

To cite this article: RABEMANANJARA Vololonirina Alisambatra, ANDRIANARIZAKA Hantatiana Henimpitia, RANDRIANARIJAONA Maeva and RANDRIAMIHARISOA Mamy Alfa (2023). THE IMPACT OF INNOVATION ON THE OPERATION OF MALAGASY COMPANY, International Journal of Applied Science and Engineering Review (IJASER) 4 (4): 93-105 Article No. 167 Sub Id 260

THE IMPACT OF INNOVATION ON THE OPERATION OF MALAGASY COMPANY

RABEMANANJARA Vololonirina Alisambatra¹, ANDRIANARIZAKA Hantatiana Henimpitia²,
RANDRIANARIJAONA Maeva³ and RANDRIAMIHARISOA Mamy Alfa⁴

¹Lecturer at the University of Fianarantsoa
University of Fianarantsoa, Madagascar

²Doctor of Management Sciences
University of Antananarivo, Madagascar

³Doctor of Management Sciences
University of Antananarivo, Madagascar

⁴Lecturer, Doctor HDR in Management Science
University of Antananarivo, Madagascar

DOI: <https://doi.org/10.52267/IJASER.2023.4407>

ABSTRACT

The globalization of the economy is disrupting the entrepreneurial world through major changes, and the intensity of competition is constantly fueling change. However, Malagasy companies are suffering the effects of the country's economic backwardness and are looking for every possible strategy to advance their entrepreneurial projects. Innovation is therefore imperative if they are to position themselves in an increasingly demanding market. But the question that arises is how does innovation change the way Malagasy company operate?

Based on the hypothesis that innovation changes the way Malagasy company operate, an analysis of data from an opinion poll of a sample of 154 Malagasy company leaders has enabled us to identify the changes that innovation brings to the way these businesses operate.

KEYWORDS: Company, Function, Finance, HRM, Production, Trade, Innovation.

INTRODUCTION

The globalisation of the economy and Madagascar's integration into a number of free-trade zones offer great opportunities for Malagasy companies. However, the requirements of these markets are often more complex than those of the local market. So, in line with the trend towards globalisation of markets and competition, these Malagasy companies are having to evolve their strategies and adopt practices that were once seen as innovations reserved for multinationals. Today, aware of the importance of innovation, business leaders are increasingly turning to it to maintain or even stimulate their growth, because according to authors, innovation is one of the factors considered strategic for business growth, in terms of both employment and turnover (Adams, Bessant, & Phelps, 2006). Halilem even goes so far as to say that innovation is the most important component of corporate strategy (Halilem & St-Jean, 2007).

But given that innovation tests an organisation's ability to convert its creative ideas into something concrete with added value that can give them an advantage in terms of sustainable development and competitiveness, it triggers numerous changes in management methods and tools in order to facilitate the company's growth rather than slowing it down (Atamer T. et al., 2005). This raises the question of how innovation is changing the way Malagasy company operate?

Indeed, the country's environmental context influences the development capacity of companies, which often operate with generally limited financial and technological resources. And given the current economic climate, managers are afraid to invest in innovation projects that appear risky. Yet companies that develop new products or processes are also recognised as innovative, and a great deal of research underlines the importance of combining technological and organisational innovation. Innovation can therefore be seen as the introduction of technology into the way companies operate.

The aim of this study is therefore to examine the changes brought about by innovation in the way Madagascan businesses operate. Based on the hypothesis that innovation modifies the way these companies operate, the results of an opinion poll of a sample of 154 Malagasy company directors will be analysed using statistical tests in order to highlight the changes that exist in each company function.

I- CONCEPTUAL BASIS

The first simple definitions of innovation are: originality, change, boldness, novelty, invention. Innovation is the action of introducing something new or as yet unknown into an established thing (Robert Grand & Collins Dictionary, 2009). However, according to the Austrian economist Schumpeter, there is a clear distinction between invention and innovation; the making of an invention and the putting into practice of the corresponding innovation are, economically and sociologically, two entirely different things (Schumpeter, 1939). For him, innovation corresponds to the first commercial use of a product, process or

service that had never been exploited before. He therefore defined innovation as the result of the economic development and social acceptance of an invention.

