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A handwritten signature in black ink, appearing to read 'Michael K Fung', is positioned above a horizontal line.

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## **Cohort Analysis on the Tourism Area Life Cycle: A Conceptual Framework**

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### **Abstract**

The Tourism Area Life Cycle (TALC) theory has been accepted and developed very rapidly in the economic tourism analysis. The analysis of TALC was introduced by Butler (1980) by adopting Christaller (1963) which popularized the three stages of the evolution of resorts or tourism areas---encompassing discovery, growth and decline. Butler (1980) developed it into six stages or life cycle. The use of TALC in the practice of developing tourism area is very diverse. Initially introduced, TALC analysis was used as a way of identifying factors determining the position of a tourist area in the life cycle based on the number of visits and or rate of visiting (visitors per area of population), and time (time) in terms of time series. Data aggregation is used to estimate life cycles as well as examining or analyzing resource inventory and infrastructure (inventory analysis). This method is accepted without criticism; it has even been developed into a broad analytical techniques. In its developments, TALC is used for objective analysis of market or competitiveness and impact analysis. This development still leaves questions related to "time dimension". Defining the model of the life story of the tourist area should refer to the age of the management of tourist areas where the arbiter point of each destination is diverse. Each tourist area has different life, age or other aspects. The Cohort method for the tourist area life cycles is indispensable for understanding the life

cycle of different tourist areas. Age and different periods during its management have significant meaning for destination. Cohort analysis has strategic values for analyzing tourist areas, resorts or destinations. This article focuses on the use of Cohort methods for analysis framework of tourism area life cycle.

*Keyword: tourism area life cycle (TALC), inventory, competitiveness, impact analysis and cohort methods.*

## **1. Introduction**

Tourism has been the largest industry in the world (Scheyvens and Momsen, 2008; Awang, et.al, 2009). As an economic sector, tourism is widely used by the state to advocate for economic development. This is used as a development strategy due to significant economic impacts to generate foreign exchange, improve exchange rates, create jobs and stimulate the local economy. The theory of evolution presents a theoretical approach and an evolution model of the tourism industry based on a concept 'borrowed' from the business literature, the concept of the product life cycle (Almeida & Correia, 2010). The theory of evolution believes that ... *tourism attractions do not last forever and, therefore, that in the management of a tourism destination, natural and cultural resources should be treated as finite rather than renewable (Buttler, 1980)*. Butler, therefore, proposed the TALC model (*tourism area life cycle*). Previously, Christaller (1963) has popularized the three stages of the evolution of resorts or tourist areas that include discovery, growth and decline. In 1980, Butler adjusted to current tourism conditions, extending and formulating the three stages of the tourism lifecycle into six phases. The TALC stage is also often known as three categories, six stages. The first category is the non-critical category (consisting of stages-exploration, engagement, development and consolidation) and the second or critical stage (stagnation / stabilization) and post-stagnation (declination / rejection stage).

The rate or number of tourist visits with time (time) becomes a form of central relation in this analysis, with in-depth observation of the nature and characteristics of resources and exposure of social, cultural and nature. The data is longitudinal, historical and it tells stories about destination. In quick way, TALC analysis is also conducted through time series data to analyze resource inventories and recommend the resource policy strategies necessary for the development of the destination. *Cross sectionally*, the study also places the determination of criteria on tourism resources to determine the development stage of a tourism area. This paper considers it is necessary to accommodate the need for a correlation between the time dimension in terms of the age of destination management (age) and the period of observation (period) as well as the effects which both of them have on a particular cohort (cohort). This is known as the cohort method as the focus of discussion and it is applied in the TALC theory model. This study is expected to develop the use of TALC theory more meaningfully in explaining the changes and development of tourist areas.

## **2. Conceptual Framework**

### **2.1. Early Thought of Life Cycle of Tourism Area- Butler 1980**

The life cycle of a tourism area can be identified and categorized in six stages: exploration, inclusion, development, consolidation, stagnation or stabilization, rejuvenation or declination (Picture 1.1). The tourism lifecycle model incorporates a set of tourist investment and discrete policy options to explain the ongoing process of changing resorts or tourist areas on a micro, national and international level. The original model of the Butler-life cycle of the 1980s showed the result of a combination of elements consisting of tourist visits and the development of a tourist's time. The model is expanded by observing the attractiveness and type of objects, the infrastructure provided, the frequency of contact between destinations and travelers, the impact of the presence of destinations for local people and recommending development strategies undertaken at each stage (Table 1.1). Butler built this theory in the conceptual framework that the development of the tour was evolutive. This Darwinian process of evolutionary development observes the economic, socio-cultural changes that take place in the slow process, for a long time and there is a series of small changes that follow. A policy and development plan following the process is in line with the organizational capacity owned by a tourism area.

