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Published online: 15 Dec 2015.

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# Economic effects of advertising expenditures – a Swedish destination study of international tourists

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## ABSTRACT

This study estimates the effects of advertising on international tourism demand for the leading Swedish mountain destination Åre. In contrast to previous studies, which primarily focus on tourism demand at a national or sectorial level, this research is conducted at the destination level. The study considers price levels at tourism destinations and tourists' income as determinants for tourism demand. However, following advertising theories and previous research, the dominance of the market power function (i.e. product differentiation) and the information function (i.e. market transparency) are identified as major co-determinants for international tourism demand. Demand elasticity coefficients are empirically estimated for the origin countries Norway, Finland, the Russian Federation, Denmark and the UK. Findings show that advertising is a significant driver of tourism demand from Norway, the UK and Russia. Interestingly, income and tourism price levels are less significant drivers of demand in all analysed origin markets.

## Introduction

Tourism is a significant contributor to the economy of the Jämtland and Härjedalen region (Sweden), where international tourism presently shows relatively high growth rates. Despite accounting for only 21.3% of the total tourist base in 2010, international tourists increased much faster (i.e. 9.5%) compared to the yearly growth rate of domestic tourism (i.e. 4.2%) (Tillväxtverket, 2011, p. 52). Thus, destination stakeholders and host communities in this region have a strong interest in identifying these growth determinants. In general, international tourism demand is driven not only by economic factors, such as exchange rates and consumers' available income (Frechtling, 2002; Song & Witt, 2000) but also by destination-specific factors, like destination attractiveness, the degree of advertising and destination marketing efforts (Brida & Schubert, 2008; Divisekera & Kulendran, 2006). The nature of destination advertising is typically seen as a series of strategic investments for avoiding loss of market share and for building-up a positive destination brand

image in the long run (Chekalina, Fuchs, & Lexhagen, 2014; Li & Petrick, 2008; Mossberg, 2007). However, destination advertising also shows the potential for boosting tourism sales in the short run (Divisekera & Kulendran, 2006; Morgan & Pritchard, 2000). Accordingly, the effectiveness of destination advertising is typically reflected through an increased amount of tourist arrivals or a change of tourists' consumption behaviour, for example through increased tourist spending or longer destination stays (Kulendran & Dwyer, 2009).

Destination advertising is considered a one-way communication process implying that the targeted audience does not necessarily respond to the transmitted advertising messages (Kotler, Bowen, & Makens, 2006). Therefore, the question as to whether or not advertising investments are effective is crucial for tourism suppliers and destination managers, although difficult to evaluate through direct measures, such as advertising's return-on-investment (Kim, Hwang, & Fesenmaier, 2005). Like in other sectors, tourism advertising influences the customer in three principal ways: through confirmation and reinforcement; through the creation of new patterns of behaviour and attitude; or through changing these behaviours and attitudes (Kotler et al., 2006). Indeed, tourism advertising is persuasive, thereby reflecting the ability to shift customers' attitudes towards the motivation to purchase the advertised tourism product (Chen & Tsai, 2007; Flagestad & Hope, 2001). However, unlike every-day consumer goods, tourism represents experience goods, which attract most attention from customers in terms of information search and involvement (Binkhorst & Dekker, 2009; Lehto, Jang, Achana, & O'Leary, 2008). Consequently, companies in the travel and tourism industry primarily use images to communicate with potential customers (Beerli & Martin, 2004; Chekalina et al., 2014; Morgan & Pritchard, 2000; Ren & Stilling-Blichfeldt, 2011). Furthermore, tourism advertising creates an emotional rather than a rational preference for the advertised tourism product. This emotional link between the customer and the tourism destination results in a perceived brand advantage, which combines the unique destination characteristics and the added-value for the customer (Chekalina et al., 2014). Customer involvement and personal relationships towards the advertised destination support the formation of destination brands as perceived by customers (Alcaniz, García, & Blas, 2009; Morgan, Pritchard, & Pride, 2004).

In the course of the last 15 years, information and communication technologies (ICTs) revolutionised marketing in the travel and tourism domain (Buhalis & O'Connor, 2005; Gretzel, Yu-Lan, & Fesenmaier, 2000; Law, Buhalis, & Cobanoglu, 2014; Li & Petrick, 2008): Internet-based technologies allow consumers to search for information in a highly convenient and effective way, thereby empowering customers to individually inspect, plan and configure tourism products before consumption takes place (Ho, Lin, & Chen, 2012; Li, Pan, Zhang, & Smith, 2009; Smithson, Devece, & Lapiedra, 2011; Steinbauer & Werthner, 2007). Especially web 2.0-based approaches and social web applications show the potential to increase the degree of interaction, information exchange and trust building (Conrady, 2007; Pan, MacLaurin, & Crotts, 2007; Sidali, Fuchs, & Spiller, 2012; Xiang & Gretzel, 2010). However, because of low entry barriers and the capability to directly promote and sell to potential customers, the amount of advertising information is continuously increasing (Buhalis & Licata, 2002; Fuchs & Höpken, 2011; Sigala, 2011). Thus, in highly competitive tourism markets, advertising messages might easily lose their significance in a constantly growing flow of information.

The goal of this study is to estimate the effectiveness of destination advertising for Åre, the leading Swedish mountain destination. By applying an econometric approach, the effect of advertising on international tourism demand is quantified in conjunction with other economic co-determinants (Brida & Schubert, 2008; Divisekera & Kulendran, 2006; Song & Li, 2008). The focus of this study is on advertising expenditures invested into various off- and online advertising channels by the major destination operator, SkiStar Åre. The Nasdaq-listed destination operator with several branches in Sweden and Norway provides approximately 6500 beds in Åre (SkiStar, 2014) and represents about three-fourth of the international guest base at the destination (Chekalina et al., 2014, p. 14). The presented research at the level of tourism destinations provides estimates about the effectiveness of the destination's marketing investments in attracting winter tourists from Denmark, the UK, Norway, Finland and Russia to Åre. By quantifying the effects of advertising investments and other economic determinants on the arrivals of international tourists, it will be possible to draw inferences regarding the destination's brand strength as perceived by country-specific tourist segments.

The article is structured as follows: after a review of the literature the theoretical framework is developed. Subsequently, model building steps and variable specification are discussed. After a presentation of empirical results, the concluding section provides a summary and discusses managerial implications, study limitations and the agenda for future research.

## Related research

The purpose of this study is to estimate the effects of advertising on international tourist arrivals in Åre. The research is embedded in a wider framework of economic factors influencing tourism demand (Frechtling, 2002; Song & Witt, 2000; Weiermair & Fuchs, 1998). As discussed in the literature, besides advertising investments, further economic variables affecting international tourism demand are taken into consideration (Brida & Risso, 2009; Garin-Munoz & Perez-Amaral, 2000; Song & Li, 2008; Song, Li, Witt, & Fei, 2010). However, in the tourism literature only a few studies exist, which analyse the effects of advertising investments by means of econometric methods. For instance, Bhagwat and Debruine (2008) investigate the impact of advertising on different tourism sub-sectors, like hotels, casinos, cruises and speed tracks. The same authors claim that previous studies analysing the returns of advertising investments in the travel and tourism domain are mainly based on surveys or laboratory experiments considering recall (e.g. top of mind awareness), travel intentions and the number of conducted trips. The authors, however, support the idea that advertising can be viewed as an economic investment that creates intangible assets, like brand image, which systematically reduce the firm's risk against market fluctuations. Bhagwat and Debruine (2008) estimate the effectiveness of tourism advertising with the help of an econometric approach by using two proxies for the dependent variable: the increase of tourism companies' sales revenue and its operating earnings.

