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Impact of Negative Customer Engagement on Market-Based Asset and Financial Performance

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ABSTRACT

Negative customer engagement (NCE) has received little research attention. The effect of NCE on market-based assets (i.e. brand equity) and firm performance remains a particularly underexplored topic despite the increasing rates of NCE with brands across a multitude of service industries. This study develops a comprehensive and parsimonious model of the causes and consequences of NCE. In this study, time-series cross-sectional data from the US airline industry and a simultaneous equation modelling technique were used to provide evidence for why some firms experience more NCE than others. The results indicate that airlines with a higher relative marketing capability (RMC) experience fewer NCE incidents in the form of customer complaints. A firm's relative marketing capability determines the extent to which its customers engage negatively with it. Furthermore, deviating from earlier studies which explored the direct and immediate relationships between the focal variables, this study theoretically argued and empirically demonstrated that brand equity mediates the nexus between NCE and financial performance. That is, the number of NCE incidents a firm experiences affects its brand equity, which in turn impacts its financial performance, as measured by Tobin's q and market value added (MVA).

Keywords: Brand equity, customer complaints, firm performance, marketing capability, negative customer engagement

1. INTRODUCTION

Customer engagement (CE) has received a great deal of research attention from academics and practitioners alike in recent years (Ashley & Tuten, 2015; Fang, 2017; Giakoumaki & Krepapa, 2020; Harmeling et al., 2017; Naumann et al., 2020; Singh et al., 2021). A number of academic disciplines, including sociology and psychology, have examined *engagement* (Delbaere et al., 2021; Rietveld et al., 2020), and interest in the topic in the field of marketing has also surged (Bowden & Mirzaei, 2021; Bruneau et al., 2018; Hollebeek et al., 2014; Rietveld et al., 2020). Marketing scholars have broadly defined CE as the level of a consumer's 'cognitive, emotional and behavioural investment in specific brand interactions' (Leventhal et al., 2014). It is manifested by certain behaviours, such as word-of-mouth (WOM) activities and writing in favour of or against a brand in online forums, etc. (Rossolatos, 2019; Simillidou et al., 2020; Van Doorn et al., 2010). These behavioural manifestations can be either positive or negative (Kucuk, 2019; Park et al., 2020; Wei et al., 2013).

Positive CE includes customer actions which have favourable financial and nonfinancial consequences for a firm (Kumar & Pansari, 2016). Negative customer engagement (NCE) occurs when there is a misalignment between the goals of the customer and those of the firm (Azemi et al., 2020; Kucuk, 2019; Van Doorn et al., 2010). Customer complaints, an extreme form of NCE, refer to customer-initiated communications either to the service provider (Hollebeek & Chen, 2014; Park et al., 2020; Yilmaz et al., 2016) or to a third party (Luo, 2007; Do et al., 2020), including governmental bodies (Luo, 2007; Yilmaz et al., 2016), intended to remedy a disappointing service experience (Azemi et al., 2020). A third-party complaint is the type of complaint most detrimental to a firm's reputation (Hollebeek & Chen, 2014; Luo, 2007). Such NCE incidents are posited to result in a reduction in customer loyalty, thereby negatively affecting a firm's financial performance (Leventhal et al., 2014; Luo, 2007; Wei et al., 2013). Notwithstanding scholars' theoretical postulation that NCE has a significantly stronger impact on firms than positive engagement (Do et al., 2020), there is surprisingly little research on this important phenomenon (Do et al., 2020; Kimmel & Kitchen, 2014; Leventhal et al., 2014).

The extant corpus of studies on CE can be broadly classified into two strands. The first of these strands is the exploration of a spectrum of antecedents of CE (Bowden, 2009; Pansari & Kumar, 2017). Although earlier conceptual studies (e.g. Van Doorn et al., 2010) identified and theorised a wide array of antecedents of CE, which were classified into either customer-, context- or firm-based antecedents, the majority of prior empirical studies investigated customer-based antecedents (Hapsari et al., 2017; Leckie et al., 2016; Pansari & Kumar, 2017). What is noteworthy about these empirical studies is that they adopted an *external view* and most investigated customer-related issues only. Specifically, they analysed whether and how various customer-related constructs increase or reduce CE with a service firm (Hollebeek et al., 2014). This stream of literature is also predominantly focused on the antecedents of positive CE (as opposed to NCE). Very few of these empirical studies have examined whether a firm's *internal* strategic capabilities, such as marketing capability, have any effect on CE, particularly NCE, and so this is the first lacuna in the pertinent literature which this research is intended to fill. Therefore, the first research question that this study addresses is 'does a firm's relative marketing capability affects the rate of NCE it experiences?'

The second stream of studies in this field examines the consequences of this burgeoning phenomenon (Bowden, 2009; Naumann et al., 2020; Pansari & Kumar, 2017). Studies investigating the consequences of CE can be categorised into those examining the effect of the focal variable on customer-related outcomes, such as customer advocacy (Moliner et al., 2018),

and those exploring the financial implications of this important phenomenon (Kumar & Pansari, 2016). While the performance consequences of positive CE have received some attention in the literature (Kumar & Pansari, 2016), little is known about the financial implications of NCE (Bowden et al., 2015; Hollebeek & Chen, 2014; Juric et al., 2015; Naumann et al., 2020). Only one study has examined the impact of NCE on firms' financial performance (e.g. Luo, 2007). However, this study adopted an immediate analytical approach and examined the direct impact of NCE on financial performance, excluding any intervening mechanisms. Meanwhile, pertinent earlier studies (e.g. Luo, 2007) argued that, theoretically, the nexus between NCE and financial performance is mediated by market-based assets, such as brand equity. This study endeavoured to fill this void in the literature, and so the second research question explored herein is 'does brand equity mediate the nexus between NCE and financial performance?'

