REPOBLIKAN'I MADAGASIKARA
Fitiavana Tanindrazana Fandrosoana
MINISTERE DE L'ECONOMIE ET DES FINANCES

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**SECRETARIAT GENERAL**

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**INSTITUT NATIONAL DE LA STATISTIQUE**

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**DIRECTION GENERALE**

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**DEPARTEMENT CONSEIL**

**N°: _____2025/MEF/SG/INSTAT/DG/CONSEIL**

**Ref.:** Robert Summers Fellowship on Economic Measurement – Conference on Research on Income and Wealth, Cambridge, MA — July 14–15, 2025

# APPLICATION LETTER

As a new Member of IARIW from Madagascar, I would like hereby to apply for the fellowship program to attend the above-mentioned *Conference on Research on Income and Wealth* in Cambridge, July 2025.

The 38th IARIW Conference in London, August 2024, was my first attendance to these events and it has marked me profoundly in all its aspects, especially with regards to the special topics covered by the pre-conference trainings (poverty measurement and national accounts).

Please find here below my details:


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| **Name :** | ROMALAHY Mande Isaora Zefania (Mr) |
| **Position :** | Scientific Advisor to the Director General of the National Statistical Office<br>Former Director General of INSTAT (of Madagascar) |
| **Institution :** | National Statistical Office / Ministry of Economy and Finance Madagascar |
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| **Departure city :** | Antananarivo, Madagascar |


**Antananarivo, March 11, 2025**

## SUMMARY OF CURRENT ASSIGNMENT:

As former Director General of the INSTAT, and now advisor to the current Director General, I am in charge of providing counselling to the role of Chief statistician of the Government of Madagascar in terms data production and data use at national level. In particular, my role is to coordinate the implementation of surveys and strategies such as:

- Producing and updating all national socioeconomic indicators, SDGs in particular: building from the 2018 General Population Census and specific sampled surveys (DHS, MICS, Poverty and Household Surveys…), as well as routine processes for the CPI and PPI, National Accounts (rebasing)…;
- Setting up the 2nd Generation of the National Strategy for the Development of Statistics (SNDS-II) for Madagascar;
- Representing Madagascar in the United Nations Statistical Commission in New York.

## PARTICULAR INTEREST IN ECONOMIC MEASUREMENT:

As for a public institution, all the work we are doing in the area of economic measurement are owned by the National Statistical Office and published accordingly in www.instat.mg : monthly CPI data and related summary statistics, quarterly and annual national accounts data and related summary analysis. However, the initial inputs from my work on these issues are delivered to the authorities as Policy Notes (*not for public use*), for both INSTAT and the Ministry of Economy and Finance.

Furthermore, since 2023, I am doing some consultancy work for the World Bank in supporting the Comoros National Statistical Institute for the same assignment as I am doing for Madagascar. To this end, I supported the Comoros INSEED to improve the quality of their CPI in terms of geographical coverage and prospects for the use of digital and some specific automated tools to collect prices data at shop level. In addition, I supported the Comoros INSEED to proceed to the rebasing of their National Accounts Statistics migrating to the SNA-2008: the outcome of the revised and enhanced CPI and National Account are planned to be released on April 2025.

## *SPECIFIC PAPER: "Determinants Productivity At Firm Level Madagascar"*

Another aspect of the work I am interested in, and which I would like to push forward during this event was commissioned by the World Bank: *Firm-level Productivity*. This is one my flagship work that I would like to submit for publication under IARIW premises. This work consists of an econometric and non-parametric testing on the determinants of firms' productivity in terms of sales, workforces and TFP. This exploit data from the series of World Bank Enterprise Survey conducted in partnership with INSTAT for Madagascar, along with a large databank for a list of comparator countries.

This work provided input to the Madagascar Economic Update released and published in 2025, along with a comprehensive macro diagnosis of the Malagasy economy: inflation, money supply, budget deficit, investment position, trade and current account balance, balance of payments, and other sociodemographic parameters such as poverty in all its dimensions (Published by World Bank).

