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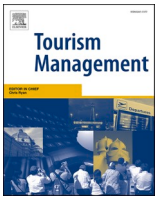

Which consumer feedback metrics are the most valuable in driving consumer expenditure in the tourism industries? A view from macroeconomic perspective

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ABSTRACT

The link between consumer feedback metrics and consumer expenditure at the microeconomic level has been extensively examined. However, little is known at the macroeconomic level about the influence of consumer feedback metrics on consumer expenditure. Relying on actual data concerning consumer feedback metrics and consumer expenditure, the present study examines the influence of various consumer feedback metrics on consumer expenditure in the tourism industries. Our study collected data about consumer feedback metrics and consumer expenditure over the period 2008–2017. The findings indicate that consumer satisfaction and consumer effort score (CES) are the best performing consumer feedback metrics in hotels, restaurants, and travel agencies industries. Furthermore, the top-2-box performs best for predicting consumer expenditure in online booking industry. The findings reflect the significance of consumer feedback metrics on the economy as a whole; therefore, efforts to boost consumer feedback metrics should consider a national agenda.

1. Introduction

Enhancing consumer expenditure has become a popular topic for academics, consultants, and managers. The significance and role of consumer expenditure in the economy can hardly be overvalued. Consumer expenditure plays an important role in the U.S. economy, contributing more than 70% of the gross domestic product (GDP). Thus, there is no doubt that managers and policy makers alike should monitor changes in consumer expenditure. Indeed, consumer expenditure has deep implications for firms, industries, and the economy. Neither companies nor the government want consumer expenditure to be reduced.

Managers, marketers, and economists spend much time and effort on seeking valid indicators of consumer expenditure. Accurate and valid forecasts help policymakers and companies with strategic organizing, planning, and the efficient use of resources to improve future economic conditions (Pauwels, Silva-Risso, Srinivasan, & Hanssens, 2004; Schandl et al., 2016; Yeung, Ramasamy, Chen, & Paliwoda, 2013). While reports of future decreases in consumer expenditure lead companies to adjust their marketing mix in ways which negatively influence their long-term commitment to advertising campaigns and reduce their product-assortment composition, reports of future increases in consumer expenditure lead companies to adjust their marketing strategies by decreasing promotional spending and advertising, at the same time redirecting the companies' resources to the wider distribution of products (Fornell, Rust, & Dekimpe, 2010; Gao, Xie, Wang, & Wilbur, 2015; Song, Moon, Chen, & Houston, 2018).

Marketing philosophy argues that the development of consumer satisfaction is the lifeblood of marketing practice and theory. What consumers need is not products so much as a satisfying experience (Buonincontri, Morvillo, Okumus, & van Niekerk, 2017). Marketing and sales strategies are thus centred on building consumer satisfaction (Bond, Fink, & Ross, 2001; Liu & Atuahene-Gima, 2018; Thomas, 2016). At the firm level, it has often been demonstrated that consumer satisfaction has a positive influence on profitability, competitive advantage, and firm performance (Anderson & Mittal, 2000; Helgesen, 2006; Lee & How, 2019; Ramanathan, Subramanian, & Parrott, 2017; Saeidi, Sofian, Saeidi, Saeidi, & Saaeidi, 2015). Consumer feedback metrics (e.g., of consumer satisfaction, Top-2-Box, net promoter scores, and consumer effort score) emerge as crucial to the entire process of relationship marketing, because they can predict consumer retention and business

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performance (e.g., De Haan, Verhoef, & Wiesel, 2015; Morgan & Rego, 2006; Raassens & Haans, 2017; Sun & Kim, 2013). Firms often benefit from engaging in marketing activities that improve consumer feedback metrics (De Haan et al., 2015; Sureshchandar, Rajendran, & Anantharaman, 2002; Venkatesan, Bleier, Reinartz, & Ravishanker, 2019). Therefore, companies nowadays use regular consumer feedback metrics surveys to evaluate their marketing effectiveness and to identify suitable compensation for their executives (De Haan et al., 2015; Morgan & Rego, 2006).

However, previous research examines only a limited range of settings, firms, and industries, and they lack knowledge about the way in which an economy as a whole can benefit from enhanced consumer feedback metrics and which of the consumer feedback metrics are foremost in driving consumer expenditure. This lack of knowledge can be traced to the inability to determine how much value marketing adds to the economy. Although some studies have assessed the importance of consumer satisfaction at the national level (Baghestani & Williams, 2017; Fornell et al., 2010; Yeung et al., 2013), few writers have devoted empirical research to considering what issues link consumer feedback metrics to consumer expenditure and economic growth. Recently, however, academics have begun to associate consumer satisfaction with macroeconomic factors and examine its influence on national consumption (Yeung et al., 2013). It must be confessed that the main reason for the limited amount of empirical research on this issue is the shortage of actual data about consumer feedback metrics and consumer expenditure. Prior research used an asymmetric growth model to evaluate the influence of changes in the American Customer Satisfaction Index (ACSI) on changes in consumer spending (Yeung et al., 2013). However, Ramasamy and Yeung (2010) have investigated the influence of the Consumer Confidence Index (CCI) and the ACSI on national consumption.

Table 1 demonstrates the contributions of our study in comparison with selective previous studies. Our research is the first to examine the predictive ability of consumer feedback metrics on four levels (i.e., those of the consumer, firm, industry, and society). In doing so, our study can differentiate between consumers' heterogeneity (i.e., it can tell which customer feedback metrics are most suitable for consumer management) and firms' heterogeneity (i.e., it can tell which consumer feedback metrics are most suitable for competitive positioning). Moreover, our research is the first to investigate the influence of the NPS and CES on consumer expenditure at the macroeconomic level. Taking account of what firms do in their dashboards, we combine consumer feedback metrics to enhance the predictive power of the research. Furthermore, our study collected actual data about consumer feedback metrics and consumer expenditure, in contrast with prior research which used questionnaires. Finally, to confirm whether consumer feedback metrics do indeed have incremental predictive power, we assess the combination of consumer feedback metrics on their out-of-sample predictions. More importantly, we introduced three crucial innovations to the tourism literature. First, heterogeneity among tourism industries was for the first time kept in mind, having previously been ignored in the literature. Assaf and Cvelbar (2015) note that a failure to account for this heterogeneity may lead to biased results and conclusions. Second, our index was developed at the macroeconomic level, as is the case with several studies in the literature review. Third, potential endogeneity is accounted for in our study. Specifically, the present study seeks to address the following research questions: (1) could consumer feedback metrics act as a significant predictor of consumer expenditure at the macroeconomic level? (2) Which consumer feedback metrics are the most effective for enabling consumer management and the firms' heterogeneity to identify which consumer feedback metrics emerge as most suitable for predicting consumer expenditure in the tourism and hospitality firms?

2. Literature review

2.1. Conceptual classification of consumer feedback metrics

In marketing literature, different metrics have been discussed. For instance, Farris, Bendle, Pfeifer, and Reibstein (2006) categorize these consumer metrics as share-of-mind metrics and suggest willingness to recommend and consumer satisfaction as sub-group within these metrics. Morgan and Rego (2006) pointed out that these metrics are recognised as customer feedback metrics (CFMs) in marketing practice. Prior research has paid attention to these customer feedback metrics in relationship marketing and service context (De Haan et al., 2015). The present study classified the consumer feedback metrics based on a time focus (past, present, or future). Our study is consistent with prior research that focus on the time span of measures to differentiate between backward-looking (present and past) and more forward-looking metrics (future) (e.g., Bolton, Lemon, & Verhoef, 2004; De Haan et al., 2015; Zeithaml et al., 2006). Forward-looking consumer feedback metrics describe what consumers think to do in the future.

Net promoter score (NPS) considers an example of a forward-looking CFM as it demonstrates consumers' willingness to recommend a company in the future, which can also indicate consumers future association with the company (e.g., Reichheld, 2003; Zeithaml et al., 2006). Customer Effort Score (CES) is an example of backward-looking CFM as

Table 1
Literature overview on consumer feedback metrics.

Research	Level of analysis				Consumer feedback metrics (CFM)			Combine multiple CFM	Predictive Power	Out-of-sample prediction
	Consumer	Firm	Industry	Society	SAT	NPS	CES			
		✓			✓				✓	
Mittal & Kamakura (2001)	✓				✓				✓	
Anderson et al. (2004)		✓	✓		✓					
Gruca and Rego (2005)		✓	✓		✓				✓	
Morgan and Rego (2006)		✓			✓	✓			✓	
		✓	✓		✓	✓				
Fornell et al. (2010)	✓			✓		✓				✓
Yeung et al. (2013)	✓					✓				✓
Chebat, Michon, Haj-Salem, & Oliveira (2014)	✓				✓				✓	
De Haan et al. (2015)	✓	✓	✓		✓	✓		✓	✓	✓
Keiningham et al. (2015)	✓			✓					✓	
Buoye et al. (2016)	✓									
Baghestani and Williams (2017)	✓			✓	✓					✓
Golovkova, Eklof, Malova, & Podkorytova (2019)		✓		✓	✓					✓
Current study	✓	✓	✓						✓	✓

it considers the perceived service performance from previous experience (Dixon, Freeman, & Toman, 2010; Zeithaml et al., 2006). Customer Effort Score (CES) is measured by the question ("How much effort did you personally have to put forth to handle your request?"), on a five-point scale. Prior research revealed that customer effort score (CES) is the best driver of consumer repurchase intentions and enhance consumer spending (Dixon et al., 2010). Verhoef (2003) indicated that consumer satisfaction measures the overall evaluation of the interactions among the consumers and the company over time and has a present focus.

