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COMPLEMENTARITY OF TIC AND CORPORATE CULTURE IN THE QUEST FOR PERFORMANCE

Case of Malagasy companies

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ABSTRACT

Corporate culture has recently aroused a great deal of interest and debate in several fields, particularly in business management. Imbued with a rigid and static conception of culture, studies have long excluded any impact of TIC on this variable. The presumed relationship between culture, TIC use and performance was a one-way street. Today, a very different image of culture represents it as an open and dynamic system; susceptible to change as a result of TIC adoption. It is in this perspective that this study aims to analyze the complementarity of corporate culture and TIC in the quest for performance. The problematic that arises is to know how the use of TIC acts on the corporate culture in the search for performance?

Based on the hypothesis that the adaptation of the corporate culture to the evolution of TIC leads to performance. The analysis of the results of a survey by opinion poll near a sample of 580 Malagasy companies

made it possible to affirm that the use of TIC can be adjusted to the corporate culture because a communication of the culture via TIC can lead to better performances.

KEYWORDS: Culture, Company, Technology, Information, Communication, Performance.

INTRODUCTION

Corporate culture and information and communication technology are among the constant concerns of economists and managers.

Culture appears as an effort to produce references. It implies the invention of rules and identity seems to be the criterion of culture. The company does not seem to escape this principle. Surrounded by an environment that imposes itself on it, it must react to impose its existence and thus create its own identity. Reality shows us today that this is often a very used tool, even if it can sometimes prove to be a formidable key performance factor due to its own complexity. Many companies are nowadays integrating this parameter.

All over the world, companies are permanently exposed to competition. In this context, they are led to rationalize, optimize and automate their processes by relying on TIC and subsequently offering a gain in productivity differential, profitability and defense of their acquired positions within the competition or market share.

The decision to invest in TIC is taken by Malagasy managers targeting various objectives. At the organizational level, the criteria used to evaluate TIC performance are as numerous as the objectives that motivated their implementation. While labor productivity and capital profitability are certainly used, managers also use other measures such as market share, production variety and product quality to justify their TIC investments.

The use of technology has been on the agenda of Malagasy business leaders for several years. Nevertheless, it must be noted that its concrete progress frequently remains rather weak for some companies. It seems that one of the explanations is that the use of TIC leads companies to have to change their way of doing and thinking. That is to say, change the corporate culture. Thus, the question arises as to how the use of TIC affects the corporate culture in the search for performance.

This reflection has motivated the shift from a narrow conceptualization of performance to a broader and more global one. Thus, beyond the indicators of productivity and profitability, a last series of works mobilizes another indicator of the performance of the company which is the organizational performance based on the effectiveness of human resources.

It is in this perspective that this study aims to analyze the complementarity of TIC and corporate culture in the search for performance. Based on the hypothesis that the adaptation of the corporate culture to the evolution of TIC leads to performance, statistical analyses of the results of a survey by opinion polling of a sample of 580 Malagasy companies¹ will allow us to identify the intervention of TIC in the corporate culture in order to aim at performance

I-CONCEPTUAL BASES

Today, models such as the virtual onion (**Straub et al.,2002**²), and the spinner (**Walsh et Kefi, 2008**³) draw a very different pTICure of culture. They represent culture as a dynamic system in continuous movement and in constant interaction with the environment; as a system likely to undergo changes following a managerial action such as the adoption of TIC.

The first part of these studies considers organizational culture as a strategic asset capable of differentiating the company from its competitors (**Michalisin et al., 1997**⁴). Influencing learning and human development, promoting the sharing of skills and resources across the different components of the organization, supporting quality, cooperation and innovation; the preservation, development and enhancement of these cultural specificities are imposed through these articles as the main axis of the organization's long-term performance.

