INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, ECONOMICS & MANAGEMENT

IJRCM

CONTENTS

INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, ECONOMICS & MANAGEMENT ii

A Monthly Double-Blind Peer Reviewed (Refereed/Juried) Open Access International e-Journal - Included in the International Serial Directories

http://ijrcm.org.in/

INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, ECONOMICS & MANAGEMENT

A Monthly Double-Blind Peer Reviewed (Refereed/Juried) Open Access International e-Journal - Included in the International Serial Directories

http://ijrcm.org.in/

iv

CALL FOR MANUSCRIPTS

We invite unpublished novel, original, empirical and high quality research work pertaining to recent developments & practices in the areas of Computer Science & Applications; Commerce; Business; Finance; Marketing; Human Resource Management; General Management; Banking; Economics; Tourism Administration & Management; Education; Law; Library & Information Science; Defence & Strategic Studies; Electronic Science; Corporate Governance; Industrial Relations; and emerging paradigms in allied subjects like Accounting; Accounting Information Systems; Accounting Theory & Practice; Auditing; Behavioral Accounting; Behavioral Economics; Corporate Finance; Cost Accounting; Econometrics; Economic Development; Economic History; Financial Institutions & Markets; Financial Services; Fiscal Policy; Government & Non Profit Accounting; Industrial Organization; International Economics & Trade; International Finance; Macro Economics; Micro Economics; Rural Economics; Co-operation; Demography: Development Planning; Development Studies; Applied Economics; Development Economics; Business Economics; Monetary Policy; Public Policy Economics; Real Estate; Regional Economics; Political Science; Continuing Education; Labour Welfare; Philosophy; Psychology; Sociology; Tax Accounting; Advertising & Promotion Management; Management Information Systems (MIS); Business Law; Public Responsibility & Ethics; Communication; Direct Marketing; E-Commerce; Global Business; Health Care Administration; Labour Relations & Human Resource Management; Marketing Research; Marketing Theory & Applications; Non-Profit Organizations; Office Administration/Management; Operations Research/Statistics; Organizational Behavior & Theory; Organizational Development; Production/Operations; International Relations; Human Rights & Duties; Public Administration; Population Studies; Purchasing/Materials Management; Retailing; Sales/Selling; Services; Small Business Entrepreneurship; Strategic Management Policy; Technology/Innovation; Tourism & Hospitality; Transportation Distribution; Algorithms; Artificial Intelligence; Compilers & Translation; Computer Aided Design (CAD); Computer Aided Manufacturing; Computer Graphics; Computer Organization & Architecture; Database Structures & Systems; Discrete Structures; Internet; Management Information Systems; Modeling & Simulation; Neural Systems/Neural Networks; Numerical Analysis/Scientific Computing; Object Oriented Programming; Operating Systems; Programming Languages; Robotics; Symbolic & Formal Logic; Web Design and emerging paradigms in allied subjects.

Anybody can submit the **soft copy** of unpublished novel; original; empirical and high quality **research work**/**manuscript** *anytime* in *M.S. Word format* after preparing the same as per our **GUIDELINES FOR SUBMISSION**; at our email address i.e. infoijrcm@gmail.com or online by clicking the link **online submission** as given on our website (*FOR ONLINE SUBMISSION, CLICK HERE*).

GUIDELINES FOR SUBMISSION OF MANUSCRIPT

1.   **COVERING LETTER FOR SUBMISSION**:

                                                                                                                   DATED: _____

      THE EDITOR
      IJRCM

      Subject: **SUBMISSION OF MANUSCRIPT IN THE AREA OF**.

      (e.g. Finance/Marketing/HRM/General Management/Economics/Psychology/Law/Computer/IT/Engineering/Mathematics/other, please specify)

      DEAR SIR/MADAM

      Please find my submission of manuscript entitled '_____' for possible publication in your journals.

      I hereby affirm that the contents of this manuscript are original. Furthermore, it has neither been published elsewhere in any language fully or partly, nor is it under review for publication elsewhere.

      I affirm that all the author (s) have seen and agreed to the submitted version of the manuscript and their inclusion of name (s) as co-author (s).

      Also, if my/our manuscript is accepted, I/We agree to comply with the formalities as given on the website of the journal & you are free to publish our contribution in any of your journals.

      NAME OF CORRESPONDING AUTHOR:
      Designation:
      Affiliation with full address, contact numbers & Pin Code:
      Residential address with Pin Code:
      Mobile Number (s):
      Landline Number (s):
      E-mail Address:
      Alternate E-mail Address:

      NOTES:
      a)   The whole manuscript is required to be in *ONE MS WORD FILE* only (pdf. version is liable to be rejected without any consideration), which will start from the covering letter, inside the manuscript.
      b)   The sender is required to mentionthe following in the **SUBJECT COLUMN** of the mail:
           New Manuscript for Review in the area of (Finance/Marketing/HRM/General Management/Economics/Psychology/Law/Computer/IT/ Engineering/Mathematics/other, please specify)
      c)   There is no need to give any text in the body of mail, except the cases where the author wishes to give any specific message w.r.t. to the manuscript.
      d)   The total size of the file containing the manuscript is required to be below **500 KB**.
      e)   Abstract alone will not be considered for review, and the author is required to submit the complete manuscript in the first instance.
      f)   The journal gives acknowledgement w.r.t. the receipt of every email and in case of non-receipt of acknowledgment from the journal, w.r.t. the submission of manuscript, within two days of submission, the corresponding author is required to demand for the same by sending separate mail to the journal.

2.   **MANUSCRIPT TITLE**: The title of the paper should be in a 12 point Calibri Font. It should be bold typed, centered and fully capitalised.

3.   **AUTHOR NAME (S) & AFFILIATIONS**: The author (s) **full name**, **designation**, **affiliation** (s), **address**, **mobile/landline numbers**, and **email/alternate email address** should be in italic & 11-point Calibri Font. It must be centered underneath the title.

