

REVISITING MEASURE OF ABSORPTIVE CAPACITY: APPLYING THE SCALES IN SPANISH WINE INDUSTRY

Mahir Pradana, Telkom University
Ana Pérez-Luño, Universidad Pablo de Olavide
María Fuentes-Blasco, Universidad Pablo de Olavide

ABSTRACT

The purpose of this study is to investigate aspects of absorptive capacity (ACAP) as a driver for innovation among Spanish wine industry. We use Exploratory Factor Analysis (EFA) followed by Confirmatory Factor Analysis (CFA) to review the existing theories related to ACAP. From the research we conducted out of 111 wine companies in Spain, three factors are empirically proven to be in accordance with the theory, knowledge acquisition, assimilation and transformation. One other factor, knowledge exploitation, does not correspond with our empirical result. We have come to the conclusion that using other indicators related to knowledge exploitation capabilities might lead to more fit research model.

Keywords: Absorptive capacity, Organizational innovation, Organizational learning, Business administration, Factor analysis

INTRODUCTION

In this era of globalization, competitive performance is needed by companies to survive and be able to win the competition. As the challenge of competition increases, companies need to recharge quickly and efficiently innovate on new aspects (Floyd & Lane, 2000). The idea of knowledge absorption, followed by exploration and then exploitation has developed as a topic in research on innovation and business enterprises (Damanpour, 1991; Shane & Venkataraman, 2000). Knowledge will provide a role to absorb needs concerning exchanging activities among employees. According to Davenport & Prusak (1998), knowledge is information, contextual information, values, fundamental intuition and expert views that provides observations for new information for the working environment, especially the knowledge that leads to employees' productivity.

We examine the role of ACAP in terms of a process to identify and translate external knowledge inflows into organizational innovation. To support our examination, we choose tourism as the third biggest contributor to Spain's national economy, more specifically wine tourism. We use Spain wine companies to conduct our research because this industry has given massive contribution to the Spanish GDP, employ about 6.7% of workers in the food industry and generate a turnover of over five million Euros (ICEX, 2014).

In line with this research agenda, we gathered data from wine companies in Spain to measure the factors that explain absorptive capacity. There have been several articles on this similar issue (Giuliani, 2007; Galbreath et al., 2016; Stasi et al., 2016) to name a few. These studies found that the ability to share knowledge has different influences. As authors who

work on this issue, we see that this paper will be a great chance to focus on aspects of innovation among Spanish wine industry. Based on that purpose, this research aims to find out whether the existing constructs of ACAP is enough to explain the phenomenon among Spanish wine companies. The result from these studies will contribute to literatures related to new knowledge and innovation capabilities and in the end will enrich the innovation literature, provide detailed descriptions and provide information for company management policies.

LITERATURE REVIEW

As discussed in our introduction, absorptive capacity (ACAP) is the institutional capacity to acquire, integrate, incorporate and utilize new knowledge (Cohen & Levinthal, 2015). Other perspectives see capacity as part of organizational processes where it finds, assimilates, changes and exploits knowledge to trigger dynamic organizational capabilities (Zahra & George, 2002). This form of capacity is needed to gather external knowledge to smooth the process of innovation (Volberda et al., 2015; Cohen & Levinthal, 2015). Within a company, absorptive capacity is carried out in various ways. Determine how the organization that leads the R & D itself is better prepared to use data that can be accessed remotely. This shows the purchasing power of R & D association speculations (Damanpour, 1991, Cohen & Levinthal, 2015). Other studies that have strategies that are appropriate to their environmental conditions, they can improve higher performance (Pérez-Luño et al., 2014).

ACAP is also seen as the capacity of the company's ability to gather new external knowledge and assimilate and commercialize it (Lozano, 2014). It is important for companies to gather routines to manage information and influence from sustainable learning within a company (Zahra & George, 2015). Although formalization contributes to the transition capacity realized by the unit as predicted by Jansen et al. (2006), it does not reduce the potential of the unit's absorptive capacity. Well-designed regulations and procedures can provide information that allows all related parties, especially employees, to search for new knowledge from outside the environment then assimilate it (Adler & Borys, 1996; Lozano, 2014).