An internal view of firms was used in this study and the arguments set forth are anchored in the resource-based view (RBV) of firms (Wernerfelt, 1984; Priem & Butler, 2001; Barney, 2001), which asserts that an airline's relative marketing capability (RMC) determines the extent to which its customers engage negatively with it. More specifically, it is argued herein that greater RMC reduces the rate of NCE in the form of customer complaints. That is, airlines with greater marketing capability experience fewer NCE incidents. Furthermore, it is argued in this study that the nexus between NCE and financial performance is mediated by market-based assets, namely the firm's brand equity. In other words, NCE adversely affects brand equity, which in turn negatively impacts a firm's financial performance, as measured by Tobin's q and market value added (MVA).

Based on a sample drawn from US-based airline firms, this research provides robust empirical evidence regarding the negative relationship between RMC and NCE. The results of this study also confirm that the nexus between NCE and a firm's financial performance is partially mediated by the brand equity of the airline firm. This study makes three significant contributions to the literature. First, unlike earlier studies, which explored the customer-related antecedents of NCE, this study adopts a capability-based approach and explores the impact of a firm's RMC on the level of NCE. Second, this study demonstrates that the nexus between NCE and financial performance is mediated by brand equity. Third, unlike previous studies, this study examines the antecedents and consequences of NCE concurrently using an endogeneity-robust simultaneous equation modelling technique.

2. RELEVANT LITERATURE

Before delineating the proposed hypotheses of this study, we reviewed and summarised the extant literature on CE. We found that a preponderance of the literature covered positive CE rather than NCE. In Table 1 below we summarised the relevant studies in order to reveal this gap in the literature and to demonstrate how this study adds to the extant literature.

Insert Table 1 here

Before developing the hypotheses of this study, we defined the key constructs of this research, which are discussed below.

2.1 Relative Marketing Capability

The popular business press defines marketing capability as 'the ability to design and run processes effectively to a programme that drives profitable growth' (Marketing Week). Marketing capability was defined in a pertinent study 'as a firm's interrelated organisational routines for performing marketing activities such as product, pricing, channel management, marketing communications, marketing planning, and marketing implementation' (Ngo & O'Cass, 2012). Notwithstanding its usefulness, this conceptualisation of marketing capability suffers from a major shortcoming: It is parochial in nature because it assesses a focal firm's marketing actions and strategies while excluding those of its competitors. Both marketing scholars and exponents of RBV theory, however, acknowledge that the success or failure of a marketing strategy hinges not only on how effectively it is deployed by the focal firm but also on the actions and strategies implemented by competing firms in the same market. In other words, a firm's marketing strategy can be neutralised by its competitors' actions and strategies (Angulo-Ruiz et al., 2018). Accordingly, a comparative approach is required for understanding the marketing capability of a given firm in any industry (Angulo-Ruiz et al., 2014, 2018). Consequently, a more fine-grained approach was adopted in this study and a nuanced construct, RMC, was used. We defined RMC as *a firm's ability to strategize and implement market-driven marketing programmes, which are reconfigured from one time period to another in response to changes in customers' and competitors' behaviour to minimise the utilisation of marketing inputs, such as promotional budget, and maximise marketing outcomes, such as sales revenue* (Angulo-Ruiz et al., 2018; Nath et al., 2010). This conceptualisation of marketing capability has two distinctive attributes. First, it is relative in nature, as it relies on a competitor-oriented approach to analyse and measure a firm's marketing capability. Specifically, the marketing capability of a firm is analysed vis-à-vis the level of marketing capability of other firms in the same industry. Second, our conceptualisation not only encompasses the actions and strategies carried out by a firm but also incorporates its relative ability to convert marketing inputs into marketing outputs.

2.2 Negative Customer Engagement (NCE)

Positive CE has received far more attention in the literature than NCE (Azemi et al., 2020; Park et al., 2020; Wei et al., 2013); in fact, researchers have only recently begun to pay more attention to the latter (Azemi et al., 2020, Revilla-Camacho et al., 2017). While there seems to be some consensus on the conceptualisation of positive CE, there is a pronounced dearth of unanimity among scholars regarding how to define NCE (Azer & Alexander, 2020; Do et al., 2020). Prior studies adopted either a psychological, social or behavioural approach (or a combination thereof) to conceptualise NCE (Azer & Alexander, 2020; Do et al., 2020). From a behavioural perspective, customers' behavioural response to a negative service experience could prompt a formal complaint (Azemi et al., 2020; Luo, 2007). In particular, it is crucial for service providers to understand customer complaint behaviour because such behaviour is reported to be directly related to negative WOM and switching behaviour (Azemi et al., 2020; Jerger & Wirtz, 2017). Building on earlier studies which adopted a behavioural approach, this research defines NCE as customers' *motivation to invest time and resources to bring disappointing service experiences to the attention of relevant authorities in the form of formal complaints in order to negatively affect other actors' service perception about the firm in question* (Azer & Alexander, 2020; Do et al., 2020; Hollebeek & Chen, 2014).

2.3 Brand Equity

The additional benefit/valued derived from a brand name and its associated properties is called brand equity (Kumar et al., 2018; Loureiro et al., 2012; Lieven et al., 2014; Rahman et al., 2019). Brand equity is intrinsically connected to brand names and their related properties/features (Kaufmann et al., 2012; Papasolomou & Vrontis, 2006). It can affect the value of a product or service positively or negatively, and thus can be counted as both an asset and a liability for a company (Ding & Tseng, 2015; Dwivedi et al., 2019). Brand assets and liabilities can be classified into five categories: brand awareness, brand associations, brand loyalty, perceived quality and other proprietary brand assets, such as patents, trademarks and channel relationships (Aaker,1996; Rahman et al., 2019).