In another approach, some research has also introduced culture as an axis of the organization's performance as perceived by its stakeholders. This is the case in particular for the work of **Fazier (1983)**⁵ on international marketing. In the context of exports - opposing actors from different cultures - these researchers introduce "cultural sensitivity" as a component of sales performance perceived by customers. Information and communication technology has evolved considerably over the last few decades, having a considerable impact on daily life and on the way companies operate. Generally speaking, the impact of TIC on the company has notably materialized through:

- A better structuring of work: tools and software have made it possible to improve the organization of work and to obtain a better rationalization whatever the professional field concerned,
- More flexible work: TICs, especially through the development of remote work tools and mobile

¹ Characteristics in table12 in annex.

² **Straub et al.**, « *D'une recherche centrée sur les usages des systèmes d'information, à la délimitation et l'édification d'une nouvelle discipline scientifique* », 2002.

³ **Walsh et Kefi**, « *évaluation des systèmes d'informations* »2008.

⁴ **Michalisin et al.**, « *la recherche en strategie de management* », Revue française de gestion, 1997.

⁵ **Fazier**, "On the Measurement of Interfirm Power in Channels of Distribution". Journal of Marketing Research, Vol.20, pp. 158-166. Cité par Harich et Labahn, 1983.

devices, make it possible to work in a less rigid way. For example, it is possible to work remotely via videoconferencing systems or to access a work environment even if you are not physically in your workplace

- Cost reduction: dematerialization, automation of certain aspects or work processes can reduce a company's operating costs,

- An improvement in the quality of work and performance: TICs provide tools to better regulate the flow of work and to have a more in-depth analysis of the work produced, whether the result is material or not.

According to **Brousseau et Rallet (1997)**⁶, TICs bring to companies a "communication" dimension to information processing, while freeing themselves from geographical and temporal boundaries. In addition to its ability to transmit and receive information, TICs bring a new dimension: the information exchanged (voice, data, images) remains available for later reuse and can be enriched.

Don Tapscott⁷, president of the Alliance for Converging Technologies, noted that through new technology networks, small businesses can overcome the major advantages of large companies: economies of scale and access to information. At the same time, they do not suffer from the major drawbacks that plague large companies: crippling bureaucracy, stifling hierarchy and inability to change. Moreover, thanks to the evolution of TIC, the company has an additional means to market its products and services. Also known as electronic commerce or e-commerce, online sales correspond to the various electronic transactions that are carried out through computer networks

II-RESULTS

The following results are used to explain the role of corporate culture and TIC in the performance of companies.

2.1 Place of culture in Malagasy companies

The motivation of the group is preponderant to ensure performance, whereas to motivate a work team, interactions are needed to ensure the cohesion of the group of individuals, i.e., a strong union of the parts making up the group. It is at this point that the corporate culture has a very important function, because for the Malagasy, "unity is strength"; it strengthens the ties between individual members of the group, so that they share and disseminate the values of the company together.

⁶ **Brousseau et Rallet**, « *Le rôle des technologies de l'information et de la communication dans les changements organisationnels* », 1997.

⁷ **Don Tapscott**, « *digital capital* », 2000.

The results in Table 1 show the attachment of Malagasy managers to their corporate culture. In fact, 83.1% of them state that their employees respect the corporate culture in their work.

Table 1: Respect for the corporate culture

Respect for the corporate culture	Frequency.
Not at all respected	12,8%
Not respected	3,5%
Respected	62,8%
Very respected	20,9%
TOTAL QUOTE	100%

Source: Authors, 2021

This situation is also justified by the results in table 2, which according to the opinions of 83.7% of the interviewees show that the corporate culture created ensures homogeneity and stability of belonging of employees to its organization.

Table 2: Homogeneity and stability of membership of employees

Corporate culture as a source of homogeneity and stability of belonging of the employees	Frequency.
Disagree	3,0%
Somewhat agree	50,0%
Agree	33,7%
Strongly agree	100%

Source: Authors, 2021

Performance is also measured by the competitive position. Choosing and asserting one's values is an asset to differentiate oneself on the market from the competition. The value of this culture is measured by the respect of the values shared by the employees. Indeed, according to Table 3, 83.3% of the respondents claim to value their corporate culture.