Whatever its level of implementation, technological innovation is currently the most widely used policy in companies. For Giget, innovation does not play a key role in the dynamics of the company, but represents the very heart of the entrepreneurial approach (Giget, 1994). Above all, innovation can take extremely diverse forms: doing things better, doing things differently, doing things differently, doing things faster, doing things cheaper or doing things together (Giget, 1994). The recipe for innovation has yet to be defined.

Historically, companies sought to organise the quality-cost-delay triad. Now, the target strategy is to master the quality-cost-delay-innovation tetralogy. In an increasingly demanding environment (globalisation, competition, etc.), this strategy, based on the need to innovate, has become essential, particularly for SMEs, which have specific organisational requirements.

II- RESULTS

The results that follow will focus on the level of innovation of SMEs in order to subsequently verify the hypothesis suggesting that innovation modifies the way companies operate.

2.1 Innovation processes in malagasy companies

The statistics in the table below show the percentages of enterprises that have innovated a small part, a large part or all of their operations, according to their sector of activity, legal status and size.

We find that the majority of enterprises which have innovated a small part of their function are sole proprietorships (69.6%), most of which operate in the tertiary sector (39.1%) and are logically constituted as small enterprises or PEs (43.5%).

In addition, for the companies that have innovated a large part of the way their organisation works, our study has shown that, overall, a large majority, i.e. just over 3 out of 4 companies interviewed, work in the tertiary sector (78.6%) and are covered by the status of SARL (76.2%) and the type of medium-sized company or ME (76.2%).

Our results also show that the secondary sector is making progress in innovation. In fact, one out of every two companies that innovated completely were SARL-type MEs operating in the secondary sector.

Table 1: Distribution of percentages of innovative companies by sector of activity, legal status and size respectively

| Innovation process | Sector of activity | | | Status legal | | | Company size | | |
|--------------------|--------------------|-----------|----------|--------------|------|------------|--------------|------|------|
| | Primary | Secondary | Tertiary | SA | SARL | Individual | PE | ME | GE. |
| A small part | 39,1 | 26,1 | 34,8 | 4,3 | 26,1 | 69,6 | 43,5 | 34,8 | 21,7 |
| A large part | 9,5 | 11,9 | 78,6 | 4,8 | 76,2 | 19,0 | 14,3 | 76,2 | 9,5 |
| All of it | 30,0 | 50,0 | 20,0 | | 50,0 | 50,0 | 40,0 | 50,0 | 10,0 |

Source: Authors, 2023

It should be noted that the significance of these trends in results is supported by the p-values obtained from the chi-square tests of independence, all of which are below the 0.05 risk of error.

Table 2: Indicators for chi-square tests of independence on the innovation process

| | Chi-deux | ddl | 1-p |
|--------------------|----------|-----|--------|
| Sector of activity | 20,13 | 4 | 99,95% |
| Legal status | 17,28 | 4 | 99,83% |
| Size | 11,72 | 4 | 98,04% |

Source: Authors, 2023

The same Chi-square test of independence was used to ensure the objectivity of the results on the distribution of the percentages of innovative companies by sector of activity, legal status and size. All the p-values presented in the table below are significant (values less than 0.05).

Table 3: Indicators for chi-square tests of independence on the innovation process

| | Chi-deux | ddl | 1-p |
|--------------------|----------|-----|--------|
| Sector of activity | 23,29 | 6 | 99,93% |
| Legal status | 29,69 | 6 | 99,99% |
| Size | 18,94 | 6 | 99,57% |

Source: Authors, 2023

We can see from the table below that the innovation process primarily concerns individual companies, 81.8% of which have been involved in innovation for more than 10 years. Generally speaking, companies with more than a decade's experience of innovation are small businesses (70.5%) and work in the tertiary sector (77.3%).

