

## **SMALL BUSINESS EFFICIENCY IN THE STATE OF KEDAH, MALAYSIA**

(Kecekapan Perniagaan Kecil di Negeri Kedah, Malaysia)

*NOR HASNI OSMAN & ABDUL AZIZ JEMAIN*

### *ABSTRACT*

This paper presents an empirical study on the efficiency of small businesses owned by Malays in Kedah, a state in the northern region of Peninsular Malaysia, wherein small businesses dominate the majority of commerce. There are five different types of main businesses, two from manufacturing and three from service sector. A study on the performance measurement using an efficiency technique of these businesses is sorely needed, since many Government agencies have provided continual help either financial or non-financial on a large scale, in order for these businesses to survive and compete in the commercial market. This study employs the data envelopment analysis (DEA), which is a non-parametric approach, to measure the performance of the subjects under study. DEA is widely used to measure the performance of organisations in the service industry. However, any organisation that is treated as a decision-making unit (DMU), including the manufacturing companies can use DEA technique in measuring their performance. Based on two basic models of DEA, almost 53% of DMUs from furniture production business are efficient. Whereas percentage of DMUs that are efficient for food processing, tailoring, food serving and grocery business are 42%, 41.7%, 34.1% and 33.3% respectively. The furniture production business also achieved the highest mean efficiency value compared to other type of business. The percentage of efficient DMUs and mean of efficiency had shown that the furniture production performs best in terms of efficiency level among the other four small businesses in Kedah.

*Keywords:* efficiency; small business; performance measurement; DEA

### *ABSTRAK*

Dalam makalah ini dibentangkan satu kajian empirikal berkenaan kecekapan perniagaan kecil yang dimiliki oleh peniaga Melayu di Kedah, sebuah negeri di utara Semenanjung Malaysia, yang perniagaan kecilnya adalah perniagaan yang dominan. Terdapat lima jenis perniagaan utama yang dijalankan, iaitu dua daripada sektor pembuatan dan tiga daripada sektor perkhidmatan. Kajian pengukuran prestasi menggunakan teknik kecekapan ke atas perniagaan kecil amat diperlukan kerana bantuan sama ada kewangan atau pun bukan kewangan yang berterusan telah banyak dikeluarkan oleh agensi kerajaan bagi memastikan perniagaan ini terus hidup dan dapat bersaing di pasaran. Dalam kajian ini digunakan analisis penyampulan data (APD), yang merupakan pendekatan tidak berparameter untuk mengukur prestasi subjek kajian. APD digunakan dengan meluas untuk mengukur prestasi organisasi bagi sektor perkhidmatan. Bagaimanapun, ianya sesuai digunakan oleh mana-mana organisasi yang dilayan sebagai satu unit pembuat keputusan (UPK), termasuklah syarikat pembuatan. Berdasarkan dua model asas APD, hampir 53% UPK perniagaan pengeluaran perabot adalah cekap. Manakala peratusan UPK yang cekap bagi perniagaan pemprosesan makanan, kedai jahitan, penyediaan makanan dan peruncitan adalah masing-masing 42%, 41.7%, 34.1% dan 33.3%. Perniagaan pengeluaran perabot juga mencatatkan purata nilai kecekapan tertinggi berbanding jenis perniagaan lain. Justeru, peratusan UPK cekap dan purata kecekapan menunjukkan bahawa perniagaan jenis ini, iaitu pengeluaran perabot adalah terbaik prestasinya dari segi tahap kecekapan berbanding empat jenis perniagaan kecil lain di Kedah.