3. DEVELOPMENT OF THE HYPOTHESES

3.1 RMC and NCE

A firm's RMC can negatively affect its rate of NCE in a multitude of ways. Proponents of RBV contend that firms with better RMC are armed with greater *market-sensing* ability, which enables them to innovate and introduce services focused on customers' needs (Nath et al., 2010; Revilla-Camacho et al., 2020; Srivastava et al., 2001). In other words, firms with greater RMC are able to detect changes in the marketplace over time; specifically, they can prognosticate changes in the strategies of various market-based actors and agents, such as suppliers and trade partners (Angulo-Ruiz et al., 2014; Feng et al., 2017; Srivastava et al., 2001; Wei et al., 2013). This ability to predict future changes enables firms with greater RMC to better prepare for evolutions in the competitive landscape (Angulo-Ruiz et al., 2018; Srivastava et al., 2001). Thus, RMC is seen as one of the most important sources of competitive advantage for service firms (Luo, 2007; Srivastava et al., 2001). Firms with greater RMC adopt a market-driven approach in their decision-making processes, which results in changes in their service-provision strategies in response to marketplace dynamism (Del Vecchio et al., 2020; Punel, Hassan, & Ermagun, 2019; Punel et al., 2019; Srivastava et al., 2001). Marketing capability also helps a firm to build and sustain a long-standing relationship with customers, channel members and other business-critical stakeholders (Angulo-Ruiz et al., 2014, 2018). Consequently, airline firms with higher marketing capability are able not only to enhance customer satisfaction but also to better deal with dissatisfied customers following a service failure (Do et al., 2020; Kumar & Pansari, 2016; Srivastava et al., 2001). When customers are satisfied with the service resulting from a firm's better marketing capability, they tend to purchase further services from that provider; this strengthens brand loyalty and reduces the number of complaints, even in the event of a service failure (Angulo-Ruiz et al., 2018; Do et al., 2020; Rezaei et al., 2018; Su & Teng, 2018). In essence, firms with greater marketing capability are armed with necessary marketplace know-how to enable them to effectively strategize to build and nurture relationships with diverse market-based agents (Angulo-Ruiz et al., 2018; Feng et al., 2017; Srivastava et al., 2001; Wei et al., 2013).

Firms with greater RMC are endowed with better *customer-sensing* ability, which enables them to understand what customers expect with regard to the service(s) offered (Akamavi et al., 2015; Angulo-Ruiz et al., 2018; Revilla-Camacho et al., 2020). Consequently, such firms are able to design and offer their customers a better service experience compared to their competitors (Angulo-Ruiz et al., 2014; Feng et al., 2017). That is, the better customer-sensing ability cultivated by firms with greater RMC enables them to provide service experiences that meet their customers' service expectations. Such firms thus achieve better customer satisfaction records (Angulo-Ruiz et al., 2018; Revilla-Camacho et al., 2020). The numbers of satisfied customers of such firms far outstrip the numbers of their disgruntled

customers, thereby leading to fewer customer complaints. Furthermore, firms with greater RMC are able to develop and institute internal routines and processes to effectively deal with actual service failures and prevent potential ones (Angulo-Ruiz et al., 2018; Revilla-Camacho et al., 2020; Su & Teng, 2018; Wei et al., 2013; Yilmaz et al., 2016). Accordingly, such firms are not only able to mitigate the adverse consequences of current service failures (i.e. fewer customers complaints) but also are able to effectively mitigate future ones (Angulo-Ruiz et al., 2018; Feng et al., 2017; Revilla-Camacho et al., 2020; Su & Teng, 2018; Wei et al., 2013). Firms with better RMC are also equipped with the requisite knowledge and ability to predict changes in customers' service expectations due to marketplace dynamics, such as technological development (Akamavi et al., 2015; Angulo-Ruiz et al., 2014; Nath et al., 2010). Specifically, better RMC enables firms to keep abreast of changes in customer behaviours and service expectations (Angulo-Ruiz et al., 2014; Jung et al., 2017; Xiong & Bharadwaj, 2013). As a result, firms with better RMC are rarely caught off-guard by customers' service expectations (Do et al., 2020; Feng et al., 2017; Jung et al., 2017).

Firms with better RMC also possess greater *competitor-sensing* ability, which enables them to predict their competitors' service provision strategies (Angulo-Ruiz et al., 2018; Feng et al., 2017; Harmeling et al., 2017; Keiningham et al., 2014). Firms with greater RMC are able to design and deliver better customer-centric service compared to their competitors (Angulo-Ruiz et al., 2018; Feng et al., 2017; Keiningham et al., 2014). Armed with intelligence on their competitors' strategy, firms with better RMC are able to stay ahead of the game by designing and providing better and differentiated customer experience (Angulo-Ruiz et al., 2018; Feng et al., 2017; Harmeling et al., 2017). Furthermore, firms with better RMC are intrinsically proactive in managing post-consumption customer experience (Angulo-Ruiz et al., 2014; Feng et al., 2017; Keiningham et al., 2014). In other words, such firms take pre-emptive measures to ameliorate the pernicious effect of customer dissatisfaction in the event of a service failure (Angulo-Ruiz et al., 2014; Harmeling et al., 2017; Keiningham et al., 2014; Punel et al., 2019). As a result, even the disgruntled customers of such firms are highly unlikely to engage in negative actions that might have an adverse effect on the focal firm or its other customers (Feng et al., 2017; Harmeling et al., 2017; Keiningham et al., 2014). In essence, the competitor-sensing ability of firms with greater RMC enables them to provide unique and differentiated customer experiences. In light of the foregoing, the following hypothesis is offered:

Hypothesis 1*: The higher a firm's RMC, the lower the rate of NCE in the form of customer complaints.*

3.2 NCE and Brand Equity

Prior studies have demonstrated that positive CE can engender positive marketing outcomes, such as customer loyalty and positive WOM (Heller et al., 2020; Kumar & Pansari, 2016; Rosado-Pinto & Loureiro, 2020; Vivek et al., 2012). Furthermore, positive CE can favourably impact the reputation and recognition of a brand, brand evaluation, brand trust and brand loyalty (Kumar & Pansari, 2016; So et al., 2016). In a similar vein, it can be argued that NCE adversely affects strategic assets of a firm, namely, brand equity in a multitude of ways (Srivastava et al., 2001; Luo, 2007; Wei et al., 2013; Wirtz et al., 2013). More specifically, it is argued that NEC derogates from brand equity which is seen as one of the most pivotal performance-enhancing strategic assets of a firm (Priem & Butler, 2001; Wernerfelt, 1984; Rahman et al., 2019; Srivastava et al., 2001).