4.   **ABSTRACT**: Abstract should be in fully italicized text, not exceeding 250 words. The abstract must be informative and explain the background, aims, methods, results & conclusion in a single para. Abbreviations must be mentioned in full.

5.   **KEYWORDS**: Abstract must be followed by a list of keywords, subject to the maximum of five. These should be arranged in alphabetic order separated by commas and full stops at the end.

6.   **MANUSCRIPT**: Manuscript must be in ***BRITISH ENGLISH*** prepared on a standard A4 size ***PORTRAIT SETTING PAPER***. It must be prepared on a single space and single column with 1" margin set for top, bottom, left and right. It should be typed in 8 point Calibri Font with page numbers at the bottom and centre of every page. It should be free from grammatical, spelling and punctuation errors and must be thoroughly edited.

7.   **HEADINGS**: All the headings should be in a 10 point Calibri Font. These must be bold-faced, aligned left and fully capitalised. Leave a blank line before each heading.

8.   **SUB-HEADINGS**: All the sub-headings should be in a 8 point Calibri Font. These must be bold-faced, aligned left and fully capitalised.

9.   **MAIN TEXT**: The main text should follow the following sequence:

     INTRODUCTION

     REVIEW OF LITERATURE

     NEED/IMPORTANCE OF THE STUDY

     STATEMENT OF THE PROBLEM

     OBJECTIVES

     HYPOTHESES

     RESEARCH METHODOLOGY

     RESULTS & DISCUSSION

     FINDINGS

     RECOMMENDATIONS/SUGGESTIONS

     CONCLUSIONS

     SCOPE FOR FURTHER RESEARCH

     ACKNOWLEDGMENTS

     REFERENCES

     APPENDIX/ANNEXURE

     It should be in a 8 point Calibri Font, single spaced and justified. The manuscript should preferably not exceed ***5000 WORDS***.

10.   **FIGURES &TABLES**: These should be simple, crystal clear, centered, separately numbered & self explained, and **titles must be above the table/figure**. **Sources of data should be mentioned below the table/figure**. It should be ensured that the tables/figures are referred to from the main text.

11.   **EQUATIONS**:These should be consecutively numbered in parentheses, horizontally centered with equation number placed at the right.

12.   **REFERENCES**: The list of all references should be alphabetically arranged. The author (s) should mention only the actually utilised references in the preparation of manuscript and they are supposed to follow **Harvard Style of Referencing**. The author (s) are supposed to follow the references as per the following:

- All works cited in the text (including sources for tables and figures) should be listed alphabetically.
- Use (**ed.**) for one editor, and (**ed.s**) for multiple editors.
- When listing two or more works by one author, use --- (20xx), such as after Kohl (1997), use --- (2001), etc, in chronologically ascending order.
- Indicate (opening and closing) page numbers for articles in journals and for chapters in books.
- The title of books and journals should be in italics. Double quotation marks are used for titles of journal articles, book chapters, dissertations, reports, working papers, unpublished material, etc.
- For titles in a language other than English, provide an English translation in parentheses.
- The location of endnotes within the text should be indicated by superscript numbers.

PLEASE USE THE FOLLOWING FOR STYLE AND PUNCTUATION IN REFERENCES:

BOOKS

- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

UNPUBLISHED DISSERTATIONS AND THESES

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

ONLINE RESOURCES

- Always indicate the date that the source was accessed, as online resources are frequently updated or removed.

WEBSITES

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, ECONOMICS & MANAGEMENT   vi

A Monthly Double-Blind Peer Reviewed (Refereed/Juried) Open Access International e-Journal - Included in the International Serial Directories

http://ijrcm.org.in/

INVESTIGATING THE IMPACT OF ECONOMIC VARIABLES ON INTERNATIONAL TOURIST ARRIVALS

CHENG-WEN LEE
PROFESSOR
DEPARTMENT OF INTERNATIONAL BUSINESS
CHUNG YUAN CHRISTIAN UNIVERSITY
TAIWAN

WEN-CHUAN FU
RESEARCH SCHOLAR
COLLEGE OF BUSINESS
CHUNG YUAN CHRISTIAN UNIVERSITY
TAIWAN

KUO-SUNG HSIEH
LECTURER
DEPARTMENT OF ACCOUNTING
SOOCHOW UNIVERSITY
TAIWAN

YI-CHANG LEE
RESEARCH SCHOLAR
DEPARTMENT OF INTERNATIONAL BUSINESS
CHUNG YUAN CHRISTIAN UNIVERSITY
TAIWAN

ABSTRACT

This paper uses an econometric model of the panel data and GMM methods to explore the impact factors regarding the number of visitors to Taiwan for sightseeing. The empirical results of this paper shows that the unemployment rate, real GDP, price level and crime rates are the factors with a significant negative relationship with the number of visitors to Taiwan for sightseeing, while the foreign exchange rate is the factor with a significant positive relationship. On the other hand, return on the stock shows an insignificant but negative relationship, while the growth rate in the number of international tourists to Taiwan in the previous period shows an insignificant but positive relationship. The above results may be evidenced that the growth in the number of tourists to Taiwan is related with the domestic job market, economic growth, prices level and social security issues, because growth in the number of tourists to Taiwan can increase employment of manpower, and the fall in prices level and the reduction in social security problem can enhance the growth in the number of tourists to Taiwan, but with limited help to economic growth. These findings also suggest that local authority should adjust the economic transformation of tourism industry, and be more active in planning guidelines to induce enterprises invest more in tourism industry. The conclusions or predictions of this paper may provide a reference as basis for policy-making and then adjust the implementation of related policy.

KEYWORDS
Economic growth, Exchange rate, Panel data analysis, Tourist arrivals, Unemployment rate.

JEL CLASSIFICATION NUMBERS
L83, C33.

