôles agroalimentaires dans les pays du Maghreb opportunités et spécificités', *Options Méditerranéennes*, Vol. 64, Série B, pp.232–238.

Benoit, S. and Milena, M. (2009) 'Un modèle pour des alliances stratégiques dans le cadre de la gestion d'événements sportifs au CANADA', Paper presented at *ASAC*, Niagara Falls, Ontario [online] http://luxor.acadiau.ca/library/ASAC/v30/TourismAndSportManagement/Papers/ParentSeguinCoteLeblondLaperle.pdf (accessed 10 May 2014).

Blanchot, F., Guillouzo, R. and Krauss, G. (2008) 'Rupture et finitude des alliances stratégiques', Paper presented at *2èmeconférence internationale sur le temps à Brest*, le 25–26 Juin [online] http://fr.scribd.com/doc/11501912/Rupture-Et-Finitude-Des-Alliances-Strategiques (accessed 24 August 2013).

Chauvet, V. (2003) 'Construction d'une échelle de mesure de la capacité d'absorption', *XIIème Conférence de l'AIMS Les Côtes de Carthage*, 3–6 Juin 2003, 29pp.

Chevalier (2004) *Apprentissage moteur et processus d'apprentissage*, Working paper UQAM Canada [online] http://www.er.uqam.ca/nobel/r12110/pdf/2apprentissage%20moteur%20et%20processus%20d'apprentissage.pdf (accessed 18 June 2012).

Cohen, W.M. and Levinthal, D.A. (1990) 'Absorptive capacity: a new perspective on learning and innovation', *Administrative Science Quarterly*, Vol. 35, No. 1, pp.128–152.

Das, T.K. and Teng, B-S. (2003) 'Partner analysis and alliance performance', *Scandinavian Journal of Management*, Vol. 19, No. 3, pp.279–308.

David, P.A. and Foray, D. (2002) 'Une introduction à l'économie et à la société du savoir', *Revue Internationale des Sciences Sociales*, Vol. 54, No. 171, pp.13–28.

Didellon, L. and Valette-Florence, P. (1996) 'L'utilisation des indices d'ajustement dans les modèles d'équations structurelles: présentation et recommandations d'usage', *Actes des 13èmes Journées Nationales des IAE*, Tome 2, Toulouse, pp.111–126.

Doz, Y.L. (1996) 'The evolution of cooperation in strategic alliances: initial conditions or learning processes?', *Strategic Management Journal*, Vol. 17, No. S1, pp.55–83.

Doz, Y.L. and Hamel, G. (1998) *Alliance Advantage: The Art of Creating Value Through Partnering*, 1st ed., Harvard Business Press, United States of America.

Errabi, K. and Lebas, C. (2009) *« Demand-Pull » ou « Technology-Push »: Survey de la littérature récente et nouveaux tests économétriques*, Thèse de Doctorat de Sciences Économiques Sous le direction de Christian LEBAS Présentée et soutenue publiquement le 31 mars 2009 à Université Lumière Lyon 2 École doctorale de Sciences Économiques et Gestion Faculté de Sciences Économique.

Evrard, Y., Pras, B. and Roux, E. (2003) *Market: Etudes et recherches en marketing*, 3ème ed., Paris, Dunod.

Flatten, T. (2011) 'A measure of absorptive capacity: scale development and validation', *European Management Journal*, Vol. 29, No. 2, pp.98–116.

Fornell, C. and Larker, D.F. (1981) 'Evaluating structural equations models with unobservable variables and measurement error', *Journal of Marketing Research*, Vol. 18, No. 1, pp.39–50.

George, G., Zahra, S., Wheatley, K. and Khan, R. (2001) 'The effects of alliance portfolio characteristics and absorptive capacity on performance a study of biotechnology firms', *Journal of High Technology Management Research*, Vol. 12, No. 2, pp.205–226.

Gharbi, H. and Ayed, T.L. (2012) 'The trust as a necessary condition but not sufficient for the psychological contract', *Journal of Human Resources Management Research* [online] http://www.ibimapublishing.com/journals/JHRMR/jhrmr.html, Article ID 951574, 15pp., DOI: 10.5171/2012.951574.

Hamdeni, F. and Affes, H. (2012) 'L'impact des systèmes d'informations et de la gouvernance sur le transfert du savoir dans les alliances stratégiques internationales: Le cas Tunisien', *17ème colloque de l'AIM*, Bordeaux France, 21–23 Mai 2012, 20pp.

Hamdeni, F. and Haddar, M. (2011) 'Succès des alliances stratégiques: Cas des entreprises Tunisiennes avec les entreprises étrangères', *Conférence de l'Atlas*, Paris, France, 26–27 Mai 2011, 44pp.

Jabar, J., Soosay, C. and Santa, R. (2011) 'Organizational learning as an antecedent of technology transfer and new product development: a study of manufacturing firms in Malaysia', *Journal of Manufacturing Technology Management*, Vol. 22, No. 1, pp.25–45.

King, A. and Lakhani, K.R. (2011) *The Contingent Effect of Absorptive Capacity: An Open Innovation Analysis*, Working Paper 11-102 at Harvard Business School, 3 April 2011.

Knudsen, M.P., Dalum, B. and Villumsen, G. (2001) 'Two faces of absorptive capacity creation: access and utilisation of knowledge', *Nelson and Winter Conference* organised by DRUID in Aalborg, Denmark, June.

