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Financial inclusion in Malaysia: tracking progress using index[1]

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Financial Inclusion in Malaysia: Tracking Progress Using Index

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Abstract

The study seeks to examine the extent of financial inclusion in Malaysia. This study demonstrates that the measurement approach developed in the human development literature can be usefully applied to the measurement of financial inclusion. A conceptual framework for aggregating data on financial products and services in different dimensions and the suggested composite index of financial inclusion allows calculation of percentage contributions of different dimensions to the overall achievement. This in turn enables the identification of the dimensions of inclusion and their impact to overall financial inclusion. An index of financial inclusion (IFI) has been developed in the study using data on four identified dimensions of financial inclusion for Malaysia. The study also provides a tool for the measurement of progress and to estimate the impact of appropriate policies in order to make financial inclusion more meaningful and effective for the benefit of society.

Section 1: Introduction

Malaysia recognises the importance of financial inclusion as a strategy towards sustainable long-term growth. Measures that were put in place over the last four decades helped the country in the effort to reduce poverty and inequality levels within society. This is reflected in the laying of many critical foundations to advance the cause of financial inclusion; which amongst others include adding the financial inclusion mandate in the Central Bank of Malaysia's Act, creating of a diverse range of institutions, enhancing distribution channels, providing of basic banking products and micro financing scheme, strengthening of supporting financial infrastructure, consumer education and protection and catalysing SME development. At the Federal level, it was recognised that an important component of the country's financial sector policies is financial inclusion that ensure that all segments of society get access to financial services irrespective of geographical location, income strata or the economic activity[2].

The Central Bank of Malaysia's Financial Sector Blueprint 2011–2020 charts the development of an inclusive financial system that best serves all members of society, particularly the underserved, in terms of access, take up, responsible usage, quality and affordability. More intensified efforts are focused on creating innovative channels, products and services, empowering the underserved through financial literacy and capacity building and strengthening financial institutions and infrastructure. The importance of a holistic monitoring and evaluation framework has also been given emphasis to measure the state of financial inclusion more effectively. To support this strategy, a core set of KPIs for financial inclusion have been identified to monitor the progress with a demand-side survey conducted in 2011 and a financial inclusion index developed in 2012.

Given this background, the major objective of the study is to measure the extent of financial inclusion in Malaysia. Section 2 provides the background of the state of financial inclusion in Malaysia followed by the development of the financial inclusion index in Section 3. Section 4 deals with the analysis of the results from the index and how it could be replicated to examine the level of financial inclusion of the different segments of the population. Section 5 concludes the study.

Section 2: Furthering the Financial Inclusion in Malaysia

The comprehensive initiatives implemented over the past decade have significantly improved financial inclusion in Malaysia. Take-up of deposits has increased from 1,975 deposit accounts per 1,000 adults in 2000 to 3,036 deposit accounts per 1,000 adults in 2011. Meanwhile, the take-up of financing has increased from 310 financing accounts per 1,000 adults in 2000 to 895 financing accounts per 1,000 adults in 2011. These outcomes have elevated Malaysia's position in various global financial inclusion rankings, including a number one ranking since 2007 for

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[2]   Excerpt from the Prime Minister's Speech at the ADB-BNM-EC Joint Conference themed "Beyond The Global Crisis: A New Asian Growth Model?" Kuala Lumpur, 20 October 2009.

"Getting Credit" in the "Ease of Doing Business" index by the World Bank (FSBP, 2011).

Although significant progress was achieved, there are still opportunities to further enhance financial inclusion outreach. For instance, preliminary findings based on the supply-side data show that 54 percent[3] of sub-districts (mukim) with more than 2,000 population in the country were not served by the formal financial system. Whilst the take-up of deposit accounts has risen, it is estimated that 8 percent of the adult population still do not have deposit accounts.