Another econometric study by Dritsakis and Athanasiadis (2000) focuses on the international demand for tourism in Greece of major tourism sending countries in Europe as well as the USA and Japan. Next to advertising expenditures, this study also considers investments into fixed assets (i.e. leisure equipment and mega-events). Finally, the

seminal study by Divisekera and Kulendran (2006) is most closely related to the approach proposed in this particular study. The focus in their research is on advertising effectiveness regarding international tourism demand in Australia. For the tourism generating countries like the UK, Japan, USA and New Zealand, tourist arrivals are utilised as the dependent variable, while a distinction between holiday travellers and the total number of tourist arrivals is additionally made. A log-functional form is chosen using the Phillips-Hansen regression method as a modification of the standard ordinary least square (OLS) technique (Hill, Griffith, & Lim, 2011). The model proposed by Divisekera and Kulendran (2006) sets arrival numbers as the dependent variable, while the independent variables comprise deflated prices of tourism products, prices of airfares, prices of substitute destinations, disposable income of tourists in respective sending countries as well as advertising expenditures. Following advertising theory (Bagwell, 2007), the empirical results gained by Divisekera and Kulendran (2006) corroborate the hypothesis that tourism advertising has a significant impact on tourism demand in the short run as well as on the formation of a destination brand in the long run.

The few previous studies aimed at estimating advertising effects by econometric methods have been conducted either on a national level or on a sectoral level, like hotels, casinos and cruises. Thus, the proposed study, to the best of our knowledge, for the first time analyses advertising effects by econometric methods on the sub-regional level of a tourism destination.

## Theoretical framework

The theoretical foundation of this study traces back to *consumer choice theory* (Thaler, 1980; Tversky & Kahneman, 1986) and to specific economic theories explaining the effects of advertising investments (Bagwell, 2007; Brida & Schubert, 2008; Mitra & Lynch, 1995). These two bodies of theory complement each other. Consumer choice theory describes which economic factors interact in consumers' purchasing decision, while advertising theories, in particular the market power model, explain how advertisements influence consumers' purchasing decisions. More concretely, consumer choice theory prescribes how marginal changes in price and income affect the demand of a specifically marketed product, thereby referring to the economic concepts of budget constraints and consumer preferences (Silberberg & Suen, 2001). The latter refers to people's consumption habits, thus, explaining why certain goods and services are preferred over others. However, although consumer preferences are assumed to be fixed in the short run, they can be influenced by advertisements in the long run (Bagwell, 2007, p. 1708).

By looking more closely at economic theories prescribing the effects of advertising investments, two major research models can be identified: the market power model (Comanor & Wilson, 1974) and the information model (Nelson, 1974; Stigler, 1961; Telser, 1964). The information model implies that advertising contributes to an increase of market transparency regarding products and markets (i.e. substitutes for the advertised product, other suppliers, etc.). As consumers receive additional information about the advertised products' characteristics in terms of quality and price, the products' *distinction* from competitors' offers is improved; thus, product substitutability is enhanced (Mitra & Lynch, 1995). Accordingly, consumers will choose among those product alternatives which provide the highest perceived utility at the best relative price – in economic

terms, price elasticity of demand tends to increase (Nelson, 1974). By contrast, the market power model follows the idea that advertising should primarily be interpreted as a means of persuasion (Comanor & Wilson, 1974). Accordingly, the promotion of image-based product features aims at *differentiating* the product from existing and potential competitors and, thus, tends to decrease product substitutability. The model especially assumes that customers' individual preferences can be formed through advertising, thereby building a base of loyal customers with strong and stable emotional relationships towards the brand (Chekalina et al., 2014). In economic terms, brand attachment reflects the notion that advertising contributes to a decrease of price elasticity (Montgomery, 1985, p. 790).

## Model building and variable specification

*Tourist arrivals:* Within the scope of the proposed model, the dependent variable reflects tourism demand in Åre for each of its five major international tourist markets Norway, Finland, Russia, Denmark and the UK. Similar to previous econometric studies (Brida & Risso, 2009; Song & Li, 2008; Song et al., 2010), the measure of tourism demand includes tourist arrival numbers based on overnight stays for each of the aforementioned origin countries. Arrival data provided by Åre's destination management organisation (Åre Destination AB) comprise tourist arrivals in Åre between December 2005 and April 2012. Although monthly time series intervals are determined by the winter season (i.e. December–April), arrival numbers for the entire year are considered (i.e. total amount of observations $N = 77$). However, as Åre is primarily known as a winter destination, arrivals during the winter months are the most significant ones for international tourism markets. Thus, to catch this dominance effect of the winter season, a dummy variable was included in the model (see further discussion below in this section).

*Income:* Following theory of consumer choice (Silberberg & Suen, 2001; Thaler, 1980), consumer demand is affected by the price of a product as well as the consumers' present and expected level of income. Previous econometric studies on tourism demand considered the income variable and claim that a marginal change in disposal income in the respective sending country has a significant effect on tourism demand (Kulendran & Dwyer, 2009; Salman, 2003; Song et al., 2010; Song & Witt, 2000). However, for the study at hand, data for disposal income were available only on a per annum base. Thus, instead of disposal income, as suggested in the literature (Divisekera & Kulendran, 2006; Frechtling, 2002), the gross domestic product (GDP) has been used as a proxy for disposal income, as it is available on a quarterly basis for each sending country.

*Destination price level:* Song and Witt (2000) point out that "tourists base their decisions on tourism costs in the destination measured in terms of their local currency" (p. 5). Therefore, similar to previous studies (Brida & Risso, 2009; Song et al., 2010), the cost of living at the destination is assumed to be determined by the exchange rate between the Swedish krona (SEK) and the currency of the respective sending countries adjusted by relative consumer price indices (CPI), thus, also considering the current rate of inflation. Unfortunately, once again, destination specific data, which reflect a particular basket of tourism goods and services for Åre, are not available. Hence, as in previous studies (Frechtling, 2002;

Salman, Arnesson, Sörensson, & Shukur, 2010), the national CPI for Sweden is considered as a proxy variable:

$$P_{S_i}^T = \left(\frac{CPI_j}{CPI_i}\right) \cdot EX_{ij},$$

where $P_{S_i}^T$ = relative price level of destinations in Sweden for tourists from the $i$th sending country at time $T$; $CPI_j$ = CPI of the host country Sweden (basis year 2005 = 100); $CPI_i$ = CPI of the $i$th sending country (basis year 2005 = 100); and $EX_{ij}$ = bilateral exchange rate of the currencies between sending country $i$ and Sweden.

*Price level of alternative tourism destinations:* Similar to Divisekera and Kulendran (2006), Åre's competing destinations and their specific price levels are assumed to affect the price elasticity of tourism demand. Although it would be interesting to consider all possible competitor winter destinations, this is not feasible in econometric practice (Divisekera & Kulendran, 2006, p. 191). Thus, in order to identify the price level of only the most important competitor destination, exchange rates are again adjusted by the relative CPI. Competitor destinations for each origin country are identified in the course of interviews with the marketing managers of SkiStar Åre. Final choice of competitor destinations is, thus, not based on comparative destination attributes, such as geographic location, culture, or size. Rather, SkiStar Åre's marketing managers (2011) point at Europe's Alpine regions as the most significant direct competitor (e.g. Austria's Alps for Danish tourists, French Alps for tourists from the UK, etc.). Accordingly, the composition of the cost of living in the competitor destination is approximated by considering the exchange rates between the respective origin countries weighted by CPI:

$$P_{A_i}^T = \left(\frac{CPI_k}{CPI_i}\right) \cdot EX_{ik},$$

where $P_{A_i}^T$ = relative price level of the alternative destination for tourists from the $i$th sending country at time $T$; $CPI_k$ = CPI of the alternative destination $k$ (basis year 2005 = 100); $CPI_i$ = CPI of the $i$th sending country (basis year 2005 = 100); and $EX_{ik}$ = bilateral exchange rate of the currencies between sending country $i$ and the alternative destination $k$.