1. INTRODUCTION

Tourist income becomes more and more important to the economic growth of any countries. According to the research report issued by World Travel & Tourism Council (WTTC), although all of the economies were seriously hit by global financial crisis, sightseeing activities are still continuously mounted, and contribute to drive the growth of the global tourism industry, mitigate the impact caused by each countries' economic downturn, and thus promote both the standard of living and growth in personal wealth for practitioners in tourism industry. It was estimated by United Nations World Tourism Organization (UNWTO) that the number of international sightseeing passengers will show multiplication phenomenon, from 1995 to 2013, and up to 2013, the accumulated numbers of sightseeing tourists all over the world has reached 10 billion 87 million people. In addition, according to the WTTC assessment, in 2014 the global travel and tourism industry will grow 4.3%, slightly higher than the 3.3 percent growth rate of the world economy, and thus creating the world's economic output value of more than $ 2.248 trillion, increasing more than 103 million jobs globally, and effectively reduce unemployment rates in every countries. Therefore, it is worth of concern to observe the impact on the overall economy induced by tourism resources.

We know that once the foreign exchange rate depreciation occurs, it will be theoretically more favorable to travel to Taiwan, to export and exportation economic growth, as well as to stock market, but is likely to cause prices up in imported goods, prices level fluctuation upwards, as well as concerns in inflation. When prices level continues to rise over exchange rate fluctuations, those who want to travel to Taiwan will probably be deterred. If such phenomenon occurs, whether the tourism industry and job market are affected is worth of research. But so far few literatures focus on the study regarding the relationship between sightseeing activities and social security issues. Therefore, this paper tries to explore this issue by investigating the linkage and relationship between the crime rate and sightseeing activities.

In addition, after examining most of the related literature, it is found by this study that variables generally selected to research the issue regarding sightseeing demands are: GDP, CPI, foreign exchange rates, accommodation prices and transport costs (Kulendren & Witt, 2003; Lim & McAller, 2002; Akinboade and Braimoh , 2010; Akhtar and Shah, 2012; Singh, 2014; Babu and Valli, 2014). The literature also shows that most of the operating variables selected are: income, exchange rate and price index. Therefore, this study also uses these economic variables to investigate the factors that would affect the growth of the number of visitors to Taiwan for sightseeing. In addition, Baker and Stockton (2014) according to the study the crime rate will be included as explanatory variables.

In the study of tourism, traditionally econometric models and time series model are employed as research tools. Recently, research methods such as unit root test, cointegration test, error correction model and causality model are used to study the Dynamic Time Series (Tang, 2011 ; Brida and Risso , 2010). These methods are mainly applying time series or cross-sectional data analysis, so it is relatively easy to overlook the information provided by other sections. It is believed that the effects on variables caused by changing of time cannot be captured by cross-sectional analyses, and only average effect of influence caused by independent variables to dependent variables can be reflected. On the other hand, the effects on a specific variable caused by other variable cannot be investigated through time series analyses, and only the influence on dependent variables caused by changing of time can be taken into account. Since this study is to explore the growth in the number of tourists to Taiwan, beyond the way only considering one single facet data, we take breakthrough data analysis research methods capable of time series and cross-section information by simultaneously considering data of both sections, in order to investigate the impact on the growth in the number of tourists to Taiwan derived from the factors: historical real GDP, CPI, the US dollar against the NT dollar exchange rate, unemployment rate, stock market, and crime rate. The empirical results will provide government agency and sightseeing tourism industry with information and insight for their planning and management.

2. LITERATURE REVIEW

Tourism industry is an important industry of great potential in today's twenty-first century. development of tourism industry can attract a large number of international tourists, increase employment opportunities offered from tourism-related industries and obtain significant foreign exchange earnings, and thus contribute to the country's economic development (Chakrabarti, 2014; Harini and Indira, 2014).

King et al. (1993) considered relevant negative impact of crime, pornography, gambling, etc., as often the byproducts derived from sightseeing activities. But the relationship between sightseeing activities and crime is still uncertain, although local residents often believe that the relationship exists between sightseeing activities and crime. Balaguer and Cantavella-Jorda (2002) investigated the causal relationship between the Spanish tourism income and economic growth, and the results showed there is a long-term relevant relationship between revenue from tourism industry and GDP. It was also evidenced that the growth in tourism industry can also improve economic growth. Lim and Mcaller (2002) described that there is a long-term equilibrium relationship between the tourist arrivals to Australia and some key Malaysia macro-economic variables, and also a long-term equilibrium relationship between transportation costs, exchange rates and demand of international sightseeing demand. But there is no long-term equilibrium relationship between real income and other variables. Kim et al. (2006) investigated the causal relationship between economic growth and the number of tourist arrivals, demonstrating a long-term equilibrium relationship between each other to prove the increase in foreign tourist arrivals could enhance economic development, and economic growth could also lead to growth in tourism market. In exploring the relationship between tourism industry development and economic growth, they pointed out that there is a causal relationship between Taiwan's economic growth and the number of tourists to Taiwan for sightseeing. Brida et al.（2008）explored the relationship between Mexico tourism industry development and economic growth, and showed sightseeing activities lead the economic growth in Mexico. Lee and Chang (2008) investigated the causal relationship between long-term tourism development and economic growth, by utilizing the application of heterogeneity panel cointegration test results, and showed that there exists one-way tourism development impact on the economic growth in OECD countries, while two-way effects in non-OECD countries, but no significant relationship in Asian countries.

