Measuring the economic effectiveness of place advertising in China

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Abstract

The economic effectiveness of place advertising is a valuable inquiry for both policy makers and marketers. Our study aims to answer the research question of whether or not a significant and localized targeted place brand communication effort is associated with the generation of measurable economic benefits therein. The results indicate that there is a significant positive correlation between place advertising and tourist expenditure based on the data of place brand advertising campaigns within 31 provinces in China in the period of 2005 to 2015. Further, this study indicates a relationship between the level of advertising spend and the consequential positive impact on tourist expenditure: each 1% increase in advertising spend generating a 0.013% increase in tourist expenditure. The novel concept model presented in this paper aids practitioners to better understand the effect of advertising and promotional place communication in the wider context of local economic planning and national development policy.

Key words: place branding, advertising effectiveness, measurement of place branding, tourist expenditure

Introduction

It has become common practice that cities and regions implement place branding to promote both their image and economic development via pithy slogans or advertising to communicate what is unique about itself: landmark architecture, cultural festivals and sports events that give it a sense of place. In such place branding practices, there are multiple purposes such as attracting investment, tourism, professional talent and to increase exports as well as improve public relations and cultural capital. (Hannigan, 2003; Anholt, 2007; Rainisto, 2003; Ashworth and Voogd, 1988) With its broad potential benefits, the promotional aspect of place branding seems essential best practice. Yet in many places, such branding initiatives either do not exist or are implemented without giving equal thought and attention to measuring the direct and indirect effects of the communication.

The rise of place branding in China is driven by both global and national challenges. Globalization and the expansion of new urban regions have redefined the national economic landscape, forcing local governments to seek new approaches to plan the next phase of economic development. As Anholt (2007b) noted: "In today's globalized, networked world every place has to compete with every other place for its share of the world's consumers, tourists, businesses, investment, capital, respect and attention." The structural transformation of the global economy has also given rise to new value concepts such as the experiential economy and a shift towards knowledge-based economies. These changes also push local policy-makers to use more sophisticated approaches and tools such as the promotion of culture and creativity to attract talented people and an associated investment in cultural

industries that will increase a place's long-term "cultural capital".

The level of urbanization in China has risen sharply over the past 40 years: from 18% of the population in 1978 to 60% of its 1.4 Bln inhabitants living in urban conurbations by 2018 (National Bureau of Statistics of China.) One negative effect of this stupendous rate of economic development and urbanization has been the despoiling of ecological habitats and an associated challenge in living conditions in some areas. Recognizing that the wisest course is not to focus solely on GDP indicators as a measure of local government performance, the central government has, since 2013, shifted to "Green GDP" as an enhanced indicator of local government performance. There are now two contrasting pressures on Chinese cities that once thrived on an economy dependent upon large-scale manufacturing. Policy makers need to manage both the continuing rapid urbanization of the population with the newer requirement to integrate a "Green GDP" indicator. Such cities now have an urgent need to amplify awareness of the existence, importance and possibilities of their natural endowments as well as to plan the structural adjustment and reconfiguration of their economic resources. Image promotion of the cities' natural heritage and potential could be a beneficial contribution to these wider policy goals.

Against this background, place branding has become an innovative method for regions to promote their particular characteristics to the tourism marketplace and encourage the closer integration of both tangible and intangible resources to sustainably develop local economies. Over the past decades, place branding has taken a higher proportion of state budgetary expenditure across various initiatives in different cities and regions. Taking China's Central Television as just one communications channel, a total of 1,858 different entities (cities and regions) advertised 987,890 image enhancing advertisements during the ten-year period of 2005 to 2015. As an example of scale, the "Hospitable Shandong" campaign promoting Shandong province had advertised on China's Central Television for thirteen consecutive years. The annual total cost of this campaign is estimated to be at least RMB 450 million p.a. (US$ 66.7 million), based on the 2011 advertising rate of the CCTV-1 channel. The sheer scale and commitment to current and potential place branding activity in China is significant given the internal configuration of 31 provinces, 397 prefecture-level cities and 2,854 individual county-level cities in China.

The media landscape in China has, like other countries within this period, saw notably shifted spend with the rise of internet advertising and the decline of offline newspaper advertising. Within the time period, TV remained was not as affected by this swing from offline to online and retained a relatively constant level of the total advertising spend until the last year, 2015 (Wen et al., 2012, Wen et al., 2017). TV within the period of data analysis was the preeminent method of advertising to the large and geographically dispersed Chinese population. The National Bureau of Statistics of China, reported that in 2011, CCTV covered 97% of the total population of 1.4 Bln who owned 4 billion televisions sets between them. Like the West, life in a Chinese household during this period consisted of TV sets in multiple locations within the home (China Mainland Media Research Co.) On the basis of its near universal reach and that a consistent set of data over the time period was available, TV advertising was chosen as the

basis of analysis.

City government officials, communication practitioners or even local residents might ask if such extensive advertising campaign efforts would really translate into a sustainable enhancement in the image of a place brand within the target audiences. This central issue, measuring the manner and depth of change in the values associated with a place brand due to a targeted communication effort, is the challenge of measurement common with many advertising campaigns. For Chinese place branding in particular, this is now a core research problem which will guide future communication activities and policy making.

The purpose of our study is to address this research gap, specifically to evaluate the economic impact of place brand advertising within China. There are other potential measures such as social impact and sustainability measures used elsewhere. However, the framework of data collection across the Chinese regions is driven by the central government's focus on economic measures so social impact measures were not commissioned and are of very limited availability. Whilst this might be regrettable, it is a reflection of wider Chinese government priorities so, in itself, is an interesting contrast to the measurement regime used in other countries. The research has therefore pragmatically honed in onto what we can consistently measure with a high degree of confidence in both accuracy and congruence with policy intent. The particular question of policy makers is also what can be measured: whether an extensive but time limited place advertising campaign shows evidence of an influence on measurable short-term economic growth. If advertising does have such an impact, might we see any early evidence of how this place brand advertising lift economic activity within that location. The two research questions derived from this are:

i. Given that economic impact has a multivariate causality, can we identify and separate the specific influence of place brand advertising on local economies?
ii. If advertising does have an impact, how does this advertising in turn contribute a change in economic activity within that location?

There is a further underlying question as to whether place brand advertising, and indeed any further ad spend, would be a good use of taxpayers' money. Answering these two research questions above will enable more robust public policy guidance on that latter question.

Literature Review

1. Measuring the Effectiveness of Place Branding

   a) Place Branding

A brand is a network of associations in consumers' minds (Keller, 1993). By adapting the corporate brand to the context of place branding, Zenker & Braun (2010) define the place

brand as "a network of associations in the consumers' mind based on the visual, verbal, and behavioral expression of a place, which is embodied through the aims, communication, values, and the general culture of the place's stakeholders and the overall place design." Place branding can further be defined as the "practice of applying brand strategy and other marketing techniques and disciplines to the economic, social, political and cultural development of cities, region and countries."(Kavaratzis & Ashworth, 2008)

Extrapolating from this definition, one can state that a place brand is not a communicated replication of the exact physicality of the place itself but rather it influences the perceptions and associations of a place in the minds of the target audiences. Communication of the desired core values and associations are an essential part of place branding. According to Kavaratzis, (2004), the brand is communicated through two distinct types of communication:

i.   Primary communication: which could be labelled as the physicality of place, includes the landscape, architectures, infrastructure and transactional offer (things to do, places to see) as well as the city's general functional behavior, the core nature and offer of a place as an experience. People judge as they see and find as reality their own visiting experience.

ii.   Secondary communication: could be labelled as functional communication, which is centered on official, intentional promotion and communication channels, partly advertising or public relations but more generally known as place communication and is often directed by officials charged with enhancing their local city or region.