The second aspect concerns to how the consumer feedback metrics (CFM) is utilised. De Haan et al. (2015) revealed that practitioners should not look at the value of the scale but at the proportion of consumers reacting very negative or very positive. For instance, Morgan and Rego (2006) indicated that the top-2-box consumer satisfaction measures the proportion of consumers filling in the two-greatest scoring points of the overall consumer satisfaction measurement. Prior research revealed that this shift considers a good driver of future performance (Morgan & Rego, 2006). Reichheld (2003) pointed out that the shift on the official NPS also differentiates among very negative, moderate, and very positive responses. For the theoretical perspective, previous studies revealed that these shifts in consumer feedback metrics could be defended as consumers focus on extreme experiences and thus the influences of consumer feedback metrics may be rather non-linear (De Haan et al., 2015; Van Doorn & Verhoef, 2008). Furthermore, experts in service marketing have promised to please consumers, indicating that consumers assess companies with extreme scores on the consumer feedback metrics measures (Morgan & Rego, 2006; Oliver, Rust, & Varki, 1997). Companies can also select not to utilise a shift and use the full measure (e.g., the 0–10 scale of the NPS). Table 2 shows the classification of the consumer feedback metrics (CFMs) used in our study.

Today, managers dive into how to choose the proper consumer feedback metrics to set goals and monitor business performance. Prior research pointed out that companies utilise consumer feedback data to monitor performance and set objectives on metrics that they think to be resulting in indicators of future performance (Morgan & Rego, 2006; Petersen, Kumar, Polo, & Sese, 2018). Companies often use consumer surveys to collect data about consumer feedback utilising measures of satisfaction, repurchase intentions, and intention to recommend (Chiang, 2018; Morgan & Rego, 2006; Prayag, Hosany, Muskat, & Del Chiappa, 2017; Raassens & Haans, 2017). Consumer Feedback Metrics (CFMs) have gained considerable importance in the field of marketing (De Haan et al., 2015). Classifications of metrics differ considerably between experts. For example, Farris et al. (2006) classify these metrics as share-of-mind, though within marketing studies, these metrics are also known as CFMs (Morgan & Rego, 2006). As these metrics provide critical insights from a managerial perspective into future business growth and opportunities, it is imperative to grant them due consideration and understanding, particularly where implementation is proposed. This point is echoed by a number of authors who add that future rewards from metrics depend altogether on their being better understood (Griffin & Hauser, 1993; Petersen et al., 2018). Previous academic research has highlighted the impact of CFMs on consumer behaviour. For example, Anderson and Sullivan (1993), Crosby, Evans, and Cowles (1990), De Haan et al. (2015), and Gustafsson, Johnson, and Roos (2005) have all established positive relationships between the application of CFMs and consumer purchase intentions. Additionally, in terms of marketing accountability, academics have renewed their interest in understanding CFMs and their impact upon consumers, in terms of satisfaction, loyalty and behaviour intentions, as well as their relationship to firm performance (Bendle, Bagga, & Nastasoiu, 2019; Fornell, Morgeson, & Hult, 2016). It is therefore crucial for managers to understand CFMs better if they are to implement them successfully and reap the rewards associated with doing so.

Table 2
Conceptualization of studied customer feedback metrics (CFMs).

CFMs Dimensions	Time dimension		
Customer Effort Score (CES)	Past focus	Present focus	Future focus
Customer satisfaction	CES	Customer satisfaction	NPS Value
Top-2-box customer satisfaction		Top-2-box customer satisfaction	NPS Official
Net promoter scores (NPS) Value			
NPS official.			

Consumer feedback metrics that are commonly utilised by managers include consumer overall satisfaction, behavioural loyalty regarding intention to repurchase and the Top-2-Box satisfaction score (De Haan et al., 2015; Morgan & Rego, 2006). Firms ought to understand the importance of marketing metrics in order to design effective marketing strategies and to improve their own future performance. According to Stewart (2009), the main characteristics of marketing metrics are (1) relevance (addressing pending actions); (2) ability to predict (accurately forecasting the future outcome of certain actions); (3) objectivity (being based on more quantitative measures); (4) reliability (demonstrating stable attributes over time); (5) simplicity (being easy to understand and interpret); (6) transparency (openness to independent audit). By adopting and implementing CFMs, managers can predict the future performance of their own firms and implement corrective action that is based upon the results obtained through these metrics (De Haan et al., 2015; Otto, Szymanski, & Varadarajan, 2019).

In the tourism and hospitality industry, a considerable body of literature has focused on consumer feedback metrics (i.e., satisfaction, customer effort score, and net promoter scores) since the late 1970s. However, few studies have investigated the link between consumer feedback metrics and expenditure (Disegna & Osti, 2016) and there is the need to better understand the role of customers feedback metrics in influencing an individual's expenditure patterns (Kim, Prideaux, & Chon, 2010). For example, Satisfaction has been seen as a key driver of expenditure in the hotel industry (Smolčić Jurdana & Soldić Frleta, 2017), in the case of purchases at travel agencies (Alrawadieh, Alrawadieh, & Kozak, 2019), in the case of festival and events (Andersson, Armbrecht, & Lundberg, 2017), and at theme parks (Bonn, Line, & Cho, 2017). To the best of the authors knowledge, there is no study that examined the link between customer effort score, net promoter scores, and expenditure in the tourism and hospitality industry. So far, the link between consumer feedback metrics (i.e., satisfaction, customer effort score, and net promoter scores) and expenditure is under-researched, and in light of neoclassical theory a new approach to this issue must be taken. However, few academic studies have so far asked which metric provides the most accurate description of predicted consumer expenditure based on consumer feedback (Petersen et al., 2018; Yeung et al., 2013). Moreover, despite the importance attributed to marketing metrics, specifically CFMs, the impact of these metrics has not been fully explored at the macroeconomic level and therefore requires further investigation. Therefore, the present study evaluates the scope of various metrics within tourism industries and also seek to shed light on managers' evaluation and implementation of strategies based on the most suitable metrics in order to enhance consumer expenditure.

2.2. Consumer feedback metrics and consumer expenditure

At the microeconomic level, the literature about such consumer feedback metrics as consumer satisfaction reveals how consumers respond to satisfactory or unsatisfactory experiences and how firms benefit from devising satisfactory consumer experiences. It is obvious that the degree of utility or satisfaction a person derives from consumption may affect how he or she spends money. From the consumer's point of view, individuals are inclined to spend their money in ways that create the greatest utility. The satisfaction or utility that consumers obtain from prior consumption will influence the satisfaction expected from future purchases (Antón, Camarero, & Laguna-García, 2017; Buoye

et al., 2016; Yeung et al., 2013), and increase their expenditure in the next period (Jang, Prasad, & Ratchford, 2016; Pan, Pezzuti, Lu, & Pechmann, 2019; Yeung et al., 2013).

Prior studies revealed that consumer feedback metrics such as satisfaction influence purchase and choice behaviour (e.g., De Haan et al., 2015; Gómez, Martín-Consuegra, & Molina, 2015; Hu, Teichert, Liu, Li, & Gundyreva, 2019). Our study investigates whether this link can also be found at the macroeconomic level. Previous studies have examined the influence of consumer satisfaction on long-term profitability (Mithas, Krishnan, & Fornell, 2016; Mun & Jang, 2018), market share (Keiningham et al., 2015; Rubera & Kirca, 2017), stock prices (Fornell, Mithas, Morgeson, & Krishnan, 2006), and shareholder value (Gruca & Rego, 2005; Hunneman, Verhoef, & Sloot, 2015; Kumar, 2016).

At the firm level, prior research investigated the financial value that consumer feedback metrics bring to the company. For instance, Anderson, Fornell, and Lehmann (1994) examined the effect of consumer satisfaction on return on asset (ROA) utilising data from 77 firms. Their results indicated that consumer satisfaction is related to ROA. Prior study revealed that there is a link between the ACSI and financial performance Yeung and Ennew (2000). Empirical research by Anderson, Fornell, and Mazvancheryl (2004) found a link between consumer satisfaction and shareholder value by enhancing cash flow growth and deceasing its volatility. Morgan and Rego (2006) examined the value of different consumer satisfaction and loyalty metrics in predicting business performance. Their results indicated that consumer satisfaction, 2 Box satisfaction scores, and net promoter scores are key drivers of business performance. In particular, high levels of consumer feedback metrics (i.e., consumer satisfaction, top 2 box, NPS, CES) should be positively associated with consumer retention and business performance (De Haan et al., 2015). In sum, efforts at boosting consumer feedback metrics increase consumer purchase and are financially rewarding to the company.

From a macroeconomic perspective, Fornell, Johnson, Anderson, Cha, and Bryant (1996) point out that, while the quantity of economic output can be measured by productivity, the quality of economic output can be measured by consumer satisfaction. Spending will not be likely if the output quality is compromised. Because spending has a significant influence on the GDP (for instance, 61.8% in the UK, 70.1% in the US, and 55.9% in Germany in 2015), increases in consumers' expenditure because of the boosting of consumer satisfaction can directly influence the economy (Yeung et al., 2013). Thus, policymakers can use consumer feedback metrics such as satisfaction as "a useful tool for evaluating and enhancing the health of the nation's economy, both in terms of national competitiveness and the welfare of its citizens" (Disegna & Osti, 2016; Fornell et al., 1996). Some managers and economists have wondered whether at the macroeconomic level consumer satisfaction and consumer expenditure are related (Lee & Park, 2019; Yeung et al., 2013). Their concern is derived from the hypothesis about consumer behaviour in economic theory which considers a satisfaction unit from a specific spending package as independent of the satisfaction derived from consumption units from other spending packages. Fornell et al. (2010) observe that consumer satisfaction is a driver of consumer expenditure and find that consumer satisfaction from prior purchases explains 23% of the differences in the next quarter's expenditure growth. Ramasamy and Yeung (2010) affirm the results of Fornell et al. (2010). They investigate the impact of the American customer satisfaction index (ACSI) and Consumer Confidence Index (CCI) on consumer expenditure and find that the former has a positive influence on consumer expenditure. Therefore, the present study examines the relationship between consumer feedback metrics (e.g., NPS proportion, NPS value, CES, SAT, and Top-2-Box) and consumer expenditure at the macro level.