Table 4: Distribution of percentages of experience in innovation by sector of activity, legal status and company size

| Experiences | Sector of activity | | | Status legal | | | Company size | | |
|-------------------|--------------------|-----------|----------|--------------|------|------------|--------------|------|------|
| | Primary | Secondary | Tertiary | SA | SARL | Individual | PE | ME | GE |
| in innovation | 33,3 | 40,0 | 26,7 | 1,0 | 59,0 | 40,0 | 40,0 | 46,7 | 13,3 |
| Less than 3 years | 5,1 | 12,8 | 82,1 | 2,6 | 82,1 | 15,4 | 10,3 | 82,1 | 7,7 |
| 3 to 6 years | 40,0 | 20,0 | 40,0 | 20,0 | 30,0 | 50,0 | 50,0 | 20,0 | 30,0 |
| 7 to 10 years | 5,5 | 17,3 | 77,3 | 2,0 | 16,2 | 81,8 | 70,5 | 16,4 | 13,2 |

Source: Authors, 2023

At the same time, according to our study, the secondary sector is the most lagging behind when it comes to innovation. 40% of companies in this sector have only been in business for less than 3 years. This regression in innovation affects 46.7% of MEs and 59% of SARLs.

With regard to the innovation process initiated by the companies, the chi-square test of independence was again used to confirm the significance of our results. The p-values obtained from the tests are shown in the table below, and their values, all of which are less than 0.05, demonstrate the objectivity of the results.

Table 5: Indicators for chi-square tests of independence on innovation experience

| | Chi-deux | ddl | 1-p |
|--------------------|----------|-----|--------|
| Sector of activity | 45,61 | 8 | 99,99% |
| Legal status | 26,86 | 8 | 99,93% |
| Size | 27,66 | 8 | 99,95% |

Source: Authors, 2023

In the light of the results of the compilation of the distributions of the percentages of the level of progress of companies in terms of innovation, according to their sector of activity, legal status and size respectively in table 6, we can say that the major lag in innovation affects the 80% of companies which are in the secondary sector. Overall, 40% of medium-sized companies and the same proportion of large companies are classified as lagging far behind in innovation.

Table 6: Percentage distribution of innovation advances by sector of activity, legal status and size respectively

| Progress in innovation | Sector of activity | | | Status legal | | | Company size | | |
|------------------------|--------------------|-----------|----------|--------------|------|------------|--------------|------|------|
| | Primary | Secondary | Tertiary | SA | SARL | Individual | PE | ME | GE |
| Very late | | 80,0 | 20,0 | 1,0 | 29,0 | 70,0 | 20,0 | 40,0 | 40,0 |
| Lagging behind | 45,5 | 36,4 | 18,2 | 1,0 | 34,5 | 64,5 | 54,5 | 18,2 | 27,3 |
| Average | 5,3 | 5,3 | 89,5 | 2,6 | 84,2 | 13,2 | 10,5 | 86,8 | 2,6 |
| Advanced | 11,3 | 15,0 | 73,7 | 8,3 | 14,7 | 77,0 | 50,0 | 33,3 | 16,7 |
| Very advanced | 22,2 | 33,3 | 44,4 | 7,1 | 17,2 | 75,7 | 27,3 | 50,4 | 22,2 |

Source: Authors, 2023

For companies that are only lagging behind in innovation, our study shows that the primary sector suffers the most. In fact, 45.5% of the business managers surveyed said that they were in the primary sector. 64.5% said they had individual status, and the majority (54.5%) were small businesses.