Advertising a place brand fits within this rubric of wider place communication. As Grabow (1998) noted, there needs to be a level of advertising competence in communicating the essence of a city as part of successful urban marketing. Chinese cities have also developed in their understanding of this practice, moving from place promotion to a more subtle communication of a differentiated position embedded within a unique place brand, in line with trends described by Kavaratzis (2005). Although of more recent vintage in China, the sophistication in communication tools has increased, as has the integration of place branding efforts into urban development policy. This mirrors the evolution of place branding elsewhere, such as that seen in German municipalities, adopted in the late 1980's (Grabow, 1998). With extended peer to peer electronic communication channels and as Web 2.0 moves into Web 3.0, the boundaries between categories of place, channel of communication and content are becoming blurred. Notwithstanding these developments, place brand advertising still remains an indispensable communication tool due to its mass reach at reasonable cost.

b) Measurement of Place Branding

Measuring the effectiveness of place branding is not an abstract exercise but must be tightly linked to the question of whether the specific aims of the place branding campaign can be met. The best practice on what practitioners may hope to achieve are as per Ashworth et al,

(2015).

i.   Place brands can help places fight in the increasingly intense arena of inter-place competition. This is the most commonly reason stated for the popularity of place branding as a practice.
ii.   Place brands provide strategic guidance for place development as part of a total approach to urban economic and social development.
iii. Place brands provide a basis for stakeholder cooperation as a unifying force within a location.
iv.   Place brands provide solutions to practical/functional place-related problems
v.   Place brands can help maximize a positive experience of a place as they widen both the scope of expectation and remind people of the breadth of offer plus the emotional and functional benefits found by visiting or investing in a particular place.

Transcribing these factors into addressing the local research gap is to draw on two of the key functions of place branding. Place branding should aim to promote the economic growth and development of specific places and be part of an integrated approach to that end - the functional aim. Place branding can also act as a common ground to develop a local shared social identity and so relationship bonds among various stakeholders.

Reviewing the breadth of objectives and processes within place branding explains the challenge of finding a specific, reliable measure of the effectiveness of place branding and for specific campaigns. The extant research suggests several different approaches to this challenge. Brand image, values and the links to brand equity are suggested as one of two methodologies by Zenker and Martin (2011), the other being customer-oriented approaches such as customer equity or customer satisfaction. Florek and Kavaratzis (2014) distinguish within place brand equity further with two measurement dimensions: perceptual (including brand image) and behavioral (including willingness to stay). Lucarelli and Berg (2011) alternatively present three categories: identity, social and economic impacts. Brand image measures would be part of measurement of identity whereas the impact on political consensus, and adoption by local residents would be a measurable social impact. Measuring the financial change in brand equity might be a proxy for economic impact.

Previous studies tended to focus on the perceptual measurements of place brands such as awareness, image and specific brand value associations. The first attempt to measure place brand communication and economic return was Papadopoiulos & Heslop (2002) assessing place brand equity from an investor perspective. Jacobsen & Kalandides (2009) developed an investor-based Place Brand Equity model to illustrate the linkage between brand value drivers and the choice of investment locations. Zenker et al, (2013) explore a new economic indicator using the percentage of wage that talented individuals living in a location are willing to sacrifice to live and work in their preferred place. Seisdedos & Vaggione (2005) further assessed city marketing initiatives by three factors: the amount of incoming investment (growth in economic activity, job creation, success in attracting new businesses), tourism (number of

visitors, length of visit, expenditure) and perceptual measures. Goovaerts et al, (2014) suggested an integrated performance measurement (IPM) for city marketing containing all revenues and expenditure that occur at least once per financial year.

Each approach has its own particular focus and method, none are comprehensive and all have shortcomings. Mixed methods approaches have also been attempted. Zenker & Braun (2015) tried a combination of network analysis and advanced brand concept map methods to measure place brands' impact. Other techniques tried are multi-dimensional scaling (Carroll & Green, 1997) and laddering techniques (Grunert & Grunert, 1995).

C) Concept of measurement of Place Branding

Drawing on extant research, we conclude that there are three main approaches at the concept level in measuring the effectiveness of place branding: perceptual, behavioral and monetary/economic. There is a breadth of approaches but no consensus on the priority indicators of branding effectiveness. Perceptual and behavioral aspects are often combined but monetary or economic perspectives considered separately. The image orientated measures are more common and developed for place brand assessment. A methodological richness is also emerging in the research field with attempts to combine approaches to compensate for the shortcomings of any one single measurement technique. These deploy different methods but remain within the positivist framework of thought. The located research gap would benefit from such integrated methodologies including the more rarely used economic impact techniques combined with perceptual and social measures.

We therefore propose a concept map for Chinese place branding measurement (Figure 1). There are four elements within our concept map: place reality, place branding, concept of place branding measurement and the factors of measurement. Place is composed of both the physicality and spirituality inherent in a location. Architecture, infrastructure, natural environment we term place physicality. Cultural heritage, social values, perceived personality or "buzz" we term the place spirituality. Place physicality and place spirit mutually constitute the place reality. The complex process of place branding is cognizant of the historical and contemporary interactions between physicality and spirituality in forming an authentic place brand. We categorize three conceptual components in place branding measurement: perceptual, behavioral and monetary / economic. Each category has subsidiary factors to measure. Brand image, brand association, brand personality and others image driven measures draw this perceptual map of a place. Behavioral actions such as intention to stay, repeat visit and reputation via word of mouth show how expenditure results from place branding activity. The monetary/economic perspective utilizes robust economic data such as the rate of inward investment as alternative evidence of tangible results of place branding activity. The range of measures means that any given study cannot reflect all measure at any one time. Given the availability of data, we therefore prioritized measuring the economic effectiveness of place branding. This has received less research attention and is pertinent as an aid to policy guidance in a Chinese context.

To assessed if there is an empirical relationship between place brand advertising and economic impact, we look at each Chinese city and attempt to isolate the impact of city and tourism related advertising on tourist expenditure and related economic impacts. Amongst the multivariate factors, this study is the first to identify the specific role of targeted place brand advertising on generating the economic benefits of the incremental tourism.