Globally, there is growing recognition of the importance of having indicators and data to monitor the state of financial inclusion more effectively. In Malaysia, there is a need for a comprehensive KPI framework to measure both the level of financial inclusion from the supply and demand side perspectives. Supply-side data are collected from financial providers while the demand-side data represent the perspective of the consumers and allows the assessment of their needs to ensure that they are being adequately met by the provision of services. Under this KPI framework, financial inclusion outcomes will be measured across four dimensions and data will be sourced reliably from various sources such as the mapping of access points, supply side data which are adjusted to account for single users holding multiple accounts using the National Identity Cards, and demand side surveys of the general population and micro enterprises. The baseline measurement is in 2011, and real improvements for the consumers are expected over time as recommendations under the financial inclusion framework are implemented. These identified indicators are combined to develop a financial inclusion index to facilitate tracking of progress based on single number over time.

2.1 Literature Review on Indicator Measurement

Financial inclusion refers to the delivery of financial services of an economy to its people (Chakravarty, 2010). The domain of financial services can be quite large and it may vary from country to country. Several indicators have been used in the literature to measure financial inclusion.

The AFI Core Set of Financial Inclusion Indicators (AFI Core Set) is the first step in establishing a common measurement of financial inclusion, whereby the indicators are meant to measure the most basic and fundamental aspects of financial inclusion in a way that is standardised (AFI, 2011). The Core Set Indicators address the two basic dimensions of financial inclusion; access and usage of financial services (See Table 1).

There are various aspects to access which could be measured by the availability of financial services, cost of access, range, type and quality of financial services offered (Claessens 2006). The counterpart of access is exclusion. Financial exclusion could occur due to (1) "geographic limitations" following under-provision of financial services in remote and scarcely populated areas, (2) "socio-economic limitations" when financial services appear inaccessible to specific income, socio-

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[3]   Equivalent to 449 out of 837 sub-districts with more than 2,000 population based on the results of the Mapping of Access Points Project 2011 undertaken by Development Finance and Enterprise Department, Central Bank of Malaysia.

economic or ethnic groups, or (3) "limitations of opportunity" when new or small firms with viable projects face credit constraint due to information asymmetry and/or lack of collaterals (Beck et al, 2006). However, access is not synonymous to usage, as defined in the AFI Core Set. Economic agents might decide not to use accessible financial services, either for socio-economic reasons, or because the opportunity costs are too high (Beck et al. 2006).

Table 1: Core Set of Financial Inclusion Indicators

Access	1	Number of access points per 10,000 adults at a national level
	2.1	% of administrative units with at least one access point
	2.2	% of total population living in administrative units with at least one access point
Usage	3.1	% of adults with at least one type of regulated deposit account
	3.1a	Number of deposit accounts per 10,000 adults
	3.2	% of adults with at least one type of regulated credit account
	3.2b	Number of loan accounts per 10,000 adults

Recently, the Global Findex database by the World Bank provides a number of financial inclusion indicators based on surveys of more than 150,000 adult individuals in 148 countries in 2011 (Demirguc-Kunt & Klapper, 2012). Notwithstanding, these indicators whether at the micro or macro level if used individually provide only partial information on the inclusiveness of the financial system, and thus inadequately capture the extent of financial inclusion in an economy, which may result to an inaccurate assessment.

Therefore to address this issue, an index of financial inclusion (IFI) is required, using multidimensional approach which is able to capture information from several dimensions in one single number. The IFI should be flexible and expandable while being able to satisfy the following criteria:

i. It should incorporate information on as many dimensions of inclusion as possible.

ii. It should be comparable across countries/regions/states at a particular time period.

iii. It should be used to monitor the progress of policy initiatives for financial inclusion in a country over a period of time.

iv. It should be easy and simple to compute.

This multidimensional approach is widely used in the construction of indices to measure the 'distance from frontiers' which shows how much the environment has changed over time similar to *Ease of Doing Business Index* (Doing Business 2012). The United Nations Development Programme (UNDP) has also used a similar approach for the computation of some well-known development indices such as the Human Development Index (HDI), the Multidimensional Poverty Index (MPI) and the Gender Inequality Index. The approach chosen in this study is also similar to the one used by Chakravarty (2010) and Sarma (2008) to measure financial inclusiveness.