The tertiary sector, on the other hand, according to the results of the analysis of the interviewees' comments, is the one that is recording the most positive level of progress, either moderately advanced (89.5%), advanced (73.7%) or very advanced (44.4%). In the majority of cases, this applies to more than 75% of sole proprietorships. Furthermore, one EP in two (50%) said that they had benefited from an advanced innovation in their organisation, and one GE in two (50.4%) said that they had very advanced innovations.

2.2 Companies' maturity in terms of innovation

In order to better analyse the role of innovation within Malagasy companies, we thought it would be useful to assess their maturity in terms of innovation. In order to do this, 4 criteria were selected: mastery, dependence, training and the allocation of a budget for this process.

The information that can be gleaned from the results of the analysis of respondents' opinions on the criteria for innovation maturity within their company can be classified into two groups. First of all, it is clear that the majority of the company directors or managers surveyed agree or completely agree with the control and dependence on innovation in the operation of companies. The majority also agree to a greater or lesser extent on the existence of innovation training (56%) and on the allocation of a budget for the innovation process (52%).

Table 7: Breakdown of respondents' opinions on innovation maturity criteria

| Opinions Maturity criteria | Strongly disagree | Disagree | Somewhat agree | Agree | Strongly agree | TOTAL |
|-------------------------------|-------------------|----------|----------------|-------|----------------|-------|
| Mastery | 14,7% | 12,0% | 5,3% | 49,3% | 18,7% | 100% |
| Dependency | 13,3% | 6,7% | 14,7% | 13,3% | 52,0% | 100% |
| Training | 9,3% | 10,7% | 56,0% | 5,3% | 18,7% | 100% |
| Budget allocation | 14,7% | 8,0% | 52,0% | 12,0% | 13,3% | 100% |

Source: Authors, 2023

Scoring respondents' opinions on a scale of 1 to 5, where 1 means that they strongly disagree and 5 means that they strongly agree with the proposals put to them, shows that companies that have only recently (less than 3 years) become involved in innovation agree that they have offered their staff training (score 3.93), while those with 3 to 6 years' experience in the field agree almost completely, with a score of 4.54 out of 5, that they are dependent on innovation. It should be noted, however, that for companies that have been involved in innovation for more than 6 years, mastery of the process is not yet at its peak. They generally agree (score 3.03 to 3.07) with the control of this innovative advance.

¹ It is worth noting the very significant dependence of opinions on the criteria of maturity in innovation. $\chi^2 = 121,09$, $ddl = 12$, $1-p = >99,99\%$.

Table 8: Average scores for respondents' opinions on innovation maturity criteria, according to their number of years' experience in the field

| How many years have you been innovating? | Has your company mastered innovation? | Does your business depend on innovation? | Is the company's staff trained in the innovations it brings? | Does your company allocate a special budget to innovation? |
|--|---------------------------------------|--|--|--|
| Less than 3 years | 3,13 | 3,27 | 3,93 | 3,13 |
| 3 to 6 years | 3,64 | 4,54 | 2,87 | 3,08 |
| 7 to 10 years | 3,03 | 3,10 | 2,90 | 2,30 |
| more than 10 years | 3,07 | 2,82 | 3,18 | 3,27 |

Source: Authors, 2023

The same scoring of the opinions of the respondents concerning this maturity in innovation across the age of the companies suggests that mastery of innovation mainly concerns those that are more than 10 years old. The representatives or managers of the companies interviewed, on the other hand, more than agree with a score of 4.23 for their dependence on innovation. Young companies that have been in existence for less than 5 years, with scores of around 3, are still fairly undecided about their innovation situation.

Table 9: Average scores for respondents' opinions on innovation maturity criteria, by age of company

| Age of company | Has your company mastered innovation? | Does your business depend on innovation? | Is the company's staff trained in the innovations it brings? | Does your company allocate a special budget to innovation? |
|------------------------|---------------------------------------|--|--|--|
| Less than 5 years old | 3,25 | 2,92 | 3,25 | 3,08 |
| 5 to 10 years old | 3,33 | 4,23 | 3,17 | 2,83 |
| more than 10 years old | 4,00 | 3,33 | 2,93 | 3,53 |

Source: Authors, 2023

III- DISCUSSIONS

The aim here is to check whether the use of m-commerce is changing the way businesses operate. A company is a living organism, whose survival depends on the proper coordination of its constituent parts. In fact, a company can only function if the tasks to be carried out are divided up precisely and if the role of each person in the company is clearly defined. The larger the company, the more structured its organisation needs to be to be effective.