Table 3: Valuation of the corporate culture

Valuation of corporate culture	Frequency.
Not at all valued	11,7%
Not valued	5,0%
Valued	48,9%
Very valued	34,4%
TOTAL QUOTE	100%

Source: Authors, 2021

The culture institutionalizes the company by participating in the construction of its identity, reinforcing its external legitimacy and a federative and positive identity internally (sense of belonging)

The results of the survey data confirm the dependence between the valuation of the corporate culture and the development of the employees' sense of identity. We can deduct from Table 4 that, on a common basis, the development of the employees' sense of identity is effective for the 96.4% of companies that have a positive valuation of their corporate culture, whereas for those that do not highlight this culture, the sense of identity remains uncertain for the employees.

Table 4: Valuation of corporate culture and sense of identity through culture

the sense of identity through culture	Not developed	developed	TOTAL
Valuation of corporate culture	40,9%	59,1%	100%
Negative	3,6%	96,4%	100%
Positive	6,8%	93,2%	100%

Source: Authors, 2021

The corporate culture contributes to the performance of the company not only by ensuring the coherence of the group by improving communication. It emphasizes the sharing of common values instead of insisting on diverging interests to ensure the survival of the group, in particular by constituting a more united group and reacting more quickly to hazards thanks to a common vision of the future. But also by conveying an image that allows its positioning on the market.

2.1 Use of TIC in Malagasy companies

Although the 21st century is described as the digital age, given the technological advancement of materials and work tools in our daily lives, it is clear that the economic situation in Madagascar, which results in low purchasing power, is a major obstacle to the use and adaptation of TIC. However, the use of TIC is considered essential by 43.2% of the business leaders surveyed, as shown in Table 5

Table 5: The TIC that is essential to business development

Business Development	Frequency.
Not at all essential	36,6%
Not a must	20,2%
Not to be missed	21,5%
Definitely a must	21,7%
TOTAL QUOTE	100%

Source: Authors, 2021

The TIC as it was evoked, is used by its objective to the optimization of the function or the activities of the company. The orientation of our analyses in this direction identifies in a first step the attributes of the field of use of the TIC. The analysis of reliability by the value of the Coefficient of Alpha of Cronbach of these attributes in table 6, produced a value of 0,872 close to 1, which assures the fact that the domains of use of the TIC within the companies are: production, administration, distribution and finance.

Table 6: Reliability statistics for TIC use function attributes

Alpha Cronbach	Alpha Cronbach based on standardized elements	Number of elements
,872	,872	4

Source: Authors, 2021

The table of average scores attributed to each attribute in Table 7, however, allow us to identify the function of the company that employs TIC the most.

Table 7: Area of TIC use in the company

Area of use of TIC	Mean value
TIC in production	2,48
TIC in administration	2,49
TIC in distribution	2,58
TIC in financial management	2,29
All	2,46

Les paramètres sont établis sur une notation de 1 (Jamais) à 4 (En permanence).

Source: Authors, 2021

The results show that TIC is often used within a company in administration and in distribution, the scores or average values associated are the highest.

TIC is a factor in the evolution of social relations, jobs and professions. They accompany a series of transformations concerning company strategy, work organization, forms of management, consultation and negotiation. In fact, according to Table 8, 72.8% of company managers agreed during the survey that the use of TIC is more than necessary because they are also trying to control it.

Table 8: Mastery of TIC essential to the accomplishment of tasks

Necessity of TIC in the accomplishment of tasks	Frequency.
Not at all	15,2%
Less	12,0%
As much	3,9%
A lot	68,9%
TOTAL	100%

Source: Authors, 2021

In addition, the results of our surveys show that the impact of the use of TIC, which logically constitutes the determinants of the use of TIC, is based on four attributes: communication, access to information, work organization and staff development. In Table 9, the value of Cronbach's Alpha

equal to 0.918, which is very close to 1, confirms the reliability of the attributes of the impact of TIC use.