Figure 1. The concept of Place Branding measurement
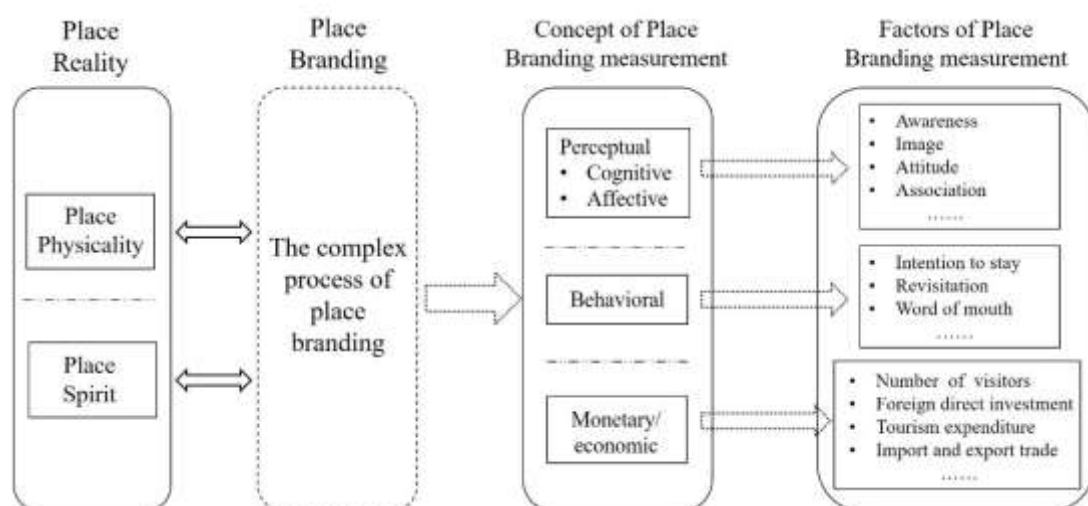
2. Evaluation the effect of advertising in Place Branding

   A)   Advertising effect

Advertising is commonly used by a service or product provider to share information and increase awareness about their offer and / or their firm (Johnson and Myatt, 2006) . The debate over whether advertising is effective still exists: which ads, which methods, long term versus short term effects and optimal use of budget to maximize the return on the resources used. There are two broad approaches for measuring advertising effectiveness. One focuses on diagnostic marketing metrics (awareness, preference, customer satisfaction, loyalty) to fine-tune individual advertisements and the other focuses on evaluative marketing metrics (sales, market share, profits, return on investment, cash flow, firm value) (McAlister et al., 2016). We translate those two approaches into perceptual, behavioral and economic measures of advertising effect.

Advertising as a tool of product and service marketing, has evidence of effect (Butterfield et al, 1998; Fullerton & Kendrick, 2011; Messmer & Johnson, 1993; Woodside, 1990) and further advances in electronic media have enabled tighter evaluation tools to further understanding of which campaigns work and why. Prior studies have empirically investigated the effect of advertising across a variety of industries on both consumable products such as cigarettes, yogurt, alcoholic and non-alcoholic beverages as well as on services that are not immediately consumed. These, like tourism, may result in a long-term relationship between

the consumer and the service provider (Fier and Pooser, 2016). Eisend and Tarrahi (2016) measured the degree of advertising effectiveness by analyzing 324 meta-analytic effect sizes from 44 meta-analyses that included more than 1700 primary studies with more than 2.4 million subjects: the meta-meta-analytic effect size of 0.2 shows that such advertising is effective.

B) Advertising effect in place branding

Advertising is at the heart of traditional communication strategy. However, beyond the intended behavioral impact of visiting or otherwise interacting with the target place as a commercial, transactional goal, advertising is also a disseminator of knowledge. Advertising builds awareness of a location, its attributes and the mass audience understand the identity of the message originator. In this sense, advertising could be seen as an induced agent (Gartner, 1994). Gartner identified eight of these image formation agents operating within the process of image formation: overt induced I, overt induced II, covert induced I, covert induced II, autonomous, unsolicited organic, solicited organic and organic. Among these information agents, the traditional form of advertising is categorized as overt induced I. The concept of information agents was developed further, albeit in the research context of museum visitors, to understand how communication impression were created prior to visitation (Gil & Ritchie, 2009). Against the evolving media environment, we propose a research structure where place brand communication can be classified as four categories:

i. Induced agents: Conventional advertising delivered via mass media such as TV, radio and print.
ii. Autonomous agents: Includes news, documentaries, films, and TV programs in which the message is tangentially embedded but for informative rather than commercial purposes.
iii. Organic agents: Non-mediated contents created without direction or oversight such as impressions made on people from visiting a place directly and any art forms created about a place.
iv. Social agents: People, relatives, friends and opinion formers who provide information and opinions to others about a place that are in turn shared in personal or digital channels.

There is limited specific guidance from infrequent empirical studies on differential impact per channels or methods of place brand communication. Braun et al, (2014) presented one: a quantitative, empirical study addressing the effectiveness of place branding across three different place brand communication strategies on attracting both residents and visitors. It concluded that both physical and word-of-mouth place brand communication have similar positive effects due to positive shifts in place brand image. Econometricians have also attempted to assess city branding using statistical data. Herget et al. (2015) assessed the relationship between the quality of city branding and average price of hotels offered in the city, showing a positive relationship between the two.

In tourism research, evaluating the effectiveness of destination advertisements has focused more on cognitive than behavioral aspects, the change in beliefs about a place being a proxy for any change in behavior as a result of shifting beliefs. This cognitive approach has generally focused on evaluating individuals' responses to advertising campaigns within the context of destination awareness, visitation and visitor expenditure (Kim & Kim, 2005). Fullerton & Kendrick (2013) found that tourism advertising may have a positive impact on attitudes towards a specific county, even amongst those who had never planned to visit the place concerned. Butterfield et al, (1998) found a relationship between awareness and attitudes toward that destination and, ultimately, to the decision to visit that destination. One behavioral aspect investigated is the extent to which a promotional campaign might "stimulate" an actual visit to a particular destination. A variety of approaches have been taken, including tracking studies, conversion studies and other forms of program evaluation (Messmer & Johnson, 1993; McWilliams, 1997; Woodside, 1990). Others have proposed a more aggregate economic evaluation to advertising effectiveness, suggesting that attention should focus on estimating the marginal number of visits and the incremental economic impact of these visits due to the promotional (Butterfield et al., 1998; Silberman & Klock,1986; Wöber & Fesenmaier, 2004). This approach adopts a general econometric perspective whereby travel from an "origin" city to the destination state is a function of the size and nature of the visitor market, distance to the state, the size plus nature of the advertising campaign, as well as its effectiveness (Butterfield et al., 1998).

There are challenges in identifying clear causal links between individual advertising campaigns and their cognitive, affective and conative effect (McWilliams,1997) Researchers can however seek to monitor broad changes in attitude and behaviour (Martín-Santana & Beerli-Palacio, 2013). The theoretical model preferred is based on the advertising conversion model of Siegel & Ziff-Levine (1990) of advertising leading to higher awareness thence image enhancement, motivation and finally to action. Ideally, researchers could measure each stage of human response to the communication (Beerli & Martin, 1999): increased awareness in response to the communication, intent to act and travel in future, the actual action to travel and lastly, if no response to either awareness or intention. In the absence of prior research in China on all four stages relating to such campaigns, this research seeks to form a benchmark on whether an impact exists at all on the 3rd action - whether to travel in response to the advertising. The level of advertising spend or message refinement would be an analysis for later research, building upon any initial research findings. A normative commercial approach would be to assess before and after awareness of the offer, be it place branding or any other sector or brand. This information was not unfortunately commissioned by Chinese policy makers so no prior awareness level benchmarks exist either as to place awareness or to intent to travel. This has led, by necessity, to assess the indirect impact of advertising campaigns on the more diffuse measure of economic impact. This is within the research strand of tourism conversion studies (McWilliams & Crompton, 1997) where the low involvement nature of destination adverts limit analysis to a macro level of impact rather than a more ideal methodology of field level measurements.