The study of Jansen et al. (2006) found that routine tasks increase capacity which is realized by internal working unit. This supports the agreed definition that absorptive capacity is always related to active learning and rich communication (Damanpour, 2017). Recently, more scholars have characterized absorptive capacity as a more useful ability in competitive solutions and knowledge, which can help companies and maintain a competitive advantage. With re-effectiveness and knowledge-based knowledge, companies with high absorptive capacity will agree to change, generating operational functions to improve performance (Jansen et al., 2006; Lozano, 2014; Larrañeta et al., 2007; Krstic & Petrovic, 2011).

Knowledge is one of the most critical factors to improve employees' ability to allocate innovation. Drucker (1988) argued that knowledge changes a person, it occurs when information becomes the basis for action, or collects information that allows a person or institution to take more effective actions from previous actions (Jackson et al., 2014). Nonaka & Takeuchi (1995) categorize knowledge into explicit knowledge, which is something that can be used with words and numbers, and can be delivered in scientific form, specifications, manual, etc. Knowledge of this matter can be immediately passed from one individual to another formally and systematically. 'Explicit knowledge' can also be described as a process, method, product design and pattern, adding to the experience of both individuals and society.

Knowledge is very personal and difficult to formulate, it is very difficult to communicate or communicate with others. Personal feelings, intuition, body language and physical performance are categorized as the second type of knowledge, which is known as 'tacit knowledge' (Larrañeta et al., 2007).

To develop effective abilities in dealing with problems, knowledge is not enough to be used individually (Cohen & Levinthal, 2015). In order for the work to be a 'center of innovation' and to assist knowledge from their place of business, organizational research must share the same linguistic and cultural codes (Youtie & Shapira, 2008). Without separating, corporate connections which are strengthened by higher closeness and institutionality, enhance the company's ability to effectively assimilate external information from the citizenship of the accomplices (Lozano, 2014). As a result, ACAP is often seen as a capacity to expand processes in external learning (Franco et al., 2012). Actual measurements and testing of ACAP are still needed further (Volberda et al., 2010). Recently, Zahra & George (2002), as also discussed in Zahra & George (2015) and Larrañeta et al. (2007) and Noblet et al. (2011), include four processes of capacity, whose explanation can be seen below:

Knowledge absorption: Acquiring knowledge is an important part of the capacity building process, because of ways to bring new knowledge into the company.

Knowledge assimilation: In addition to knowledge acquisition ability, assimilation ability is very important. It is the process to assimilate the meaning of intellectual understanding as a resource and innovation. Assimilation is the process where information (knowledge) gets a certain meaning.

Knowledge transformation: This is the ability to organize a different set that has been formed and spread in new ways. These scattered new insights will establish as new knowledge and recombination.

Knowledge exploitation: This one is related to the ability to exploit knowledge used by companies that can publish it in operations and processes. Exploitation of creative applications is seen as expanded knowledge within the company. It includes product prototype launch, idea for new product or patent application.

Furthermore, Noblet et al. (2011) exploited more the constructs of Zahra & George (2002) and found that ACAP is the process to change, improve, and increase knowledge and increase resources. The first two dimensions are further classified as potential ACAP (PACAP), while the latter two are realized ACAP (RACAP), as also explained by Jansen et al. (2005) and Larrañeta et al. (2007). Knowledge management enhances, absorbs and exploits useful external knowledge which has been the result of the company's business cooperation. The firm must succeed in managing, integrating, and marketing new partnerships and ideas by understanding the facts that a company with good management can work well in such environment (Senge et al., 1999). Surely, the positive effect of knowledge management on the level of absorption of the company is expected. Furthermore, the willingness and benefits of the organization are very important in the company's growth process (Fosfuri & Tribó, 2008).

RESEARCH METHODOLOGY

Since this research's purpose is to explain deeper about the level of absorptive capacity within certain numbers of wine companies, we have to include testing an already existing model to be carried out in an empirical research. This section will discuss on the

empirical section of the paper. We developed a questionnaire containing a set of questions which were taken from the four dimensions of absorptive capacity proposed by Zahra & George (2002), which are 'knowledge acquisition', 'knowledge assimilation', 'knowledge transformation' and 'knowledge exploitation'. We distributed the questionnaire to over 100 wine companies based in Spain to learn more about which aspects of absorptive capacity are really rooting in their organizations.