### **2.2. The Development of TALC Analysis**

The TALC study has grown very rapidly and varied. The development of TALC analysis is based on the purpose of analysis, use and importance of the study. At the beginning, TALC was mostly used as inventory analysis and its implications. Inventory analysis often referred to as "resources based view" includes: resource inventory analysis. This review is most commonly used to analyze resource changes such as landscape changes by Suwarno, (2010); Lumbanraja, (2012), changes in village tourism resources and infrastructure (Good, 2011), geographical changes (Awang, et.al, 2009). TALC evolves into an analytical tool for innovation and competition analysis, and even TALC reviews can also be used to assess impacts of tourism development stages (Figure 1.2). The analysis of innovation strategies and competition strategies puts each stage of the life cycle require a different and appropriate competition strategy (Muller et al., 2010; Foolmaun & Ramjeawon, 2013). The impact analysis occupies the actual development in life cycle studies (Cammilis, et.al, 2010). Environmental, economic, social and cultural impact assessments receive significant attention, related to sustainable development objectives (Arcese, et.al, 2013). In fact, impact studies widen to the quality of life of people in destinations. Some studies focus on impact evaluation (Foolmaun & Ramjeawon, 2013).

### **2.3. Theory Implementation of Tourism Area Life Cycle**

The Tourism Area Life Cycle (TALC) model has a longitudinal conceptual implementation. The longitudinal is understood in various ways. **First**, the well-known longitudinal study using the life cycle model illustrates the complexity of the research design and the information available from that type of study. The life cycle model for Pacific Island destinations (Choy, 1992), tourism development in

Yellowstone National Park (Johnson and Snepenger, 1992), the life cycle of Niagara Falls (Getz, 1992) is an example of a longitudinal study. This study is high cost and therefore it is often not a good choice for researchers.

**Second**, the research of tourism area life cycle has gained widespread acceptance recently. This is caused by the need to evaluate the process of planning and development of a region or area of tourism quickly and limited budget. The use of time series data provides the possibility of longitudinal quantitative observation and qualitative mapping of events that accompany the life cycle. Some examples of this study were conducted by Almeida & Correia (2010); Hidayat (2011); Jieli (2012); Hussin (2014) in the case of different areas. Time series data encompasses the diversity of destinations (aggregation). Consequently, it ignores and obscures the main concept of Butler's growth. It is because the concept of Butler's growth is a metaphor of life where every region through the stages of birth, growth, development, maturity, aging and death. Obviously, this ignores the effects of age, period and cohort of a destination. Therefore, a tourism area is often not understood in its specific context.

TALC also underwent further variations in its use. Not a few study tours also implemented a *cross sectional* model. There are several reasons why *cross-sectional* studies are used. First, pragmatic, it is easier to obtain information at one point in time and then analyze the sample data of the population of the area. Second, the need for rapid publication encouraged most researchers to publicize cross-sectional studies. Third, the study is low cost. Some of the resources available to tourism researchers by grants or contracts do not support the study of the impact in a decade or more. Some examples of such research see Suwarno (2010), Good (2011), Lumbanraja (2012).

Field studies which are cross-sectional place more criteria for observing changes in tourist arrivals, geographical changes, landscape changes, resource and social changes to assess and establish a single stage of the six major phases in the TALC-Butler model (Good, 2011; Lumbanraja, 2012). Public policy and investor mindset, investment scale and external engagement (foreign and transnational investments) have the potential and they often determine the change of a tourist area so drastic beyond the timeframe of the study. This is not possible to be captured by a *cross-sectional* study.