Within the limits of the data resources available and the limited establishment of dedicated

destination management organisations in regional locations, the research still seeks to fit within the narrow principles on monitoring place-based advertising as set out by Steinmetz, et al (2015). This research is the first step of establishing a Destination Advertising Response (DAR) model to capture the influence on the wider consideration set of visitor attractions, where to stay, where to eat and associated services. The best available data set that can be used as a proxy for this bundled set of goods and services is a suite of economic impact measures on which annual research data could be found. This is in keeping with earlier research methods in the USA when the field was less developed, measuring the impact of destination advertising on a bundle of tourism services impacts, an aggregate measure of impact, holding other factors as constant (Kim et al, 2005).

In summary, previous studies in the field of place branding have focused more on the cognitive, affective and conative aspect of advertising than on the economic effect. Past econometric models of advertising effects also concentrated more on the causal sale: post advertising relationship itself. This means that our inquiry is separated into parts tailored to realities of Chinese policy and data availability.

C) Factors affecting tourist expenditure

In tourism studies, there is a growing body of academic literature on the empirical relationship between tourism development and economic growth. Most studies find a positive long-run association between the two (Du et al., 2014). As Cárdenas-García et al, (2013) noted, tourism is considered an activity with the potential to stimulate economic growth due to complementarity with other economic activities, its contribution to gross domestic product, job creation, and foreign exchange generation. The emphasis on tourism is as a multiplier: not only does it bring its own immediate economic impact but it can also then enhance the structural foundations of other parts of the economy. This amplification particularly encourages growth in the service economy and further aids the economic and cultural progress of the host society. The available amenities and welfare of the wider resident population is also improved.

Growing tourism as a sector depends upon an intertwined set of enabling variables. A destination marketing campaign is but one enabling factor. Seasonality, holiday schedules, distance, economic conditions or climate are all influences beyond the control of place brand marketers. Equally, the revenue level of tourism relies upon multiple factors once they are in situ: infrastructure, the nature of places to stay or visit, pricing, local taxation, personal spending preferences, environmental conditions, managerial capability of those offering goods and services and professionalism of service personnel.

Current studies of tourism, regional development and destination marketing suggest four main factors influence tourist expenditure:
i. Tourism resources: Destinations that have rich tourism resources are generally more attractive as they provide for a wider range of interests and spending levels (Sui et al., 2013; Yuan & Shao, 2011; Huang & Hu, 2015; Ao & Wei, 2006).

ii. Number of visitors: Yuan & Shao (2011) find a positive correlation between the number of tourist arrivals and tourist expenditure, based on regression models and factor analysis.

iii. Level of economic development: He et al, (2010) attribute tourism development to rapid GDP growth, more leisure time, and the development of holidays as a break in the continuity of everyday activity. People are more willing to purchase tourism experiences as their disposable income rises.

iv. Transportation: Development of public transportation systems reduces the temporal and spatial distance for tourists and offers more flexible and diverse choices. Transportation paves the way for tourism development and income (Deng & Li, 2015; Pang et al., 2006).

Most of these current studies look at the influencing factors upon tourist expenditure from a macro-level perspective of the industry. Micro-level observations also reveal the interconnectedness between personal consumer decision-making and local tourist expenditure. Consumer decision-making is often shaped by marketing, image promotion and media exposures and novel media and communication research can offer new insights on the causal factors behind tourist expenditure.

Method

1. Data

a) TV Advertising Data

This quantitative study uses TV advertising monitoring data from China Central Television (CCTV) during the time period of 2005 to 2015. According to the "China Entertainment and Media Outlook 2015-2019" report by Price Waterhouse Coopers (2016), Chinese TV advertising revenue reached $US 68.6 Bln in 2014 and was estimated to grow 6.6% p.a. to $US 94.6 Bln by 2019. Longitudinal trend studies of Chinese advertising (Wen et al., 2012; Wen et al., 2017) show that in 2005 - 2014, the TV advertising market share varied from 22.8% to 29.1% of total media advertising market, dipping to 19% at the end of the review period. Internet Advertising first appeared in 2009 with 5.4% media share growing rapidly to be 27% of the market, mainly at the expense of newspaper and other offline forms of advertising. The turning point within this Chinese media landscape was 2015 when internet adverts becomes the main medium. During the period of our research, 2005 – 2014, TV advertising remained preeminent.

Table 1: The Evolution of Chinese Advertising Media Channels
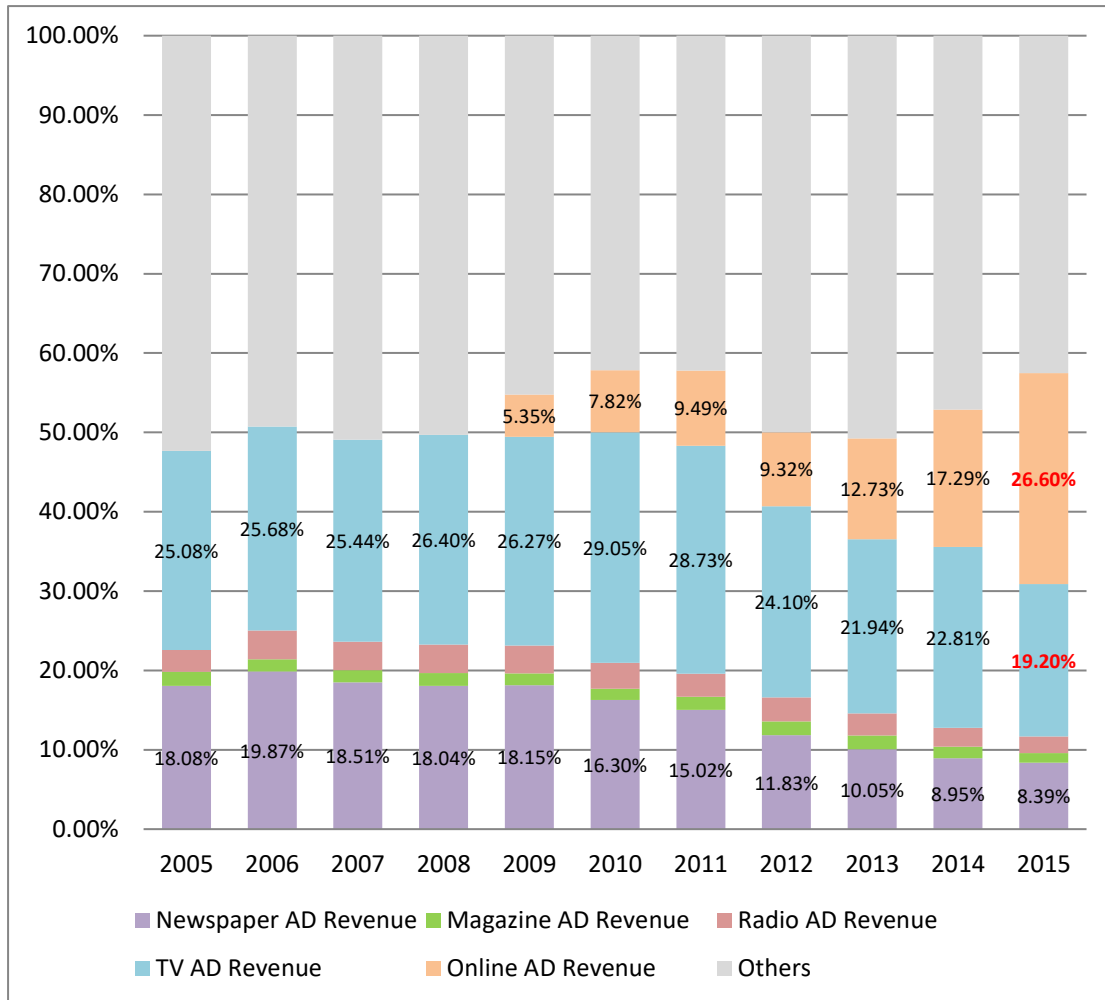
Source： Wen, et al.,