As we have explained before, the Spanish wine industry is a mature type of industry, with firms located in various regions in the country (Vrontis et al., 2016). We collected data about wine companies in Spain using available archives, interviews with senior managing officers, and data from industry experts before conducting our analysis. The questionnaire was distributed online to 111 companies from total population of 520 Spanish wineries based on the survey we have conducted. For this research, we received responses from 111 directors of the firms. It is the response rate of 20.77% of the firms in the target population. For the empirical part, quantitative research design was adopted. This type of design allows for the use of structured questionnaire surveys, enabling researchers to generalise their findings from a sample of a population (Creswell, 1994).

For the first descriptive method, EFA, data from indicator variables will be grouped, to see how many factors or latent variables that are formed as results (Fox, 1983; Bou & Satorra, 2007). The main objective is to test whether the indicators are grouped according to their latent variables (constructs). Afterwards, we will test whether the constructs are consistent or not with CFA. With the second type of factor analysis method, we can see the fitness of the formed research model (Fox, 1983).

In order to provide further elaborations, after we received all questionnaires results, we then codified the information. The information was stored in a data base using the help of the Statistical Product and Service Solutions- SPSS (an IBM product since 2009 (Hejase & Hejase, 2013)) and AMOS software, as processors of CFA and EFA methods. Using statistical techniques we extracted our indicators from regression model and structural equation methods. We also will evaluate the validity and reliability of our measures. For that purpose, in the next part we are going to split the procedures into two steps. The first one is using EFA as primary analysis, afterwards we will continue with CFA, with the purpose of confirming unidimensionality (fitness of model) and eliminating unreliable items (Hair et al., 2006; Brown, 2014).

RESULTS AND DISCUSSION

First, we conducted an exploratory factor analysis (EFA) to see whether the results conform with the measures elaborated in the previous theories. We only retained the items with factor loadings higher than 0.50 (Bou & Satorra, 2007). The first factor explains the ability to process external knowledge (5 items; $\alpha = 0.789$). The second covered the ability to process assimilation (5 items; $\alpha = 0.841$). The third covered the ability to process transformation (5 items; $\alpha = 0.778$), and the last one explains the ability to process exploitation (also 5 items; $\alpha = 0.708$).

Exploratory Factor Analysis (EFA) of Knowledge Acquisition

In Table 1, five measures (AB01, AB02, AB03, AB04 and AB05) which defined the knowledge acquisition construct. We can see from the findings that the Cronbach's alpha is

higher than 0.70 at 0.789, indicating acceptable level of reliability (Fox, 1983; Hair et al., 2006). Furthermore, according to Hejase et al. (2014), “An alpha value of 0.8 or above is regarded as highly acceptable for assuming homogeneity of items, while an alpha value that is greater than 0.7 is considered appropriate even though this value could be as low as 0.6 for exploratory research”.

The five measures were expected to define the knowledge acquisition. The measure AB04 (We hardly visited other companies) was intentionally designed as reverse question, as once applied by Jansen et al. (2005). It attained factor loadings initially below 0 (-0.460) changed into 0.820 after adjustment. It is still higher than the recommended value of 0.40 (Hair et al., 2006; Pallant, 2013). Sufficient proof of convergent validity was then provided for this construct. An Eigenvalue in the value of 2.650 was established in this factor; this explained 53.009% of the variance in the data. It can, therefore, be indicated that knowledge acquisition is reliable and valid to measure the absorptive capacity in Spanish wine companies' environment.

TABLE 1			
EFA RESULT OF KNOWLEDGE ACQUISITION			
Knowledge Acquisition		Cronbach's alpha = 0.789	
Item	Measure	Factor Loading	Cronbach level after adjustment
AB01	Our company maintains frequent contacts with other companies to acquire new knowledge	0.796	-
AB02	The employees of our company meet regularly with employees of other companies	0.836	-
AB03	We gather information about the industry through informal means (e.g. having meals with employees from fellow industries)	0.752	-
AB04	We hardly visited other companies	-0.460	0.820
AB05	Our company regularly organizes meetings with clients or third parties to get new knowledge	0.436	-

Exploratory Factor Analysis (EFA) of Knowledge Assimilation Capability

Next, five measures (AB06, AB07, AB08, AB09 and AB10) which are elaborated in Table 2 defined the knowledge assimilation capability construct of absorptive capacity. The findings show that the Cronbach's alpha is higher than 0.70 at 0.874. It is that the level of internal reliability is acceptable (Hair et al., 2006; Hejase et al., 2014).