The cross section method received more criticism in the analysis of tourism life cycle in a particular area. This is because of its incompatibility with the theoretical substance of Butler. The development of a destination is always specific and contextual. A "tourist attraction" is always related to the uniqueness and specificity of a region. This makes tourism planning and development always emphasizes: one destination, one management (in Indonesia); One tambon or village, one product (One Tambon, One Product in Thailand), Webb and Chotithamwattana (2013), cf. Polnyotee & Thadaniti, (2015). Such a policy aims at developing a memorable and specific destination. Here, Butler's concept of growth is needed and needs to be developed. Longitudinal data is required in the

form of historical data, socio-economic and environmental changes and developments, and attention to the effects of age, period and cohort (APC). It also can not be overcome with the use of *cross section* data. Therefore, APC analysis for TALC is needed. This paper advocates the importance of APC analysis in the use of TALC theory.

### **3. Cohort Method**

#### **3.1. Why Is Cohort Important?**

Cohort analysis is not commonly used to interpret changes in the economy of tourism. This analysis is popularly used by demographers, epidemiologists, and other social scientists in studying population and public health. This is reasonable because cohort analysis is used more as a measure of the effects of aging (aging), over a period of time and the development of diseases by certain age groups (see Glenn, 2005; Yang & Land, 2013; Zeng, et al., 2014). The second understanding, the primary use of a second cohort analysis is to understand the source and nature of social, cultural, and political changes to the development of the population age group.

Cohort analysis deals with arranged temporal datasets such as population survey data or sample in the form of observations or measurements on individual or group or individual populations being observed over a certain time dimension and repeated at other time dimensions. In the APC analysis, the analytic problem is always concerned with the conceptualisation, estimation, and difference of contribution interpretation of the three observed phenomena changes. The phenomenon related to age difference of tourism area at the time of observation is called effect of age (A); The effect of the difference in the time period of observation or measurement of results between the dimensions of the time of the survey, it is called the effect of period or period (P). The effect of differences in birth cohorts or some other life events by surveying in a set of tourist areas, it is called the cohort effect (C).

Recently, the marketing field has accommodated this method. Cohort analyzes are widely used to explain how customers have lifelong behavior toward business firms (see <https://canopylabs.com/resources/intro-cohort-analysis>). Should a business company carry out promotional acquisitions which include: advertising, social media and a series of discount campaigns. The acquisition of this promotion runs on an unsimultaneous month in a given year for a specified period of time. The company has significantly increased the number of subscribers. How is the behavior of new or existing customers (cohorts) that step in through the acquisition of the promotion? How long will these new or existing customers increase their revenue? Will new or existing customers only make purchases in the first, second, and third months of the campaign month and stop at the end of the promotion?

In short, this analysis can recognize changes and impacts of promotional acquisitions on customer behavior in the age group of subscriptions. The observation of the age group of subscribers in the purchasing process and the



behavior displayed in a given time in that age group is a form of cohort analysis. With the same logic, the age of tourism destination management and attempts to analyze the social, cultural, political and environmental changes that covers a destination based on a particular group can be performed.

### 3.2. Cohort Analysis on TALC

TALC study indeed requires an understanding of the age-period effects and cohort as well as their relevance to the phenomenon of institutional change and institutional development and the institutional environment in the destination. With specific context applications and specific areas of tourist destinations, TALC will play a more important and strategic role to observe changes in resource policies, competition, innovation and welfare impacts for tourism communities. The cohort analysis for destination change can be conducted using three research designs. These include (see further Megrey (1983); Glenn, (2005):

**First, Age-by-Time Period Tabular Array of Rates/Proportions.** The cohort analysis of this approach focuses on the observation of descriptive data in which the data is in the form of rectangular tables covering the period of time (period) and the age of the management (age) of a proportion of tourist visits or the level of tourist visits, or the length of stay in a destination by looking at destination age group at certain time period (cohort). Cohort-study constitutes a study conducted on a group of people who share the same characteristics, background, or experience. **Second, Repeated Cross-Sectional Sample Surveys.** Many important cross-sectional surveys are repeated at regular intervals or not always regularly so that estimates of changes can be made at the aggregate or population level. **Third, Prospective Cohort Panels and the Accelerated Longitudinal Design.** The design of a prospective cohort panel is a type of research carried out at different times, but still using the same sample. The study begins with a certain exposure (exposure) to see the result or effect (outcome, result, effect) after a certain period of time. The prospective cohort design puts current events and future directions of concern. The cohort design may actually be retrospective (non-concurrent cohort, historical cohort) in which events exist in the past to the present. The main principle of cohort study is the *exposure* preceding the *outcome*.