Section 3: Development of Financial Inclusion Index

In cognisance of the diversity in the patterns of change in the different dimensions of financial inclusion over time, it becomes necessary to get a comprehensive picture. The study introduced an approach of measuring financial inclusion performance by combining indicators representing the identified dimensions into a composite index of financial inclusion, IFI. There are three steps in calculating the IFI *(Detailed mathematical representation of the method is provided in the Appendix)*.

IFI is computed by first calculating sub-indices for each indicator, whereby minimum and maximum values (frontiers or targets) for each are set. The distance to frontier approach, which defines frontier as perfect financial inclusion, is calculated from the current position of financial inclusion.

Indexing the indicators = $\dfrac{A_i - m_i}{M_i - m_i}$

where, A_i = Actual value of indicator i.
    m_i = minimum value of indicators i.
    M_i = maximum value indicators i.

Example:

Usage of deposit account index $= \dfrac{(87 - 0)}{(90 - 0)} = 0.97$

Secondly, these sub-indices are then weighted in accordance to importance and aggregated in order to transform these sub-indices of indicators into a dimension index, expressed as a value between 0 and 1. Since we have no evidence to indicate that one dimension is more important than another, the dimensions are thus weighted equally. Moreover, unlike the case of HDI, there is yet any consensus in the literature on which set of attributes/dimensions is important to measure financial inclusion. Finally, the IFI is the arithmetic mean of the four dimension indices. Index ranges from 0 – 1, with 1 being perfect financial inclusion and 0 being total financial exclusion.

Section 4: Analysis for Index of Financial Inclusion for Malaysia

Leveraging on the AFI Core Set formulated by the AFI Financial Inclusion Data Working Group (FIDWG), the Central Bank of Malaysia developed the financial inclusion KPIs (See Figure 1) by defining four dimensions of financial inclusion for Malaysia i.e. convenient accessibility, take-up rate, responsible usage, and satisfaction level with each dimension having similar indicators as AFI Core Set which has been customised to uniquely cater for the Malaysian context. The details are as follows:

Figure 1: Comprehensive KPI Framework

Dimensions	Indicators
Convenient Accessibility	• % of mukim with at least 2000 population with access point • % of population living in mukim with at least one access point
Take-Up Rate	• % of adult population with deposit accounts • % of adult population with financing accounts • % of micro enterprises with financing accounts • % of adult population with life insurance/takaful policies
Responsible Usage	• % of customers with active deposits • % of customers with performing financing accounts • % of micro enterprises with performing financing accounts
Satisfaction Level	• % of customers who are satisfied with overall financial services

Dimension 1: Convenient Accessibility

Access refers to the ability to use available financial services and products from formal institutions. Under an inclusive financial system, financial services should be easily available to potential users. Availability of services can be indicated by the number of access points providing the financial services such as bank branches/outlets, automated teller machines (ATMs) or banking agents (BAs) or in some countries known as banking correspondences (BCs) providing banking services to the population. For convenient accessibility, we defined access points as facilities that allow both cash in and cash out (AFI, 2011) and measure this dimension using two indicators related to the availability of access points: (i) percentage of mukim[4] (sub-districts) with at least 2000 population with access point and (ii) percentage of adult population living in mukim with at least one access point. These indicators would capture the outreach of financial services, with a target of having access points spread widely all over the country, with the mukim being the smallest administrative unit with available population data.

Dimension 2: Take-up rate of financial products

Ideally, an inclusive financial system should penetrate widely amongst its users. The size of the banked population, i.e. number of adult population with a bank account over the total number of the adult population is a measure of the banking penetration of the system. Thus, if every adult person in an economy has a deposit

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[4] Mukim is a sub-district in Malaysia or the 4th level administrative unit (refer to AFI Core Set Indicators definition on administrative unit) where the 1st level is defined as the national level, followed by 2nd as the state and 3rd as the district.

and/or credit account, then the value of this measure would be equal to 1. The financial inclusion demand side survey conducted by Central Bank of Malaysia in 2011 has revealed that about 92 per cent of the individuals had deposit account with regulated financial institutions in Malaysia. The survey also provided insights into the take-up of loans and insurance policies by the Malaysian adult population. Based on the survey, 36% have at least a loan/financing account and 18% have life insurance/takaful policies. These three indicators together are used to estimate the take-up rate dimension for the main financial products offered to general population.