Furthermore, Yeung et al. (2013) have shown how income is a predictor of consumer expenditure. Prior studies have also revealed that unemployment rates, inflation rates, and stock market performance have a significant influence on future income streams and consumer expenditure (Ludvigson & Steindel, 1999; Manasseh et al., 2018; Poterba, 2000). In addition, prior research has examined other determinants of consumer expenditure from income related factors. For example, Katona (1975) has pointed out that consumer spending is determined by personal income. Consumer sentiment is defined as a measure of willingness based on a perceived future condition. The ICS measures consumers' overall perception about their current and future economic condition. Previous studies found that consumer sentiment (ICS) has a positive influence on consumer expenditure (Carroll, Fuhrer, & Wilcox, 1994; Cotsomitis & Kwan, 2006; Delorme, Kamerschen, & Voekst, 2001). Based on Gillitzer and Prasad (2018) and Cotsomitis and Kwan (2006) link Index of Consumer Sentiment (ICS), with consumer spending across different European countries. Their results indicated that consumer spending was affected by Index of Consumer Sentiment. Price has an influence not only on consumer utility but also consumers' repeat purchase (Fornell et al., 2010). The link between consumer price index (CPI) and consumer spending was examined in Fornell et al. (2010). Thus, our study includes consumer price index (CPI) as another control variable in subsequent validation exercises. More importantly, ever since Keynes introduced personal disposable income as a determinant of income in the General Theory, economists have been pre-occupied with income as the main driver of consumption. Although higher levels of consumer satisfaction may induce more spending, consumers' ability to spend will be tempered by the availability of cash and credit—that is, rising levels of debt may restrain future spending (e.g., Johnson & Li, 2007). For example, Murphy (2000) finds a significant relationship between the DSR of households and future aggregate spending growth. Thus, our study employed the five variables used as predictors of consumer expenditure as control variables, namely, real personal disposable income (income), the Consumer Price Index (CPI), the Index of Consumer Sentiment (ICS), the debt service ratio (DSR), and real consumer credit (CRD).

2.3. *Examining consumer feedback metrics across consumers, firms, industries, and society*

The present study examines the influence of consumer feedback metrics on consumer expenditure at four different levels: consumer, firm, industry, and society. Therefore, it provides various insights into how the consumer feedback metrics effect consumer expenditure.

At the consumer level, we examine how the consumer feedback metrics provide information about one consumer compared with another consumer at the same company, consumer feedback metrics can be utilised for consumer management objectives. This level of analysis has been widely examined in the previous studies (e.g., De Haan et al., 2015; Disegna & Osti, 2016; Nisar & Prabhakar, 2017; Sage, Nickerson, Miller, Ocanas, & Thomsen, 2018; Srivastava & Kaul, 2016; Smolčić Jurdana & Soldić Frleta, 2017). This level of analysis provides us with insights into how loyal consumers vary from disloyal consumers and the extent to which these metrics can distinguish between these consumers. Therefore, these metrics can be utilised to discriminate between loyal and disloyal consumers within a company.

At the firm level, the present study examines how the consumer feedback metrics can be utilised to analyse the company's competitive situation. The previous studies have paid more attention to this level of analysis (e.g., De Haan et al., 2015; Jang et al., 2016; Mortazavi, 2018; Rego, Morgan, & Fornell, 2013; Van Doorn, Leeflang, & Tijs, 2013). A company that performs better than its competitors on consumer feedback metrics such as consumer satisfaction is more likely to receive positive word of mouth which in returns enhance consumers' retention and their expenditure. Positive word of mouth is likely to decrease the rates of consumers' retention and expenditure at competing companies because consumer can switch to the company with more satisfied consumers.

At the industry level, we examine how the consumer feedback metrics provide more information about the relative performance of the

industry compared with other industries. Investors can utilise these metrics as a benchmarking tool. The importance of consumer feedback metrics in predicting consumer expenditure between different industries is not clear. In industries that have less satisfied consumers or fewer promoters, the rates of switching is lower, and therefore the rates of retention and expenditure is higher.

At the society level, in which we examine how the consumer feedback metrics provide information about the society. Prior research has investigated the drivers of consumer expenditure. Yeung et al. (2013) provide an extensive review. There are very few studies that utilise consumer feedback metric as a driver of consumer expenditure (Yeung et al., 2013). Recently a few studies have investigated the influence of consumer satisfaction on consumer expenditure. Smolčić Jurdana and Soldić Frleta (2017) find a positive link between satisfaction and consumer expenditure. Disegna and Osti (2016) find that satisfaction is a significant driver of consumer expenditure. However, to the best of our knowledge, no prior specification (neither symmetric nor asymmetric) has considered the role of different consumer feedback metrics in predicting consumer expenditure. At the macro level, the impact of consumer feedback metrics on consumer expenditure has not been investigated. Therefore, our study is the first to investigate the influence of different consumer feedback metrics on consumer expenditure. Thus, how an economy as a whole could benefit from improved different consumer feedback metrics.

Based on the aforementioned discussion, we offer the following hypotheses, and summarizes our model in Fig. 1:

Hypothesis 1. Consumer satisfaction (SAT) has a direct and positive influence on consumer expenditure across the different tourism industries.

Hypothesis 2. Top-2-Box has a direct and positive influence on consumer expenditure across the different tourism industries.

Hypothesis 3. Net promoter score (value) has a direct and positive influence on consumer expenditure across the different tourism

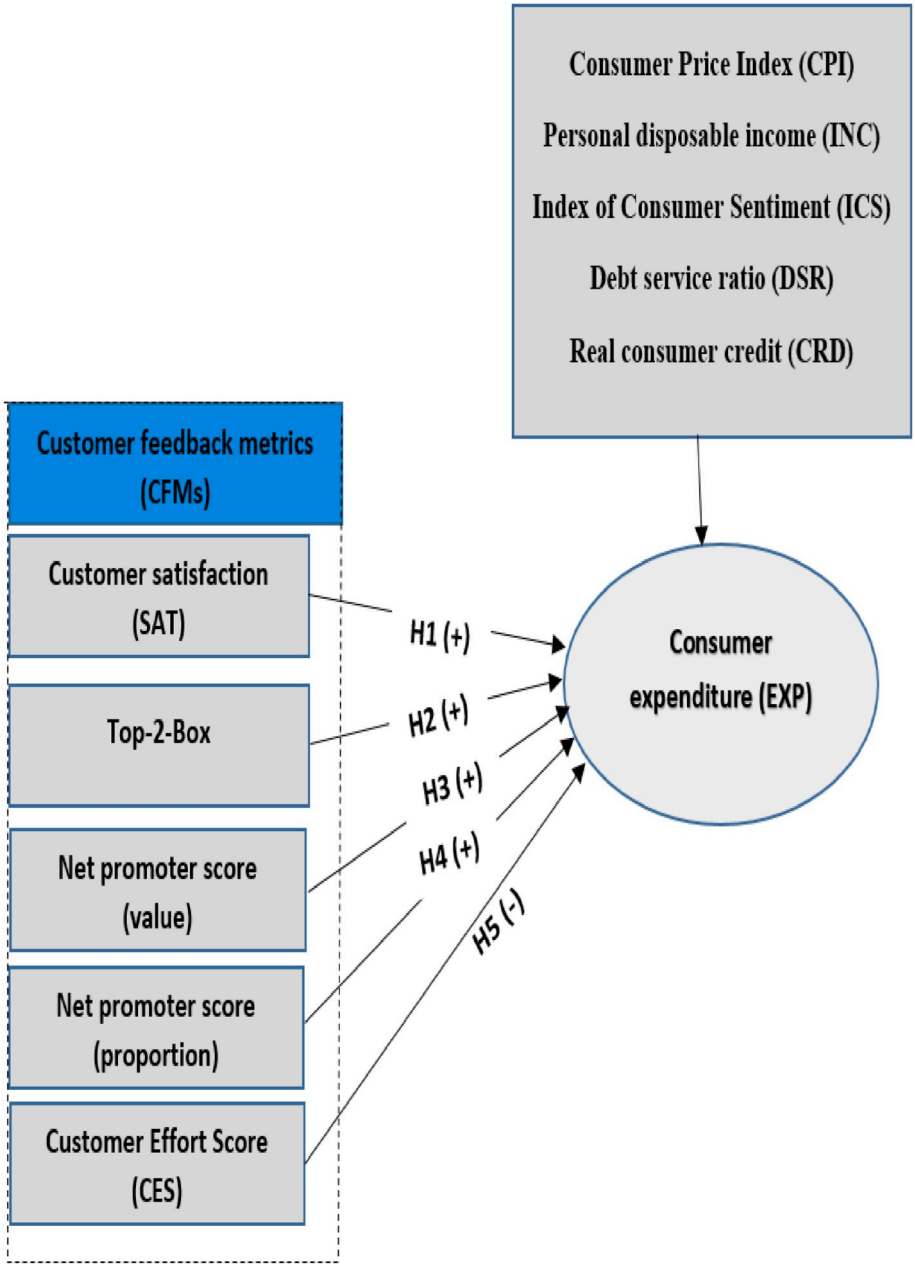

Fig. 1. Research model.