The measure AB07 (We are slow to recognize changes in our market) was intentionally designed as reverse question, also as adapted from Jansen et al. (2005). The factor loading was initially below 0 (-0.609), but eventually changed into 0.791 after adjustment. Meanwhile, all other factor loadings were above the recommended value of 0.40 (Hair et al., 2006). An Eigenvalue in the value of 2.834 is the result in this factor, which explains 56.685% of the variance in the data. Therefore, sufficient evidence of knowledge assimilation was provided for this construct.

Exploratory Factor Analysis (EFA) Of Knowledge Transformation

In Table 3, five measures (AB06, AB07, AB08, AB09 and AB10) defined knowledge transformation capability. The result shows that the Cronbach's alpha was higher than 0.70 at

0.778, indicating acceptable internal reliability (Fox, 1983; Hair et al., 2006; Hejase et al., 2014). It suggests that factor analysis could be conducted with the data.

TABLE 2			
EFA RESULT OF KNOWLEDGE ASSIMILATION			
Knowledge Assimilation		Cronbach's alpha = 0.841	
Item	Measure	Factor Loading	Cronbach level after adjustment
AB06	Our employees contact third parties (consultants, accountants, consultants etc.) to obtain new knowledge	0.441	-
AB07	We are slow to recognize changes in our market (e.g. competition, regulation, demographics)	-0.609	0.791
AB08	Our company quickly recognizes new opportunities to serve our customers	0.883	-
AB09	We quickly analyze and interpret changes in demand	0.906	-
AB10	Our company regularly considers the consequences of changes in demand for new products and services	0.818	-

Almost all the factor loadings for all practices were greater than the recommended value of 0.70, as suggested by Hair et al. (2006). Although two of them were a little below 0.70 (AB14 = 0.652 and AB15 = 0.677), we agreed that the differences were not too significant and still within the acceptable limit (Hejase et al., 2014), which is higher than 0.4. Therefore, sufficient evidence of convergent validity was provided for this construct.

TABLE 3			
EFA RESULT OF KNOWLEDGE TRANSFORMATION			
Knowledge Transformation		Cronbach's alpha = 0.778	
Item	Measure	Factor Loading	Cronbach Level after Adjustment
AB11	Employees record and store new knowledge for future reference	0.797	-
AB12	Our company recognizes the usefulness of new external knowledge for existing knowledge	0.747	-
AB13	Our employees hardly share their experiences	0.888	-
AB14	Our company meets periodically to discuss the effect of market trends and product development	0.652	-
AB15	We know clearly how activities should be carried out in our company	0.677	-

Exploratory Factor Analysis (EFA) of Knowledge Exploitation

In Table 4, five measures (AB06, AB07, AB08, AB09 and AB10) defined the risk management construct of defining project objectives. The findings indicate that the Cronbach's alpha was greater than 0.70 at 0.708, indicating acceptable internal reliability (Hair et al., 2006). Therefore, the exploratory factor analysis could be conducted with the data.

Here, the factor loadings varied in their values. One of them (AB19) has very low value (0.366). Since the value is not higher than the recommended value of 0.40, as suggested by Hair et al. (2006), we decided to exclude it to maintain the robustness of the construct. The overall dimensions have Cronbach Alpha value in the value of 0.829 (which is higher than 0.7) which explains that the values are adequate for further analysis (Fox, 1983; Hair et al.,

2006; Hejase et al., 2014). The overall EFA analysis of the four constructs can be seen in Table 5.

Knowledge Exploitation		Cronbach's alpha = 0.708	
Item	Measure	Factor Loading	Cronbach Level after Adjustment
AB16	Customer complaints are not heard in our company	0.765	-
AB17	Our company has a clear division of roles, tasks and responsibilities	0.570	-
AB18	We constantly consider how we can exploit our knowledge better	0.674	-
AB19	Our company has difficulties in developing new products and services	0.366	-
AB20	Our employees have a shared understanding of our products	0.690	-

Based on Table 5, the EFA phase confirmed four factors that form absorptive capacity, thus followed the existing research such as Zahra & George (2002), Jansen et al. (2005), and others. With a total of 20 question items, the items were also filtered in terms of eligibility for retention. In factor 1, it contains items with standard loading factors lower than 0.5, which are AB04 and AB05. In factor 2, only item AB06 has a standard loading factor lower than 0.5. Every item in factor 3 are higher than 0.5, while in factor 4, only item AB19 has a standard loading factor lower than 0.5.