*Transportation costs:* Similar to previous econometric studies in tourism (Brida & Risso, 2009; Song & Li, 2008; Song et al., 2010), it is assumed that the transportation mode used by tourists depends on the distance of the origin to the destination. Moreover, related travel costs can affect travel behaviour (Frechtling, 2002; Song et al., 2010). Since the focus of this study is on international tourists, the proposed model, similar to Divisekera and Kulendran (2006), considers only transportation costs induced by air travel. Unfortunately, however, historical time series data on ticket fares are not publicly available. Thus, as suggested by Karamychev and Van Reen (2009), the global jet fuel price was used as a proxy, which correlates with the crude-oil price traded at the Amsterdam-Rotterdam Stock Exchange market (European Commission, 2008). Jet fuel prices are universal for all airlines and the latter react immediately upon changes in fuel prices with extra fees to cover additional costs (Dickler, 2011). Consequently, although there is no exact information about changes in ticket prices available, the use of fuel surcharges as a proxy variable makes it possible to estimate whether transportation costs influence international tourism demand for Åre.

*Advertising:* The main exogenous variable comprises absolute advertising expenditures invested by SkiStar Åre in the five tourism generating countries under study. However, in contrast to existing studies (Brida & Schubert, 2008; Divisekera & Kulendran, 2006; Divisekera & Kulendran, 2007), this research makes an additional distinction between advertising investments in various advertising channels. SkiStar Åre typically promotes the destination to various international target markets via a differing mix of media channels. Data on advertising investments per origin country for the winter seasons and on utilised advertising channels were, again, received from SkiStar's marketing department. However, figures on advertising investments are only delivered on a yearly basis. Thus, after having transformed advertising data into a month format, the data are equally distributed among time intervals for the period of one year. Finally, in order to capture lag effects from advertising investments on tourist arrivals, lagged advertising variables (Advertising$_{(jt-i)}$) are additionally considered in the model (Hill et al., 2011).

Figure 1 graphically illustrates the correlation between tourist arrivals for two selected origins in Åre and the corresponding advertising expenditures invested by SkiStar Åre. For instance, tourist arrivals from the UK and the corresponding advertising expenditures follow a constant path, thus, indicating a relatively strong dependency of this territorial market from advertisements of this destination. By contrast, using a short-term perspective, tourist arrivals from Denmark seem not to be affected by the decrease in advertising expenditures at all.

*Online search requests:* Today's significance of information and communication technologies in tourism (Buhalis & Law, 2008; Law et al., 2014) is reflected by SkiStar's efforts to use its online web-portal as the main communication and distribution channel (SkiStar, 2011). Since travel and tourism products are considered as experience goods, their promotion especially requires the provision of emotion-intensive (i.e. soft) information (Fuchs & Höpken, 2011; Nelson, 1974). Online advertisements particularly fulfil these emotional requirements, wherefore web-information search and online bookings are most often made due to customers' convenience. As suggested in the literature (Bangwayo-Skeete & Skeete, 2015), in order to consider the significance of SkiStar's electronic marketing and online booking platform for Åre, the proposed econometric model includes an additional explanatory variable, which measures the relationship between online search requests for skiing holidays in Åre and tourist arrivals in the destination. Data for search requests for Åre are gained via the publicly accessible database of *Google Trends*, a tool that shows the popularity of specific search terms used in the Google search engine within a certain period of time. More precisely, *Google Trends* provides the percentage share per month in relation to the peak month (i.e. 100% sums up over the full period). Search terms are chosen by considering each country's alphabet, an appropriate combination of words (e.g. "Åre", "[Å]Are winter", "[Å]Are ski", etc.) and the available minimum amount of requests by users in each sending country. Interestingly, Figure 2 reveals a strong correlation between tourist arrivals, exemplarily from Denmark and the UK, and respective online search inquiries regarding Åre.

*Mega event and winter season effect:* Previous econometric demand studies in tourism consider special events but also political instability (Dritsakis & Athanasiadis, 2000; Salman, 2003; Song et al., 2010). Similarly, in this particular study, a dummy variable is employed to consider the effect of the FIS (Fédération Internationale de Ski) Alpine Ski World Championship held in Åre in February 2007 on tourist arrivals (Pettersson & Getz, 2009). In
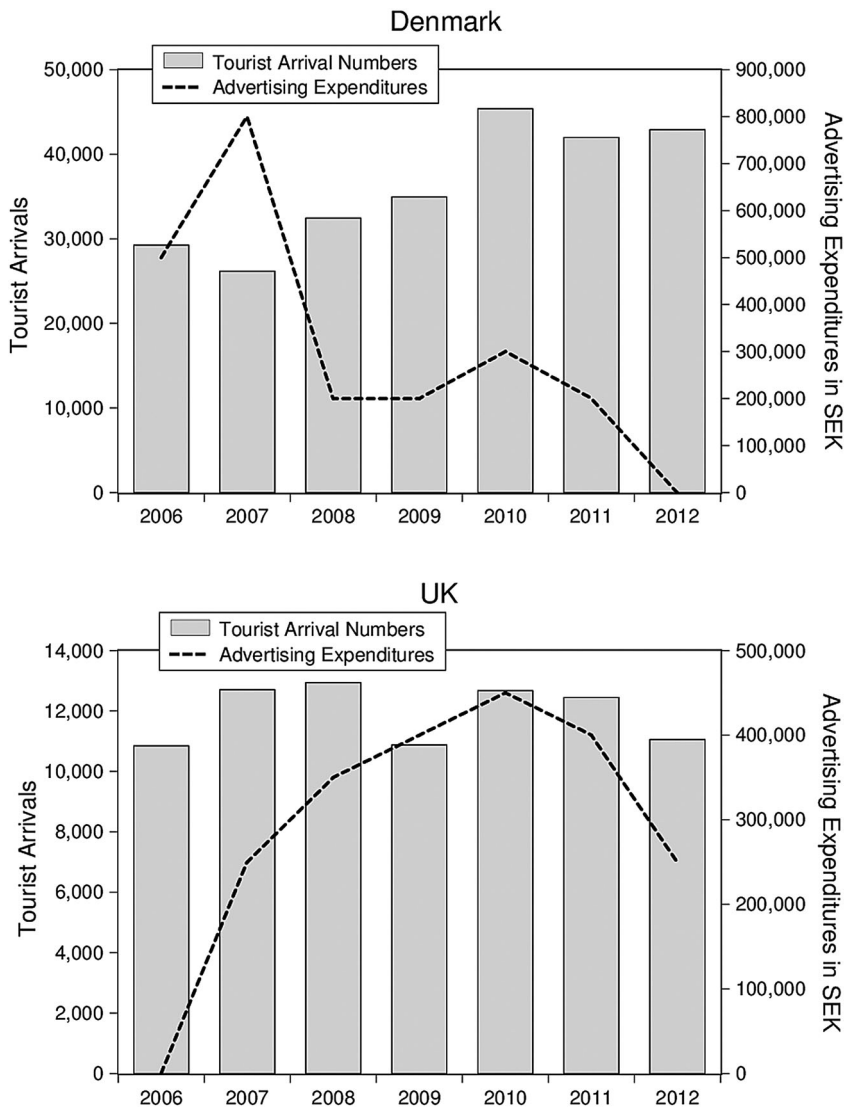
**Figure 1.** Tourist arrival numbers and advertising expenditures over time.

order to estimate reliable coefficients by means of an econometric approach, a minimum sample size of $N = 50$ is suggested (Hill et al., 2011). Since in this study only the winter months are of interest, this recommended threshold cannot be reached. Therefore, data on tourist arrivals of the entire year (i.e. 12 months) are utilised. Consequently, applied regression models consider time series data for the whole year instead of the winter months alone. However, in order to highlight the effects of destination advertising investments on tourism demand during winter, an additional dummy variable is included and set at one for the five months (i.e. December–April), which represent the winter season in Åre.