Chen and Chiou (2009) investigated the causal relationship between tourism industry development and economic growth both in South Korea and Taiwan, by utilizing EGARCH-M model, and found that there exists a two-way feedback relationship in South Korea between tourism industry development and economic growth, i.e. each other will be influenced, while one-way effect relationship in Taiwan, as only sightseeing activities lead economic growth. Akinboade and Braimoh (2010) analyzed the contribution of international tourists to South Africa's economy, using multi-variables VAR model, and the empirical results showed that there exists a long-term Granger causality relationship between revenues from international sightseeing activities and economic growth. Belloumi (2010) analyzed the relationship between revenues from international sightseeing activities and economic growth in Tunisia, and found that one-way effect relationship exists, as only demand in sightseeing leads economic growth. By utilizing Johansen co-integration model and Granger causal relationship model, Brida and Risso (2010) examined the relationship and impact between demand in sightseeing travelling to South Tyrol Italy and local economic growth. The results showed that one-way effect relationship exists, as only demand in sightseeing leads economic growth. Katirciogluˇ (2010) verified the hypothesis that the growth in tourist arrivals to Singapore leads its economic growth, and found there exists a long-term equilibrium relationship between demand in international sightseeing and economic growth. Narayan et al. (2010) examined the relationship between demand in international sightseeing and economic growth in the four Pacific island countries, namely Fiji, Papua New Guinea, Solomon Islands and Tonga. The empirical results showed that both the number of tourist arrivals and the amount of consumption affect short-term and long-term changes in GDP in every our Pacific island countries. Based on the findings from the above literature discussed, there exists a significant impact and a causal relationship between tourism industry development and economic growth, exchange rates, consumer price index, unemployment rate and stock prices. These findings can be used as the empirical basis not only to support theoretical models utilized in this study but also as to support comparative analysis for empirical results found in this study, in order to fulfill the intended objective of this study.

3. METHODOLOGY

3.1 EMPIRICAL MODEL

This study uses research methods based on panel data to analyze the relationship between growth rate in the tourist arrivals from various countries and marco-economic and social variables, and to explore the degree of impact on the willingness of travelers from various countries to visit Taiwan for sight-seeing brought by the factors such as economic growth (GDP), price level (CPI), exchange rates, unemployment rates, stock prices and social security. The model used in this study can be depicted as follows:

$$TRG_{i,t} = \alpha + GDP_{i,t} + CPI_{i,t} + EX_{i,t} + UR_{i,t} + SR_{i,t} + CR_{i,t} + \varepsilon_{i,t} \tag{3.1}$$

Among the above items, $TRG_{i,t}$ on behalf of the growth rate in the number of tourist arrivals from top 10 countries to Taiwan for sight-seeing; $GDP_{i,t}$ on behalf of real GDP growth rate, compared with last month's real GDP, in Taiwan; $CPI_{i,t}$ on behalf of the general consumer price index in Taiwan; $EX_{i,t}$ on behalf of the US dollar exchange rate against the NT dollar; on behalf of unemployment rate in Taiwan; on behalf of the issuance weighted average stock Index (monthly rate of return) in Taiwan; on behalf of rate in criminal population (person / 100,000).

3.2 PANEL DATA MODEL

There are two basic regression models based on panel data: the fixed effects model and the random effects model. The difference between these two models is the way of sampling: a particular sample is used in the fixed effects model while sample from random sampling is used in the random effects model. The explanations and comparisons for the fixed effects model and random effects model are undertaken as follows.

3.2.1 THE FIXED EFFECTS MODEL

The fixed effects model, also known as the Least Square Dummy Variable Model (LSDV), is applicable to the individual subset within a population with high degree of differences and the low degree similarity. The intercept term in this model illustrates the different characteristics among cross-sectional data for of each variable, allows the differences between each variable, and presents a fixed intercept term α_{ij}, which represents different types of cross-sectional sample with an intercept not change over time. The model is as follows:

$$Y_{it} = \sum_{j=1}^{N} \alpha_{ij} D_{jt} + \sum_{k=1}^{g} \beta_k \chi_{kit} + \varepsilon_{it} \tag{3.2}$$

represents the growth rate in the number of tourist arrivals from the "i" country to visit Taiwan in the period of "t"; i = 1, ..., N, denoting in the same time, cross-sectional sample of the different countries; t = 1, ..., T, representing the study period; k = 1, ..., K, representing the number of explanatory variables; α_{ij} is expressed asa fixed intercept term; D_{jt} for dummy variables, $j = i$ the value of dummy variable is set to 1, and the value is set to 0 when $j \neq i$; X_{kit} is expressed as the sample value of the "k" explanatory variable in the "i" sample during the period "t"; ε_{it} is expressed as the error term.

INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, ECONOMICS & MANAGEMENT 15

A Monthly Double-Blind Peer Reviewed (Refereed/Juried) Open Access International e-Journal - Included in the International Serial Directories

http://ijrcm.org.in/

3.2.2 THE RANDOM EFFECTS MODEL

The random effects model, also known as the Error Component Model, employs a random sampling way to select sample, and the intercept will not change over time. The information contained in the weighted matrix represents the interrelationship between N numbers of sequential residual term. The random effects is assumed that μ_i is deemed as a random variable from sample "i"; that is, it could be seen as a kind of disturbance term as residual term, and each sampling "i" at different points of time is all fixed. Model is as follows:

$$Y_{it} = \alpha_i + \sum_{k=1}^{K} \beta_k X_{kit} + \varepsilon_{it} \tag{3.3}$$

Among items above, α_i in the random effects model represents an α_i intercept term in random patterns, of which the formula is as follows:

$$\alpha_i = \alpha_0 + \mu_i \tag{3.4}$$

If the above equation is input into (3.3), then the equation (3.3) can be rewritten as:

$$Y_{it} = (\alpha_0 + \mu_i) + \sum_{k=1}^{K} \beta_k X_{kit} + \varepsilon_{it} \tag{3.5}$$

Among the above items, Y_{it} represents the value of the explained variable for "i" country, in "t" period; i = 1, ..., N, denoting in the same time, the different cross-sectional sample; α_0 denoting the intercept term randomly produced; μ_i denoting the error term of intercept term; t = 1, ..., T, representing the study period; k = 1, ..., K, representing the number of explanatory variables; X_{kit} representing the value of "k" explanatory variable from "i" country during period "t" ; α_i representing the intercept term from random pattern ; ε_{it} representing the error term $\varepsilon_{it} \overset{iid}{\sim} (0, \sigma_\varepsilon^2)$.