Customers engage in three broad types of complaint behaviour: private (i.e. complaining to one's personal social circle or network online/offline); voice (i.e. complaining directly to the service provider) and third-party (Jerger & Wirtz, 2017; Luo, 2007; Singh, 1989). Third-party complaints are the most effortful, last-resort action, directed toward governmental or autonomous bodies (Luo, 2007; Singh, 1990). Customers may go through a hierarchical process of actions involving these three types of complaints (Russell-Bennett et al., 2010). A third-party complaint is lodged when customers do not receive an appropriate remedy from the concerned service provider itself (Do et al., 2020; Hollebeek & Chen, 2014; Luo, 2007). Organisational reluctance to deal with consumer complaints seriously also increases the probability that disgruntled consumers will complain privately (i.e. negative WOM) and to third parties (e.g. governmental and non-governmental agencies) (Do et al., 2020; Luo, 2007; McAlister & Erffmeyer, 2003; Vrontis et al., 2020; Wei et al., 2013).

Prior studies show that, when complaining directly to a service provider, customers engage in cognitive processing, which ultimately reduces their brand loyalty, one of the most important dimensions of brand equity (Leckie et al., 2016; Rahman et al., 2019), thereby negatively affecting brand equity of the firm (Leckie et al., 2016; Wei et al., 2013). Likewise, it can be argued that the pernicious effects of NCE will be exacerbated if a customer files a complaint with a third party, which requires more cognitive and physical effort (Jerger & Wirtz, 2017; Luo, 2007). That is, a negative service experience adversely affects the future perceived service quality, which is viewed as one of the most significant building-blocks of brand equity (Luo, 2007; Rahman et al., 2018; Rahman et al., 2019: Srivastava et al., 2001). Disgruntled customers' complaints engender negative brand associations, thereby resulting in a loss of brand trust among both existing and potential customers of the service firm in question (Harmeling et al., 2017; Luo, 2007). Specifically, negative service experiences adversely affect customers' opinions of a brand, which consequently detract from brand equity (Luo, 2007; Rahman et al., 2018). Moreover, NCE is likely to adversely impact the service quality perception among existing and potential customers alike, which in turn negatively affects the brand reputation of the firm in the marketplace (Harmeling et al., 2017; Luo, 2007; Moliner et al., 2018; Shuv-Ami, 2016). Complaint information shared by third parties will ultimately tarnish the firm's image in the marketplace (Clopton et al., 2001; Do et al., 2020; Wei et al., 2013), which may lead to the loss of both existing and potential consumers (Stephens & Gwinner, 1998). In sum, it is plausible to postulate that NEC adversely affects various aspects of brand equity of a firm. It is, therefore, hypothesised that:

Hypothesis 2*: The higher the number of NCE incidents in the form of customer complaints, the lower the brand equity.*

3.3 NCE and Firm Performance: One Intervening Mechanism

Existing studies have predominantly shown the positive effect of positive CE on financial performance (Chand, 2010; Chi & Gursoy, 2009; Kumar & Pansari, 2016). However, the effects of customer complaints resulting from negative service experiences should also have implications for service firms' performance, especially for airlines, where competition is fierce and customers can easily switch to competing brands (Keiningham et al., 2014; Wei et al., 2013). While a handful of prior studies (e.g. Luo, 2007) have examined the direct impact of NCE on firm performance (i.e. firm risk), no study has empirically shown how this process occurs. It is extremely important to service firms that they understand how NCE affects firm performance by investigating the intervening processes. We theoretically argued in the preceding section (hypothesis 2) that NCE incidents have a deleterious effect on a firm's

strategic assets, namely, brand equity, which in turn adversely impacts its financial performance.

NCE is likely to have an adverse effect on a firm's brand equity, which in turn will have a detrimental effect on its financial performance (Do et al., 2020; Hollebeek & Chen, 2014). Because complaints are testimonies of extreme dissatisfaction, complaining customers may stop patronising the service firm in question, thereby having an adverse effect on its financial performance (Do et al., 2020; Wei et al., 2013). After an extremely negative experience with an airline carrier, such as cancellation of a flight (Van Doorn et al., 2010), previously satisfied customers might engage in negative WOM and turn into a company's 'worst enemies' (Grégoire et al., 2009). Eventually these customers may complain to third parties, which will negatively affect the firm's brand reputation and damage its brand image (Stephens & Gwinner, 1998), thus adversely impacting the firm's cash flow (Luo, 2007; Van Doorn et al., 2010) and revenue stream (Hollebeek & Chen, 2014; Van Doorn et al., 2010). In sum, the model of this research predicts the negative impact of NCE on brand equity (hypothesis 2). Both resource-based theorists and brand management scholars view brand equity as one of the most intangible firm assets. RBV and branding scholars concur that brand equity fulfils the VRIN criteria of a strategic asset (Barney, 2001; Priem & Butler, 2001; Rahman et al., 2019). Also, prior studies in branding literature have confirmed that brand equity affects firm performance (e.g. Rahman et al., 2019). In view of this, brand equity should mediate the relationship between NCE and a firm's financial performance. Hence, it is hypothesised that:

Hypothesis 3*:* Brand equity mediates the nexus between NCE and firm performance.