*Kata kunci:* kecekapan; perniagaan kecil; pengukuran prestasi; APD

## References

- Afriat S. 1972. Efficiency estimation of production functions. *International Economic Review* **13**(3): 568 – 598.
- Aigner D.J., Lovell C.A.K. & Schmidt P. 1977. Formulation and estimation of stochastic frontier production function models. *Journal of Econometrics* **6**(1): 21 – 37.
- Banker R.D., Charnes A. & Cooper W.W. 1984. Some models for estimating technical and scale efficiencies in data envelopment analysis. *Management Science* **30**: 1078 – 1092.
- Charnes A., Cooper W. & Rhodes E. 1978. Measuring the efficiency of decision making units. *European Journal of Operational Research* **2**(6): 429 – 444.
- Chen T.Y. & Yeh T.L. 2000. A measurement of bank efficiency, ownership and productivity changes in Taiwan. *The Service Industries Journal* **20**(1): 95 – 109.
- Clement J.P., Valdmanis V.G., Bazzoli G.J., Zhao M. & Chukmaitov A. 2008. Is more better? An analysis of hospital outcomes and efficiency with a DEA model of output congestion. *Health Care Management Science* **11**(1): 67 – 77.
- Cooper W.W., Seiford L.M. & Tone K. 2007. *Data Envelopment Analysis*. 2<sup>nd</sup>. Ed. New York: Springer Science+Business Media, LLC.
- Cooper W.W., Huang Z., Li S. & Zhu J. 2008. A response to a critiques of DEA by Dmitruk and Kosheroy, and Bol. *Journal of Productivity Analysis* **29**(1): 15 – 21.
- Entani T., Maeda Y. & Tanaka H. 2002. Dual models of interval DEA and its extension to interval data. *European Journal of Operational Research* **136**: 32 – 45.
- Fare R. & Zelenyuk V. 2005. On Farrell's decomposition and aggregation. *International Journal of Business and Economics* **4**(2): 167-171.
- Forsund F.R. & Sarafoglou N. 2005. The tale of two research communities: The diffusion of research on productive efficiency. *International Journal of Production Economics* **98**: 17 – 40.
- Fu F., Vijverberg C.C. & Chen Y. 2008. Productivity and efficiency of state-owned enterprises in China. *Journal of Productivity Analysis* **29**(31): 249 – 259.
- Fukushige M. & Miyara I. 2003. Statistical hypothesis testing for returns to scale using data envelopment analysis. <http://ht.econ.kobe-u.ac.jp/~tanizaki/workshop/2003/20030528.pdf> (1 August 2008).
- Gundlach E. 2007. The solow model in the empirics of growth and trade. *Oxford Review of Economic Policy* **23**(1): 25 – 44.
- Grigorian D. & Mande V. 2005. A cross-country non-parametric analysis of Bahrain's banking sector. *IMF Working Paper*, 05/117. Middle East: International Monetary Fund.
- Hamed A.B., Mohamed A.H., Ramli N., Mat N. & Ariffin R. 1998. *Program pembangunan keusahawanan di kalangan usahawan wanita: Satu penilaian*. Research Report, Sintok: Universiti Utara Malaysia.
- Harrison J.P., Coppola M.N. & Wakefield M. 2004. Efficiency of federal hospitals in the United States. *Journal of Medical Systems* **5**: 411 – 422.
- Hulten C.R. & Isaksson A. 2007. Why development levels differ: The sources of differential economic growth in a panel of high and low income countries. *NBER Working Paper Series*, 13469. Cambridge: National Bureau of Economic Research.
- Meeusen W. & Broeck, J.V.D. 1977. Efficiency estimation from Cobb-Douglas production functions with composed errors. *International Economic Review* **18**: 435 – 444.
- MPC. 2007. *Laporan Tahunan Produktiviti 2007*. Petaling Jaya: Malaysia Productivity Corporation.
- Nor Hasni O. 2005. *Keefisianan dan Amalan Perniagaan Usahawan Kecil di Negeri Kedah Darulaman*. PhD Thesis. Fakulti Sains dan Teknologi, Universiti Kebangsaan Malaysia.
- O'Donnell C.J., Rao D.S.P. & Battese G.E. 2007. Metafrontier frameworks for the study of firm level efficiencies and technology ratios. *Empirical Economics* **34**(2): 231 – 255.
- Richmond J. 1974. Estimating the efficiency of production. *International Economic Review* **15**: 515 – 521.
- Sarkis J. & Cordeiro J.J. 2001. An empirical evaluation of environmental efficiencies and firm performance: Pollution prevention versus end-of-pipe practice. *European Journal of Operational Research* **135**: 102 – 113.

College of Business  
Universiti Utara Malaysia  
06010 UUM Sintok  
Kedah D.A., MALAYSIA  
E-mail: has1218@uum.edu.my\*

School of Mathematical Sciences  
Faculty of Science and Technology  
Universiti Kebangsaan Malaysia  
43600 UKM Bangi  
Selangor D.E., MALAYSIA  
E-mail: azizj@ukm.my

\* Corresponding author