In selecting econometric models, the most commonly used method is Hauseman Test proposed by Mundlak (1978), which emphasizing the importance in examining whether there exist a correlation relationship between the intercept term (μ_i) and explanatory variable (X_{kit}) in the Random Effects Model. If a correlation relationship exists between the intercept term (μ_i) and explanatory variable (X_{kit}), the estimated results would be biased. In such cases, the estimated results from the fixed effects model would be efficient and consistent, and therefore the fixed effects model should be adopted. On the contrary, If there is no correlation relationship between the intercept term (μ_i) and explanatory variable (X_{kit}), the estimated results from the random effects model would be efficient and consistent, and the estimated results from the fixed effects model would be consistent, but would be inefficient. Therefore, the random effects model should be adopted.

3.3 PANEL GMM

GMM was introduced in 1982 by Lars Hansen, which extends the concept of dynamic difference allocation implicit in the dynamic difference method to all the expectations of the relationship. No specific allocation assumptions required, and allows non-independent distribution, GMM is with the following three qualities: (1). GMM is not limited to dynamic difference condition as dynamic allocation (such as mean, variance and skewness, etc.), but can be any expectations for the relationship. (2). GMM allows the number of dynamic difference condition more than the number of parameters. (3). GMM is not required to obey an independent sample distribution, as long as the stability of the sample distribution is sufficient for requirements of certain weak distribution, such as the Law of Large Numbers and Central Limit Theorem.

Early in the study on GMM, if the form the current values of dependent variables affected by previous values of dependent variables is AR (1), the endogenous problem will then exist, and therefore the estimates derived from empirical study would violate traditional OLS assumption, with bias on the estimates. In pure time-series dynamics model, although based on the assumption that T estimate is unbiased, when $T \to \infty$ the result is still the same. The main question about Panel data dynamic model is: when dependent variable (y_{it}) is the function of individual effect μ_i, the time-lag explained (dependent) variable (y_{it-1}) is also the function of μ_i ; even the residual term are in the absence of serial correlation, this correlation still exists. In the situation of standard panel data, T is normally small, and the progressive nature of panel data estimation formula is based on N $\to \infty$, not on $T \to \infty$. As a result, LSDV and GLS are all biased and inconsistent. Fixed effects under [β, σ] estimates can be regarded as the N-type individual average estimate.

Estimation of random effects model is even more obvious. Because the time-lag dependent variable (y_{it-1}) and the compound residual term ($\mu_i + V_{it}$) produce more complex correlated relationship, and each random effect μ_i are incorporated into each of the observation group i . The problems mentioned above imply the dynamic Panel data model need to be solved by other means. The GMM method proposed by Arellano and Bond (1991) and Arellano and Bover (1995) in literature can be used to cope with the problems faced by the dynamic estimation model.

Arellano and Bond (1991) developed a method of measuring first differencing GMM. If there is an estimation formula as follows:

$$y_{i,t} = \alpha y_{i,t} + \chi'_{i,t}\beta_1 + \varphi_i + \varepsilon_{i,t} \quad i = 1......N \quad t = 2......T_i \tag{3.7}$$

In the above model, φ_i represents individual effects, and $\varepsilon_{i,t}$ is error term, which meets the white noise assumption. The following formula can be obtained by first difference:

$$\Delta y_{i,t} = \alpha y_{i,t} + \Delta \chi'_{i,t}\beta_1 + \Delta \varepsilon_{i,t} \tag{3.8}$$

If required further to solve the endogenous problem and let $cor(\Delta y_{i,t-1}, \Delta \varepsilon_{i,t}) \neq 0$, by using appropriate instrument variable, let the following matrixes fulfilling the moment condition:

$$E\left[y_{i,t-s} . \Delta \varepsilon_{i,t} \right] = 0$$
$$E\left[\chi_{i,t-s} . \Delta \varepsilon_{i,t} \right] = 0 \quad \text{for} \quad s \geq 2 \; ; \quad t = 3,......T \tag{3.9}$$

But when the inter-strain sustain exists between dependent variables, namely (3.7) where the α term tends to 1, its effectiveness as instrument variables of one-period lagged variables will be weak Instruments, resulting in the increase of coefficient variance and the effect in its unbiasness in a small sample. Therefore, Arellano and Bover (1995), Blundell and Bond (1998) proposed to combine tools and variables into the first difference Level of System GMM, so that it meets:

$$E\left[\Delta y_{i,t-s} . (\varphi_i + \varepsilon_{i,t}) \right] = 0$$
$$E\left[\Delta \chi_{i,t-s} . (\varphi_i + \varepsilon_{i,t}) \right] = 0 \quad \text{for} \quad s = 1 \tag{3.10}$$

But generally, the number of instrument variables in System GMM is more than that in first differencing GMM, and may have a greater bias in the estimate. By the law to numerical analysis, Hayakawa (2007) found that the estimates bias from System GMM is small in a finite sample. In addition, System GMM can directly employ the original time-lagged variables or the differential as instrument variables, not necessarily further find other variable to replace the instrument variables. As a result, for the Panel data gathered from short sample period and large sample size, System GMM is the preferred choice.

3.4 SELECTION OF VARIABLES

The data used in this study for dependent variables are from the Taiwan Directorate-General of Budget, Accounting and Statistics (DGBAS). According to DGBAS's data-base, the areas of tourist to Taiwan by their area of residence can be classified into Asia, America, Europe, Oceania and Africa, and 19 countries. Since the statistic data about Vietnam are initially gathered in 2012, and the number of tourist to Taiwan from other non-Asian countries or regions is mostly less than 100,000 tourists (about 10,000 -70,000 passengers) every year, Vietnam and those countries or regions less than 100,000 tourists annually are not included in the sample, due to the less number of tourists to Taiwan annually and the total aggregate ratio less than 10% of total tourists. Therefore, the countries or regions with more than 100,000 visitors to Taiwan for sightseeing in 2011 are included in this study, resulting in 10 countries or regions (5.52 million tourists in total and accounted for 90.69 % of total number of tourists) as the sample of this study. The monthly growth rate of the sample, in months from January 2002 to December 2013, the aggregate data of 12 years (144 months) of seven variables in total, or 10,080 data items, are used in this study for Panel data analysis.

INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, ECONOMICS & MANAGEMENT   16

A Monthly Double-Blind Peer Reviewed (Refereed/Juried) Open Access International e-Journal - Included in the International Serial Directories

http://ijrcm.org.in/

The growth rate in the number visitors to Taiwan (TGR) for sightseeing is used as dependent variable, and the six independent variables are: the economic growth rate(GDP), consumer price index (CPI), Taiwan dollar exchange rate (EX), unemployment rate (UR), stock return (SR) and crime rate (CR). The 10 countries or regions mentioned above are Hong Kong, Macao, China, Japan, South Korea, Singapore, Malaysia, Philippines, Indonesia, Thailand and United States. The macro-economic data about economic growth rate, consumer price index, exchange rate, unemployment rate, stock return are supplied by Taiwan Economic Journal (TEJ) data-base, and the crime data are from the DGBAS. The details of the above variables are aggregated and described in Table 1.

TABLE 1 SAMPLE DATA DESCRIPTIONS

Variable	Definition	Measurement	Sources of data
TGR	Growth rate of tourist to Taiwan	Based on residence of the countries	DGBAS
GDP	Economic growth rate	Increase in real GDP monthly (%)	TEJ
CPI	Consumer price index	Aggregate CPI in Taiwan	TEJ
EX	Foreign exchange rate	Exchange rate between NTD to USD	TEJ
UR	Unemployment rate	Unemployment rate in Taiwan (%)	TEJ
SR	Stock return	Taiwan weighted-average index (monthly return)	TEJ
CR	Crime rate	Percentage of criminals (person/100,000)	DGBAS

Note：(1)DGBAS represents Taiwan Directorate-General of Budget, Accounting and Statistics.
(2)TEJ represents the data-base provided by Taiwan Economic Journal.

4. EMPIRICAL RESULT
4.1 THE FIXED EFFECTS MODEL
For the variables economic growth rate, consumer price index, exchange rate Exchange rate, unemployment rate, stock return and crime rate and the variable growth rate in the number of tourists to Taiwan , using the fixed effects model analysis under confidence interval of 90%, the unemployment rate and stock price returns presents a significant and positive impact, while the consumer price index, exchange rate, and the crime rate exhibit negative but insignificant impact, with the economic growth rate shows positive but insignificant impact, as shown in Table 2.

TABLE 2: THE STATISTICS OF GROWTH IN THE NUMBER OF TOURISTS TO TAIWAN FROM EACH VARIABLE—THE FIXED EFFECTS

Variables	Coefficient	Std. Error	t-statistic	p-value
C	67.3624	54.2512	1.2417	0.2146
UR	2.5585	1.3888	1.8423	0.0656
GDP	2.1248	1.1822	1.7973	0.0725
EX	-1.0389	0.8440	-1.2310	0.2185
SR	0.2480	0.1203	2.0626	0.0393
CPI	-0.4153	0.3670	-1.1316	0.2580
CR	-0.0123	0.0650	-0.1895	0.8497

Note: (1) *, ** and *** represent 10%, 5% and 1% significant level.
(2) UR represents unemployment rate, GDP represents economic growth rate , EX represents exchange rate, SR represents stock return, CPI represents consumer price index, CR represents crime rate.

4.2 THE RANDOM EFFECTS MODEL
For the variables economic growth rate, consumer price index, exchange rate, unemployment rate, stock return and crime rate and the variable growth rate in the number of tourists to Taiwan, using the random effects model analysis under confidence interval of 90%, the unemployment rate and stock price returns presents a significant and positive impact, while the consumer price index, the exchange rate between USD and NTD, and the crime rate exhibit negative but insignificant impact, with the economic growth rate shows positive but insignificant impact. The results of the random effect model are generally the same with that of the fixed effects model, as shown in Table 3.

TABLE 3: THE STATISTICS OF GROWTH IN THE NUMBER OF TOURISTS TO TAIWAN FROM EACH VARIABLE—THE RANDOM EFFECTS

Variables	Coefficient	Std. Error	t-statistic	p-value
C	79.4708	86.0465	0.9236	0.3559
UR	4.0455	2.2026	1.8367	0.0665[*]
GDP	0.8837	1.8750	0.4713	0.6375
EX	-1.1315	1.3386	-0.8452	0.3981
SR	0.4485	0.1907	2.3517	0.0188[**]
CPI	-0.4760	0.5821	-0.8177	0.4136
CR	-0.1274	0.1032	-1.2350	0.2170

Note: (1) *, ** and *** represent 10%, 5% and 1% significant level.
(2) UR represents unemployment rate, GDP represents economic growth rate , EX represents exchange rate, SR represents stock return, CPI represents consumer price index, CR represents crime rate.

4.3 HAUSMAN TEXT RESULTS
In this study, both the fixed effects and random effects models are used to explore the impacts brought by various variables on the growth rate in the number of tourists to Taiwan for sightseeing. In order to avoid the correlation between the intercept term and explanatory variables, and thus resulting in estimate bias, this study uses the Hausman Test to confirm the optimum effect of each model, and then chooses the optimum effect model to explain the relationship between the explanatory variables. It is found by this study that the random effect model is better for each variable in explaining the growth rate in the number of tourists to Taiwan for sightseeing, as shown in Table 4.

TABLE 4: THE ANALYSIS OF HAUSMAN TEST RESULTS

Model	Chi-Sq. Statistic	Prob.	Select
Each variable to TGR	0.0000	1.0000	random effect

Note: (1) *, ** and *** represent 10%, 5% and 1% significant level.
(2) TGR represents growth rate in the number of visitors to Taiwan for sightseeing.