Insert Figure 1 here

4. METHODOLOGY

4.1 Model Specifications

The following system of equations was used to detail the connections between the hypothesised variables and other germane control variables necessary to estimate accurate regression coefficients efficiently:

$$\begin{aligned} Firm\ Performance_{it} &= \beta + \alpha_0 Firm\ Performance_{i,t-1} + \alpha_1 Brand\ Equity_{it} \\ &+ \alpha_2\ Negative\ customer\ engagement_{it} + \alpha_3 Firm\ Size_{it} + \alpha_4 Market\ Leverage_{it} \\ &+ \alpha_5\ Turnover\ ratio_{it} + \alpha_6\ Capital\ Intenisty_{it} + \alpha_7\ Cash\ Flow\ Margin_{it} \\ &+ \alpha_8\ Profitability + Firm\ fixed\ effect + Time\ fixed\ effect + \varepsilon_{it} \qquad (1) \end{aligned}$$

$$\begin{aligned} Brand\ Equity_{it} &= \beta + \alpha_0 Brand\ Equity_{i,t-1} + \alpha_1 Negative\ customer\ engagement_{it} + \alpha_2 Firm\ Size_{it} \\ &+ \alpha_3 Profitability_{it} + \alpha_4\ Customer\ commitment_{it} + \alpha_5\ Selling\ Intensity_{it} \\ &+ \alpha_6\ Turnover\ ratio_{it} + \alpha_7 NetWorth_{it} + \alpha_8 Capital\ Intensity_{it} + Firm\ fixed\ effect \\ &+ Time\ fixed\ efefct + \varepsilon_{it} \qquad (2) \end{aligned}$$

$$\begin{aligned} Firm\ Performance_{it} &= \beta + \alpha_0 Firm\ Performance_{i,t-1} + \alpha_1 Customer\ negative\ engagement_{it} \\ &+ \alpha_2 Firm\ Size_{it} + \alpha_3 Market\ Leverage_{it} + \alpha_4\ Turnover\ ratio_{it} + \alpha_5\ Capital\ Intenisty_{it} \\ &+ \alpha_6\ Cash\ Flow\ Margin_{it} + \alpha_7\ Profitability + Firm\ fixed\ effect \\ &+ Time\ fixed\ effect + \varepsilon_{it} \qquad (3) \end{aligned}$$

$$Negative\ customer\ engagement_{it} = \beta + \alpha_0 Negative\ customer\ engagement_{i,t-1} + \alpha_1 Marketing\ Capability_{it} + \alpha_2 Firm\ Size_{it} + \alpha_3 AQR\ Score_{it} + \alpha_4\ Selling\ Intensity_{it} + \alpha_5\ Customer\ commitment_{it} + Firm\ fixed\ effect + Time\ fixed\ efect + \varepsilon_{it} \quad (4)$$

where i and t represent the firm and quarter, respectively, and $\mathcal{E}_{it}$ is the error term. We followed the pertinent literature to select and incorporate an appropriate set of control variables in the equations (see Table 2 for details). Furthermore, as the outcome variable might be affected by other time-invariant firm-specific factors (e.g. organisational culture) which are not included in the model, we used firm fixed effects to control for time-invariant firm-level heterogeneity. We also controlled for time-specific factors because the performance of airline firms is affected by various time-based factors, such as fluctuations in demand and volatility in oil prices.

4.2 Data Source and Sample

The data for the present study were obtained from multiple secondary sources, which helped us avoid common method bias. Furthermore, we worked with *hard* data rather than *soft* perceptual data, which enhanced the reliability of the findings of this research. We focused only on one service industry, the US-based airline industry, because customer complaint behaviour varies from one industry to another. Moreover, homogeneity among the sample firms was essential for measuring and comparing RMC. Data for this study were collected in few steps. In the first step, data pertaining to NCE (customer complaints) were collected from the US Department of Transportation (USDOT) website (see appendix for details). The USDOT reports monthly customer complaint data, which we hand-selected and converted to quarterly data. In the second step, quarterly data for the measurement of marketing capability were collected from three sources: the USDOT website (www.transportation.gov), airlinequalityrating.com and Compustat (see Table 2 for details). Only firms for which most of the data were available were included in the sample. The final sample comprised of 14 airlines, as firms with missing data were dropped because data envelopment analysis (DEA), which was used to measure marketing capability, is sensitive to missing data. In the third and fourth steps, the data used to measure brand equity and firm performance, respectively, were collected from Compustat. Finally, we merged all data collected from the aforementioned sources to produce the final dataset of this research. Only the firms for which most of the variables were available were included in the sample. The final sample included 14 airline companies. We used quarterly data drawn from the first quarter of 2003 until the last quarter of 2017 (4 quarters × 15 years × 14 firms). However, data for some firms for some quarters were unavailable, so an unbalanced panel dataset was used in the final analysis. The number of observations for each variable is reported in Table 3.

4.3 Measurement of Variables

4.3.1 Measuring RMC

This study measured RMC using DEA (Angulo-Ruiz et al., 2014, 2018; Rahman et al., 2016), which is a tool for computing relative firm capabilities effectively by comparing the capability score achieved by a firm with the capability scores of other firms in the sample (Assaf et al., 2020; Ruan et al., 2019). DEA can be used to compute a firm's RMC by determining the minimum amount of marketing inputs required to generate a set of marketing outputs or by determining the maximum possible marketing outputs that can be generated by a given set of

marketing inputs. DEA is also used to identify the best practice frontier or data envelope (Angulo-Ruiz et al., 2018; Wang et al., 2010). Firms with a score of 1 are considered to have the highest level of marketing capability, given the required inputs and outputs produced, and firms with a score of less than 1 have a lower level of marketing capability (Donthu et al., 2005; Rahman et al., 2016). One of most important advantages of DEA is that it can incorporate multiple inputs and multiple outputs simultaneously, which was particularly useful for the purposes of the current study (Rahman et al., 2016). As the data of this study were cross-sectional time series, DEA *window analysis* was used to measure RMC because it enabled measurement of the RMC of each firm for each quarter (Rahman et al., 2016; Rahman et al., 2021). We used a constant returns-to-scale (CRS) model to measure RMC. Either input-oriented or output-oriented DEA models can be used to measure RMC (Rahman et al., 2016; Rahman et al., 2020). As airline firms have more control over marketing inputs (i.e. selling expenditure) than marketing outputs (i.e. sales revenue), we used an input-oriented model. The input and output variables and the operationalisations used to measure the RMC of the sample firms are presented in Table 2.