Table 3
Measures and definitions.

Variable	Measures/definitions	Source
Average customer satisfaction score	"Average customer satisfaction score is the arithmetic mean score on the three specific indicators used to estimate the ACSI latent satisfaction index. These are consumer responses to questions concerning overall satisfaction, expectancy disconfirmation, and performance versus their ideal product or service in the category (e.g., Fornell et al., 1996). While we utilise the average of the three items because of the superior measurement properties of multi-item scales, the correlation with the single "overall satisfaction" indicator is above 0.9, suggesting that the scale is also a good proxy for the single-item overall satisfaction metric used by many firms in practice. The mean and median average customer satisfaction scores for the firms in our data set over this time period were both slightly over 7.5 on a 10-point scale". "We use the simple average of the three items because this is the metric most likely to be used by managers in practice. The correlation between the simple average and the ACSI latent variable is 0.985, and the results of our analyses hold whether using the mean of the three items or the latent variable".	(Ittner & Larcker, 1998; Van Doorn et al., 2013; De Haan et al., 2015).
Top-2-box customer satisfaction	"Advocates suggest looking not at the value of the scale but at the proportion of people responding very positive and/or very negative. An example of this is the top-2-box customer satisfaction, which measures the proportion of customers filling in the two highest scoring points of the overall customer satisfaction scale (Morgan & Rego, 2006). Morgan and Rego (2006) show that this transformation serves as a good predictor of business performance. "Top 2 Box customer satisfaction score refers to the two highest-scoring points on the five-point scale that firms typically use to capture customer satisfaction. Because the ACSI uses 10-point satisfaction scales, we operationalized this metric as the proportion of customers surveyed that rated the firm in the top 4 points on the 10-point single-item "overall satisfaction" ACSI scale. The mean and median Top 2 Box customer satisfaction scores for the firms in our data set over this time period were marginally above 0.7, indicating that more than 70% of surveyed consumers rated the average firm in the Top 2 Boxes". "Because some firms use Top Box scores (the proportion of their customers who are "very satisfied"), we also operationalized this using the proportion of each firm's customers reporting scores of 9 or 10 on the ACSI's overall satisfaction question and obtained very similar results to those obtained with the Top 2 Box measure".	(Ittner & Larcker, 1998; Keiningham, Timothy, & Bruce Cooil, 2007; Morgan & Rego, 2006; Van Doorn et al., 2013).
NPS (proportion)	"The transformation to come to the official NPS also distinguishes between very positive, moderate, and very negative responses (Reichheld, 2003). Transformations can theoretically be defended because research has shown that customers mainly focus on extreme experiences and therefore the effects of CFMs can be rather non-linear (e.g., (Streukens & De Ruyter, 2004); Van Doorn & Verhoef, 2008). Moreover, service marketing experts have pledged to delight customers, implying that customers will evaluate firms with extreme scores on the CFM scales" (Oliver et al., 1997). "How likely is it that you would recommend [company X] to a friend or colleague?" (0 = very unlikely, 10 = very likely). Respondents who gave a score of 0–6 are "detractors," those who gave a 7 or 8 are "passives," and those who gave a 9 or 10 are "promoters." Subtracting the proportion of promoters by the proportion of detractors provides the NPS at the firm level (Reichheld, 2003). At the customer level, the NPS reduces to a value of −1 for detractors, 0 for passives, and +1 for promoters. At the firm (industry) level, this translates to a score ranging from −1 (only detractors) to +1 (only promoters)".	(De Haan et al., 2015; Streukens & De Ruyter, 2004; Oliver et al., 1997; Reichheld, 2003; Van Doorn & Verhoef, 2008).
NPS (value)	"This is the untransformed NPS score (0–10 range) provided by the customer. At the firm (industry) level, this translates to the average NPS value given within the firm (industry)".	(De Haan et al., 2015; Reichheld, 2003).
Customer Effort Score (CES)	"Did you try to contact [company X] with any kind of request?" (yes/no) If yes, the following question is asked: "How much effort did you personally have to put forth to handle your request?" (1 = very low effort, 5 = very high effort). At the individual customer level, we only have a dummy variable for the first question and a score in the 1–5 range for the second question. At the firm and industry level, we have the proportion of people who answered yes to the first question and the average score of the second question".	(De Haan et al., 2015; Reichheld, 2003).
Consumer price index (CPI)	"The CPI is supposed to be a "cost of living" index, that is, an index of the minimum expenditure flow needed to support a standard level of welfare (Dougherty & Van Order, 1982). "Consumer price index data were sourced from Bureau of Labor Statistics, 2018)	(Dougherty & Van Order, 1982).
Index of Consumer Sentiment (ICS)	"The ICS measures consumers' overall perception about their current and future economic condition. The ICS is about capturing current and future economic conditions as interpreted by the public at large (for a detailed discussion on the ICS, see Ludvigson, 2004)". "Consumer sentiment is defined as a measure of willingness based on a perceived future condition. Consumer confidence data were sourced from), the Index of Consumer Sentiment (ICS) from the University of Michigan (2018).We aggregated monthly averages to represent annual scores and to ensure consistency with customer feedback metrics annual data".	(Carroll et al., 1994; Ludvigson, 2004).
Personal Disposable Income (INC)	"It refers to disposable income, which is defined as gross income minus social security contributions and income tax and is measured in constant US dollars (in per capita values)". "Personal Disposable Income (INC) data were sourced from Bureau of Labor Statistics, 2018).	Yeung et al. (2013).
Consumer expenditure	"Personal Consumption Expenditure (PCE), defined as total personal expenditure on goods and services in the domestic market and measured in constant US dollars, was sourced from the Bureau of Economic Analysis (2018)".	Yeung et al. (2013).

industries.

Hypothesis 4. Net promoter score (proportion) has a direct and positive influence on consumer expenditure across the different tourism industries.

Hypothesis 4. Customer effort score (CES) has a direct and negative influence on consumer expenditure across the different tourism industries.

3. Methodology

3.1. Data collection and measures

To investigate the link between consumer feedback metrics (NPS proportion, NPS value, CES, SAT, and Top-2-Box) and consumer expenditure, the present study used the American Customer Satisfaction Index (ACSI) to collect authentic data regarding consumer metrics (NPS, NPS value, CES, SAT, and Top-2-Box). We collected data about tourism industries included in the ACSI database, for several reasons. First, the ACSI provides authentic data which are in line with the data available to the managers of consumer facilities from their own industries' systems of consumer feedback. Furthermore, the ACSI records annual data from 300,000 U.S. customers. We use the ACSI to operationalize consumer feedback metrics in the tourism and hospitality firms for the following reasons: First, the index is designed to be representative of the US economy as a whole. Second, time-series data consistently measured over a long period are publicly available (http://www.theacsi.org). Finally, the measure has a long tradition in marketing research, and has been successfully linked to other key metrics, such as word of mouth (Anderson, 1998), profitability (Anderson et al., 1994). Full details about the methodology can be found in Fornell and Johnson (1993). Table 4 shows the number of firms by industry that were considered in each year, the total number of observations across all years. The final dataset included 3485 observations, representing 6 different tourism industries over 10 years (from 2008 to 2017). In total, 14,560 respondents filled out the questionnaire for 160 firms across 6 tourism industries". The present study also includes data regarding CES (13.2%), since 86.8% of the consumers concerned had not contacted the firm with a request and therefore could not provide a CES. Data about the dependent variable (consumer expenditure) were collected from the Bureau of Economic Analysis (2018). An overview of the study measurements is demonstrated in Table 3 (see Table 5).

We employed the five variables used as predictors of consumer expenditure as control variables, namely, real personal disposable income (income), the Consumer Price Index (CPI), the Index of Consumer Sentiment (ICS), the debt service ratio (DSR), and real consumer credit (CRD) based on the total consumer credit outstanding (Federal Reserve Board 2018). Data about the control variables were collected from a range of sources: the Bureau of Labour Statistics (2018), Bureau of Economic Analysis (2018), the Index of Consumer Sentiment (ICS) from the University of Michigan (2018), and the Federal Reserve Board (2018). Table 4 demonstrates the number of initial observations by industry and by year.

3.2. Model formulation

A robust regression analysis was developed in order to test the effects of different consumer feedback metrics (i.e., SAT, Top-2-Box, NPS, CES) on consumer expenditure, controlling by consumer price index (CPI), personal disposal income (INC), index of consumer sentiment (ICS), debt service ratio (DSR), and real consumer credit (CRD) variables:

$$\mathrm{EXP} = \alpha i + \beta_{\mathrm{EXP1}}.\mathrm{CconsumerFeedback\ Metric_K} + \beta_{\mathrm{EXP2}}.\mathrm{CPI_t} + \beta_{\mathrm{EXP3}}.\mathrm{INC_t} + \beta_{\mathrm{EXP4}}.\mathrm{ICS_t} + \beta_{\mathrm{EXP5}}.\mathrm{DSR_t} + \beta_{\mathrm{EXP6}}.\mathrm{CRD_t} + \varepsilon_{\mathrm{i,t}} \quad (1)$$

Where EXP represents consumer expenditure, Consumer Feedback MetricK represents the five customer feedback metrics (NPS proportion, NPS value, CES, SAT, and Top-2-Box). The present study avoids multicollinearity issues by entering each consumer feedback metric in a separate equation. CPI represents the Consumer Price Index, INC represents the income, ICS represents the Index of Consumer Sentiment, DSR represents the debt service ratio, and CRD represents real consumer credit, εi,t is the error term of the model, where the subscript i indexes the firm, t describes the time period (t = 1 [2008], …,t = 10 [2017]), αi is the fixed firm-specific effect.