As the largest nationwide national TV broadcasting network, CCTV is the most influential media outlet in China and its advertising revenue was one third of all television advertising spend in the period of 2015 to 2019. CCTV's position offers national breadth of coverage to advertisers, hence why most TV advertisements placed by cities and tourism destinations were placed on CCTV. Given the primacy of CCTV within the tourism sector, this study employs CCTV as our source of reliable, contiguous data on which we can conduct empirical research on the impact of place branding efforts within China. CCTV place brand advertising is the best available longitudinal data set to illustrate the dynamics of place branding communication in China in the period of 2005-2015.

The monitoring data used is not available in the public domain. It was supplied gratis, on request, by the Advertising Center of China Central Television Station directly to the Asia Media Lab of the Communication University of China on condition that it is used solely for academic research purposes. The original data set includes date of transmission, channel, advertiser, subdivision category, time of broadcast, length of spot and both pre and post program genre.

The original data set was composed of all advertisement monitoring logs from the 17 open

channels (as Table 1) coded as being within the city and tourism category. This included the starting time of the advertisement, the name of the advertiser, the length of the spot and the program genre. There were 1,858 city and tourism entities contributing to a pool of 987,890 advertisements during the 11-year period of 2005 to 2015.

Table 2 Advertising monitoring channels

Channel	Name	Primary contents
CCTV1	General	A general channel that aims at reporting the news. It is the flagship terrestrial television channel of CCTV.
CCTV2	Finance	CCTV financial channel that is dedicated to providing professional financial information and life services.
CCTV3	Arts and Entertainment	The channel has creative, niche interest programs, which are primarily dance and music broadcasts.
CCTV4	International (in Mandarin)	CCTV International is dedicated to news and reports to a global audience, with a special focus on Chinese issues.
CCTV5	Sports	CCTV-5 provides news, information and live broadcast of sports leagues, teams and events.
CCTV6	Movie	CCTV-6 is dedicated to movies.
CCTV7	Military and Agriculture	It has a mixture of agricultural and military programs.
CCTV8	TV series	CCTV-8 is the television drama channel.
CCTV9	Chinese Documentary	Broadcasting new Chinese documentaries between 19:00 and 23:00 Beijing time, and repeat archival programming at other times.
CCTV10	Science and Education	Its schedule includes mostly local and imported documentaries, as well as educational studio productions.
CCTV11	Chinese Opera	A channel which broadcasts Chinese Opera.
CCTV12	Society and Law	A professional channel broadcasting ethics and legal programs.
CCTV13	News	CCTV News channel broadcasts 24-hour news reports, covering domestic and international events.
CCTV14	Children	Airs cartoon programs as well as children's game shows and other children's programs.
CCTV15	Music	It aims to broadcast a diverse assortment of different music genres.
CCTV NEWS	News	CCTV News coverage includes newscasts, in-depth reports, and commentary programs, as well as feature presentations. The channel has grown out of CCTV's International channel
CCTV5+	Sports Plus	CCTV5+, formerly CCTV-HD, is a channel designed to broadcast sports events in HD. It is now the second sports channel of CCTV.

Based on our research objective, place brand advertisers were further classified into four sub-categories by the nature of their proposition:

i.   City/place focused – 80% of broadcasts
ii.   Travel destination focused – 18% of broadcasts
iii.   Relating to a specific tourism offer or organization – less than 1% of broadcast
iv.   And others as a catch all – a residual 2.5 % of broadcasts.

In terms of ad placements, 1,377 cities/places were 74.2% of the total and destination rated entities were 18.9% with 351 entities. When it comes to the frequency, the city/place group occupied the highest percentage with 79.7%, and then specific non-city destinations with 17.6%. It shows that city/place brand advertising is the dominant genre and indeed the main source of advertising within the time period. This re-enforces the research observation that intra-place and intra-city competition has generated a rise in the use of city / place advertising as a tool of differentiation between domestic cities seeking to achieve their socio-economic policy goals.

Table 3 Advertising entities by nature

Entities by nature	Number	Percentage	Frequency	Percentage
City/place	1,377	74%	787,310	80%
Destination	351	19%	173,882	18%
Tourism product/organization	59	3%	1,689	0.2%
Missing	47	2.5%	24,484	2.5%
Others	23	1%	525	0.05%
Sum	1,858	100%	987,890	100%

In accordance with Article 30 of the "Constitution of the People's Republic of China", this research has classified Chinese cities, excluding Hong Kong and Macau, into seven strata:

i.   Province/municipality,
ii.   Capital of the province,
iii.   Prefecture-level city,
iv.   County-level city,
v.   Town,
vi.   Village, and
vii.   Open economic zone.

The primary source of place branding advertising is the provincial / municipality strata. Some 31 provincial entities accounted for 36.2% of the total broadcasts. This also means that in terms of economic contribution, it is the provinces that are providing the most financial support for place brand advertising. Given the richness of data available at the provincial

stratum and their significance to domestic place branding, we have focused our data analysis on this sub group. Thus, we have 31 provinces' advertising data isolated from the total data set on which we can empirically test the relationship between advertising inputs and economic outcomes at a provincial level.

There is also significant data and spend at the prefecture city level, the second largest source of advertising spend with 35.9% of the total. However, at a public policy level, given the drive to urbanization within China, we are mindful that there will be more heterogeneous place brand characteristics at the provincial level which would include elements of both the rural and urban economy. There are also data inconsistency issues that are more prevalent at the city than at the province level which might hinder our analysis. For reasons of being marginally the largest expenditure source (and most complete) and as it also offered scope for diverse comparative analysis, we have used the province/ municipality level data set.