Dimension 3: Responsible Usage

This dimension emerges from the concept of "under-banked" or "marginally-banked", as observed by Chattopadhyay, "in some apparently very highly-banked countries, a number of people with bank account are nonetheless making very little use of the services on offer", thus having a bank account does not ensure inclusivity; it is also imperative that the banking services are adequately utilised (Chattopadhyay, 2011). In order to incorporate the responsible usage dimension in the IFI, we consider two basic banking services (deposit and credit) by using the indicators on percentage of customers with active deposits and percentage of customers with performing financing accounts. These indicate the activities by the customers in using the products responsibly. The number of unique active account holders is verified by matching the national identity card numbers via the Account and Policy Holders Survey with data submitted by financial institutions.

Dimension 4: Satisfaction Level

This particular dimension attempts to illustrate the quality dimension which is a more complex topic both conceptually and in terms of measurement, and the indicator of choice is a qualitative indicator obtained via responses collected in demand side survey. In the Malaysia case, we use the percentage of customers who are satisfied with overall financial services as the only indicator for measuring this dimension. This dimension can be enhanced in the future provided that some common indicators for the quality dimension are agreed upon based on the AFI FIDWG initiatives.

4.1 Results for Malaysia

Using data from all four dimensions for Malaysia, we illustrate the IFI computation in Table 2. In the Malaysian case, the targets are set based on the consensus view of the Financial Inclusion Working Group at Bank Negara Malaysia, which were benchmarked against the results of Global Findex (Demirguc-Kunt & Klapper, 2012) for some of the more developed countries. This higher standard is set as Malaysia aspires to reach higher income status by 2020. The weight for each indicator is set to reflect the importance of the indicators at this point in time, but the dimensions are weighted equally.

Depending on the values of IFI, the results are categorized into the four following categories:

(i)   0.75 < IFI ≤1 – high financial inclusion

(ii) 0.5 ≤ IFI <0.75 – above average financial inclusion

(iii) 0.25 ≤ IFI <0.5 – moderate financial inclusion

(iv) 0 ≤ IFI <0.25 – low financial inclusion

Figure 2: Graphical presentation for calculating the index of financial inclusion, IFI

Indicators

- % of mukim with >2000 people with at least 1 access point
- % of population in mukim with at least 1 access point

→ **Convenient accessibility**

- % of adults with deposit accounts
- % of adults with financing accounts
- % of adults with life insurance / takaful polices

→ **Take-up rate**

- % of customers with active deposits
- % of customers with performing financing accounts

→ **Responsible usage**

- % of customers satisfied with overall financial services

→ **Satisfaction level**

Dimensions indices

Index of financial inclusion

Index of Financial Inclusion

Source: Central Bank of Malaysia

Nonetheless, the importance of the indicators used could change overtime with changes in policy emphasis and priority, while the weight for each dimension may vary as the country progresses in terms of financial development. For example, access and usage of financial services now go beyond the physical access points to include virtual space such as internet and mobile banking facilities (Sarma, 2012).

As shown in Table 2, the level of financial inclusion in Malaysia as measured by IFI is high at 0.77. Higher values indicate better performances as improvements in the financial activity of a dimension will translate into a higher value for that dimension. Activities contributing to lower values may require attention from the policy point of view for improvement. We can isolate such dimensions as the financial inclusion index enables us to calculate the percentage contributions made by each indicator to the overall level of financial inclusion. The index can be used to monitor performance progress and can be used to support policy recommendations on what more is required to improve performance. This demonstrates an important

policy application of the IFI. The index can also be adjusted and expanded after a certain period to reflect the structural changes in the financial landscape by replacing some indicators or by including more indicators and/or dimensions as they become more relevant for the financial inclusion agenda of the country.