To test the industry heterogeneity, we also analysed the following specification:

$$expenditure_{ijk}\left(\eta_{expenditure,ijk},\ \pi_{expenditure,ijk}\right)$$

$$logit\left(\pi_{expenditure,\ ijk}\right) = \alpha_{x,0k} + \alpha_{x,1k}.\left(CFM_{x,ijk} - \overline{CFM}_{x,\ jk}\right) + \alpha_{x,2k}.\left(\overline{CFM}_{x,jk} - \overline{CFM}_{x,\ k}\right) + \varepsilon_{x,3ijk} \quad (2)$$

The present study conducted various tests (e.g., the normality test, endogeneity problem, heteroskedasticity, and Ramsey's (1969) RESET test) for violations of standard regression assumptions about model misspecification. Our analysis reported no issue regarding these violations. Furthermore, VIF for all variables was below the cut-off value, indicating no issues on multicollinearity. The present study used robust regression estimation to correct for any inefficiency and outlier effects in the estimates (e.g., Kennedy, 2003; Morgan & Rego, 2006). The present study utilised M estimators, the most widely utilised and simplest in robust regression, which minimize a less rapidly increasing function of the residuals (usually having a ceiling value) (Huber & Strassen, 1973). "Compatible with M estimators, we found no problematic leverage points in our data". "We also compared these results with those obtained using S and MM estimators and found that our results were stable across estimators". We conducted two tests to examine for serial correlation issues in our analyses (e.g., Greene, 2003; Kennedy, 2003). Our test suggested that across the 36 different equations being estimated, serial correlation was not a significant problem in our regression analysis.

4. Analysis and results

4.1. Econometric issues

4.1.1. Endogeneity problem

We investigated whether NPS proportion, NPS value, CES, SAT, and Top-2-Box were indeed endogenous, i.e., associated with the equations' structural errors. We conducted the Durbin-Wu-Hausman test and the Wu-Hausman F test to validate the endogeneity of these variables (Gafter & Tchetchik, 2017; Nakamura & Nakamura, 1981). The results of both tests were satisfactory, indicating that NPS proportion, NPS value, CES, SAT, and Top-2-Box are indeed endogenous at the 95% confidence level.

4.1.2. Collinearity issue

In order to confirm the unbiased estimators, our analysis reported no issue on collinearity. Furthermore, the variance inflation factor (VIF) for all the variables was below the cut-off value (10) (Hair, Anderson, Tatham, & Black, 1992), indicating that there were no issues on collinearity between the factors and thus validating the efficiency of the estimation.

4.1.3. Validity of the instruments and over-identification problems

An instrument can be valid when it is associated with the endogenous factor, but not correlated with the error terms. To assess the validity of its instruments, the present study used the common x^2 over-identification test, as recommended by Hansen (1982). The results indicated that x^2=32.41, p-value = 0.623, indicating that the null hypothesis could not be rejected and all the regression assumptions held.

Table 4
Number of initial observations by industry and by year.

Industry	Firms	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total	Contribution
Hotel	21	17	35	46	31	52	58	79	84	71	86	559	16.00%
Airline	29	21	28	52	69	63	75	83	102	78	105	676	19.39%
Restaurant	37	19	23	33	33	54	59	67	91	88	94	561	16.10%
Casino	42	45	58	74	74	89	83	91	74	93	82	763	21.89%
Travel agencies	17	21	36	36	49	42	48	40	52	61	63	448	12.86%
Online booking	14	19	31	32	32	47	59	54	60	73	71	478	13.73%
Total	**160**	142	211	286	273	347	382	414	463	466	501	**3485**	**100%**

Table 5
Variable definitions

Variable	Definitions
$CFM_{x,ijk}$	Score on CFM x for customer i of firm j in industry k
$\overline{CFM}_{x,\ jk}$	Average score on CFM x for firm j in industry k
$\overline{CFM}_{x,\ k}$	Average score on CFM x in industry k
$\alpha_{x,0k}$	Captures the industry-level heterogeneity
$\alpha_{x,1k}$	Captures the effect of differences between customers within the same firm
$\alpha_{x,2k}$	Captures the effect of differences between firms within the same industry.

Note.
We investigate per industry which CFMs are useful for customer management within the firm (i.e., have a significant $\alpha_{x,1k}$) and which CFMs are useful to compare the focal firm's competitive position with its competitors within the same industry (i.e., have a significant $\alpha_{x,2k}$). Furthermore, we indicate per industry which CFM is the most useful (i.e., have the highest significance level) for these two levels of analyses.

Thus, we confirmed that our instruments were indeed exogenous and could be used as proxies for the endogenous factors.

4.2. Descriptive statistics

Table 6 presents descriptive statistics about the collected data. Our data show that the median and mean of consumer satisfaction scores on a 10-point Likert scale are both over 7.5. Table 6 demonstrates that the median and mean of Top-2-Box consumer satisfaction are almost 0.7, demonstrating the fact that almost 70% of participants rated the firm in the two Top Boxes. Our dataset revealed that the mean of participants who reported a complaint was 17% and the median was 16%. The median and mean for NPS in the collected dataset were around 0.4. For the firms in the collected dataset, consumer expenditure was around $19,367.24 while the median was approximately $18,728.68.

Table 7 shows descriptive statistics about the study factors for two of the tourism industries (hotels and airline industry). The observations number across the ten-year (2008–2017) for hotels is 559 and for airlines is 676. Tables 8 and 9 demonstrate a descriptive summary about the study factors for the other four tourism industries (restaurants, casino, travel agencies, and online booking). The observations number across the ten-year (2008–2017) for restaurants is 561, for casino is 763, for travel agencies is 448, and for online booking is 478, respectively.

Practitioners can use these descriptive statistics to compare between industries/sectors. For instance, Berman, Wicks, Kotha, and Jones (1999) pointed out that service industry such as tourism sector has a greater capital intensity comparing with the manufacturing industry. This can be justified by notion that the service sector such as tourism sector have huge investments in their fixed assets, such as building and airplanes (Casinos, hotels, restaurants).

Table 10 presents the correlation matrix that provides us with initial insights. In relation to the consumer feedback metrics factors, NP (proportion) and NP value have a significant positive correlation with EXP. Regarding the size of the correlations, the correlations is high. CES had a significant negative correlation with EXP; however, the correlation was in the low range (0.156). Regarding consumer expenditure, the Top-2-Box demonstrates the closest association with consumer expenditure, in line with the non-linear link between satisfaction and consumer expenditure established in prior research (e.g., Yeung et al., 2013). Furthermore, CES has a significant influence on consumer expenditure, highlighting the fact that consumers who make requests are more likely to negatively influence consumer expenditure. Overall, the correlation results show exploratory evidence that points towards the existence of a significant influence of consumer feedback metrics on consumer expenditure.

4.3. Regression results

The control variable effects in our analysis explain the significant variance in consumer expenditure. Our results revealed that income and consumer price index have significant influence on consumer expenditure in the five tourism industries (hotel, airline, restaurant, travel agencies, and online booking). Our results demonstrated that these control variables $R^2 = 18.09\%$ for hotels, 13,15% for airline, 11,39% for restaurant, 16,10% for travel agencies, and 21,18% for online booking. These results are in line with prior research, which reveals that income and the consumer price index have a significant influence on consumer expenditure (e.g., Delorme, Kamerschen, & Voeks, 2001; Yeung et al., 2013). However, our results revealed an interesting finding about the influence of the ICS on consumer expenditure. Our results are consistent with those of Delorme et al. (2001), who have found in the context of services that consumer sentiment was unable to drive consumer expenditure. Furthermore, Acemoglu and Scott (1994) have revealed that consumer sentiment has no influence on consumption growth. Since services are considered a less cyclical consumption good, which some writers consider a necessity, they are consumed whether confidence is falling or rising.

Table 11 demonstrates the results of the main effects for each of the six tourism industries. The results of the main effects reveal that consumer expenditure is explained by one or more of the five consumer feedback metrics across the six tourism industries. The first row demonstrates the unstandardized regression coefficients and the second row demonstrates the robust standard errors in parentheses.

For hotels, as demonstrated in Table 11, for consumer expenditure only two of the five consumer feedback factors have a significant influence, namely CES (−0.408**) and SAT (0.491**). Regarding the effect size, we found that both CES and SAT have large effects on consumer expenditure (EXP).

For airlines industry, as indicated in Table 11, for consumer expenditure two of the five consumer feedback factors have significant influence, namely CES (−0.184*) and SAT (0.471**). Regarding the effect size, the results indicated that coefficients demonstrate stronger effects. Therefore, H1 and H5 are supported in the hotels and airlines industries. Contrary to our predictions, net promoter scores and top-2-box are not related to consumer expenditure in the hotels and airlines industries, therefore, H2, H3, and H4 are rejected.

For restaurants industries, our study found that only consumer satisfaction has a significant positive influence on consumer expenditure (0.388**). It also has a large effect size. However, in the Casinos industries, our results found that none of the consumer feedback metrics has a significant influence on consumer expenditure. Therefore, the

Table 6
Summary of descriptive statistics.