Table 4 Advertising entities by administrative divisions

	Numbers from National Statistic Yearbook 2015		Advertising monitoring logs from CCTV during the period of 2005 to 2015			
Administrative levels	Numbers	Percentage	Entities	Percentage	Frequency	Percentage
Province/municipality	31	0.07%	46	3.3%	285,074	36.2%
Capital of the province	31	0.07%	34	2.5%	70,385	8.9%
Prefecture-level city	397	0.9%	271	19.7%	282,467	35.9%
County-level city	2,854	6.5%	617	44.8%	170,955	21.7%
Village	Missing	missing	208	15.1%	1,387	0.2%
Town	40,381	92.4%	188	13.7%	11,778	1.5%
Open economic zone	Missing	missing	13	0.9%	12,092	1.5%
Sum	43,694	100.00%	1,377	100.00%	787,233	100.00%

b) Economic indicators

Economic development is a primary goal of place branding and advertising fits as a tool of policy implementation within the varying public policy goals at the provincial level. To measure the economic effect of place advertising over this time frame, we have applied the wider theories of place brand effectiveness to select exemplar socio-economic data sets, ensuring they are available in comparative quantitative formats across the 31 provinces. We have chosen and categorized specific social and economic indicators collected from the national and provincial statistical year books for each of the 31 provinces which are compendium of economic data used to assess the impact of state policy. The data has been grouped, as per place branding theory, into five categories: economic growth, tourism, inward investment,

migration and talented people and transportation. We then specified the corresponding indicators for each category as shown below:

Figure 2 Concept of economic impact variables of Place Branding
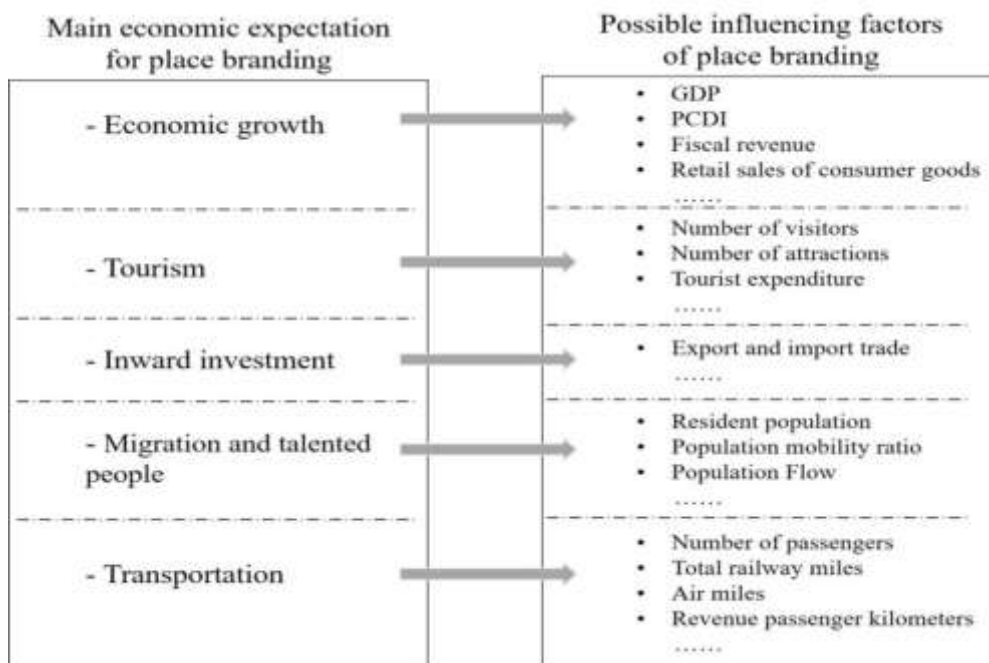
2. Variables

a) Measures of Aggregate Advertising Quantity

In the absence of data on the individual advertising expenditure spend levels per provinces, we have needed to ensure we are comparing like for like advertising placement by each province. For the analysis, CCTV operates on the principle of a central, national rate card to price spot advertising as price varies between channels but does not vary between regions. Whilst this is different to the more differentiated pricing strategy used by Western broadcasters, this uniform pricing strategy across regions continues to be the preferred strategy for CCTV acting as the dominant broadcaster.

Our calculations to derive a figure for aggregate advertising expenditure followed the convention of looking at the length of each advertising spot, the aggregate frequency of that ad being broadcast in a given year and then the cost per spot. This was multiplied to generate an aggregate advertising spend. We are aware of differing media buying practices and of the difficulty locating final invoices of advertising expenditure generated for to each place brand advertiser's campaign. CCTV can apply a complex discount system to media buying agents but the bidding price for every advertiser in the public domain and depends upon the mix of channels, frequency and total budget committed. This makes comparing invoices on a like for like basis problematic. We therefore pragmatically decided to exclude any pricing variability due to different discounts per client and rather just analyse the rate card and ad frequency to

measure the quantity of placed advertising. Given this assumption and that there are significant discounts available, this would suggest that any ratio of advertising spend: economic impact we find through our research, is likely to be understated as the impact per RMB spent would be higher if we have had access to the actual discounted cost figures.

Calculation of Aggregate Advertising Quantity per province per year:
a) Advert length e.g. 30 second spot multiplied by
b) frequency that advert was shown in a particular year e.g. 52 times, multiplied by
c) EQUALS = aggregate annual advertising volume for that advert
d) Then summed to give total advertising volumes as a measure of time on air for adverts made by that province in that year

By calculating the annual advertising quantity per province, we now have a measure that captures the variables of advertising length and frequency across the time period. We take it as a working assumption that the varying creative content will deliver equivalent impact of message to the viewer. We deem it that any such variations would be balanced out across the data set as we deploy an aggregate measure of total communication input rather than assessing individual ad input compared to individual economic or social impact. This variable will thus be absorbed within the whole. This may be an area for further research and evaluation but as the content and approach is to assume average impact of the advertising in terms of the format used, we will continue with this assumption for the purposes of assessing this top-level comparison.

For a calculation of total advertising expenditure, we have used the 2011 rate card information from CCTV. Using a single multiplier removes data inconsistencies with the CCTV pricing records, discounting variables and enables a macro comparison of send vs economic development to be made.

b) Economic factors and missing data

Although we tried to collect all data from open sources for analytical consistency and integrity, there are still issues with missing data sets, of which there are three types:
i.   Not all provinces include the same indicators in their local statistics book, such as the omission of an air miles indicator.
ii. Some statistical indicators are not available in the earlier years. For example, we originally employed the number of 5A and 4A attractions as an indicator for tourism resources but found that there are no specific numbers for each A-level attraction before 2012, just a general number of A-level attractions is available within our research period. We have therefore combined the data on the number of 5 A and 4 A attractions to instead use a category of all A-level attractions.
iii. Some indicators suffered dramatic a shift by the change of a statistic scale. For example, railway miles and highway miles for each province have changed in

statistical scale since 2008 as required by the National Bureau of Statistics of China so have rejected this indicator due to its inconsistency.

iv. Historical inflation statistics within China are contested between economists, both nationally and regionally. We have used actual rather than inflation adjusted numbers for economic measures including GDP and for advertising.

As well as individual measures, we also sought to identify a central measure that would be statistically robust, fit the research aims, have no missing data and be consistent across time in its use of a measurement scale. We found local GDP a useful master proxy measure of the overall economic development within a region and with useful sub-measures:

i. Imports and export flows to reflect inward investment.
ii. Total tourism expenditure as an indicator of regional tourism.
iii. Revenue per passenger kilometer as a measure of regional traffic capacity.
iv. Population mobility ratio as a variable to reflect regional population movement and immigration status.