*Lagged dependent variable:* Finally, the model includes a lagged dependent variable as an additional independent variable. The reason for using a lagged dependent variable lies in the possibility that inter-period dynamics in the model might occur (Koop, 2004).
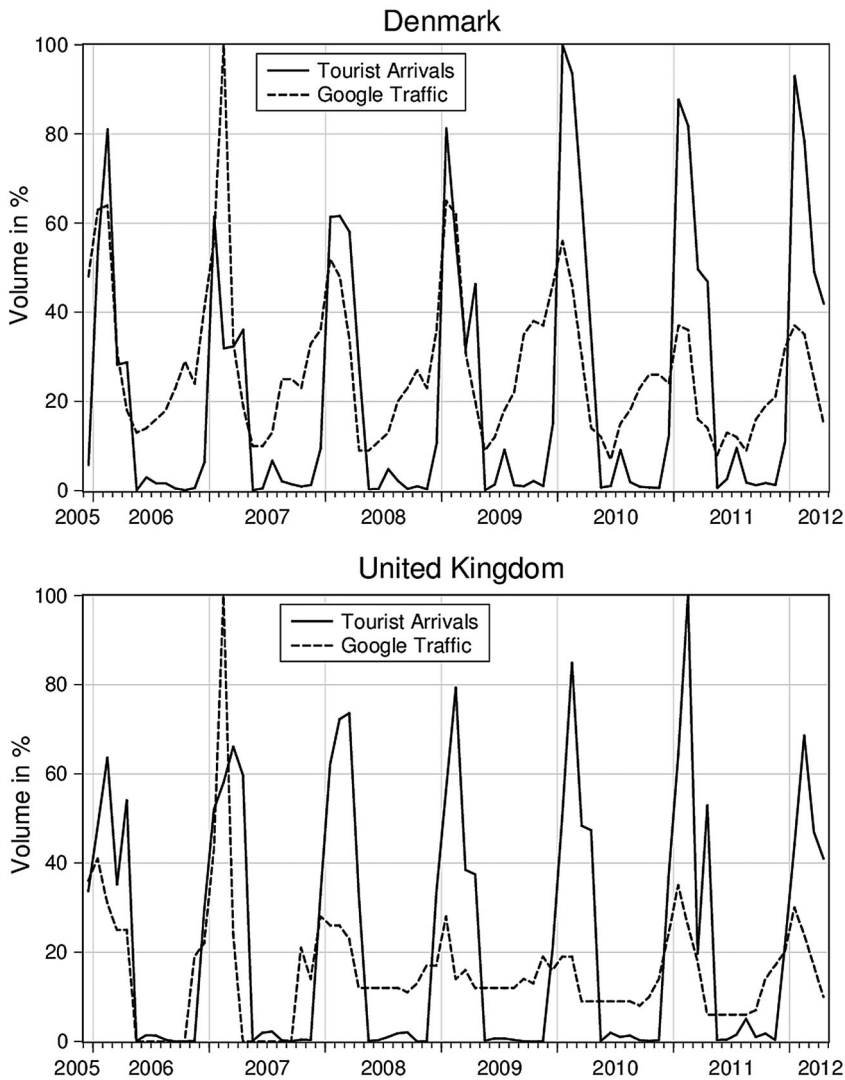
**Figure 2.** Google online search requests and tourist arrivals over time.

Furthermore, as suggested by Salman et al. (2010), a lagged variable can indicate the impact of electronic word-of-mouth, and thus, be interpreted as an additional (i.e. informal) advertising channel. Finally, the lagged dependent variable has the capability to capture the effect of variables omitted in the econometric model (Hill et al., 2011).

## Model specification

Literature-based assumptions regarding the economic relationships among model variables are formally expressed by the following econometric model:

$$Y_{jT} = \beta_0 + \beta_1\, GDP_j + \beta_2\, EX_{Sj} + \beta_3\, EX_{Aj} + \beta_4\, Jet\ Fuel + \beta_5\, Advertising_j + \beta_6\, Advertising_{(jt-i)}$$
$$+\ \beta_7\, Online_j + \beta_8\, WorldChampionship + \beta_9\, Winter + \beta_{10}\, Y_{jt-i} + e,$$

where $Y_{jT}$ = monthly tourist arrivals at destination Åre from sending country $j$ at time $T$; $GDP_j$ = gross income in respective sending country $j$ (yearly average); $EX_{Sj}$ = exchange rate reflecting price levels of destinations in Sweden (adjusted for relative CPI) for sending country $j$; $EX_{Aj}$ = exchange rate reflecting price levels of alternative destinations outside Sweden (adjusted for relative CPI) for sending country $j$; Jet Fuel = jet fuel price; $Advertising_j$ = expenditures for advertising investments by SkiStar Åre (yearly average for winter season) for sending country $j$; $Advertising_{(jt-i)}$ = lagged variable(s) of expenditures for advertising investments by SkiStar Åre (yearly average for winter season) for sending country $j$ by lag period $i$; $Online_j$ = Google traffic for search terms, like "Åre", "[Å]Are winter", "[Å]Are ski", by sending countries $j$; WorldChampionship = dummy variable for Alpine Ski WorldChampionship in February 2007; Winter = dummy variable to capture the significance of the winter months; and $Y_{(jt-i)}$ = lagged dependent variable to capture dynamic lag-effects by lag period $i$.

The dependent variable $Y_{jT}$ represents tourist arrivals in Åre from origin country $j$ in year $T$. The income level of the respective countries is mirrored by $GDP_j$. EX stands for exchange rate, and reflects the relative price level weighted by CPI for destinations in Sweden ($EX_{Sj}$) as well as for alternative (i.e. competitive) destinations ($EX_{Aj}$). Jet Fuel price is the proxy for transportation costs. $Advertising_j$ reflects SkiStar's average expenditures for advertising investments devoted to the winter season in respective countries. By contrast, the lagged advertising variables $Advertising_{(jt-i)}$ capture lagged effects of advertising investments on tourist arrivals. $Online_j$ represents the amount of online search traffic identified by *Google Trends* for the sending countries under study. WorldChampionship and Winter represent qualitative dummy variables to control tourist arrivals for effects induced by the mega event of the FIS Alpine Ski WorldChampionship in 2007 and by the dominance of the winter season (i.e. months of December–April). The lagged dependent variable $Y_{(jt-i)}$ reflects inter-period dynamics in the model. Finally, the error term $e$ captures random (unpredictable) factors, which although not taken into consideration, might influence arrivals of international tourists in Åre (Hill et al., 2011). In order to estimate the unknown parameters $\beta_0 - \beta_{10}$, the *EViews* package is employed (EViews Version 7, 2009).