Variable	Obs	Mean	Median	Std. dev.	Min	Max
Consumer expenditure	3485	19,367.24	18,728.68	7360.27	6589.62	38,378.37
Customer feedback						
NPS (proportion)	3485	0.436	0.419	0.380	0.301	0.897
NPS value	3485	6.963	5.851	2.739	0	10
CES	3485	0.173	0.162	0.140	0.036	0.466
SAT	3485	7.812	7.570	0.693	6.262	9.428
Top 2 Box	3485	0.728	0.701	0.175	0.296	0.814
Control variables						
CPI	3485	174.29	172.94	16.20	163.90	192.46
INC	3485	9327	8973	1672	8630	11,639
ICS	3485	96.36	91.82	8.41	90.47	130.24
DSR	3485	0.128	0.121	0.007	0.125	0.146
CRD	3485	1,947,083	1,731,265	617,420	1,280,417	2,971,830

Note.
Obs = Observations, **NPS** = Net promotor score, **CES** = Customer Effort Score, **SAT** = Customer Satisfaction, **CPI** = the Consumer Price Index, **INC** = Real personal disposable income, **ICS** = the Index of Consumer Sentiment, **DSR** = the debt service ratio, and **CRD** = Real consumer credit.

Table 7
Summary of descriptive statistics for hotels and airlines.

Variable	Hotel industry						Airline industry					
	Obs	Mean	Median	Std.dev.	Min	Max	Obs	Mean	Median	Std. dev.	Min	Max
Consumer expenditure	559	8178.10	7935.47	4347.31	4210.29	21,260.61	676	19,367.24	9728.68	3360.27	4589.62	19,378.37
Customer feedback	559	0.206	0.192	0.027	0.129	0.873	676	0.236	0.419	0.380	0.301	0.897
NPS (proportion)	559	3.280	0.279	0.125	0	10	676	3.463	5.851	2.739	0	10
NPS value	559	0.036	0.016	0.012	0.016	0.307	676	0.093	0.162	0.140	0.036	0.466
CES	559	2.390	2.017	1.290	2.019	4.390	676	3.012	7.570	0.693	2.262	2.428
SAT	559	0.761	0.710	0.108	0.172	0.792	676	0.752	0.701	0.175	0.396	0.814
Top 2 Box												
Control variables	559	123.18	121.02	11.24	108.23	106.24	676	174.29	172.94	16.20	163.90	192.46
CPI	559	4289	3.207	1210	3.027	2.396	676	9327	8973	1672	8630	11,639
INC	559	48.32	40.29	4.36	37.20	62.10	676	96.36	91.82	8.41	90.47	130.24
ICS	559	0.107	0.082	0.002	0.028	0.129	676	0.128	0.121	0.007	0.125	0.146
DSR	559	1,209,30	1,102,47	402,21	1,462,27	2,3094,21	676	1,947,08	1,731,26	617,42	1,280,41	2,971,83
CRD												

Table 8
Summary of descriptive statistics for restaurant and casino.

Variable	Restaurant industry						Casino industry					
	Obs	Mean	Median	Std.dev.	Min	Max	Obs	Mean	Median	Std. dev.	Min	Max
Consumer expenditure	561	7460.14	6982.40	3937.31	3639.21	23,470.93	763	18,237.49	8650.63	3178.46	4302.61	21,028.34
Customer feedback	561	0.192	0.167	0.025	0.146	0.869	763	0.202	0.385	0.350	0.341	0.850
NPS (proportion)	561	3.037	0.210	0.160	0	10	763	3.125	5.236	2.843	0	10
NPS value	561	0.017	0.021	0.018	0.013	0.315	763	0.030	0.103	0.162	0.038	0.412
CES	561	2.194	2.107	1.109	2.125	4.384	763	3.127	7.126	0.698	2.127	2.367
SAT	561	0.710	0.720	0.115	0.181	0.771	763	0.783	0.725	0.165	0.380	0.834
Top 2 Box												
Control variables	561	123.18	121.02	11.24	108.23	106.24	763	162.20	159.06	15.83	158.45	188.29
CPI	561	4289	3.207	1210	3.027	2.396	763	8390	7309	1257	8078	10,583
INC	561	48.32	40.29	4.36	37.20	62.10	763	83.71	85.82	8.04	84.31	141.57
ICS	561	0.107	0.082	0.002	0.028	0.129	763	0.154	0.174	0.004	0.162	0.130
DSR	561	1,209,30	1,102,47	402,21	1,462,27	2,3094,21	763	1,081,05	1,540,16	672,30	1,418,72	2,541,76
CRD												

results support H1 in restaurants industries, while, H2, H3, H4 and H5 are not supported. Furthermore, our findings do not support any hypotheses in casinos industries.

In the travel agencies and online booking industries, our findings indicate that consumer satisfaction and the Top-2-Box satisfaction have the highest impact on consumer expenditure. These results support H1 and H2 in the travel agencies industries, while, H3, H4 and H5 are rejected. Previous studies showed that, among consumer feedback metrics, Top-2-Box satisfaction and consumer satisfaction have the greatest influence on consumers' retention (e.g., De Haan et al., 2015). Furthermore, Yeung et al. (2013) reveal that consumer satisfaction has a significant impact on consumer expenditure. Regarding the customers who made a service request, our findings indicate that CES has no influence on consumer expenditure in these industries. Prior research found that a change in the CES has little influence on consumer retention (De Haan et al., 2015). The present study reveals that the CES performs worse for consumer expenditure in the travel agencies and online booking industries. This finding may be due to the limited number of consumers who provided a CES. The top-2-box customer satisfaction (which has a present focus and centres on the extremes) and the official NPS (which has a future focus and also centres on the extremes) perform best on consumer expenditure. This indicates that the transformations

Table 9
Summary of descriptive statistics for travel agencies and online booking.

Variable	Travel agencies industry						Online booking industry					
	Obs	Mean	Median	Std.dev.	Min	Max	Obs	Mean	Median	Std. dev.	Min	Max
Consumer expenditure	448	6370.52	6127.63	3460.51	3495.59	24,520.76	478	10,427.71	7462.71	3480.36	3490.50	27,370.91
Customer feedback	448	0.106	0.149	0.031	0.136	0.891	478	0.215	0.340	0.372	0.372	0.872
NPS (proportion)	448	3.102	0.231	0.183	0	10	478	3.401	5.125	2.430	0	10
NPS value	448	0.028	0.016	0.010	0.011	0.327	478	0.025	0.161	0.192	0.029	0.405
CES	448	2.110	2.291	1.136	2.264	4.490	478	3.410	7.429	0.720	2.310	2.159
SAT	448	0.732	0.746	0.147	0.195	0.781	478	0.795	0.783	0.141	0.236	0.873
Top 2 Box												
Control variables	448	137.29	136.30	10.28	110.56	108.61	478	184.28	165.40	16.40	165.40	193.20
CPI	448	4379	3.127	1417	3.058	2.216	478	7430	7430	1653	8132	10,628
INC	448	43.27	43.25	4.08	34.28	58.20	478	80.51	83.40	7.509	82.30	152.390
ICS	448	0.106	0.047	0.001	0.022	0.151	478	0.148	0.201	0.032	0.154	0.173
DSR	448	1,127,30	1,219,36	427.31	1,317,58	2,170,64	478	1,127,40	1,682,83	7129,65	1,528,61	2,836,95
CRD												

Table 10
Correlations.

Variable	NPS (proportion)	NPS value	CES	SAT	Top 2 Box	EXP	CPI	INC	ICS	DSR	CRD
NPS (proportion)	1.000										
NPS value	0.247**	1.000									
CES	0.238**	0.183**	1.000								
SAT	0.092*	0.147**	- 0.439**	1.000							
Top 2 Box	0.079*	0.185**	−0.238**	0.319**	1.000						
EXP	0.421**	0.394**	−0.165*	0.417**	0.493**	1.000					
CPI	0.233**	0.187**	−0.195**	0.189**	0.452**	0.406**	1.000				
INC	0.319**	0.162*	- 0.217**	0.120*	0.419**	0.420**	0.391**	1.000			
ICS	0.047	0.104	- 0.013	0.219**	0.580**	0.047	0.237**	0.085	1.000		
DSR	0.204**	0.172**	- 0.194**	0.271**	0.110*	0.106	0.114*	0.216**	0.193**	1.000	
CRD	0.075	0.301**	- 0.104*	0.218**	0.116*	0.109	0.218**	0.220**	0.163**	0.246**	1.000

Note. **Significant at $p < 0.01$; *significant at $p < 0.05$.

for these two CFM make sense and that the focus on customers with more extreme opinions is important.

4.4. Industry heterogeneity

One of our study objectives is to examine the predictive ability of consumer feedback metrics at the consumer and firm level per industry. Tables 12 and 13 provide an insight into the performance of the consumer feedback metrics at the consumer and firm level per industry. The predictive power of consumer feedback metrics may differ among industries. Our study used equation (2) to examine whether consumers are useful as a key metric for consumer management purposes. Table 12 demonstrates the consumer feedback metrics performance at the consumer level per industry. The consumer feedback metrics have no significant influence in the travel agencies and casino industries. For the 4 tourism industries, there is at least one consumer feedback metric significant. The top-2-box has a significant influence in 4 industries and performs best for predicting consumer expenditure in hotels and airlines industries. Consumer satisfaction also has a significant influence in 3 industries and is the best performing consumer feedback metrics in hotels and airlines industries. In the online context, in which consumers can readily switch websites and compare offers, having high level of satisfaction (i.e., high top-2-box) is of extreme importance rather than having "on average" quite satisfied consumers. Based on our model classification, this demonstrates that in the online context, consumer has a strong focus on the present and is driven by highly positive service experiences. Regarding the industries where consumers do not have frequent purchases such as hotels, restaurants, and airlines, consumer satisfaction performs best for predicting consumer expenditure. This explains that positive experiences in the present are the major predictor of consumer expenditure in these two industries.