Table 9: TIC Impact Reliability Statistics

Alpha Cronbach	Number of elements
,918	4

Source: Authors, 2021

In short, TIC is an effective tool to ensure the performance of the company because not only it is essential in each function of the company but also its use impacts communication, access to information, work organization and staff development which are determinants guaranteeing performance.

III- DISCUSSION

Our hypothesis suggests that the adaptation of the corporate culture to the evolution of TIC leads to the performance of the company, so the following analyses try to demonstrate this assumption.

3.1 The use of TIC promotes the efficiency of the organizational system (rites)

The technological mutations currently in massive invasion in Madagascar give birth to new forms of integrated cultures, valorizing all the more the need to develop the adaptability of the organizational structure of the company.

The culture perceived by individuals is sometimes very different depending on the context in which they work. The corporate culture represented in the form of habits is the most noted according to the results of the survey (at least 70% of the managers or entrepreneurs surveyed). Theoretically, rites are forged from habits and the use of TIC a work method existing in an entity for several years becomes a rite, and the result shows that those who are already accustomed to using TIC recognize a positive result in the organization of work.

The chi-square test of independence producing a p-value of 0.03 significantly establishes the impact of the material representation of the corporate culture through the concept of the rite on the level of performance in human resources. This impact is evaluated in relation to the characterization of the use of TIC simultaneously by the p-value associated with the chi-square test of independence and the Cramer's Phi and V indicator that measures globally the intensity of this dependence. The results obtained are presented in Table 10.

Table 10: Measure of dependence and intensity of dependence of the impact of the concept of rite conveyed in your company on the evolution of human resources in relation to the use of TIC

Are you an TIC user?		Value	Meaning approx.
Never	Pearson Chi-square	133,978	,051
	Nominal by Nominal	Phi	
		Cramer's V	,284
	N of valid observations		191
Rarely	Pearson Chi-square	34,576	,041
	Nominal by Nominal	Phi	
		Cramer's V	,462
	N of valid observations		54
Often	Pearson Chi-square	79,941	,010
	Nominal by Nominal	Phi	
		Cramer's V	,676
	N of valid observations		188
Always	Pearson Chi-square	64,797	,000
	Nominal by Nominal	Phi	
		Cramer's V	,785
	N of valid observations		146
Total	Pearson Chi-square	144,22	0,03
	Nominal by Nominal	Phi	,499
		Cramer's V	,288
	N of valid observations		579

Source: Authors, 2021

In view of the results of the table, we can establish the following facts:

- Firstly, by comparing the values of p-values or sig in relation to the level of use of TIC, we note a decrease in these values which demonstrate that the relationship between the concept of corporate culture and the level of performance improves as the leaders of companies integrates TIC in their activities.

- In a second time, by observing the values of Phi and V of Cramer in relation to the level of use of the TIC, we note this time a growth of these values which show that the intensity of the relation between the concept of the corporate culture and the level of performance improves as the leaders of the companies integrate the TIC in their activities.

The same analyses carried out respectively on the impact of the material representation of the corporate culture through the concept of myth, habit, hero, taboos and nationalism on the level of performance produced the same results.

3.2 The use of TIC improves communication (identification and brand image)

Faced with the magnitude of the change in the cultural environment, the market requirement now revolves around TIC, business leaders said during interviews that they quickly understood the need for a technological transformation to challenge the competition and satisfy its customers. The identity and the image that the company conveys on the market are part of its culture, in order to better communicate these images, Malagasy companies have resorted to the use of TIC and according to the survey results, this action has improved their performance.

The analysis on the possible impact of the use of symbols related to the values of the company and the performance in terms of customer development produced a significant relationship (p-value 0.00) following the chi-square test of independence. Thus, we can draw from the results in Table 11 that:

- Companies that never use symbols to represent their cultures struggle to increase their market share. 74.8% of the managers surveyed find that their numbers of customers remain constant.
- The previous situation improves a little for those who often use value symbols. 66.3% manage to increase their market share.
- Finally, the use of the company's value brand in all activities ensures, according to 85.2%, an increase in the number of customers.