Table 2: Index of Financial Inclusion for General Population in Malaysia

Dimension	Indicators	Data (%)	Target (%)	Index of Each Indicator	Weight	Index of Each Dimension	Equal Weighted Dimension	Equally Distributed FII
Convenient Accessibility	• % of mukim with at least 2000 population with at least 1 access point	46	90	0.51	0.5	0.64	0.25	0.77
	• % of population living in mukim with at least one access point	82	95	0.86	0.5			
Take-Up Rate	• % of adult population with deposit accounts	92	95	0.97	0.5	0.70	0.25	
	• % of adult population with financing accounts	36	50	0.72	0.25			
	• % of adult population with life insurance/takaful policies	18	40	0.45	0.25			
Responsible Usage	• % of customers with active deposits	87	90	0.97	0.5	0.98	0.25	
	• % of customers with performing financing accounts	97	97	1.00	0.5			
Satisfaction Level	• % of customers who are satisfied – Overall financial services	61	80	0.76	1.0	0.76	0.25	
Index ranges from 0 – 1, with 1 being perfect financial inclusion							1.00	0 – 1.00

Low | Moderate | Above Average | High

Source: Central Bank of Malaysia

In Table 3, we used the low income group data for Malaysia to illustrate how IFI could be used to confirm whether there is a need for specific policy intervention to cater for different level of income. In this scenario, low-income is defined as the segment of population who earn less than RM 1,000 per month. The results showed that low income customers have a lower score for IFI compared to the general population in Malaysia. However, we could only go in-depth with the take-up rate dimension due to limitations on the availability of data. The data on take-up is based on findings from the demand survey, while the data for the others indicators are mainly from the supply-side which we could not segregated by income group. This shows that more granularities in data collected is required from the supply side for better assessment. Nonetheless, using this method we have been able to demonstrate how the index could be enhanced and expanded provided we have adequate data for each segments of the population.

Table 3: Index of Financial Inclusion for Low Income Group in Malaysia

Dimension	Indicators	Data (%)	Target (%)	Index of Each Indicator	Weight	Index of Each Dimension	Equal Weighted Dimension	Equally Distributed FII
Convenient Accessibility	• % of mukim with at least 2000 population with at least 1 access point	46	90	0.51	0.5	0.64	0.25	0.68
	• % of population living in mukim with at least one access point	82	95	0.86	0.5			
Take-Up Rate	• % of adult population with deposit accounts	89	95	0.94	0.5	0.32	0.25	
	• % of adult population with financing accounts	10	50	0.20	0.25			
	• % of adult population with life insurance/takaful policies	8	40	0.20	0.25			
Responsible Usage	• % of customers with active deposits	87	90	0.97	0.5	0.98	0.25	
	• % of customers with performing financing accounts	97	97	1.00	0.5			
Satisfaction Level	• % of customers who are satisfied − Overall financial services	60	80	0.75	1.0	0.75	0.25	
Index ranges from 0 – 1, with 1 being perfect financial inclusion							1.00	0 – 1.00

0 — 0.25 — 0.5 — 0.75 — 1

Low | Moderate | Above Average | High

Figure 3: Comparing the Results of General Population with Low Income Group
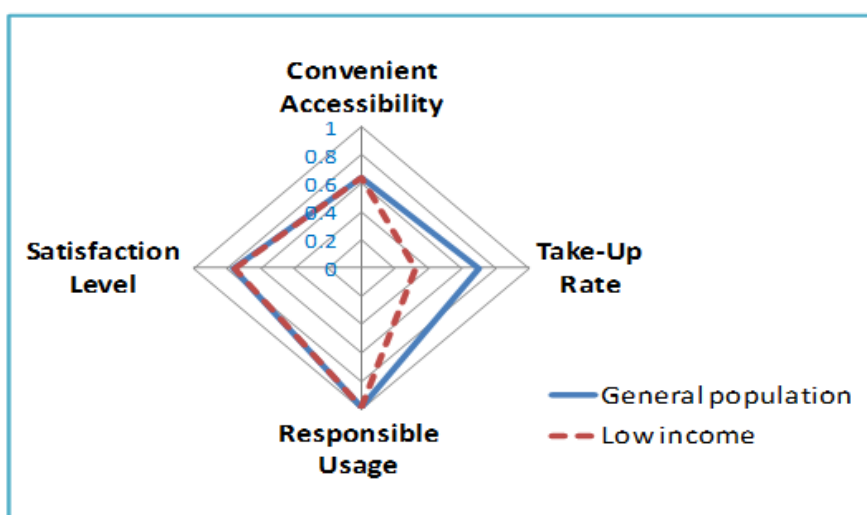
Source: Central Bank of Malaysia