Similar to previous studies, the OLS procedure using a linear model as the functional form has been chosen as the appropriate method (Frechtling, 2002; Hill et al., 2011; Roget & Gonzáles, 2006; Song et al., 2010). As discussed in the next sub-section, this estimation approach was affirmed after considering a test for both unit roots (i.e. Augmented Dickey-Fuller test) and autocorrelations (i.e. Breusch-Godfrey serial correlation Lagrange Multiplier test), respectively.

## Empirical results

As suggested in the literature, before going on to estimate the specified model for each of Åre's main origins, respective time series data are tested for stationarity and autocorrelation (Hill et al., 2011). Finally, correlation analyses (see Online Appendix A) show that multicollinearity between independent variables is predominantely inexistent (Baddeley & Barrowclough, 2009, p. 127).

### Unit root test

The first step in analysing time series data is to investigate whether the variables are stationary or not (Baddeley & Barrowclough, 2009, p. 199). In this study, the most

**Table 1.** Augmented Dickey-Fuller test.

| Variables | Denmark | Russia | Norway | UK | Finland |
|---|---|---|---|---|---|
| $Y$ | −3.175 | −6.944 | −2.446 | −2.910 | −3.949 |
| GDP | −3.193 | −1.926 | −4.022 | −1.952 | −2.850 |
| $EX_S$ | −8.128 | −2.894 | −7.326 | −2.022 | −7.637 |
| $EX_A$ | −9.626 | −3.659 | −7.160 | −1.910 | −2.123 |
| Jet Fuel | −7.125 | −7.125 | −7.125 | −7.125 | −7.125 |
| Advertising | −3.088 | −2.714 | −2.480 | −2.714 | −2.581 |
| Online | −2.180 | −12.643 | −1.812 | −3.172 | −3.232 |
| WorldChampionship | −8.660 | −8.660 | −8.660 | −8.660 | −8.660 |
| Winter | −2.928 | −2.928 | −2.928 | −2.928 | −2.928 |

Note: Critical value of 10% confidence level is −1.61.

popular Augmented Dickey-Fuller test for unit roots in time series data is used (Hill et al., 2011). Test results for Denmark and Norway show that the estimated *tau* values for four variables GDP, $EX_S$, $EX_A$ and Jet Fuel are larger than the critical value of −1.61. This implies that those variables are non-stationary as the null hypothesis ($H_0$: unit root exists) cannot be rejected. Similarly, test results for the UK imply non-stationarity for the variables GDP and Jet Fuel; for Russia GDP, Jet Fuel and Online; and for Finland GDP, $EX_S$ and Jet Fuel, respectively. As suggested in the literature, in those cases the variables should be transformed from non-stationary time series data into stationary data by using first differences (Hill et al., 2011; Koop, 2004, p. 124). Results are presented in Table 1.

It can be seen that the test statistics are all smaller than the critical value. This confirms that after data transformation, all variables considered in below regression estimations are stationary. Thus, OLS-based regression results are not expected to be spurious (Hill et al., 2011).

## *Autocorrelation test*

The diagnostic test conducted in this study for autocorrelation of residuals is the Breusch-Godfrey serial correlation Lagrange Multiplier (LM) test for autoregressive conditional heteroscedasticity (Hill et al., 2011). Test results show that there is no autocorrelation of residuals. Hence, the OLS-based regression method can be considered as the suitable method to gain unbiased parameter estimates in the course of hypothesis testing or forecasting (Baddeley & Barrowclough, 2009, p. 21). Table 2 shows the summary results of the autocorrelation tests. Test results at the level of each single variable are provided in Online Appendix B.

**Table 2.** Breusch-Godfrey Autocorrelation test.

| Variables | Denmark | Russia | Norway | UK | Finland |
|---|---|---|---|---|---|
| Q-stat. lag 1 | 1.411 | .523 | .064 | 2.578 | .022 |
| Prob. (Q-stat. lag 1) | .235 | .470 | .799 | .108 | .881 |
| Q-stat. lag 2 | 1.765 | 1.027 | .088 | 3.007 | .201 |
| Prob. (Q-stat. lag 2) | .414 | .598 | .957 | .222 | .904 |
| F-Stat. | .947 | .654 | .066 | 1.786 | .1487 |
| Prob. (F-Stat.) | .394 | .523 | .935 | .177 | .862 |
| Lagrange Multiplier | 2.320 | 1.614 | .168 | 4.255 | .365 |
| Prob. (Chi$^2$) | .313 | .446 | .919 | .119 | .832 |

Note: p-values indicate non-significance; the null hypothesis $H_0$ (i.e. errors are serially uncorrelated) is not rejected.

## Estimation results

The specified model displayed is estimated for each of Åre's five main origins. However, due to space limitations, empirical results are discussed in detail only for Denmark and Russia.

### Denmark

Generally, for Denmark, the model fit is highly satisfactory: all independent variables, except GDP, Jet Fuel and the lagged Advertising variables are statistically significant at the 10% level ($p$-value < .10). Moreover, the significant $F$-value and the Durbin-Watson statistic close to 2 corroborate the adequacy of the model (Baddeley & Barrowclough, 2009, p. 164). Finally, the $R^2$-value amounting at .93 indicates a high explanation power of the model (Koop, 2004, p. 45). Estimation results for Denmark are summarised in Table 3.

The GDP variable is not significant (i.e. $p$-value = .17), implying that a causal relationship between GDP, as the proxy for people's income, and tourist arrivals from Denmark does not exist. By contrast, the price level for destinations in Sweden, which is measured by the variable $EX_S$ and expressed as the exchange rate between Danish kronor and Swedish kronor, shows a significant effect on the dependent variable (i.e. $p$-value = .009). This implies that a marginal increase of the price level of Swedish destinations will lead to an average decrease of 1.67 tourist arrivals from Denmark in Åre. With regard to costs of alternative destinations, SkiStar Åre is considering the Austrian Alps as the main winter holiday alternative for the Danish tourist segment. Again, the estimate indicates that the price of this alternative destination has a strong and significant impact on tourist arrivals from Denmark in Åre (i.e. $p$-value = .009). The estimated parameter for price variations of the alternative destination ($EX_A$) shows a negative sign, thus, suggesting a decline of tourist arrivals in Åre by approximately 99 if the exchange rate increases by 1%. The parameter for transportation costs (Jet Fuel) is not significant (i.e. $p$-value = .724). This implies that an increase of 1 US cent per gallon of jet fuel has no effect on tourist arrivals in Åre. The gained result indicates that the Danish customer base is