Table 11: Symbols related to values and performance in number of clients

Performance in number of customers	Decreasing	Constant	Croissant	TOTAL
Symbols related to values	19,5%	74,8%	5,7%	100%
Never	21,1%	12,6%	66,3%	100%
Often	2,7%	12,1%	85,2%	100%

Source: Authors, 2021

3.3 The TIC allows to archive rites and habits (dashboard)

Corporate culture is defined as the set of ways of thinking, feeling and acting, more or less formalized, which, being learned and shared by a plurality of people, serves objectively and symbolically to constitute the company. These practices and rules, which are the history of the company, the rites, symbols, values, myths and techniques used, are generally written down in a charter and are applicable in the form of discipline in Malagasy companies.

Theoretically, human resources management is the main field of action of the corporate culture. From recruitment to conflict management, corporate culture is always the main subject. The identity, the value, the habits of the company are always conveyed. According to the survey, companies that have used TIC in this aspect of HRM are satisfied with their performance.

The conservation and evaluation of the elements or achievements important to the value and identity of the company is also one of the solutions that companies expect from TIC. And the result of the survey shows that the successful companies have been able to value and convert their culture into a dashboard through the use of TIC.

These verifications made from the analysis of the survey results show that the use of TIC and the corporate culture can evolve together to enable performance.

This confirms the hypothesis that Information and Communication Technologies can be adapted to the culture to have a better performance.

CONCLUSION

In order to analyze the complementarity of corporate culture and TIC in the quest for performance, this study was based on the analysis of the results of an opinion survey of a sample of 580 Malagasy companies. It was found that the arrival of TIC has contributed to a great improvement in the

functioning of the company. However, who wants to transform must always tackle the culture and the particularities of the TIC are also exploitable to accentuate the company culture.

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ANNEX

Table 12: Table of sample characteristics

Legal status	Family business	Size of your company	Sector of activity	Age of your company	Capital
SARL (55,2%) S.A (22,7%) Individuel (18,9%)	Non (50,3%)	Moins de 50 (75,2%) 101 à 150 (19,2%) plus de 200 (3,1%)	Commerce (30,4%) Service (13,3%) Transport (12,2%)	11 à 15ans (48,3%) 6 à 10 ans (30,4%) Plus de 15 ans (18,9%)	10 à 50 millions AR (69,9%) 51 à 100millions AR (19,2%) Moins de 10millions AR (8,7%)
Individuel (40,6%) SARL (37,7%) S.A (19,8%)	Non (87,7%)	Moins de 50 (83,0%) plus de 200 (5,7%) 101 à 150 (4,7%)	Transport (34,9%) Autres (31,1%) Commerce (12,3%)	11 à 15ans (89,6%) 6 à 10 ans (4,7%) Moins de 5 ans (2,8%)	51 à 100millions AR (84,0%) Plus de 100millions AR (8,5%) Moins de 10millions AR (4,7%)
SARL (58,8%) S.A (21,9%) Individuel (17,6%)	Oui (53,5%)	Moins de 50 (59,4%) 51 à 100 (32,1%) 151 à 200 (4,3%)	Autres (29,9%) Commerce (18,2%) Restauration (18,2%)	Plus de 15 ans (61,0%) 11 à 15ans (30,5%) 6 à 10 ans (4,8%)	10 à 50 millions AR (85,6%) 51 à 100millions AR (5,9%) Moins de 10millions AR (5,3%)



SARL (308) Individuel (130) S.A (127)	Non (324) Oui (255)	Moins de 50 (414) 51 à 100 (67) 101 à 150 (63)	Commerce (134) Autres (107) Transport (96)	11 à 15ans (330) Plus de 15 ans (181) 6 à 10 ans (51)	10 à 50 millions AR (363) 51 à 100millions AR (155) Moins de 10millions AR (40)
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Source: Authors, 2021