Dimensions	Indicators	Cronbach's α	(λ_i)	Average variance explained
<i>F1: Knowledge acquisition</i>	AB01	0.789	0.796	20.602%
	AB02		0.836	
	AB03		0.752	
	AB04		0.820	
	AB05		0.436	
<i>F2: Knowledge assimilation</i>	AB06	0.841	0.441*	11.337%
	AB07		0.791	
	AB08		0.883	
	AB09		0.906	
	AB10		0.818	
<i>F3: Knowledge transformation</i>	AB11	0.778	0.797	12.947%
	AB12		0.747	
	AB13		0.888	
	AB14		0.652	
	AB15		0.677	
<i>F4: Knowledge exploitation</i>	AB16	0.708	0.765	12.088%
	AB17		0.570	
	AB18		0.674	
	AB19		0.366*	
	AB20		0.690	

KMO = 0.829; Barlett test of sphericity = 0.000; Total variance explained = 59.974%; λ_i = Standardized Factorial Loading

However, Hair et al. (2006) argued that factor loading below 0.5 can still be acceptable as long as the value is still greater than 0.4. Afterwards, it is time to eliminate variables that are considered not ‘strong’ enough. Here, they are the ones with low factor loadings, or as Hair explained as a rule of thumb, the item should have a rotated factor loading of at least $|0.4|$ (meaning $\geq +0.4$ or ≤ -0.4). In this case, we omitted one from the total 20 items, which was AB19 (our company meets periodically to discuss the effect of market trends and product development). The other 19 items were then continued to be processed with Confirmatory Factor Analysis (CFA).

TABLE 6 CONFIRMATORY FACTOR ANALYSIS (CFA)				
	λ_i	<i>t</i> -value	AVE	CR
<i>F1: Knowledge acquisition</i>	-	-	0.43	0.69
AB01	0.765	-	-	-
AB02	0.806	7.195	-	-
AB03	0.634	5.903	-	-
AB04	0.335*	2.990	-	-
AB05	0.630	6.022	-	-
<i>F2: Knowledge assimilation</i>	-	-	0.50	0.69
AB06	0.289*	-	-	-
AB07	0.477*	2.621	-	-
AB08	0.873	2.954	-	-
AB09	0.941	2.965	-	-
AB10	0.719	2.878	-	-
<i>F3: Knowledge transformation</i>	-	-	0.31	0.60
AB11	0.795	-	-	-
AB12	0.683	5,086	-	-
AB13	0.156*	1,385	-	-
AB14	0.495	4,202	-	-
AB15	0.548	3,345	-	-
<i>F4: Knowledge exploitation</i>	-	-	0,24	0,53
AB16	0.294*	-	-	-
AB17	0.436*	-1,790	-	-
AB18	0.555	-1,999	-	-
AB19	0.533	2,312	-	-
AB20	0.577	-1,879	-	-
Satorra-Bentler Scaled Chi-Squared (X^2) = 388.501; df = 20; p = 0,000				
RMSEA and 90% confidence interval of RMSEA = 0.112 (0.097; 0.126); CFI = 0.748; GFI = 0.739; AGFI = 0.669; NOTE: λ_i = Standardized Factorial Loading; AVE = Average variance extracted; CR = Composite Reliability				

Meanwhile, the average variance explained (AVE) for factor 1 (acquisition capability) is 20.602%, which shows that if its five indicators form one factor, then the factor itself will

explain indicator variance which is 20.602%. While factor 2 (assimilation capability) explains 11.337% of the whole construct, factor 3 (transformation capability) with 12.947%, and factor 4 (exploitation capability) with 12.088%. The total variance explained is 59.974% or 0.59, which is slightly higher than limit, which is ≥ 0.5 (Hair et al., 2006).

Confirmatory Factor Analysis (CFA)

Next, we confirm the ACAP construct with Confirmatory Factor Analysis (CFA). The study employed additional fit indices in assessing the viability of the current CFA model. These include CMIN or the Chi-square (χ^2/df), Normed Fit Index (NFI), Goodness-Of-Fit Index (GFI), the Root Mean Square Error of Approximation (RMSEA), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI) as supported Incremental Fit Index as shown in Table 6. The analysis of the composite reliability of each factor is in acceptable level. The recommended minimum value of each item loading must not be less than 0.7 (≥ 0.7).