**Table 3.** Parameter estimates for Denmark.

Dependent variable: tourist arrival numbers

Method: least squares

| Variable | Coefficient | Std. error | $t$-Statistic | Prob. |
|---|---|---|---|---|
| C | −735.073 | 478.879 | −1.535 | .131 |
| GDP | 14.877 | 10.598 | 1.404 | .166 |
| $EX_S$ | −1.676 | 62.081 | −2.700 | .009 |
| $EX_A$ | −99.480 | 3688.313 | −2.697 | .009 |
| Jet Fuel | −2.685 | 7.569 | −0.355 | .724 |
| Advertising | −13.906 | 5.547 | −2.507 | .015 |
| Advertising $_{(t-3)}$ | 2.743 | 4.678 | .586 | .560 |
| Advertising $_{(t-6)}$ | 3.584 | 4.213 | .851 | .399 |
| Online | 33.605 | 19.539 | 1.720 | .091 |
| WorldChampionship | −4940.243 | 1674.007 | −2.951 | .005 |
| Winter | 6984.526 | 457.502 | 15.267 | .000 |
| $Y_{(t-11)}$ | .281 | .055 | 5.127 | .000 |
| $R^2$ | .932 | Durbin-Watson | | 1.709 |
| $F$-statistic | 67.285 | Prob. ($F$-statistic) | | .000 |

encouraged to travel to Åre independently of marginal jet fuel price changes. This relationship is highly plausible, as tourists from Denmark do not consider air travel as the main transportation mode when visiting Åre. Rather, for Danish tourists it is more convenient to take their own car using the Öresund Bridge or to use the train which connects Denmark and Sweden (Tillväxtverket, 2011). Thus, an increase of prices for airline tickets implies that tourists from Denmark will avoid long-haul travelling to far-distance destinations by plane, but rather visit places reachable by private car or public means of transport. Finally, this finding can also be interpreted as a positive branding effect, as Åre is showing a brand-based pull effect by attracting the Danish customer segment regardless of transportation costs (Chekalina et al., 2014).

Interestingly enough, advertising efforts (Advertising) by Åre seem to be counterproductive (p-value = .0152). More precisely, an investment of 1000 SEK in advertising entails a decrease of approximately 14 tourists in Åre (Table 3). This finding, together with the non-significant lagged advertising variables, implies that advertising efforts in the Danish market do not attract additional tourist arrivals to Åre (Figure 1). Obviously, Åre is perceived by the Danish target market as a well-known winter holiday destination, thus, not much additional advertising is expected by this customer base. As described in previous studies (Chekalina et al., 2014; Divisekera & Kulendran, 2006), this finding is typical for destinations that are perceived as brands.

Google online search requests (Online) by Danish tourists regarding Åre are significant at the 10% level (i.e. p-value = .091), thus, affecting demand for that destination. More concretely, an increase of 1% in search activities results in an increase of approximately 34 additional tourist arrivals from Denmark in Åre. This development mirrors the importance of web-based portals for destination advertising (Fuchs, Höpken, Föger, & Kunz, 2010; Gretzel et al., 2000; Law et al., 2014). Indeed, SkiStar takes major steps to promote its web-portal as the main advertising and distribution channel (SkiStar, 2011). More precisely, the shares of advertising expenditures on the Danish market are allocated to magazines (50%), online platforms (30%) and public relations (20%). Looking at the qualitative (i.e. dummy) variable measuring the effects from the FIS Alpine Ski World Championship in 2007 (WorldChampionship), a highly significant (i.e. p-value = .005) and negative short-term effect on tourist arrivals is detected. Indeed, in February 2007 the smallest number of Danish tourists was attracted to Åre compared to the same month of other years in the sample period ranging from 2004 to 2012. This result can be explained by the fact that in February it is mainly families who visit Åre. Consequently, a mega event with a significant amount of visitor crowds might be strictly avoided by this tourist segment. Furthermore, the share of accommodation and tourism facilities occupied by FIS staff and international ski teams during the event combined with limited slope areas available might have affected Danish tourists' decision-making patterns (Pettersson & Getz, 2009). The highly significant (i.e. p-value = .000) and relatively large estimated coefficient (i.e. 6,984) for the dummy variable Winter highlights the dominance of the winter season (i.e. the months January – April) in the time series data. Finally, the lagged dependent variable $Y_{(t-11)}$ is similarly statistically significant (i.e. p-value = .000). This result points at inter-period dynamics showing word-of-mouth effects, thus, once more corroborating the brand character of the Åre destination in the eyes of the Danish customer segment (Hill et al., 2011).

To sum up, from the econometric analysis it can be deduced that Åre is perceived by Danish tourists predominantly as a brand. This conclusion is, first of all, corroborated by

the significant F-value, the Durbin-Watson statistic and the high significance of most model variables (Baddeley & Barrowclough, 2009). Moreover, the explanation power of the model is high. Secondly, by considering the advertising variable, the Danish tourism segment does not seem to be sensitive to advertising. More concretely, while expenditures in destination advertising constantly decreased, Danish tourists are increasingly spending their winter holidays in Åre (see also Figure 1). Rather, further distinctive destination advertising efforts are showing a negative marginal effect in attracting additional tourists from Denmark. Thirdly, this conclusion is supported by the non-significant *GDP* variable and the relatively low coefficient for the destination price level ($EX_S$). This indicates that neither tourists' income nor the price level of destinations in Sweden are crucial determinants in the travel decision of Danish tourists travelling to Åre. In economic terms, the Danish tourist base is both income and price inelastic, respectively (Hill et al., 2011). Similarly, increasing air travel costs are not affecting tourism demand in Åre. This implies that tourists from Denmark perceive Åre as a recreation and leisure area close to their own country easily accessible by terrestrial (e.g. public) means of transportation. Finally, the online variable clearly shows the interest of Danish tourists in Åre's online brand visibility, along with a corresponding high elasticity of demand during the winter season.

Altogether, these findings are characteristic for a destination perceived by its customer base as a strong brand. Thus, the winter destination Åre may consider the Danish tourist segment as a stable and strategically valuable base of loyal customers. By referring to advertising theories (Bagwell, 2007; Brida & Schubert, 2008), the findings are in line with the market power model (Comanor & Wilson, 1974). According to this model, advertising has the primary function of increasing product *differentiation*, that is to differentiate the (e.g. destination) product from competitors, thereby developing a stable base of loyal customers. Individual preferences of loyal customers (e.g. tourists) are strengthened not necessarily through advertising, but rather through emotion-intensive messages, like word-of-mouth and experiences from previous visits widely spread through social media (Gretzel et al., 2000; Sidali et al., 2012). Indeed, the findings gained from regression analysis indicate that the Danish tourism market shows relatively high leverage effects from online advertising messages, while the same market perceives the destination Åre as a strong brand.

## Russia

The second origin country analysed in this particular study is Russia. Generally, the model fit is satisfactory again: the independent lagged Advertising variables, Online, Winter and the lagged dependent variable are statistically significant at the 5% level ($p$-value < .05). Moreover, the significant F-value (8.447) and the Durbin-Watson statistic close to 2 corroborate the adequacy of the model (Baddeley & Barrowclough, 2009, p. 164). Finally, the $R^2$ value amounting at approximately .63 indicates a satisfactory explanation power of the model (Koop, 2004, p. 45). Estimation results for Russia are summarised in Table 4.

The *GDP* variable is not significant, thus, income seems not to play a major role in the decision-making process of Åre's Russian customer base. Moreover, the price level of Swedish tourism destinations $EX_S$, expressed as the exchange rate between the Russian rouble (RUB) and the SEK, is not significant. Similarly, the cost of the alternative destination ($EX_A$) seems not to play a significant role for Russian tourists. Interestingly, the non-significant estimate indicates that the costs for air travel (Jet Fuel) also do not affect the travel decision of the Russian tourist segment.