The cohort analysis in TALC can be understood as a destination age group that reflects the accumulated experience and changes in the management status of the tourist destination on the horizontal axis (Age). Horizontal axis displays the level of tourist visit or the length of stay in the tourist area within a certain period of time (Period). This indicator functions as a representation of the success of a destination attracts tourists within a certain period of time. Behavior of destination management in certain age group management (*cohort*) can be observed for its phenomenon and development. This can be used to compile TALC phases, resource empowerment strategies, competition and impact on tourism developments in the community.

### 3.3. Analysing APC Effect on TALC Phase

APC method then can be used to analyze the symptoms of change (effect) generated, through three direct effects, namely: **First**, the effect of age is the variation associated with the chronology of the destination age group. These age changes can result from physiological changes in the area, accumulated experience, roles or changes in the status of a tourism area or a combination of both. Therefore, the effects of age reflect the process of biological and social change, the maturation of internal management at the resort and it constitutes a change of development throughout the discourse of tourist area life. This can be seen clearly in the considerable regularity of the variance of destination that have implications for the spaces, outcomes and development of tourist areas, such as growth, consolidation of citizen participation, employment change, legality and management structures, prevalence and shock-shaking events and visits, setbacks and even the death of a destination.

**Second**, the period effect is a variation during a period of time or a calendar year affecting all age groups of destinations simultaneously. Periodic effects combine a complex set of historical events and environmental factors such as disasters, economic expansion and contraction, disease incidence, starving and poverty, policy interventions, and technological breakthroughs. The shift in the social, cultural, economic, and political environments can in turn lead to changes in the lives of all destinations at a given point in time. Thus, the periodic effects can be observed from the correspondence between the time of change of events, social, economic and cultural influences of another particular event.

**Third**, the cohort effect is a change in the age group of a destination experiencing initial events such as birth, exploration, and or subsequent stages of development. The birth cohort of a tourism area is an analytical unit that may be investigated in APC analysis. Destination of the birth cohorts move through common life and discover the same historical and social events at the same age. Destination of birth cohorts that experience different historical and social conditions at different stages of their lives have varying exposures to socioeconomic, behavioral, and environmental risk factors. The cohort effect has been shown in many growing tourist area sites, stagnancy, not thriving and experiencing the ending due to not owning the ability to cope with these various exposures.

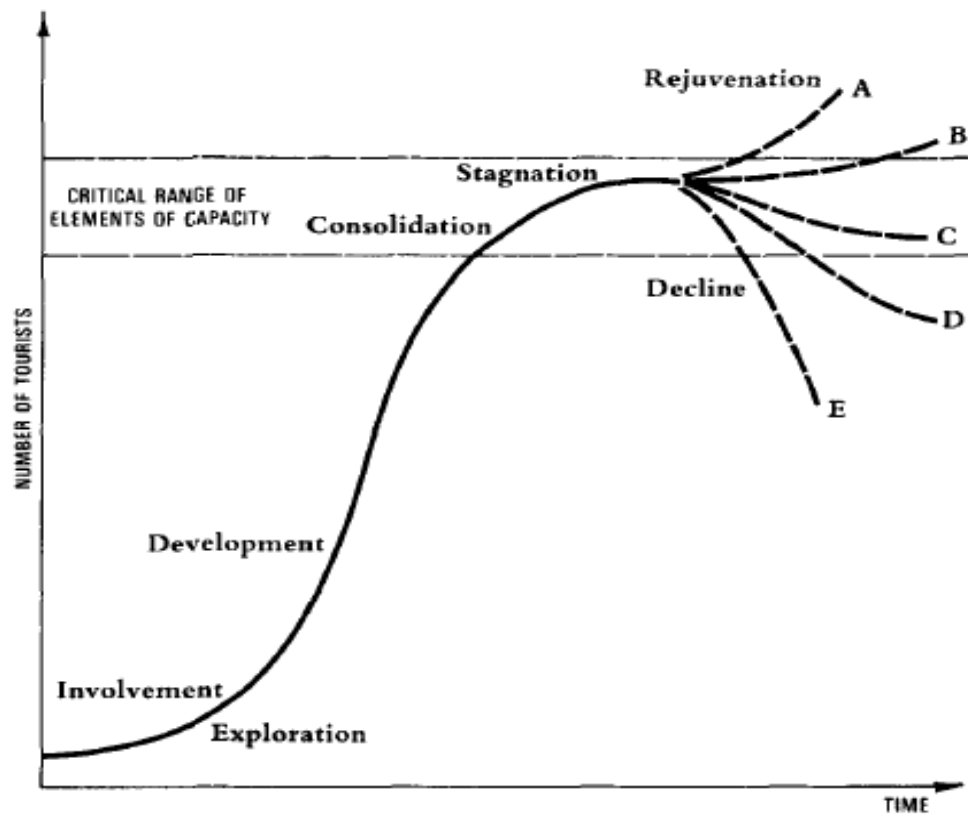
As an example of a hypothesis, for example there was probability of a drastic decrease in the number of tourist arrivals due to incidents of suicide bombings in 2002-2005 in Indonesia (effect period). At the same time, there had been low law enforcement in terms of anti-terrorism laws and therefore it was responded differently by destinations of different ages in which the accumulation of management experience was also different (effect age). Certain age groups experienced a declining number of visits, but in other age groups faced stagnant, stable or even increased conditions (cohort effects). These three effects have a very important meaning to recognize, develop, advance, thrive, project the progress of a tourist destination and its management.