The many tasks carried out by the company can be the subject of innovation, depending on their purpose. To analyse the effects of innovation on the way the company operates, it is necessary to identify the changes observed in each function. This is one of the ways in which our study can be made more precise.

3.1 Changes within the Finance function

The aim of this function is to translate the material and financial flows between the company and its partners into data:

- Tax authorities (tax)
- Suppliers
- customers
- banks

Table 10: Changes within the Finance function

| Opinions of company directors Change in the finance function | Strongly disagree | Disagree | Agree | Strongly agree | TOTAL |
|---|-------------------|----------|-------|----------------|-------|
| Tax procedures | 1,0% | 4,0% | 63,0% | 32,0% | 100% |
| Modify banking relationships | 0,0% | 3,0% | 64,0% | 33,0% | 100% |
| Modifying supplier payments | 1,0% | 3,0% | 65,0% | 31,0% | 100% |
| Modifying collections | 0,0% | 4,0% | 63,0% | 33,0% | 100% |

Source: Authors, 2023

The table above shows that the majority of the managers surveyed, over 90%, stated that they had seen changes as a result of the innovation in the four areas of the finance function.

3.2 Changes in production function

The Production function encompasses all the activities that transform raw materials and components into products sold to customers.

The technical or production function is at the heart of the company's activity. In order to make goods and services available to customers, it gathers and implements human and technical resources to manufacture, install and distribute its products or provide services.

The table below sets out companies' views on the changes brought about by the use of m-commerce in their production functions.

Table 11: Changes in production function

| Opinions of company directors Changes in production | Strongly disagree | Disagree | Agree | Strongly agree | TOTAL |
|--|-------------------|----------|-------|----------------|-------|
| Modify production procedures | 1,0% | 17,0% | 53,0% | 29,0% | 100% |
| Modify production capacity | 1,0% | 15,0% | 55,0% | 29,0% | 100% |
| Modify supply | 0,0% | 3,0% | 65,0% | 32,0% | 100% |
| Modify deliveries | 0,0% | 3,0% | 63,0% | 34,0% | 100% |

Source: Authors, 2023

According to this table, despite a few companies disagreeing about the changes in procedures (17%) and production capacity (15%), the production function is very much affected by the changes brought about by the use of m-commerce. These changes are most noticeable in procurement and delivery.

3.3 Changes in the commercial function

The sales function covers all tasks relating directly or indirectly to the sale by the company of its products and services. It can also be said that sales encompass all actions designed to detect needs and adapt production and marketing accordingly and on an ongoing basis. The effects of innovation in the commercial function are detailed in the following table

Table 12: Changes in the commercial function

| Opinions of company directors Changes at commercial function | Strongly disagree | Disagree | Agree | Strongly agree | TOTAL |
|---|--------------------------|-----------------|--------------|-----------------------|--------------|
| Modify order taking | 1,0% | 2,0% | 60,0% | 37,0% | 100% |
| Modify sales capacity | 0,0% | 3,0% | 60,0% | 37,0% | 100% |
| Modifying the prospecting system | 0,0% | 3,0% | 60,0% | 37,0% | 100% |
| Modifying the loyalty system | 0,0% | 3,0% | 60,0% | 37,0% | 100% |
| Modify marketing | 0,0% | 3,0% | 60,0% | 37,0% | 100% |
| Modify customer visits | 2,0% | 1,0% | 60,0% | 37,0% | 100% |

Source: Authors, 2023

According to this table, innovation has had an impact on the various essential levels of the sales function. These tasks are of two kinds: operational (sales execution and administration) and strategic (choice of markets and customers to serve, products/services to offer, market research, sales forecasts, definition of communication methods, etc.).