**Table 4.** Parameter estimates for Russia.

| Dependent variable: tourist arrival numbers | | | |
|---|---|---|---|
| Method: least squares | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | −9393.941 | 4964.789 | −1.892 | .064 |
| GDP | 41.054 | 122.835 | .334 | .740 |
| $EX_S$ | 10.484 | 711.206 | 1.474 | .146 |
| $EX_A$ | −43.895 | 3015.725 | −1.456 | .151 |
| Jet Fuel | 19.838 | 18.136 | 1.094 | .279 |
| Advertising | −20.617 | 19.467 | −1.059 | .294 |
| Advertising $_{(t-1)}$ | 53.397 | 20.834 | 2.563 | .013 |
| Advertising $_{(t-9)}$ | 82.575 | 13.451 | 6.139 | .000 |
| Online | −114.577 | 31.237 | −3.668 | .001 |
| WorldChampionship | −3298.389 | 2789.783 | −1.182 | .242 |
| Winter | 3537.120 | 1712.069 | 2.066 | .044 |
| $Y_{(t-10)}$ | −.211 | .108 | −1.956 | .056 |
| $R^2$ | .628 | Durbin-Watson | | 2.159 |
| F-statistic | 8.447 | Prob. (F-statistic) | | .000 |

By contrast, although the Advertising variable is not significant, the lagged Advertising variables show the expected (i.e. positive) effect on tourist arrivals and are statistically significant (i.e. Advertising $_{(t-1)}$ p-value = .013; Advertising $_{(t-9)}$ p-value = .000). Thus, tourists from Russia react relatively strongly on SkiStar's advertising investments. More precisely, as advertising investments on the Russian market increase by 1000 SEK, the expected increase of tourist arrivals in Åre amounts at approximately 53 after a lag period of one month, and 82 tourists after a lag period of nine months. About 75% of the advertising expenditures devoted to the Russian market is spent on print media, such as magazines, brochures and newspapers as well as outdoor posters and public relations. The result indicates that Russian tourists, indeed, seem to rely heavily on off-line advertising information.

Google online search requests (Online) regarding Åre by the Russian tourist segment are highly significant (p-value = .001) but are, interestingly enough, negatively correlated with tourism demand for that destination. More concretely, an increase of 1% in search activities results in a decrease of approximately 114 tourist arrivals in Åre. According to SkiStar, so far no special online advertising investment exists for the Russian market. This might be the main reason why a negative relationship between Google search requests from Russia and tourist arrival numbers is found. Interestingly enough, the dummy variable which catches the effect of the FIS Alpine Ski World Championship (WorldChampionship) is not significant, thus, the mega event does not affect the demand for winter holidays in Åre by the Russian customer segment. The winter period variable (Winter) is statistically significant (p-value = .043) with a high and positive coefficient. This result indicates that for the Russian customer segment the image of Åre is predominantly perceived as a winter skiing destination. The lagged dependent variable ($Y_{(t-10)}$) is significant at the 10% level (i.e. p-value = .055). This result, again, points at inter-period dynamics (Hill et al., 2011).

To sum up, the findings indicate that the Russian tourist segment does not perceive Åre as a brand. Rather, the Russian customer segment perceives Åre as merely one alternative among other winter sports destinations. The hypothesis that Åre is not perceived as a brand by the Russian customer segment is further supported by the strong and

significantly positive effect of advertising investments on tourist arrivals from Russia in Åre. To conclude, the high advertising elasticity is considered as a typical criterion for the predominance of the information function of advertising (Brida & Schubert, 2008; Divisekera & Kulendran, 2006; Mitra & Lynch, 1995).

## Discussion and summary of findings

By utilising an econometric modelling approach (Frechtling, 2002; Song & Witt, 2000) and as shown in previous studies of tourism demand (Brida & Risso, 2009; Divisekera & Kulendran, 2006; Song & Li, 2008; Song et al., 2010), the article empirically estimates the direct effect of independent variables on tourism demand of the five major origin countries of the Swedish winter destination Åre. Due to space limitations empirical results are reported in detail only for the sending countries Denmark and Russia. Table 5 provides an overview of obtained estimates and corresponding levels of significance for each explanatory variable for each of the five sending countries.

Table 5 shows that no country indicates a full range of consistently significant coefficients among the included set of variables. In the study the dummy variable, which is controlling for the predominance of the winter season, indicates statistical significance for all origins with the only exception of Finland. This finding provides evidence for the importance of Åre as a winter destination, especially for its main international markets. By contrast, income level (GDP) and exchange rates, approximating the price levels of Swedish destinations ($EX_S$) and those of alternative destinations ($EX_A$), are in most cases statistically non-significant. This finding is in line with previous research estimating income and price elasticities of international tourism demand for Sweden (Salman, 2003; Salman, et al., 2010). It implies that economic variables play a relatively less important role in determining tourism demand. Interestingly, the variable approximating Google online search

**Table 5.** Summary of estimated coefficients of Åre destination's major sending countries.

| Variables | Denmark | Russia | Norway | UK | Finland |
|---|---|---|---|---|---|
| GDP | 14.882 | 41.051 | 17.412 | 5.830 | −3.814 |
| $EX_S$ | 1.681* | 10.482 | −.0141 | −.001 | .090 |
| $EX_A$ | −99.483* | −43.907 | .0174 | .071 | −.379* |
| Jet Fuel | −2.682 | 19.844 | 4.164 | −2.292 | .541 |
| Advertising | −13.911* | 20.623 | 2.237 | 8.201* | 11.632 |
| Advertising$_{(jt−i)}$ | 2.748 | 53.401* | 10.814* | −2.071 | −24.129* |
| Advertising$_{(jt−k)}$ | 3.582 | 82.573* | 11.480* | 1.232 | − |
| Online | 33.612 | −114.582* | 33.276 | 10.031 | 272.858* |
| WorldChampionship | −4940.242* | −3298.392 | −5590.943* | −1029.890 | −16754.219* |
| Winter | 6984.531* | 3537.121* | 4357.733* | 907.501* | 1283.411 |
| $Y_{(jt−i)}$ | −.0401* | −.210* | .031 | .443* | .201 |
| Model Statistics | | | | | |
| F-statistics | 67.292 | 8.456 | 8.794 | 44.753 | 19.188 |
| Prob. (F-statistics) | .000 | .000 | .000 | .000 | .000 |
| Durbin-Watson | 1.712 | 2.168 | 1.907 | 2.382 | 2.001 |
| $R^2$ | .932 | .628 | .645 | .901 | .779 |

Note: *Significance level < .05;
Lag-periods for the lagged advertising variables Advert$_{(jt−i)}$ and Advert$_{(jt−k)}$: Denmark ($i = 3$; $k = 6$), UK ($i = 3$; $k = 6$); Norway ($i = 6$; $k = 10$); Russia ($i = 1$; $k = 9$); Finland ($i = 9$).
Lag-periods for the lagged dependent variable $Y_{(jt−i)}$: Denmark ($i = 11$), UK ($i = 12$); Norway ($i = 10$); Russia ($i = 10$); Finland ($i = 9$).

requests (Online) indicates statistical significance for two of the five origins under study. Thus, according to the literature (Buhalis & Law, 2008; Law et al., 2014; Li & Petrick, 2008), an increasing share of consumers seem to utilise the Google search engine for satisfying own information needs regarding Åre. These findings are corroborated by the graphs for the UK and Denmark in Figure 2, visualising that both time series follow the same patterns. Interestingly, each of the two origins shows the highest volumes of Google online search requests during February 2007 (i.e. the period when the FIS Alpine Ski World Championship took place in Åre). However, both figures on tourist arrivals and estimated coefficients show that this mega event was no significant driver behind tourist arrivals from any of the origin countries in the short run. Nevertheless, the relatively high online traffic volumes in February 2007 can be considered as plausible evidence that the international customer base is generally interested in the Ski World Championship event. Thus, the formation process of the destination brand image might be supported in the long run (Chekalina et al., 2014; Pettersson & Getz, 2009; Ren & Stilling-Blichfeldt, 2011). The graphs in Figure 2 further indicate that Google online search inquiries are predominantly executed during the winter seasons (i.e. the time periods immediately before tourists arrive in Åre and the periods during tourists' destination stay, with the absolute peak during the months October and November). This reflects the tourism trend towards short-term booking behaviour and the acquisition of updated online information during destination stay, such as (i.e. ubiquitous) information about attractions, weather conditions, open slopes and other real-time destination information (Chang, Hsieh, Chen, Liao, & Wang, 2006; Höpken, Fuchs, Zanker, & Beer, 2010; Rasinger, Fuchs, Höpken, & Beer, 2009; Wang, Park, & Fesenmaier, 2012).