We have therefore derived a mix of macro socio-economic measures that enabled a statistically robust data sets across the 31 provinces within the time period.

c) Observation variables

Factors that influence tourism expenditure mainly include the number of tourists, economic development, tourism resources and transportation links. As a subset, we also included the number of A-level tourism attractions, the total number of tourists, gross regional product, per capita disposable income, revenue passenger kilometers and aggregate advertising expenditure in the regression analysis as observation variables. Operational definitions of variables are:

Advertising Volume: An indication of the scale of place advertising air time shown across CCTV channels in the time periods indicated. Advertising Volume= frequency X length.
GDP: Gross domestic product generated by all residents in a region during a certain period of time.
Total exports and imports trade: The value of commodities imported into and exported across the geographical boundary of the province.
PCDI: Per capital disposal income, an indicator for the monetary well-being of a regions' citizens.
Population mobility ratio or "PMR": population flow ratio/ registered population
Revenue passenger kilometers: The number of passenger X average transport distance, unit: million people km.
Tourist Expenditure: total expenditure of tourists on travel accommodation, customer spending and other related expenditure. We sum the indicators for domestic tourist expenditure and international tourist expenditure as a combined variable tourist expenditure. Although there are significant inconsistencies in the estimates of domestic vs international

visitors, we know that the latter is still dwarfed by internal domestic movement for internal tourism. We also note that the international tourism impact has a time lag effect once domestic infrastructure from tourism has been developed and is, to a degree, a part consequence of domestic tourism growth. We have therefore not removed international data but are using an all tourism aggregate measure of comparison.

The number of A-level attractions: The National Committee for Quality Assessment of Tourism Resources Planning and Development is entrusted by the National Tourism Administration (now the Ministry of Culture and Tourism) to assess tourism attractions nationwide. The number of A-level attractions is available in the provincial statistic books.

3. Findings

a) Correlation Analysis

In this statistical analysis, the Pearson Correlation Coefficient is adopted to measure the linear correlation degree of two random variables X and Y. The value range of the correlation coefficient is $-1 \leq \rho$ (X, Y) ≤ 1. The closer to 1 or -1 of the value, the higher the degree of correlation between the two variables. The closer to 0 of the correlation coefficients, the lower the degree of correlation between the two variables. A Pearson correlation test was used in this study to analyze both advertising data and economic impact data.

The results are:

Table 5 Correlation analysis

		GDP	Imports & Exports	Tourism Expenditure	Revenue Passenger Kilometers	Population mobility Ratio
AD volume	Pearson corr.	0.244^*	.075	0.226^{**}	0.223^{**}	-0.148^*
	Sig.	.000	.348	.000	.000	0.021
	N	341	341	341	341	341

**: 0.01; *: 0.05

The result of the correlation analysis suggests advertising is not significantly correlated to total import-export volumes of the region. Rather, there is a significant positive correlation at the 0.01 level with tourism expenditure (0.226) and revenue passenger kilometers (0.223), with a notable correlation at 0.05 level with correlations for GDP at 0.244 and a population mobility ratio of -0.148. We know that there are multiple variables affecting economic impact, tourism levels and transport. We are not expecting place branding advertising to be the dominant driving factor of provincial GDP as it is only one of a suite of policy tools used to achieve wider economic and social objectives. There are also extraneous variables beyond the purview of domestic policy such as climate variability, global trade flows, macro-economic policy of other nations or international consumer demand.

Thus, from modest expectations, we deem it significant that from 2005 to 2015 that there

was a level of correlation between the quantity of place brand advertising campaigns of the 31 provinces with a certain impact on the economic development, tourism development, transportation and population mobility. In particular, the highest finding of a 0.226 correlation is with tourist expenditure. This would be the most logical direct impact: place brand advertising designed to attract tourists does indeed increase tourist expenditure. However, there appears to be a wider "halo" effect that is equally as powerful on the wider GDP with this being equally as correlated with place brand advertising as the more direct impact of tourist expenditure. This suggests a hidden spillover mechanism bringing diffuse economic benefits across the provinces. That would be an area for further research.

The analysis shows that TV advertising exerts an influence on regional brand construction and development. This answers our first question is: yes, there a wider causal link with economic growth. To those who make policy in China at a macro level, this is important. As a complementary tool for meeting urban development goals, an extensive place advertising campaign makes economic sense with significant measurable impact.   Judged from the correlation coefficient value, advertising volume is highly correlated with a province's tourist expenditure. To further study the role of advertising on a province's brand promotion, this study takes tourist expenditure to a next stage analysis regarding any specific relationship between advertising increases on tourist expenditure.

b) Regression Analysis

ⅰ. Modeling

As tourist expenditure is affected by a variety of factors, this study attempts to use multiple regression analysis to explore the narrower question of whether advertising increases tourist expenditure. A stationarity and co-integration test were conducted on variables which affect tourist expenditure before modeling. A double logarithmic form can not only reduce the integration order of variables to facilitate co-integration analysis, but also reflect the revenue elasticity by estimating coefficients of independent variables in the double logarithmic linear model. The linear function of a double logarithm is widely adopted in the study of tourist expenditure as a standardized approach. W therefore build the model as below:

$$\ln Y = \alpha + \beta \ln_1 X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + \beta_5 \ln X_5 + \beta_6 \ln X_6 + \mu \qquad （1）$$

In model (1), Y represents total tourist expenditure (100 million Yuan), X1 indicates the amount of advertising, X2 the regional GDP (100 million Yuan), X3 the total number of tourists (10,000 people), X4 per capita disposable income (Yuan), X5 the number of A-level attractions, and X6 the revenue passenger kilometers (100 million X km). The μ is the residual term.

ⅱ. Model Modification

For controlling some of the independent variables that may influence the dependent variables, and the possible interaction among variables, a collinearity analysis of independent variables was conducted.

Table 6 Collinearity diagnostics

Dimension	Eigenvalue	Condition index	Variance proportions						
			Constant	X_1	X_2	X_3	X_4	X_5	X_6
1	6.895	1	0	0	0	0	0	0	0
2	0.056	11.084	0	0.11	0	0.51	0	0	0
3	0.025	16.564	0	0.5	0	0.18	0	0.05	0.02
4	0.017	19.999	0.02	0.36	0	0.01	0.02	0.02	0.02
5	0.004	39.535	0.01	0	0	0.08	0.01	0.56	0.42
6	0.002	62.209	0.02	0.01	0.98	0.16	0	0.15	0.24
7	0.001	115.621	0.95	0.02	0.01	0.06	0.97	0.22	0.3