Table 13 demonstrates the consumer feedback metrics at the firm level per industry. The table shows whether the consumer feedback metrics are useful to compare firms within an industry. Based on Equation (2), our results reveal that the top-2-box customer satisfaction is the best performing consumer feedback metrics to compare firms in the hotels, online booking, and airlines industries, while consumer satisfaction is best for restaurants. The CES is the best consumer feedback metrics to compare travel agencies. Furthermore, the official NPS is the best consumer feedback metrics to compare casinos.

4.5. Robustness checks

Three sets of robustness checks were conducted to validate the findings of our study. First, the fit of our mode: the adjusted R square value was between 0.46 and 0.81, which was greater than in previous research. In order to identify and evaluate the main reason behind the improved fit, some tests from previous research were conducted (e.g., Fornell et al., 2010; Ludvigson, 2004; Murphy, 2000) and we regressed the change in consumer expenditure on the lagged variations of consumer feedback metrics, CPI, INC, ICS, DSR, and CRD. The number of lags varied between 1 and 4. The adjusted R-square of these models was never greater than 0.13. Second, a test was conducted to check whether our findings were robust when other predictors of consumer expenditure were included, such as income (INC) (Fornell et al., 2010), Index of Consumer Sentiment (ICS) (Yeung et al., 2013), the Consumer Price Index (CPI) (Fornell et al., 2010), the debt service ratio (DSR) (Yeung et al., 2013), and real consumer credit (CRD) (Fornell et al., 2010; Yeung et al., 2013). The results indicated that β for the main effect of consumer feedback metrics and β for the interaction effect remained significant. Therefore, the findings were robust; they indicate that consumer feedback metrics have predictive power above and beyond that of other variables.

Table 11
Robust regression standardized estimates.

Consumer expenditure (EXP)										
	Hotel industry					***Airline industry***				
Control variables (R^2)	*18.09%*	*18.09%*	*18.09%*	*18.09%*	*18.09%*	*13.15%*	*13.15%*	*13.15%*	*13.15%*	*13.15%*
CPI	0.427	0.360	0.408	0.293	0.351	0.406	0.297	0.336	0.307	0.481
	(0.023)	(0.011)	(0.041)	(0.012)	(0.009)	(0.003)	(0.020)	(0.010)	(0.007)	(0.000)
INC	0.351	0.203	0.406	0.446	0.374	0.201	0.295	0.408	0.441	0.391
	(0.002)	(0.010)	(0.041)	(0.000)	(0.005)	(0.082)	(0.008)	(0.013)	(0.000)	(0.027)
ICS	0.128	0.130	0.206	0.493	0.370	0.127	0.169	0.027	0.113	0.205
	(0.102)	(0.062)	(0.071)	(0.093)	(0.081)	(0.082)	(0.079)	(0.070)	(0.059)	(0.060)
DSR	0.174	0.105	0.116	0.210	0.161	0.184	0.132	0.094	0.117	0.194
	(0.192)	(0.110)	(0.216)	(0.082)	(0.107)	(0.069)	(0.083)	(0.052)	(0.099)	(0.072)
CRD	0.210	0.127	0.208	0.115	0.183	0.201	0.172	0.050	0.069	0.118
	(0.092)	(0.104)	(0.162)	(0.080)	(0.104)	(0.060)	(0.091)	(0.102)	(0.105)	(0.083)
Main effects (R^2)	*73.07%*	*68.16%*	*71.05%*	*52.90%*	*78.19%*	*42.21%*	*56.39%*	*51.02%*	*49.30%*	*47.62%*
NPS (proportion)	0.114					0.090				
	(0.060)					(0.210)				
NPS value		0.029					0.117			
		(0.182)					(0.080)			
CES			−0.408**					−0.184*		
			(0.001)					(0.020)		
SAT				0.491**				0.471**		
				(0.000)				(0.000)		
Top 2 Box					0.192					0.219
					(0.078)					*(0.014)*
Consumer expenditure (EXP)										
	Restaurant industry					***Casino industry***				
Control variables (R^2)	*11.39%*	*11.39%*	*11.39%*	*11.39%*	*11.39%*	*7.45%*	*7.45%*	*7.45%*	*7.45%*	*7.45%*
CPI	0.362	0.406	0.318	0.271	0.410	0.261	0.110	0.185	0.096	0.075
	(0.018)	(0.010)	(0.037)	(0.019)	(0.000)	(0.080)	(0.094)	(0.067)	(0.104)	(0.101)
INC	0.394	0.319	0.419	0.401	0.341	0.240	0.203	0.121	0.132	0.175
	(0.001)	(0.007)	(0.031)	(0.000)	(0.002)	(0.093)	(0.068)	(0.057)	(0.076)	(0.090)
ICS	0.103	0.146	0.273	0.436	0.418	0.156	0.151	0.092	0.172	0.263
	(0.167)	(0.082)	(0.070)	(0.000)	(0.003)	(0.070)	(0.091)	(0.083)	(0.062)	(0.093)
DSR	0.194	0.112	0.141	0.202	0.138	0.152	0.150	0.075	0.180	0.165
	(0.100)	(0.183)	(0.203)	(0.079)	(0.114)	(0.073)	(0.061)	(0.070)	(0.076)	(0.061)
CRD	0.113	0.188	0.247	0.135	0.195	0.268	0.194	0.063	0.090	0.171
	(0.095)	(0.101)	(0.191)	(0.061)	(0.110)	(0.083)	(0.057)	(0.191)	(0.153)	(0.092)
Main effects (R^2)	*48.17%*	*44.30%*	*47.20%*	*32.90%*	*36.53%*	*46.14%*	*45.03%*	*37.33%*	*40.67%*	*39.02%*
NPS (proportion)	0.186					0.107				
	(0.081)					(0.094)				
NPS value		0.106					0.081			
		(0.096)					(0.103)			
CES			−0.319					- 0.119		
			(0.026)					(0.070)		
SAT				0.388					0.140	
				(0.000)					(0.072)	
Top 2 Box					0.102					0.108
					(0.060)					*(0.061)*
Consumer expenditure (EXP)										
	Travel agencies industry					***Online booking industry***				
Control variables (R^2)	*16.10%*	*16.10%*	*16.10%*	*16.10%*	*16.10%*	*21.18%*	*21.18%*	*21.18%*	*21.18%*	*21.18%*
CPI	0.294	0.319	0.207	0.251	0.471	0.419	0.205	0.304	0.392	0.371
	(0.017)	(0.017)	(0.059)	(0.016)	(0.000)	(0.002)	(0.060)	(0.019)	(0.004)	(0.002)
INC	0.391	0.236	0.412	0.482	0.029	0.236	0.294	0.430	0.474	0.290
	(0.004)	(0.018)	(0.002)	(0.001)	(0.205)	(0.021)	(0.009)	(0.021)	(0.000)	(0.024)
ICS	0.125	0.146	0.243	0.463	0.120	0.143	0.145	0.023	0.107	0.190
	(0.110)	(0.081)	(0.020)	(0.082)	(0.281)	(0.092)	(0.062)	(0.049)	(0.057)	(0.083)
DSR	0.139	0.142	0.154	0.247	0.159	0.141	0.154	0.060	0.130	0.108
	(0.110)	(0.109)	(0.265)	(0.079)	(0.173)	(0.075)	(0.065)	(0.064)	(0.082)	(0.034)
CRD	0.106	0.148	0.212	0.154	0.121	0.272	0.106	0.032	0.093	0.156
	(0.083)	(0.135)	(0.173)	(0.067)	(0.174)	(0.082)	(0.083)	(0.281)	(0.215)	(0.093)
Main effects (R^2)	*69.46%*	*63.20%*	*68.29%*	*54.20%*	*64.30%*	*81.05%*	*68.49%*	*79.56%*	*80.12%*	*76.12%*
NPS (proportion)	0.195					0.116				
	(0.070)					(0.090)				
NPS value		0.107					0.135			
		(0.094)					(0.076)			
CES			- 0.393					- 0.201		
			(0.019)					(0.061)		
SAT				0.492					0.302	
				(0.000)					(0.010)	
Top 2 Box					0.319					0.416
					(0.041)					*(0.000)*

Note. P-values associated with each coefficient are in parentheses.

Table 12
Customer feedback metrics performance per industry at the customer level (Obs = 16,245).

Industry	NPS	NPS value	CES	SAT	Top-2-Box
Hotels	0.993		0.998	**1.000**	**1.000**
Airlines	0.988			**1.000**	0.998
Restaurants	0.997			0.975	0.559
Casinos					
Travel agencies					
Online bookings	0.948	0.996			**1.000**
Significant	4/6	1/6	1/6	3/6	4/6
Best performing	0/6	0/6	0/6	2/6	2/6

Table 13
Customer feedback metrics performance per industry at the firm level.

Industry	NPS	NPS value	CES	SAT	Top-2-Box
Hotels			0.958	0.982	**1.000**
Airlines				0.977	**1.000**
Restaurants	0.996			**1.000**	0.946
Casinos	**1.000**	0.966			0.825
Travel agencies			**1.000**		
Online bookings	0.993	0.946			**1.000**
Significant	3/6	2/6	2/6	3/6	5/6
Best performing	1/6	0/6	1/6	1/6	3/6

5. Discussion and implications

5.1. Summary of the findings

In marketing studies, previous research has assessed the performance of consumer feedback metrics (e.g., De Haan et al., 2015; Dixon et al., 2010; Gupta & Zeithaml, 2006; Reichheld, 2003; Venkatesan et al., 2019). The present study argues that crucial marketing factors have been overlooked in predicting consumer expenditure. Our study found that consumer feedback metrics play a major role in driving consumer expenditure in 6 different tourism industries. Our findings revealed that the predictive power of these marketing variables is greater than of other factors, such as consumer sentiment, credit, and income, which have been investigated in previous studies. In particular, our results show that for hotels and airlines industry, consumer expenditure is influenced by CES and SAT. Furthermore, these effects are offset income and the consumer price index. This result is consistent with previous studies (e.g., Delorme et al., 2001; Yeung et al., 2013). For travel agencies, our findings indicated that consumer satisfaction and the Top-2-Box satisfaction influence consumer expenditure. For restaurants industries, consumer expenditure is influenced by consumer satisfaction. However, in the Casinos industries, the results revealed that consumer expenditure is not influenced by any of the consumer feedback metrics.