Most importantly, for all origins under study the econometric analyses revealed that the (non-)lagged Advertising variables were statistically significant on the 5% level, thus, co-determining international tourist arrivals in Åre. Interestingly enough, the regression estimates vary strongly across the different origin countries. While tourists from Russia, the UK and Norway react most sensitively to advertising, the findings for the tourist markets Finland and Denmark indicate negative effects of advertising on tourism demand. As discussed, relatively weak advertising effects on specific markets mirror consumers' brand perception of the Åre destination. Put differently, the positive advertising responsiveness by tourists from Russia, the UK and Norway indicates, first of all, an increasing interest in Åre as a winter holiday destination. Hence, according to the information model of advertising (Bagwell, 2007; Nelson, 1974), in these countries the formation process of destination awareness and brand image is still ongoing. Thus, the majority of (i.e. potential) tourists from these origins is seeking for functional information about the destination's attractiveness in order to influence their travel decision

**Table 6.** Approximate shares of advertising expenditures among media channels.

|  | Denmark | Russia | Norway | UK | Finland |
| --- | --- | --- | --- | --- | --- |
| TV | 0% | 0% | 0% | 0% | 50% |
| Outdoor | 0% | 0% | 50% | 25% | 25% |
| Web | 30% | 0% | 0% | 0% | 25% |
| PR | 20% | 25% | 0% | 25% | 0% |
| Print | 0% | 0% | 50% | 50% | 0% |
| (Travel agent) Magazines | 50% | 75% | 0% | 0% | 0% |

(Mitra & Lynch, 1995; Ren & Stilling-Blichfeldt, 2011). By contrast, the response on advertising efforts is negative in the case of the customer base from Denmark and Finland. Hence, according to the market power model (Comanor & Wilson, 1974), Åre shows a highly differentiated brand image in these sending countries, whereby there is no need for further (i.e. functional) information provided through advertising (Montgomery, 1985). This implies that the customer base from the neighbouring Scandinavian sending countries Denmark and Finland is well aware of Åre's destination brand dimensions as previous visits or advertising campaigns seem to have formed consumers' preferences and emotional relationships towards the destination brand (Chekalina et al., 2014). As reported by Ski Star Åre, Table 6 illustrates the approximate share of advertising expenditures among different media channels.

Interestingly, the use of media channels in sending countries with relatively high advertising effectiveness (i.e. the UK, Russia and Norway) differs highly. Thus, according to Li and Petrick (2008), it can be deduced that advertising effectiveness is partly due to country-specific media channel strategies. For instance, while in Finland the majority of advertising expenditures is invested into television, half of the advertising budget for the UK is utilised for advertisements in print media. By contrast, for the Russian market, about 75% of the advertising budget is spent for magazines. Consequently, the positive response on advertising in these countries indicates a well-balanced mix of media channels. However, it is evident that no special online advertising investments exist for the Russian market yet (Table 6). This might, in turn, be one reason why a negative relationship between Google search requests from Russia and tourist arrivals in Åre is found.

Estimated elasticity coefficients for advertising effectiveness are, however, not sufficient to indicate the perception of Åre as a winter sports destination brand by its customer segments. Rather, only by simultaneously considering all variables included in the demand model proposed in this article, the following coherent picture is revealed: Åre is perceived as a strong brand by tourists from Denmark and Finland. For these countries the effect of advertising on tourist arrivals is merely inexistent and those tourist segments are both income and price inelastic. By contrast, although tourists from Norway, the UK and the Russian Federation are similarly income and price inelastic, the effect of advertising on tourist arrivals is significant, thus, the destination brand and image formation process is still ongoing.

## Conclusion and outlook

The aim of this article was to provide estimates for Åre's advertising effectiveness in major international customer markets. An econometric approach utilising both secondary and primary data was employed. The authors are confident that the findings will provide practical implications for the marketing management of Åre: for instance, the findings suggest that destination managers should (a) invest into image-based (i.e. emotional) advertising campaigns in the sending countries Norway, the UK and Russia in order to strengthen *differentiation* by establishing customer relationships towards the destination brand; (b) invest into advertising campaigns predominantly displaying functional information in order to increase *differentiability* from existing competitors, thus, to persuade the mostly price-elastic customers from Finland and Denmark to visit Åre; and finally, (c) to

invest in the customisation of the online platform in order to better reach the Russian target market.

The limitations of this study and, hence, recommendations for further research can, first of all, be seen in the quality of data. Generally, often a problem with time series is that variables do not vary sufficiently over time to really capture their effect. That might be the reason why the economic variables are not significant or do not show the expected signs in most of the analysed cases. Second, difficulties occurred in collecting the type of data originally assumed to be utilised for validating the proposed demand model. Therefore, adequate alternatives had to be found as useful proxy variables. Thus, a future attempt to revalidate the proposed model should consider the following data: disposable income per capita (i.e. instead of GDP); airline ticket fares per booking class of respective airlines (i.e. instead of *jet fuel* prices); cost of living in Åre (i.e. instead of cost of living in Sweden). Moreover, all data should use a common time scale (i.e. instead of the yearly-based *advertising* data). Third, the quality of the study could generally be improved through a cross-validation of the applied OLS-based econometric approach by using a Seemingly Unrelated Regression (SUR) or Iterative Generalised Least Square (IGLS) approach (Hill et al., 2011; Salman et al., 2010). Similarly, it is suggested utilising methods of business intelligence to revalidate the proposed model (Höpken, Fuchs, Keil, & Lexhagen, 2015). Data mining-based methods (i.e. especially methods of supervised learning) are important for tourism data analysis especially for its ability to discover unknown patterns in huge databases and, in contrast to statistical methods, for its ability to also consider non-linear relationships in the analysed data. Further advantages of data mining compared to statistical methods are the relaxed assumptions regarding data quality, as data can be incomplete, noisy, redundant and dynamic (Fuchs, Höpken, & Lexhagen, 2014, p. 200). Fourth, the analysis was designed on the basis of a quantitative framework. Hence, the interpretation of results was approached from the perspective of a positivistic paradigm (Creswell, 2003). However, for future analytical purposes, the study would be enriched by using a mixed-methods approach utilising also qualitative (i.e. survey-based) data that confirm findings regarding the perception of Åre's brand strength in the eyes of tourists from various (i.e. international) sending countries (Chekalina et al., 2014). To conclude, it is the authors' hope that this study will inspire both researchers and practitioners interested in the undeveloped but growing research niche on the economics of destination advertising.

## Acknowledgements

## Disclosure statement

## Funding

## Supplemental data

Supplemental data for this article can be accessed at http://dx.doi.org/10.1080/09584935.2015.1101013.

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