Insert Table 2 here

4.3.2 Measuring NCE

Disgruntled airline customers in the United States can lodge complaints about negative brand experiences with particular airlines with the USDOT through online and offline communication media. The broad categories for which customers can file a complaint are flight delays or cancellations, ticket oversale, reservations/ticketing/boarding, fares, refunds, baggage, customer service, disability, advertising, animals and others. The USDOT reports the total number of complaints filed by customers in each complaint category. In this study, the number of complaints in all complaint categories was summed up to generate an index of complaints, which was used to measure the number of NCE incidents reported (see Appendix A for details).

The USDOT data are appropriate for measuring customers' negative engagement for a few reasons. First, customers of various US-based airline companies directly lodge their complaints against the concerned airline company. As customers need to make an effort to file a complaint, these complaints are an appropriate means of quantifying NCE incidents. Second, the USDOT dataset is the most comprehensive for customer complaints against airline companies. Third, the USDOT's customer complaint data have been consistent over time, ensuring the reliability of the data. Previous studies have also used USDOT data as a reliable source (Keiningham et al., 2014; Luo, 2007).

4.3.3 Measuring Brand Equity

The revenue premium approach was used to measure brand equity (Ailawadi et al., 2003; Angulo-Ruiz et al., 2014). Brand equity was calculated as follows:

$$BrandEquity_{it} = Sales_{it} - Predicted\ Sales_{it}$$

where $Predicted\ Sales_{it} = \beta_0 + \beta_1 Sales_{i(t-1)} + \beta_2 SGA_{i\ (t-1)} + \beta_3 \Delta Assets_{it} + \eta_i + \lambda_t + \upsilon_{it}$.

BE_{it} is the approximate quarterly brand equity of an airline company i at the end of quarter t; $Sales_{it}$ is the log of the quarterly sales revenue of airline company i at the end of quarter t; and $SGA_{i\ (t-1)}$ is the one-quarter lagged value of the quarterly selling, general and administrative expenditures (SGA) of firm i. $\Delta Assets_{it}$ is the quarterly growth of assets of an airline company i at the end of quarter t; λ_t is the time-fixed effects; η_i is the unobserved firm-fixed effects; and υ_{it} denotes the random-error term.

4.3.4 Measuring Firm Performance

For this research, we used two firm performance measures to check whether the results were sensitive to a particular measure of firm performance. Tobin's q and market value added (MVA) were used, both of which have been extensively used in prior research (Angulo-Ruiz et al., 2014; Germann et al., 2015). Tobin's q was measured as follows:

Tobin's Q: (prccq x cshoq - (atq - ltq + txditcq) + atq) / atq

where *prccq* is the price at the end of the quarter, *cshoq* is the common share outstanding, *atq* is total assets, *ltq* is total liabilities and *txditcq* is deferred taxes and investment tax credit.

The second performance measure used in this study was MVA, which measures how efficient a firm is in maximising shareholders' wealth (Hillman & Keim, 2001). Following prior studies (Hillman & Keim, 2001), MVA was measured as follows:

Market value added (MVA) = market value – capital

4.3.5 Control Variables

A set of germane control variables was incorporated into the four equations. The variables were chosen based on a theoretical rationale and pertinent earlier studies. The control variables and their operationalisations are listed in Table 3.

Insert Table 3 here

4.4 Model Estimation Technique

A system of four equations was developed for this study, so it is unrealistic to expect that the error terms of different equations would be uncorrelated. Because some of the independent variables are outcome variables of other equations in the system, it is expected that the error terms among the equations would be correlated. Therefore, the three-stage least square (3SLS) estimation method was used in this study. It was necessary to develop a system of equations, and 3SLS is also particularly useful for measuring multiple equations simultaneously; unlike limited information methods, it is a full information method which does not lose efficiency if the error terms of different equations are correlated. By default, 3SLS considers the variables entered into one equation as explanatory variables and in another equation as dependent variables as endogenous regressors; all other variables are treated as exogenous. Because 3SLS is an instrumental-variables approach, it produces consistent estimates and accounts for the correlation structure in disturbances across equations using generalised least squares. Although 3SLS generates robust results in the presence of endogeneity, it is still necessary to ascertain whether the equations are identified properly, so an additional analysis was conducted to check whether the system of equations was properly identified. The *checkreg3* command for *Stata*

was used and the results confirmed that the system of equations was properly identified. 3SLS estimation comprises the following three steps: 1) Developing instrumented values for the endogenous variables in the equations; 2) obtaining a consistent estimate for the covariance matrix of the equation disturbances; and 3) performing a GLS-type estimation. See Rutz and Watson (2019) and Zaefarian et al. (2017) for a detailed explanation on endogeneity and the 3SLS estimation method.

4.5 Descriptive Statistics and Correlation Matrices

The descriptive statistics of the variables in this study are reported in Table 4, and the variance inflation factors are reported in Table 5. As shown in Table 4, the variance inflation factor values are far below the cut-off limit of 10, confirming that multicollinearity is not an issue (Shieh, 2011). Tables 6 and 7 report the correlation matrices.

Insert Table 4 here

Insert Table 5 here

Insert Table 6 here

Insert Table 7 here

5. MAIN FINDINGS

The hypotheses-testing results are reported in Tables 8 and 9. We discussed the results for both of the firm performance variables—Tobin's q and MVA—simultaneously. As shown in Tables 8 and 9 (equation 4), the regression coefficient for RMC is negative and significant, indicating that RMC is inversely related to NCE: the higher the RMC, the lower the rate of NCE. Specifically, our analysis demonstrated that firms with greater marketing capability relative to other firms in the industry receive fewer customer complaints. This result supports the first hypothesis. The second hypothesis was that NCE will adversely affect the brand equity of the sample firms. That is, we predicted that NCE detracts from brand equity. As indicated in Tables 8 and 9 (equation 2), the coefficient for NCE is negative and statistically significant. This finding confirms the second hypothesis of the study: the higher the rate of NCE incidents, the lower the brand equity. Although no formal hypothesis was developed regarding the direct effect of NCE on firm performance, it was necessary to analyse whether brand equity partly or fully mediated the nexus between NCE and firm performance, as measured by Tobin's q and market value added (MVA). As shown in Tables 8 and 9 (equation 3), the negative and significant coefficient of NCE corroborated previous findings (e.g. Luo, 2007) that NCE has a direct effect on firm performance. Specifically, our results confirm that NCE adversely affects firm financial performance, as measured by Tobin's q and MVA.