Dependent variable is tourist expenditure

As illustrated in Table 6, multiple eigenvalues appear to be 0, and numerous condition index values are above 10, both of which indicate multicollinearity among the independent variables. It can be discovered from the correlation coefficient matrix that both per capita disposable income variable and gross domestic product variable are close to 1. The two variables refer to the regional economic development level and consumption capacity, both being economic factors. We then only maintain per capita disposable income as the variable to represent economic factors in the model, also as the effect of inflation PCDI is a more reasonable variable. Therefore, the model is modified as model (2):

$$lnY=\alpha+\beta_1 lnX_1+\beta_3 lnX_3+\beta ln_4 X_4+\beta_5 lnX_5+\beta_6 lnX_6+\mu \quad （2）$$

iii. Regression Result

Table 7 Model summary

	B	$\ln X_1$	$\ln X_3$	$\ln X_4$	$\ln X_5$	$\ln X_6$
M	-6.986	.013	.134	.721	.394	.564
t	.000	.039	.000	.000	.000	.000
	.766		**Adjusted R²**		.761	
F	40.482		**Sig.**		.000	

Given the higher R sq. results from this multilinear regression model and the F test value showing significance, we conclude that this model is effective at meeting our analytical objectives. The Adjusted R^2 result is 0.761, indicating that the model can explain about 76% of the sample data with better goodness of fit. At the same time, the coefficients of each variable in the model all passed the T test, noting in particular the coefficient of per capita disposable income was the largest, which was 0.721. The results indicate that the factor of change in PCDI can greatly boost tourist expenditure. This fits with current theories on the role of tourism within economic development: as people's living standards improve, there is more disposable income to meet their tourism and leisure consumption needs. Also noted is the coefficient of

the revenue passenger kilometers of 0.564, which implies that convenience and capacity of transportation is another important factor determining choice of travel destination by tourists. An abundance of tourism options also influenced tourist expenditure, A-level attractions having a coefficient of 0.394. Although the coefficient of the advertising volume is only 0.013, the P value is significant at P <0.05, indicating that the quantity of advertising still has an impact on tourist expenditure to a certain extent: each 1% of the advertising scale can bring 0.013% increase in tourist expenditure. Therefore, the multivariate linear equation can be written as:

$$lny=\alpha+0.13lnVolume+0.134lnNT+0.721lnPCDI+0.394lnA\text{-}spot+0.564lnNT+\varepsilon$$

For clarification, all the independent variables are significant at the level of $p < 0.05$. It can be concluded that from 2005 to 2015 that there was a causal relationship between the rise in tourist expenditure and the level and rise in aggregate advertising scale. There are also inter-linkages shown with the total number of tourists, the rise in per capita disposable income and A-class attractions availability.

Thus, we have answered the second research question, which is: if advertising does have an impact, how does it contribute to economic growth within that location? The answer is that for each 1% of the advertising scale suggests a 0.013% increase in tourist expenditure.

Conclusions and Discussions

The economic effectiveness of place advertising has long been questioned by policy makers, government budget holders and indeed residents. The empirical evidence for the effectiveness of place communication has not been extensively investigated so these questions linger. Our study aims to answer the basic as to question whether a significant and sustained communication effort will generate a measurable economic impact on the target location. The results indicate that there is a significant positive correlation at 0.01 between place advertising and tourist expenditure (0.226) based on the data of place brand advertising campaigns of 31 provinces in China within the time period of 2005 to 2015. Further, this study suggests that the level of advertising has a clear impact on tourist expenditure: each 1% of additional advertising can generate a 0.013% increase in tourist expenditure at the P <0.05 level. The findings from this study also support the extant studies on influencing factors upon tourist expenditure: namely tourism resources (0.394), transportation capacity (0.564), and per capital dispensable income (0.721).

The economic effectiveness of place branding within China cannot be given more granularity at this stage beyond the overall model and correlations we have found. The more detailed process that tourist undertakes when considering a visit is fluid and may follow many paths. We know from viewing figures whether people have had sight of the advertising but not whether or not they already know of the place or have preconceptions or prior intentions to visit. Many other personal factors need be included for such a micro analysis: personal life events, income, education, motivation or trip type. Local factors will be an influence:

infrastructure, managerial capability or seasonality. There are also communication level factors within the model that we cannot yet break down into more detail such as the scope and effectiveness per media type in reaching the target audience and how that might negate or confirm other impressions from public relations activities. These factors all interact to produce a net positive or negative decision to visit. This is all at a micro level beyond the scope of our model. The one area where we could conduct robust and novel social science research was on the aggregate role of effectiveness on the aggregate tourism expenditure in China and so draw conclusions as to the existence of wider economic impact at the provincial level.

Further, we cannot advise policy makers how to plan a local budget given the nuances of discounts or channel choices per each province. We cannot say if one channel choice is better than another for example, nor can we give a view on the relative effectiveness of the type of creative treatment used. Rather, we have focused on establishing a robust holistic model from which these more details explorations and comparisons can be taken forward as new variables. It should be noted again that because we have assumed "full price" advertising rather than what we know re regularly applied discounts, the effects within the study may well be higher but consistency of data does not allow us to quantify that further.

Beyond the specific correlations, the area for particular deliberation by Chinese regional policy makers is our finding of the "halo effect" of place branding, a causal link to tourism development but thereafter also to wider regional economic development. This is a cornerstone goal of most economic development policy, where a particular investment amplifies beyond the direct impact and is also a qualifying determinant of state intervention to accelerate economic development. We anticipate use of this research to influence policy formation by including place branding as an ongoing policy tool for regional economic growth and an equal influence on policy discussions on building the necessary infrastructure to better support such local tourism activity. This mutual feedback loop of stimulating tourism and stimulating the investment into tourism related in infrastructure is where we see ongoing impact of this research. This feedback loop also then enables regions to become open to the wider international visitor market, further amplifying economic benefits.

Opportunities for Further research

The effectiveness of place advertising is a valuable inquiry both for policy makers and marketers. Prior studies provided little evidence and guidance for exploring these points which are of particular importance to China's economic development objectives. A possible common problem for researchers to date is the lack of appropriate data and analytical framework. The concept models and findings presented by this study might aid a better understanding of the effect of advertising and promotional place communication building on Beerli & Martin's (1999) model of the linear effect of advertising, from awareness to action. As per the limitations, there is the possibility for our model to be recalibrated, up or down, as required by policy makers in line with the different levels of urban and rural classification between smaller cities or larger regions.

Research which used more detailed data sets on historical advertising costs would also improve the model. Given the difficulty in acquiring this information, realistically this research could be developed by policy makers into a forward orientated model to assess advertising costs per province compared to ongoing economic impacts.

There are also scope for further research derived from an enriched conceptual framework. The shift from GDP to Green GDP indicators is propelling more local governments to undertake a place branding strategy in a manner that is integrated with a sustainable economic development plan. Understanding the relative contribution from "Green GDP" factors compared to other factors of influence on potential tourists would allow clarity on how ecological improvement would act as an attractor to greater tourism from both within China and from beyond its borders. Understanding the causal pathway on how ecological improvement may lead to improved Green GDP and higher economic impact through higher tourism, amongst other factors, is another area for further research.

Lastly, methods have been adapted to local Chinese circumstances. There are normative advertising practices in Western destination of measuring before / after advertising awareness measures as well as their impacts on a range of other social impact measures such as the non-economic impact on resident's well-being or the carrying capacity within high demand locations. In a Chinese context this research would be "nice to have" and as the state policy focus shifts from pure economic growth to more inclusive and sustainable economic activity, this can be extended into a wider research framework more congruent with Western data sources and research practices.

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