4.4 THE EMPIRICAL RESULTS FROM THE ANALYSES OF DYNAMIC PANEL DATA MODEL
By utilizing the variables one-period lagged growth rate in the number of tourist to Taiwan for sightseeing TGR (-1), the economic growth rate, consumer price index, the exchange rate, unemployment rate, stock return and crime rate, the dynamic analyses through Panel data model (GMM) are conducted on the growth rate in the number of tourists to Taiwan for sightseeing. With 90% confidence interval, the unemployment rate, the real GDP, CPI and the crime rate is

significantly in negative relationship; the exchange rate is significantly in positive relationship; return on stock price is in negative but insignificant relationship; one-period lagged growth rate in the number of tourist to Taiwan for sightseeing TGR (-1) is in positive but insignificant relationship. The reasons why these results obtained maybe due to the growth in the number of tourist to Taiwan for sightseeing is correlated with job market, economic growth, prices level and social security issues, but in reversed direction. It may be obvious that the growth in the number of tourist to Taiwan for sightseeing can increase employment of manpower, and the fall in the price level and reduction in social security problems can enhance the growth in the number of tourist to Taiwan for sightseeing, but with limited help to economic growth. It also indicates that the adjustment and transformation of domestic economy and the participation in the multinational regional-based tariff trade organizations should be actively in planning and making decision by the Government in Taiwan. Especially in the recent two years, the economic growth rate in Taiwan was significantly lower than the average of global economic growth rate. The governments may well encounter bottlenecks, but still no specific guidelines for the industry in Taiwan, as shown in Table 5.

TABLE 5: THE RESULTS OF DYNAMIC PANEL MODEL ANALYSIS

Variables	Coefficient	Stand. error	T value	P value
TGR(-1)	0.0693	0.0929	0.7453	0.4562
UR	-121.9094	46.6676	-2.6123	0.0091***
GDP	-12.5960	6.8109	-1.8494	0.0646*
EX	71.6812	16.9307	4.2338	0.0000***
SR	-0.4354	0.3782	-1.1510	0.2499
CPI	-27.3575	10.5761	-2.5867	0.0098***
CR	-0.6191	0.3060	-2.0230	0.0433**

Note: (1) *, ** and *** represent 10%, 5% and 1% significant level.
(2) UR represents unemployment rate, GDP represents economic growth rate, EX represents exchange rate, SR represents stock return, CPI represents consumer price index, CR represents crime rate.

5. CONCLUSION

This paper focuses on exploring the correlations between the growth rate in the number of tourist to Taiwan for sightseeing and real GDP, inflation, unemployment rate, exchange rates, stock prices and crime rates. Previous literature on the study of tourism issues often utilize linear calibration mode for empirical research. In general, for the relevant non-stationary state time series economic variables, the pseudo-regression problems may exist. Therefore, some researchers will treat the economic variables by differential process, in order to maintain sequence in state order, and to produce reasonable results. The main method is to analyze the data from time series or cross-sectional data, so it is relatively easy to overlook the information provided from other sections. In addition, if data from low frequencies sources, it is often ignored that the number of sample will be reduced after differential processing of its variables, a new problem of insufficient test thus derived. In order to solve this problem, this study utilizes data that meet the characteristics of time series, and uses Panel data analysis model to avoid ignoring information only in cross-sectional or time series. The heterogeneity issue among the variables also can be effectively controlled, allows the presence of heterogeneity among individuals, and reduces multicollinearity problem. The conclusion reached should be better than that form linear model.

In studying the correlation between the tourists to Taiwan from the ten countries or regions for sightseeing, when random effects model is used, unemployment rate and stock returns exhibit significant and positive impact; the consumer price index, the exchange rate between USD and NTD, and the crime rate exhibit a negative but insignificant impact; the economic growth rate shows positive but insignificant impact. To change the random effect model into the dynamic Panel data model to assess the relationship between the variables, it is found that the unemployment rate, the real GDP, CPI and the crime rate is significantly in negative relationship; the exchange rate is significantly in positive relationship; return on stock price is in negative but insignificant relationship; one-period lagged growth rate in the number of tourist to Taiwan for sightseeing TGR (-1) is in positive but insignificant relationship. The reasons why these results obtained maybe due to the growth in the number of tourist to Taiwan for sightseeing is correlated with job market, economic growth, prices level and social security issues, but in reversed direction. It may be obvious that the growth in the number of tourist to Taiwan for sightseeing can increase employment of manpower, and the fall in the price level and reduction in social security problems can enhance the growth in the number of tourist to Taiwan for sightseeing, but with limited help to economic growth.

Based on the above findings, it is obvious that the growth in the number of tourists to Taiwan for sightseeing has certain degree of relevance with the each variable. When planning local tourism policies, the government in Taiwan should be properly response to the changes in each variable through understanding the relationship between them, as well as how to continuously expand Taiwan tourism through the inter-ministerial collaborative support to tourism policy implementation.

REFERENCES

1. Arellano, M. and Bond, S. (1991), "Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations," Review of Economic Studies, Vol. 58, No. 2, pp.277-297.
2. Arellano, M. and Bover, O. (1995), "Another look at the instrumental variables estimation of error components models," Journal of Econometrics, Vol. 68, pp.29-51.
3. Akhtar, S. and Shah, A. M. (2012), "Contemporary approach towards evaluation of sustainable tourism development: A Case Study of GOA, " International Journal of Research in Commerce and Management, Vol. 3, No. 1, pp.98-105.
4. Akinboade, O. A. and Braimoh, L. A. (2010), "International tourism and economic development in South Africa. a Granger causality test," International Journal of Tourism Research, Vol. 12, No. 2, pp.149–163.
5. Balaguer, J. and Cantavella-Jorda, M. (2002), "Tourism as a long-run economic growth factor: the Spanish case," Applied Economics, Vol. 34, No. 7, pp.877-884.
6. Babu, K.V.S.N. J. and Valli S.K. M. (2014), "CRM implications in tourism sector," International Journal of Research in Commerce and Management, Vol. 5, No. 10, pp.28-29.
7. Baker, D. and Stockton, S. (2014), "Tourism and crime in America: A preliminary assessment of the relationship between the number of tourists and crime in two major American tourist cities, " International Journal of Safety and Security in Tourism / Hospitality, Vol. 1, No. 5, pp. 1-25.
8. Belloumi, M. (2010), "The relationship between tourism receipts, real effective exchange rate and economic growth in Tunisia," International Journal of Tourism Research, Vol. 12, No. 5, pp.550–560.
9. Blundell, R. and Bond, S. (1998), "Initial conditions and moment restrictions in dynamic panel data models," Journal of Econometrics, Vol. 87, No. 1, pp.115-143.
10. Brida, J. G., Carrera, E. J. S. and Risso, W. A. (2008), "Tourism's impact on long-run Mexican economic growth," Economics Bulletin, Vol. 3, No. 21, pp.1-8.
11. Brida, J. G. and Risso, W. A. (2010), "Tourism as a determinant of long run economic growth, Journal of Policy Research in Tourism, Leisure and Events, Vol. 2, No. 1, pp.14–28.
12. Chakrabarti, A. (2014), "Economic development and tourism in Sikkim: A critical review," International Journal of Research in Commerce, Economics and Management, Vol. 4 No. 3, pp.16-21.