3.4 Changes to the HRM function

The mission of the Human Resources function is to ensure that the organisation has the staff it needs to operate and that these staff do their best to improve the organisation's performance, while at the same time developing themselves. The changes brought about by innovation in these different areas are explained in the table below:

Table 13: Changes to the HRM function

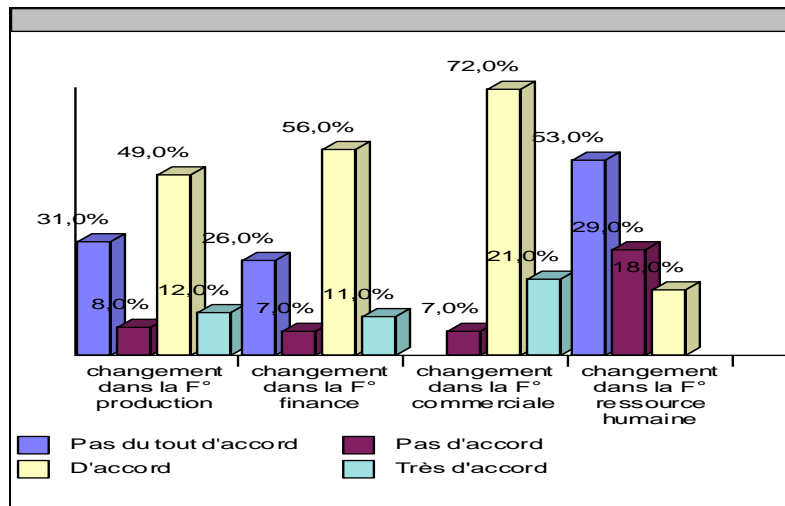
| Opinions of company directors Changes to the HRM function | Strongly disagree | Disagree | Agree | Strongly agree | TOTAL |
|--|--------------------------|-----------------|--------------|-----------------------|--------------|
| Modify recruitment | 1,0% | 19,0% | 51,0% | 29,0% | 100% |
| Modify checks and monitoring | 1,0% | 4,0% | 64,0% | 31,0% | 100% |
| Modify salary payments | 1,0% | 11,0% | 57,0% | 31,0% | 100% |
| Modify work procedures | 1,0% | 14,4% | 55,7% | 28,9% | 100% |

Source: Authors, 2023

The majority of respondents mentioned changes in HRM. These changes were mainly seen in the control and monitoring of employees' activities.

Finally, the figure below summarises these different analyses confirming the impact of innovation on the way companies operate. These statements are represented by the figure below

Figure 1: Representation of the changes made in each function



Source: Authors, 2023

CONCLUSION

In conclusion, the results of this descriptive quantitative study paint a portrait of Malagasy companies in terms of innovation. The vast majority of these companies have already been involved in innovation for several years, despite the country's economic and technological backwardness. It is clear from the results presented in this study that innovation affects the various existing functions in each company, and the innovation process adopted has brought about changes in each function.

BIBLIOGRAPHY

Adams, R., Bessant, J., & Phelps, R. (2006). *“Innovation management measurement: A review”*. International Journal of Management Reviews.

Atamer, T., et al. (2005). *« Développer l’innovation. »* Revue française de gestion.

Giget, M. (1994). *« L’innovation dans l’entreprise »*. Techniques de l’Ingénieur.

Halilem, N., & St-Jean, E. (2007). *“L’innovation au sein des PME: Proposition d’un cadre*



conceptuel ». 5ème Congrès international de l'Académie de l'Entrepreneuriat,
Schumpeter, J. (1939). "*Business cycles, a theoretical, historical, and statistical analysis of the capitalist process*". New York and London: McGraw-Hill Book Company.