An approach in the setup of in-house calibration laboratory to enhance university's research output reliability

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Many cost reduction strategies and methods have been employed in most academic institution laboratories. The economic instability strained organization to adjust and readjust processes, which, indirectly affect institution's research findings reliability. Hence, placed the institution in a difficult situation to produce a world-class paper publications. Having this in mind, this project started in year 2015 with aims to reduce expenditure on laboratory equipment calibration by setting up an in-house calibration laboratory, as well as to promote an awareness to researchers on the importance of equipment calibration towards their research output. This study is greatly influenced by national economic impact and researchers' priorities, hence, small scale data collection was conducted at the University Malaya's largest faculty, Faculty of Medicine. At the end of this study, it was observed fairly reasonable results, where it shows an increase in the good maintenance practice awareness and the calibration turnaround time was shorten. The biggest achievement was the equipment calibration expenditure was slashed three times lower. This project currently is still on going with hopes to expand the services of the newly setup calibration laboratory to the whole campus and at the same time to provide a highest degree of confidence to institution researchers, and that the measurements and data are reliable and trustworthy. And most of all, results obtained from calibrated instruments are validated and accepted worldwide.

AN APPROACH IN THE SETUP OF IN-HOUSE CALIBRATION LABORATORY TO ENHANCE UNIVERSITY'S RESEARCH OUTPUT RELIABILITY

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THE PROJECT INITIATING FACTORS

Prior to 2016, researchers from the Faculty of Medicine (FOM) at the Universiti Malaya outsourced services for pipette and weighing device calibration. Which means ;

- FOM UM Researchers reliability on the external expertise
- Additional costs to assure the calibration of laboratory instruments.
- FOM alone spent roughly RM 118, 938.00 in the year of 2014 for calibration of weighing device and pipettes.

PROJECT MISSION STATEMENTS

- The establishment of a calibration lab that will be in charge of performing calibration services on FOM and UM laboratory instruments to complement the output of the university's research.
- The up skilling of new competencies for university technical staff
- Enhance UM researchers' confidence in the reliability of the calibration results.
- Reduce expenses on calibration services by 10%-20% per year.

SUCCESS STORIES

Well established Calibration Laboratory in Universiti Malaya

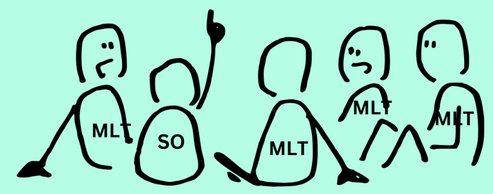
Experienced, Certified and Competent Calibrators

The project is acknowledged as 'Projek Penambahbaikan' by UM Quality Mangement and Enhancement Centre

Annual Cost Saving of Approximately RM 27,000 annually

THE STRATEGIES BEHIND THE DEVELOPMENT OF UNIVERSITY'S IN-HOUSE CALIBRATION LABORATORY

1 Five personnel were identified to run the project ;
1 Science Officer (SO) &
4 Medical Laboratory Technologist (MLT)



2 Data collection of FOM's common laboratory instrument with the highest expenditure on calibration i.e. Micropipette & Weighing Device

3 Training development to the appointed members;

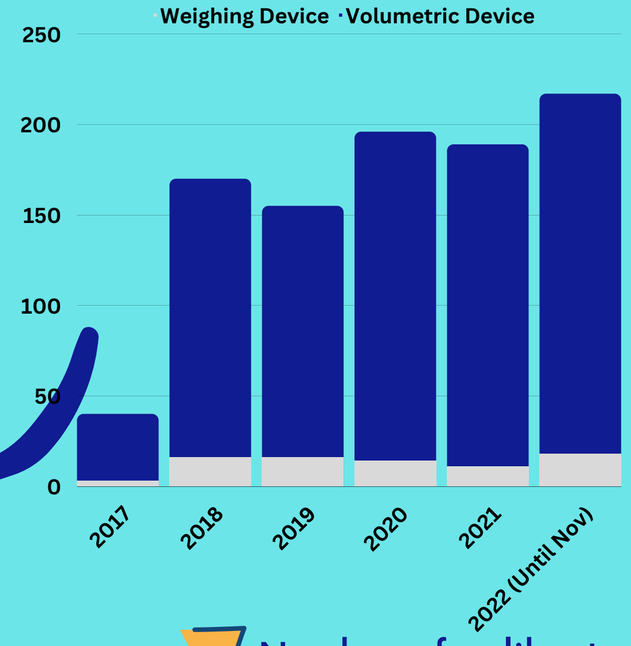
- Calibration of Measuring Instrument by National Metrology Institute of Malaysia (NMIM)
- Measuring uncertainty calculation by National Metrology Institute of Malaysia (NMIM)
- Competency training on calibrating specific measuring laboratory instrument by CAL25, Universiti Sains Malaysia.

4 Renovation of FOM Calibration Laboratory (FOMCAL) & equipment purchase

5 FOMCAL service launched in 2017

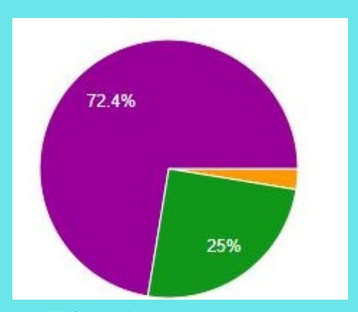
IMPACTS OF ESTABLISHING IN-HOUSE CALIBRATION SERVICE

Number of calibrated device VS Year

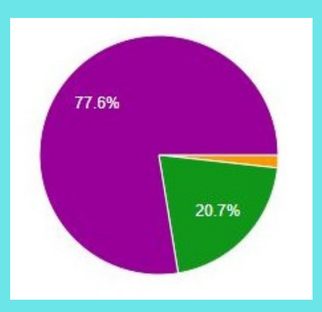


Number of calibrated device increased over years

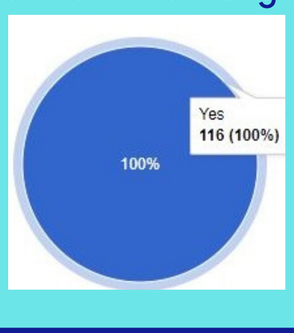
Post Calibration Satisfaction Survey - 116 respondants



72.4 % customers agree FOMCAL staff has excellent technical knowledge



77.6 % customers agree FOMCAL staff has excellent professionalism



All clients will use FOMCAL's services again without a doubt.