13. Chen, C. F., and Chiou-Wei, S. Z. (2009), "Tourism expansion, tourism uncertainty and economic growth: new evidence from Taiwan and Korea," Tourism Management, Vol. 30, No. 6, pp.812-818.
14. Harini, K.V. & Indira, M. (2014), "Trends in economic contribution of tourism industry to Indian economy," International Journal of Research in Commerce, Economics and Management, Vol. 4, No. 7, pp.21-24.
15. Hayakawa, K. (2007), "Small sample bias properties of the system GMM estimator in dynamic panel data models," Economic Letters, 95(1) , pp.32-38.
16. Katircioglu, S. (2010), "Research note: Testing the tourism-led growth hypothesis for Singapore– an empirical investigation from bounds test to cointergration and Granger causality tests," Tourism Economics, Vol. 16, No. 4, pp.1095–1101.
17. Kim, H. J., Chen, M. H. and Jang, S. S. (2006), "Tourism expansion and economic   development: the case of Taiwan," Tourism Management, Vol. 27, No. 5, pp.925-933.
18. King, B., Pizam, A. and Milman, A. (1993), "Social impacts of tourism: host perceptions," Annals of Tourism Research, Vol. 20, No. 4, pp.650-665.
19. Kulendran, N. and Witt, S. F. (2003), "Leading indicator tourism forecast," Tourism Management, Vol. 24, pp.503-510.
20. Lee, C. C. and Chang C. P. (2008), "Tourism development and economic growth: a closer look at panels," Tourism Management, Vol. 29, pp.180-192.
21. Lim, C. and McAller, M. (2002), "Time series forecasts of international travel demand for Australia," Tourism Management, Vol. 3, pp.389-396.
22. Mundlak, Y. (1978), "On the pooling of time series and cross section data," Econometrica, Vol. 46, No. 1, pp.69-86.
23. Narayan, P. K., Narayan, S., Prasad, A. and Prasad, B. C. (2010), "Tourism and economic growth: a panel data analysis for Pacific island countries," Tourism Economics, Vol. 16, No. 1, pp.169–183.
24. Singh, D. (2014), "Analysis of medical tourism", International Journal of Research in Finance and Marketing, Vol. 4, No. 7, pp.36-43.
25. Tang, C. F. (2011), "Old wine in new bottles: Are Malaysia's tourism markets converging?," Asia Pacific Journal of Tourism Research, Vol. 16, No. 3, pp.263–272.

INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, ECONOMICS & MANAGEMENT 19

A Monthly Double-Blind Peer Reviewed (Refereed/Juried) Open Access International e-Journal - Included in the International Serial Directories

http://ijrcm.org.in/

REQUEST FOR FEEDBACK

Dear Readers

At the very outset, International Journal of Research in Commerce, Economics & Management (IJRCM) acknowledges & appreciates your efforts in showing interest in our present issue under your kind perusal.

I would like to request you tosupply your critical comments and suggestions about the material published in this issue as well as on the journal as a whole, on our E-mail**infoijrcm@gmail.com** for further improvements in the interest of research.

If youhave any queries please feel free to contact us on our E-mail **infoijrcm@gmail.com**.

I am sure that your feedback and deliberations would make future issues better – a result of our joint effort.

Looking forward an appropriate consideration.

With sincere regards

Thanking you profoundly

Academically yours

Sd/-
Co-ordinator

DISCLAIMER

The information and opinions presented in the Journal reflect the views of the authors and not of the Journal or its Editorial Board or the Publishers/Editors. Publication does not constitute endorsement by the journal. Neither the Journal nor its publishers/Editors/Editorial Board nor anyone else involved in creating, producing or delivering the journal or the materials contained therein, assumes any liability or responsibility for the accuracy, completeness, or usefulness of any information provided in the journal, nor shall they be liable for any direct, indirect, incidental, special, consequential or punitive damages arising out of the use of information/material contained in the journal. The journal, nor its publishers/Editors/ Editorial Board, nor any other party involved in the preparation of material contained in the journal represents or warrants that the information contained herein is in every respect accurate or complete, and they are not responsible for any errors or omissions or for the results obtained from the use of such material. Readers are encouraged to confirm the information contained herein with other sources. The responsibility of the contents and the opinions expressed in this journal is exclusively of the author (s) concerned.

ABOUT THE JOURNAL

In this age of Commerce, Economics, Computer, I.T. & Management and cut throat competition, a group of intellectuals felt the need to have some platform, where young and budding managers and academicians could express their views and discuss the problems among their peers. This journal was conceived with this noble intention in view. This journal has been introduced to give an opportunity for expressing refined and innovative ideas in this field. It is our humble endeavour to provide a springboard to the upcoming specialists and give a chance to know about the latest in the sphere of research and knowledge. We have taken a small step and we hope that with the active co-operation of like-minded scholars, we shall be able to serve the society with our humble efforts.

Our Other Journals