Section 5: Conclusion

The issue of financial inclusion has received widespread attention in Malaysia during the recent years as policymakers acknowledge that one of the most important driving forces of growth is institutionalised financial services. While overall, Malaysia is on a sustainable growth path, the bottom 40% of the population are still categorised as low income households. This is neither desirable nor sustainable for the nation as the benefit of high growth will not be able to trickle down and thus a large portion of the population will be deprived of these benefits if they are not financially included.

We have developed an index of financial inclusion using data on four dimensions of financial inclusion which is useful to monitor the progress of policy initiatives for financial inclusion over a period of time. Thus far, the result has shown that by segmenting the population for which the IFI has been estimated, there is a gap between the low income segment and the general population (see Figure 3). The index could help policymakers to focus on the dimensions with these gaps for further analysis and introduce new policies and initiatives that could address related issues or assist to narrow such gaps. It is observed from the study that the achievement of financial inclusion in Malaysia is relatively high although some improvements in respect of some dimensions must take place to conclude that financial inclusion has also brought about economic and socio-political impact to the society at large.

This result is confirmed by the financial inclusion demand survey that was conducted in 2011. The findings from the survey and mapping of access points were used to support the introduction of agent banking which will further enhance access to financial services especially in the rural and remote areas. A proper agent banking model will be able to overcome the supply and demand problems to a greater extent. However, simply providing financial services is not sufficient. Significant numbers of rural people are still not aware of the availability of many financial products and due to this ignorance may not be able to take full advantage of the available financial facilities. The survey has also revealed that the level of awareness of the various financial services and products vary among the different segments of the population. This pointed to the need to spread financial literacy. The need for financial education at all levels requires intervention by the relevant ministries and other stakeholders so that the public would be better informed on how to benefit from the financial services and products in an effective manner.

The IFI could be used as a communication tool just as any other development index to indicate the level or performance of a country, which would enable the general public is made to be aware of the achievements or outcomes of reforms in the area of financial inclusion and in a broader sense the development of the financial sector overtime. Additionally, in order to make the IFI a more effective tool for cross country comparison, a common set of indicators and targets with standard reporting structure should be agreed upon among the policymakers and data compilers.

In a nutshell, it is observed that although various initiatives have been undertaken for financial inclusion, there is still a need to narrow the gap among the different income groups, and this could be achieved with the help of appropriate policies. Above all, a whole-hearted effort is called for from all the corners of the society, in order to make financial inclusion more meaningful and effective.

Appendix

Step to Estimate the Index of Financial Inclusion

In order to compute the IFI, first a sub-index is calculated for each inclusion of financial inclusion. Then the sub-indices are weighted and aggregated to create the dimension index which is normalised to be between 0 and 1. The IFI is the simple weighted average of the dimension indices.

The sub-index for the ith indicators, X_i, is computed by the following formula

$$X_i = \frac{A_i - m_i}{M_i - m_i} \tag{1}$$

where

A_i = Actual value of indicator $_i$
m_i = minimum value of indicator $_i$
M_i = maximum value of indicator $_i$

The index for the ith dimensions, X_i, is computed by

$$\text{Dimension Index, } D_i = \sum_{i=1}^{n} w_i X_i \tag{2}$$

where w_i is the weight of the ith indicators and n is the number of indicators.

The IFI is a simple weighted average of the dimension indices, as follows:

$$IFI = \frac{1}{n} \sum_{i=1}^{n} w_i D_i \tag{3}$$

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