## *Summary of the paper:*

The paper aimed to implement an empirical analysis considering at first stage of the modeling process, using the ordinary Cobb-Douglas production function $Y = A * K^{\alpha} * L^{1-\alpha}$ and testing empirically the relationship of each one of the determinants on TFP and Labor productivity using econometric estimation method: Ordinary Least Squares (OLS). This method will be complemented by a quantile regression to further analyzes the differentials of effects at different level of productivity. However, the OLS requires some a priori assumptions that may not be met for a database with few observations or a weak specification of the model because of the data misbehavior, which seems to be the case with the WBES 2022 data for Madagascar. Therefore, to prevents any misinterpretation of the effects of the factors, we will complement the analysis using an alternative and enhanced method: the ***Generalized Maximum Entropy for Linear Model (GME)***.

***Innovation, formal training, and business environment proxies*** (tax, access to finance, customs issues, delivery of permit/licence…) are the most significant determinants with the expected positive sign of the coefficient… Innovation is definitely the main driver of productivity. Alleviating or facilitating tax issues will contribute significantly on improving TFP, and will benefit the most to the lower and the upper-level productivity firms.

***Promoting exports*** will also increase significantly the productivity, for both TFP and labor productivity, but any policy to this end should consider specifically, even exclusively, firms at medium level productivity. To be more fruitful and effective, any policy aiming to improve both measures of productivity through the promotion of exports status should have a particular focus on firms at middle level productivity.

***The electricity cost*** is the outstanding burden to TFP and labor productivity improvement: the most important factor with the most significant and negative effect in determining TFP at firm level is electricity cost, and at all level of firms productivity. Definitely, any policy aiming the reduction of electricity burdens (costs and outages) benefitting the firms operations will be very fruitful and effective in the transformation of the economy.

In addition to the business environment proxies, firms having offered ***formal training programs*** for its employees tend to have a higher TFP in comparison to their counterparts who doesn't have this plan. In addition, findings show that formal training not only improves labor productivity but even beyond.

A specific model estimated by the GME method helped find evidence on the importance of ***women related variables*** in determining TFP and labor productivity: outputs confirm an importantly significant and positive impact of the three variables tested separately along with the theoretical determinants (capital and employment): firms owned or managed by women all significant at 1% level, except the number of women-workers.

| Determinants | TFP | Labor productivity | Particular target for policies |
|---|---|---|---|
| *Capital* | Yes (-) from OLS, and (+) only for upper quantile, Yes confirmed by GME | Yes | Upper quantile for TFP |
| *Total employment* | No with OLS, | No, OLS | |

| | | | |
|---|---|---|---|
| | Confirmed (-) by GME | Yes (-), confirmed GME | |
| *Exporting/Non-exporting* | Not conclusive for overall sample<br>Yes (+) for middle quantile | Uncertain | Middle quantiles only for TFP |
| *Innovating/Non-innovating* | Yes*** | Yes*** | |
| *Investing in R&D* | Yes but negative, OLS<br>Confirmed, GME | Yes, but negative, OLS<br>Confirmed (+), GME | |
| *Having contracted loans* | Yes*** | Yes*** | |
| *Having obstacle to access finance* | Yes | Yes | Lower quantile for TFP |
| *Tax as an obstacle* | Yes*** | Yes | Both extreme quantiles of TFP<br>Lower quantile for Labor |
| *Obstacles at customs level* | No | No | |
| *Obstacle license, permits* | Yes*** | Yes *** | |
| *Cost of raw materials* | Not conclusive** | Not conclusive** | |
| *Cost of electricity and/or Impact of Electricity* | Yes*** | Yes*** | The most important negative effect for all firms |
| *Firm age* | No, form OLS<br>Confirmed (+), GME | No, from OLS<br>Confirmed (+), GME | |
| *Firm size* | No, form OLS<br>Confirmed (+), GME | No | |
| *Number of Temporary workers* | No | No | |
| *Formal training* | Yes***, from OLS | Yes *** | The most important positive effect for all firms |
| *Informal competition* | Uncertain | Uncertain | |
| *Female ownership* | No, from OLS<br>Confirmed (+) from the GME | No, from OLS<br>Confirmed (+) from the GME | |
| *Female manager* | Yes, confirmed only by GME | Yes, confirmed only by GME | |
| *Number of employed female* | Yes, confirmed only by GME | Yes, confirmed only by GME | |