#### **4. Conclusion**

TALC by using the cohort method is able to present a more useful and unique analysis. Through this method, TALC can be analyzed based on changes in tourism resources, competition and innovation. It also can be used to assess the impact of the presence and development of development on tourist destinations. Changes can be ensured through three main effects---effects of age, period and cohort. These three effects have a very important meaning to recognize, develop, advance, mature, project the progress of a tourist destination and its management.

## ATTACHMENTS

**Figure 1.1. *Tourism Area of Life Cycle (Butler, 1980)***



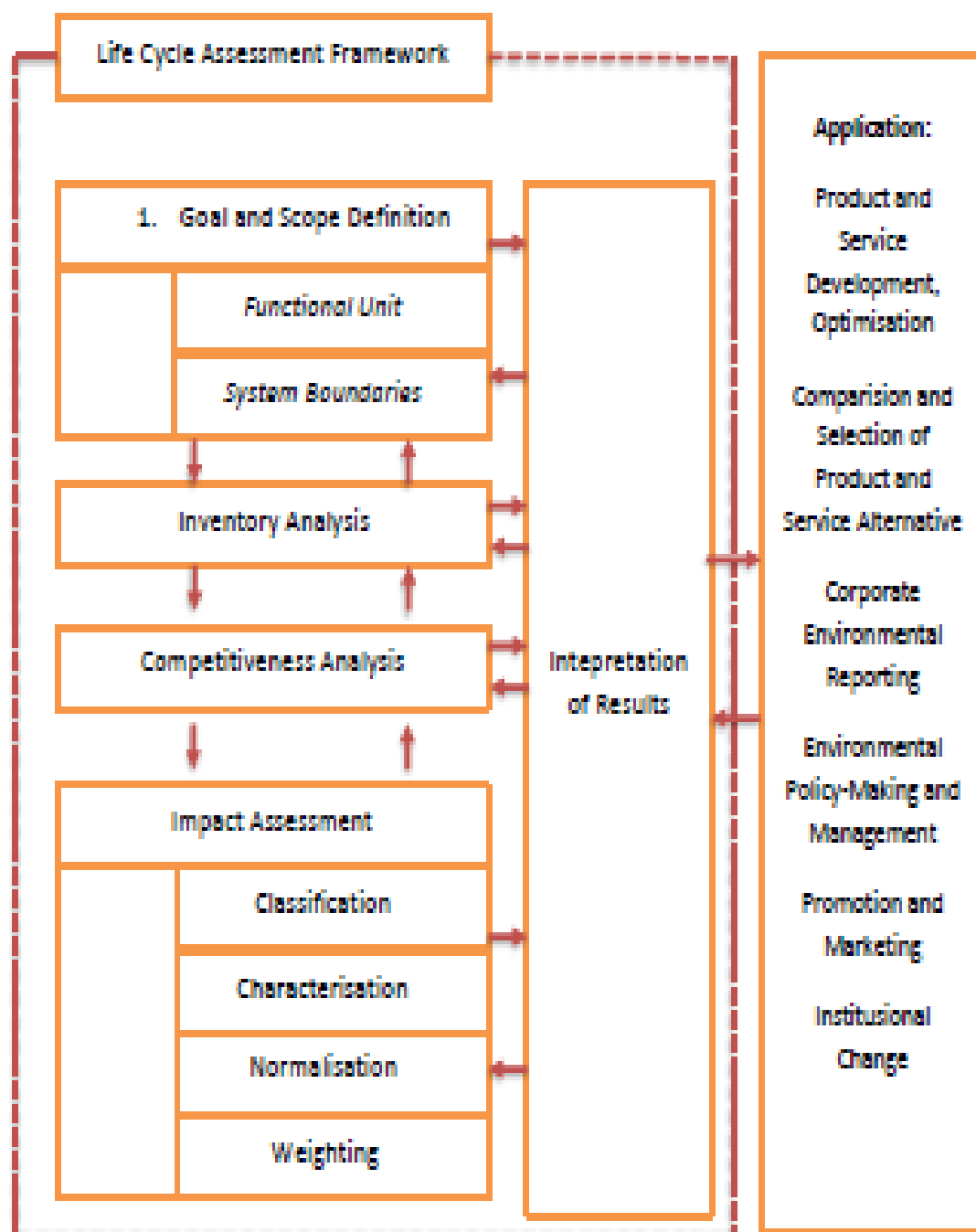
**Table 1.1. Characteristics of Tourism Area of Life Cycle**