The final hypothesis was that brand equity mediates the relationship between NCE and firm performance. To establish the mediation effect through brand equity, the following three conditions must be fulfilled: (1) the negative coefficient of NCE in equation 2 must be significant; (2) the positive coefficient of brand equity in equation 1 must be significant; and (3) the product of the coefficient of NCE in equation 2 and the coefficient of brand equity in equation 1 must be significant (Malshe & Agarwal, 2015). We used Sobel's test to examine the significance of the product term (Malshe & Agarwal, 2015; Zhao et al., 2010). As shown in Tables 8 and 9 (equation 2), NCE has a significant and negative impact on brand equity,

thereby fulfilling condition 1. Brand equity has a positive and significant impact on Tobin's q and MVA (see Tables 8 and 9, equation 1), which satisfies condition 2. Lastly, Sobel's test on the product of the two coefficients shows a statistically significant result for both Tobin's q (t = -4.708, $P < 0.01$) and MVA (t = -4378.335, $P < 0.01$), thus confirming the mediating effect of brand equity on the nexus between NCE and firm performance, as measured by Tobin's q and MVA. This finding supports the final hypothesis. In sum, our analysis demonstrates that brand equity acts as an intervening mechanism on the nexus between NCE and firm financial performance.

Insert Table 8 here

Insert Table 9 here

5.1 Robustness Check

In order to check the robustness of the main findings, additional analysis was performed. To check whether the main findings are sensitive to specific performance variables, we conducted an analysis with a new firm performance variable: market value. The results of this analysis are presented in Table 10. All of our hypotheses were supported with the use of the new firm performance variable. Marketing capability (equation 4) is negatively correlated with NCE, which supports our first hypothesis, and NCE negatively impacts brand equity (equation 2), confirming the second hypothesis. This additional analysis also reveals that NCE has an adverse effect on firm performance, as measured by market value (equation 3). Finally, to analyse the mediation effect of brand equity, we followed the identical procedure explained above and performed the Sobel test. Our robustness analysis shows that brand equity mediates the nexus between NCE and firm performance (t = -898.996, $P < 0.01$).

Insert Table 10 here

6. DISCUSSION AND CONCLUSION

While positive CEs have received some attention from researchers, NCE has received little. In particular, both the antecedents and consequences of NCE remain underexplored, even though customers are increasingly likely to vent their disappointment with service failures in the form of complaints on various online and offline media, including lodging complaints to third parties. This study contributes to this neglected but important topic by developing and testing a comprehensive and parsimonious model which encompasses both the antecedents and consequences of NCE. In sum, the results of this study provide robust empirical evidence that firms with higher RMC experience lower rates of NCE incidents. The findings also demonstrate that NCE adversely affects brand equity, and brand equity mediates the nexus between NCE and firm financial performance, as measured by Tobin's q and MVA.

6.1 Implications for theory

This study contributes to theory in three significant ways. First, this study demonstrates that marketing capability affects NCE. While a few prior studies have explored NCE using mostly qualitative methods, they have investigated a limited array of antecedents to NCE, such as perceived brand/company action, perceived brand value (Hollebeek & Chen, 2014), personality traits, and customer characteristics (Juric et al., 2015). No study has yet investigated whether firm capabilities—particularly marketing capability—have any impact on NCE. This study

shows that marketing capability has a significant negative and direct impact on NCE. This finding contributes to RBV theory by demonstrating that marketing capability plays a pivotal role in reducing NCE. Our study substantively contributes to the literature on CE by providing robust empirical evidence that a stronger market orientation should be reflected in a higher marketing capability (Dutta et al., 1999), and such marketing capability will help firms reduce the number of customer complaints, which is reflective of lesser negative engagement. From a theorical perspective, this is an important contribution to RBV theory in that most prior studies rooted in RBV theory examine and show how a firm's capabilities *positively* affect outcome variables such as financial performance. This study, conversely, demonstrates how a firm's capabilities assist it in reducing negative outcomes, particularly customer complaints. Specifically, while prior RBV-based research has documented the positive effect of firm capabilities on desirable outcomes, this study shows how firm capabilities (i.e. marketing capability) assist firms in reducing undesirable outcomes (i.e. NCE). This constitutes the first and most significant contribution of the study.

Second, the findings of this study demonstrate that NCE has an adverse impact on one of the most important market-based assets: brand equity. This finding is of pivotal importance for RBV theory in general and branding management theory in particular in that it demonstrates what causes a loss of brand equity rather than what helps firms to create brand equity. It is notable that most studies have examined the positive antecedents of brand equity, as opposed to the negative ones (Rahman et al., 2019; Torres et al., 2012). This constitutes the second theorical contribution of this research. Third, this study complements the extant, albeit scant, literature exploring the direct effect of NCE on firms' performance (e.g. Luo, 2007). When the mediating mechanism on the relationship between NCE and long-term firm performance was examined, it was found that brand equity is a critical intervening mechanism that explains how NCE affects organisational performance. Therefore, this study adds a new dimension to the performance implications of NCE: This is an important contribution to the NCE literature in that it will enable firms to ameliorate the negative impact of NCE on their performance by enhancing and protecting brand equity through various brand-building tools. This constitutes the third contribution of the study. Finally, this study contributes to the NCE literature in the development and testing of a comprehensive framework which includes both the antecedents and outcomes of NCE with a mediating mechanism.