Based on the information we found from the Table 6, the AVE value of each factor is smaller than the highest correlation value between paired factors, which indicates indecent validation discriminant. Results suggested several important issues. First, the model is proven to be fit, which means that the empirical results already support the theoretical model of Zahra & George (2002). Second, three out of four factors explained by Zahra and George (2002) and explored by Noblet et al. (2011) was supported in this study. These factors are 'knowledge acquisition', 'assimilation' and 'transformation', while factor 'knowledge exploitation' is left as a questionable factor considering its low λI value.

CONCLUSION

The initial objective of this descriptive parametric research was to explore and confirm the factors of absorptive capacity (ACAP). The objective of this study was to explore and confirm the factors of ACAP. A great number of researches have been conducted to define outcomes of absorptive capacity. In this research, we intended to explore its factors since factors of ACAP have often been ignored in recent studies. This empirical study measured potential absorptive capacity using an already widely known model by Zahra & George (2002), which afterwards will be measured again for our future empirical research

After analyzing the factors of absorptive capacity argued several studies, most notably by Zahra & George (2002), we found interesting conclusion based on our analyzed result. From the research we conducted out of 111 wine companies in Spain, three factors are empirically proven to be in accordance with the theory, knowledge acquisition, assimilation and transformation. One other factor, knowledge exploitation, does not correspond with our empirical result. Our results reveal that the present study contributes to the reason why certain units are able to acquire and assimilate new external knowledge. However, in this case, the knowledge was not exploited successfully. The possible explanation regarding this result is because capacity in exploiting new knowledge does not always lead to collective efforts. Hence, for further future research there is opportunity for deeper study on sensitivity towards change.

Related to this, we still recommend future research incorporating ACAP constructs, knowledge creating (acquisition) capabilities, knowledge assimilation, knowledge transformation and knowledge exploitation capabilities, as the key determinants to the volume of an enterprise's absorptive capacity. Moreover, in this research, we have discussed

and confirmed the statement by conducting our own factor analysis. We have come to the conclusion that using other indicators related to knowledge exploitation capabilities might lead to more fit research model. However, more rigorous literature review must be conducted beforehand.

This conclusion is also in accordance with the concept of organizational learning that involves individual learning, including the management of mental models by omitting the exposition of assumptions, examining and developing new models (Senge et al., 1999; Lozano, 2014). Collective individual learning will facilitate group learning. In the end, organisational learning, in retrospect, also facilitates group learning (Fosfuri & Tribo, 2008; Lozano, 2014). It emphasizes the role of knowledge management in management capabilities, which should be adapted to the, such as weekly meetings and other social encounters. The implementation of absorptive capacity emphasizes the implementation of such routines in talent management capabilities. Absorptive capacity should be inbuilt in the talent management capabilities of the salesforce in order to create the sufficient abilities for knowledge recognition and knowledge sharing and to create motivation for the employee to commit to the practices that aim towards capability development.

Last but not least, this research still has some limitations. The basic limitation is provided by the scope of the research. When it comes to the knowledge sharing between the subunits, the research does not provide a holistic view of the knowledge sharing processes of the whole organization; instead it focuses on describing the knowledge sharing practices within the organization from the point of view of a single subunit of the organization. The company's ability to obtain and assimilate also has a significant influence on the ability to change and explore knowledge. Ability and capacity needed to be moderated by formal aspects. This study has obstacles concerning those relevant perceptions. Therefore, further research will have to be done as individual analysis within a company.

For more holistic view, the research could have focused on researching the processes of multiple subunits and include the liaison role of the change agents, but it might have changed the perspective of the research from individual point of view into more organizational view. The second limitation of the research is due to the chosen methodology. In order to examine the process dimension of absorptive capacity, especially in such small team as in the case organization, it is not so easy to make distinctions between the knowledge acquisition, assimilation and transformation and exploitation based on the interviews. In order to research these different stages in detail, a researcher has to be present in the social situations where the acquisition, assimilation and transformation and exploitation take place. In such small group the whole process might take place in one meeting. After all, despite all limitations, every study about ACAP has the potential for future research seen from macro perspective, since the topic is always updated and fits with the global context.

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