5.2. Theoretical contributions

From a theoretical perspective, the findings add to the small but increasing number of studies on consumer feedback metrics and consumer expenditure at the macro level. The present study extends the results of previous studies (e.g., Fornell et al., 2010; Ramasamy & Yeung, 2010; Yeung et al., 2013) to another important group of industries. Furthermore, the present study includes other feedback metrics, such as NPS and CES, and 'investigates their effect on consumer expenditure. In addition, we find that real personal disposable income (income) and the Consumer Price Index (CPI) have a significant impact on consumer expenditure. Specifically, the findings of the analysis confirmed our hypotheses overall, and revealed that adopting different consumer feedback metrics leads to a high level of consumer expenditure. These are important outcomes because they confirm claims by De Haan et al., 2015 that using different consumer feedback metrics does indeed positively influence consumer behaviour. Our study also indicated that the predictive ability of consumer feedback metrics varies between industries, a feature yet to be investigated in the research domain and ignored in previous research. Thus, there is no specific feedback metric for predicting consumer expenditure across industries. Our results are consistent with Yeung et al. (2013), who revealed that consumer satisfaction plays an important role in predicting consumer expenditure in the services context. However, our study provides more convincing evidence, with authentic data covering six different tourism industries over a 10-year period.

Our study provides new insight into the consumer expenditure framework by demonstrating the role of consumer feedback metrics. In addition, the findings help practitioners to understand how the outcomes from consumer feedback metrics can be obtained and used. The ultimate goal of firms is to encourage consumers to spend and this study provides suggestions for managers who wish to do this. Whereas prior research has examined the link between consumer feedback metrics and retention, no study has examined the link between consumer feedback metrics and consumer expenditure. Our study therefore advances consumer expenditure research by investigating the influence of consumer feedback metrics on consumer expenditure. From the theoretical point of view, our study findings support the consumer expenditure model suggested by Yeung et al. (2013).

While previous studies investigated the phenomenon and drivers of consumers complaining behaviour (e.g., Anderson, 1998; Morgan & Rego, 2006; Raassens & Haans, 2017), our study is the first to investigate the influence of CES on consumer expenditure at the macro level. Fornell and Wernerfelt (1988) indicate that increasing the amount of attention paid to complaints made by dissatisfied consumers enables companies to better manage "at risk" consumers. Our results reveal that among the firms in our sample, consumers' complaints have not been listened to by the firm managers and the managers have made too little effort to reduce the negative influence of consumers' complaints on consumers' expenditure. While prior research (e.g., TARP, 1986) suggests that consumers' complaints are not a good predictor of satisfaction, the results of the correlations between CES, consumer satisfaction, and Top-2-Box scores indicates that CES provides insights into consumer satisfaction and is a good indicator of consumer expenditure.

Regarding the differences across industries, our findings revealed that top-2-box consumer satisfaction is the most useful metric for predicting consumer expenditure in three industries (Hotels, online bookings, and airlines), for predicting consumer satisfaction restaurant industries. CES is also useful for predicting this in one industry (travel agencies), and official NPS in casinos industry. Thus, companies should use different consumer feedback metrics instead of using a single metric (Ambler & Roberts, 2008; De Haan et al., 2015).

5.3. Practical contributions

The findings reveal that investigating consumer feedback metrics is worthwhile because it helps managers to raise consumers' expenditure. From this perspective, our findings provide visible implications which managers interested in consumer feedback metrics may use in their firms' control systems to raise consumers' expenditure. Our analysis reveals that the five consumer feedback metrics (NPS, NPS value, CES, SAT, and Top 2 Box) offer major ways of predicting consumer expenditure, while our study encourages managers to improve net promoter scores because doing so has a positive influence on consumer expenditure. Our findings also reveal that there is no relationship between customer effort score (CES) and consumer expenditure in casinos and online bookings industries. Our study indicates that enhancing CES will fail to increase consumer expenditure. Therefore, it makes it clear that managers should not ignore consumer satisfaction and focus only on the CES as a firm-only consumer feedback metric in these industries. Consequently, our findings suggest that consumer expenditure should be raised according to a consumer feedback "scorecard" that comprises net promoter scores (NPS) (proportion), NPS value, customer effort score

(CES), consumer satisfaction (SAT), and the Top-2-Box.

The present study thus provides some meaningful managerial and policy implications. From the managerial point of view, our study raises the role of marketing activities and marketing in consumer feedback metrics to one of national interest. Marketers prioritise better ways of delivering services and goods so as to generate satisfying experiences. The present study does not directly evaluate the effect of marketing activities on the economy. However, the findings emphasize the economic contribution of consumer feedback metrics, which can be attained by good marketing. Therefore, managers should recognise that their marketing efforts to satisfy consumers' needs do not meet profit and sales objectives alone, but also directly influence the growth of economy. The marketing effort to enhance consumer feedback metrics will help to improve consumer expenditure, which substantially aids both the firm and the national economy. Our study has revealed that managers should not trade consumer satisfaction for sales targets because reducing consumer satisfaction will in the long term have a negative influence on the firm and the economy. Our study also indicates that reducing the budget for marketing due to an economic downturn is a dubious strategy for firms. When managers may lose the resources necessary to look after consumers, the loss of consumer satisfaction results in a vicious circle. Furthermore, a better understanding of ways to expand consumer expenditure leads to more accurate sales forecasts and marketing plans, which results in effective decisions in all the major marketing areas, comprising pricing, distribution, products, and promotion. Rust, Ambler, Carpenter, Kumar, and Srivastava (2004) confirm the value of consumer feedback metrics to stock market analysts and macroeconomists when they predict the growth of consumer expenditure.

For instance, if consumer expenditure on services declines, managers can use other strategies to maintain or stimulate demand for services. Marketers can engage in a marketing campaign which mainly focuses on retaining sales despite low demand, or marketers may implement marketing strategies which attract consumers who can spend less in a downward market. If the consumer expenditure predictions are positive, in contrast, managers may simply adjust their supply chain operations and ordering process to enhance the service deliveries in the coming year. Furthermore, when higher demand is predicted, managers can implement strategies which target consumers who are highly price-sensitive, such as a more time-efficient delivery of service, and more effective management of the cash flow. Thus, the use of accurate predictions of consumer expenditure enables managers to use resources more effectively and efficiently.

Furthermore, multinational corporations can further benefit from a better understanding of the impact of consumer feedback metrics on consumer expenditure, which can use them to segment consumers. Our findings suggest that multinational corporations should understand that firms' efforts to achieve high level of consumers' satisfaction. The company can target the proper market where their efforts to build consumer satisfaction yield more spending.

The present study provides some valuable implications for policy-makers. It indicates that every society should establish some form of consumer feedback metrics index. Policy-makers need to understand that such a system not only measures the quality of services and goods but also provides a helpful prescription for future consumption at the macro level. Thus, for the national interest, policy-makers should increase the pressure on companies to invest in consumer feedback metrics and provide them with incentives to do so. This is true for societies that pay more attention to the services sector because consumer expenditure is more powerfully affected by consumer feedback metrics in the service sector. Our study reveals that consumer feedback metrics play a crucial role in the services sector; policy-makers ought to pay more attention to these metrics in the services sector so that they played more of a role in boosting long-term economic growth.

6. Research limitations and further research

The present study has some limitations. One of these is that the data cover only American respondents, who may use scales differently from U.K. participants, for example (De Haan et al., 2015; Van Doorn et al., 2013). The effect of consumer feedback metrics may also vary according to the political, cultural, and economic variables of a society (De Haan et al., 2015; Yeung et al., 2013). Investigating the influence of consumer feedback metrics on consumer expenditure across different markets and service will help to validate our model. Second, Rust et al. (2004) indicate that companies should pay attention to the most profitable consumers. The present study collected data from the ACSI database, which made it impossible to differentiate between consumers; hence, all consumers were treated as equally important. Consumers vary in their propensity to save, their long-term orientation, and their risk attitude, and it is not clear how consumers' consumption utility and debt service interact with respect to consumer expenditure growth. Consequently, it may be helpful to consider other service and markets than the present ones. Future studies can validate our findings by incorporating more countries as the consumer feedback metrics and consumer expenditure data become available. Furthermore, the impact might change over time, which could be investigated in a more longitudinal study. Furthermore, future studies could examine the influence of marketing activities on the consumer feedback metrics. For instance, the influence of advertising on the consumer feedback metrics at the macroeconomic level could be investigated to understand its role in enhancing macroeconomic performance.

Declaration of competing interest

None.

CRediT authorship contribution statement

Gomaa Agag: Conceptualization, Methodology, Data curation, Formal analysis, Writing - original draft. **Riyad Eid:** Conceptualization, Software, Writing - original draft, Writing - review & editing.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.tourman.2020.104107.

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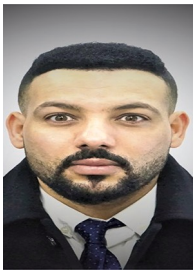

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