Liao, S.H., Fei, C.W. and Chen, C.C. (2007) 'Knowledge sharing, absorptive capacity, and innovation capability: an empirical study of Taiwan's knowledge-intensive industries', *Journal of Information*, Vol. 33, pp.340–359.

Lin, C., Wu Y., Chang, C., Wang, W. and Lee, C. (2012) 'The alliance innovation performance of R&D alliances – the absorptive capacity perspective', *Technovation*, Vol. 32, No. 5, pp.282–292.

Marchand, L., Lauzon, N. and Pérès, L. (2007) *Formalisation et transmission des savoirs tacites des travailleurs d'expérience et formation par les TIC*, *Synthèse, défis et recommandations*, CPMT, Montréal.

Matusik, F. and Heeley, B. (2005) 'Absorptive capacity in the software industry: identifying dimensions that affect knowledge and knowledge creation activities', *Journal of Management*, Vol. 31 No. 4, pp.549–572.

Minbaeva, D. (2005) 'HRM practices and MNC knowledge transfer', *Personnel Review*, Vol. 34, No. 1, pp.125–144.

Minbaeva, D., Pedersen, T., Björkman, I., Fey, C.F. and Park, H.J. (2003) 'Knowledge transfer, subsidiary absorptive capacity, and HRM', *Journal of International Business Studies*, Vol. 34, No. 6, Decade Award Issue: Foreword from the Editor-in-Chief (November, 2003), pp.586–599.

Morgan, P. (2006) *Paradigm Change in European Studies in Australia*, Christine Weller (Ed.), Axel Fliethmann, Germany.

Murovec, N. and Prodan, I. (2008) 'The influence of organizational absorptive capacity on product and process innovation', *Organizacija*, Vol. 41, No. 2, pp.43–49.

Mustar, P. and Pénan, H. (2001) 'Contrats de licence et innovation', *Encyclopédie de l'Innovation*, Economica, Paris, 20pp.

Omar, R., Takim, R. and Nawawi, A. (2011) 'Measuring absorptive capacity in technology transfer (TT) projects', *Business Innovation and Technology Management International Summer Conference of Asia Pacific*, 10–12 July, pp.328–332.

Oreal, S. (2008) *Alliances Stratégiques*, Working paper: technical report, l'ESC Rennes School of Business, Rennes.

Ritala, P. and Hurmelinna-Laukkanen, P. (2013) 'Incremental and radical innovation in coopetition – the role of absorptive capacity and appropriability', *Journal of Product Innovation Management*, Vol. 30, No. 1, pp.154–169 [online] HYPERLINK "http://onlinelibrary.wiley.com/doi/10.1111/jpim.2013.30.issue-1/issuetoc.

Rothaermel, F.T. and Deeds, D.L. (2006) 'Alliance type, alliance experience and alliance management capability in high-technology ventures', *Journal of Business Venturing*, Vol. 21, pp.429–460.

Sampson, R. (2007) 'R&D alliances and firm performance: the impact of technological diversity and alliance organization on innovation', *Academy of Management Journal*, Vol. 50, No. 2, pp.364–386.

Sazali, A.W. (2009) 'The effects of absorptive capacity and recipient collaborativeness as technology recipient characteristic on degree of inter-firm technology transfer', *Journal of Social Sciences*, Vol. 5, No. 4, pp.423–430.

Schmidt, T. (2005) 'Absorptive capacity: one size fits all? Firm-level analysis of absorptive capacity for different kinds of knowledge', *Managerial and Decisions Economics*, Vol. 31, No. 1, pp.1–18.

Schumpeter, J.A. (1934) *The Theory of Economic Development, Transaction Publishers*, Harvard University Press Cambridge, England.

Simonin, B.L. (1999) 'Ambiguity and the process of knowledge transfer in strategic alliances', *Strategic Management Journal*, Vol. 20, No. 7, pp.595–623 [online] http://onlinelibrary.wiley.com/doi/10.1002/(SICI)1097-0266(199907)20:7%3C%3E1.0.CO;2-M/issuetoc.

Tijani, O. (2011) *La capacité d'absorption et le rôle de la gestion des resources humaines dans l'appropriation des connaissances dans les alliances stratégiques au Maroc*, Thèse de doctorat sous la direction de Jaussaux, J., Académie de Bordeaux Université de Pau et des Pays de l'Adour.

Xia, T. and Roper, S. (2008) *From Capability to Connectivity – Absorptive Capacity and Exploratory Alliances in Biopharmaceutical Firms: A US-Europe Comparison*, Working Paper No. 91, Warwick Business School University of Warwick Coventry, January 2008.

Zahra, S. (2005) 'A theory of international new ventures: a decade of research', *Journal of International Business Studies*, January 2005, Vol. 36, No. 1, pp.20–28.

Zahra, S. and George, G. (2002) 'Absorptive capacity: a review, reconceptualization, and extension', *Academy of Management Review*, Vol. 27, No. 2, pp.185–203.

Zahra, S., Sapienza, H.J. and Davidsson, P. (2006) 'Entrepreneurship and dynamic capabilities: a review, model and research agenda', *Journal of Management Studies*, Vol. 43, No. 4, pp.917–955 [online] http://onlinelibrary.wiley.com/doi/10.1111/joms.2006.43.issue-4/issuetoc.