Stages	Characteristics
Exploration	<ol style="list-style-type: none"> <li>1. Characterised by small numbers of tourists</li> <li>2. Adventurous</li> <li>3. Visit “new” places</li> <li>4. Attracted by some unique feature</li> <li>5. Few tourist facilities → reliance on local facilities</li> <li>6. High level of contact between tourist &amp; host</li> <li>7. Small impact on the host community.</li> </ol>
Involvement	<ol style="list-style-type: none"> <li>1. Local residents begin to provide facilities for tourists</li> <li>2. High degree of contact between tourists &amp; locals</li> <li>3. Locals may start to change usual patterns to accommodate tourists</li> </ol>

	4. Pressure on local government to provide more & better facilities for tourists.
Development	<ol style="list-style-type: none"> <li>1. Tourism market: well-defined because of promotion at tourist generating areas</li> <li>2. Local control of facilities &amp; development of tourism starts to decline</li> <li>3. International organisations take root (Holiday Inn, Hilton)</li> <li>4. Physical nature of resort changes (not universally accepted)</li> <li>5. Number of tourists approaches (or exceeds) local population (take notice at this point, can start to see negative impacts)</li> <li>6. Type of tourist → mainstream, conservative</li> </ol>
Consolidation	<ol style="list-style-type: none"> <li>1. Rate of increase of tourist arrivals starts to decline (<i>even though absolute numbers may still grow</i>).</li> <li>2. Number of tourists now exceeds local population</li> <li>3. Marketing &amp; promotion well developed</li> <li>4. Market is almost saturated, therefore new development/building slows down</li> <li>5. Growing discontent among host population</li> </ol>
Stagnation	<ol style="list-style-type: none"> <li>1. Peak number of visitors has been reached (carrying capacity)</li> <li>2. Environmental, social &amp; economic problems (beach erosion, local businesses sold, dissatisfaction with locals)</li> <li>3. Area is not as popular with tourists (beach is dirty, crowded, not enough parking)</li> <li>4. Original features which attracted tourists in the first place will have been supplemented by new “attractions”. (theme parks, museums, bungee jumping, something that wasn’t there before)</li> </ol>
Immediate decline & decline	<ol style="list-style-type: none"> <li>1. Immediate decline: an abrupt death of the resort</li> <li>2. Decline: a more gradual decline, where number of visitors gradually tapers off</li> <li>3. Infrastructure changes (hotels converted to condominiums because not enough visitors)</li> <li>4. Local population begins to buy tourist facilities because of affordability</li> </ol>
Stabilisation, reduced growth & rejuvenation	<ol style="list-style-type: none"> <li>1. Stabilisation: the area stabilises and changes very little over time</li> <li>2. Reduced growth: the area continues to grow but at a reduced rate of growth</li> <li>3. Rejuvenation: can take place in 2 ways: <ol style="list-style-type: none"> <li>a. Building a new attraction</li> <li>b. Taking advantage of previously untapped resources.</li> </ol> </li> <li>4. Strong government or corporation involvement</li> </ol>

Sumber: Butler, 1980

**Figure 1.2. Overview of Key Stages and Possibility of Application TALC, Adopted and Developed from Filimonau, 2016**





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