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Universitas Padjadjaran
Preface

Welcome to the Proceedings of the International Conference on Applied Statistics (ICAS 2013). This event was held at September, 16-18th 2013 in the beautiful Campus of Universitas Padjadjaran, Jatinangor-Sumedang, West Java Province, Indonesia. This Conference is organized by Department of Statistics, Faculty of Mathematics and Natural Science, Universitas Padjadjaran in cooperation with Statistical Forum for Higher Education (FORSTAT) Indonesia.

The ICAS 2013 Conference was attended by 12 invited speakers, 60 researchers and academicians from 8 countries who were share their expertise and find out about the latest research on applied statistics. A special thanks goes to all speakers and presenters as well as to the session chairpersons, who drove all the conference sessions on the right tract, keeping them in time while permitting enriching discussions.

Finally, we hope that these proceedings will serve as a valuable reference for security researcher and academicians.

Best Wishes,

Dr. Toni Toharudin, M.Sc.
Chair of Organizing Committee
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FEMALE FERTILITY IN ASEAN-10 AND ASEAN-5: EVIDENCE FROM PANEL COINTEGRATION AND GRANGER CAUSALITY TESTING

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Abstract

This study attempts to identify the determinants of female fertility in ASEAN countries using panel cointegration technique utilizing data from 10 members of ASEAN countries. The data spans from 1990 to 2010. Two methods namely FMOLS and DOLS are employed to analyse the long-run relationship between fertility and income, female labour force participation and infant mortality rate for ASEAN-10 and ASEAN-5 countries. The results from DOLS and FMOLS are found to be consistent for ASEAN-10. Firstly, the present study found a negative relationship between female fertility and income which is contrast with microeconomic theory of household fertility for ASEAN-10 countries but concurs with studies done by Narayan and Peng (2006), Becker and Lewis (1973) and Birdsall and Jamison (1983). Secondly, an inverse relationship can be observed between female labour force participation and female fertility as suggested by Narayan (2006), McNownand Ridae-Cano (2004) and Devaney (1983) for both ASEAN-10 countries. Thirdly, a positive relationship can be observed between infant mortality and female fertility for ASEAN-10 countries and this finding is similar to studies done by Chowdury (1988), Gani (1999), Sanderson and Dubrow (2000), Narayan (2006), Knodel (1968), Knodel and Walle (1967), Yamada (1985), Shields and Tracy (1986) and Hondroyannis (2010). For ASEAN-5 countries which comprise ofpioneer members of ASEAN, a similar relationship can be observed as for ASEAN-10 countries. Finally, a short-run and long-run bi-directional causality can be observed between labour force participation rate and female fertility for ASEAN-10 countries which concurs with Mishra and Smyth (2010).

Keywords: ASEAN-10, ASEAN-5, fertility, panel cointegration, FMOLS and DOLS JEL classification codes: J13, C22, C52

1. INTRODUCTION

Population growth is determined by three dimensions namely fertility rate, mortality rate and net migration. Lower fertility is of concern for many countries especially the developed ones as it brings negative repercussions to the economy. Some of the negative effect of declining fertility is insufficient amount of labour force especially in labour-intensive economies, increasing dependence on foreign workers, declining dependency ratio and under-utilization of public infrastructure. In the recent past, even developing countries have started to worry about their declining fertility. This includes countries like Malaysia, Singapore, Thailand and Vietnam. Between 1990 and 2010, the fertility rate for all ASEAN countries recorded a decline ranging from 25% to 60%, the highest being for Laos (56.45%), Cambodia (54.39%)