6.2 Implications for practice

This study offers several novel implications for service, marketing and brand managers. First, NCE in the form of third-party complaints should be of particular interest to service managers because such complaints are much more acute and damaging for a firm's reputation. Our results indicate that the rate of NCE incidents can be minimised by improving a firm's RMC because marketing capability assists firms in sensing customers' current and future service expectations, which helps them design effective service delivery mechanisms; ultimately this maximises customers' satisfaction and reduces complaints. In sum, firms should adopt a proactive approach in developing and bolstering their marketing capability, as this will assist firms in reducing NCE. Second, our results also show that NCE has a deleterious effect on brand equity and firm performance. Because the effect of NCE on firm performance is mediated by brand equity, managers in service firms still have an opportunity for remediation and to minimise the impact of NCE on firm performance. Therefore, managers need to improve brand equity by properly communicating with their firm's current and potential customers as well as by attending to its dissatisfied customers, even after a complaint is made, by offering special discounts and priority services. The finding that NCE adversely affects brand equity is

particularly important for brand managers, because it represents a source of negative antecedents of brand equity. Brand managers trying to build/sustain brand equity should pay particular attention to NCE so that they can ameliorate the adverse impacts of NCE on brand equity. Third, our analysis demonstrates the significance of collaboration between service managers, marketing mangers and brand managers in mitigating the adverse effect of NCE.

6.3 Limitations and Future Research Directions

NCE has received little research attention, so there are opportunities for future research on this important topic. First, the current study examined one strategic antecedent (i.e. RMC) to NCE, the possibility that other strategic antecedents could influence such negative engagement cannot be completely ignored. Future studies should explore whether other strategic antecedents such as relative strategic emphasis on value creation versus value appropriation has any effect on NCE. Also, the outcomes of NCE could also constitute other variables in addition to brand equity, such as customer equity and corporate reputation. Therefore, future research could examine the effect of NEC on these variables. Second, the current study was conducted in a single-country context. It seems plausible that customer complaint behaviour will vary across countries. Hence, a cross-cultural comparison of NCE behaviours would provide more insights into the determinants and impacts of NCE from a cultural perspective. Third, the sample of firms used in this study was drawn from a single industry, so the results may not be generalisable to other industries. Future studies should draw samples from multiple industries to generate more generalisable insights. Also, a composite measure of NCE was created in this study by summing up different types of customer complaints, but it could be argued that not all customer complaints are equally important. For example, waiting for a few additional minutes for baggage arrival versus cancellation of a flight do not represent the same type of complaint. Future studies should thus adopt a more nuanced approach and differentiate among different types of customer complaints based on the extent or degree of customer inconvenience. Finally, market conditions, such as market volatility, could impact the nexus between the focal variables. Hence, future studies should examine the direction and strength of the relationships between the focal variable changes depending on market conditions.

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Table 1: Contribution of the current study relative to selected pertinent prior studies.

Authors	Main focus of the study	Antecedents/moderators	Mediator	Outcome of CE
Azer & Alexander (2020)	NCE in online social networks (experiment)	Intensity levels of NCE as antecedents; positive reviews as moderators	No	No
Beckers et al. (2018)	Firm-initiated CE	Type of CE, use of social media, competitive intensity, advertising intensity and corporate reputation as moderators	No	Abnormal stock return
Heinonen (2018)	CE in the context of online communities	Behavioral, emotional, and cognitive factors (positive/negative) as antecedents	No	No
Kumar & Pansari (2016)	Employee engagement as well as CE	Employee empowerment, service vs manufacturing firms, B2B vs B2C firms as moderators	CE	Firm performance
Leckie et al. (2016)	Consumer brand engagement in the context of Australian mobile phone service providers	Consumer involvement, consumer participation and self-expressive brand	Consumer brand engagement	Cognitive processing, affection and activation and brand loyalty
Hollebeek & Chen (2014)	Consumers' positively-/negatively-valenced brand engagement in particular brand communities	Perceived brand/company actions, perceived brand quality/performance, perceived brand value, perceived brand innovativeness, perceived brand/company responsiveness, perceived delivery of brand promise as antecedents	No	Brand attitude, (e)-WOM
Brodie et al. (2013)	Positive CE in online brand community	Information need, learning, sharing, and advocating as antecedents	No	Consumer loyalty, satisfaction, empowerment, connection, commitment and trust
Wei et al. (2013)	CE behaviors and hotel management responses (experiment)	Customers' perceived motivational drivers for user-generated hotel reviews (positive/negative) Management perceived motivational drivers for response to CE behavior	No	No
Luo (2007)	Consumer negative voice in	Consumer negative voice (complaint records)	No	Idiosyncratic stock return

	firms' future idiosyncratic stock returns			
This study	***Negative customer engagement***	***Relative marketing capability as an antecedent***	***Brand equity***	***Tobin's q, MVA and market value***

Table 2: Input and Output Variables for the Measurement of RMC

Input variables	**Description**	**Operationalisation**
	Marketing expenditure	Dollar amount of selling, general and administrative expenditure
	Commitment towards customer relationship	Dollar amount of accounts receivables
	Market coverage	Total number of flights
	Depth of markets covered	Total number of available seat miles
Output variables	Size of customer base	Total number of passengers
	Promotional effectiveness	Load factor

		Revenue passenger miles
		Sales revenue
	Customers' overall service perception	Score on airline quality (airline quality rating)

Table 3. Control Variables Used in the System of Equations

Variables	**Operationalisation**	**Incorporated in equation number**	**Data source**	**Relevant literature**
Firm size	Log of sales revenue	1, 2, 3 and 4	Compustat	Dang, Li, & Yang (2018)
Capital intensity	Plant, property and equipment divided by sales	1, 2 and 3	Compustat	Huselid, Jackson, & Schuler (1997), Riley et al. (2017)
Selling intensity	Selling, general and administrative expenses divided by total assets	2 and 4	Compustat	Morgan & Rego (2009), Ptok, Jindal, & Reinartz (2018)

Profitability (ROE)	Net income divided by stockholders' equity	1, 2 and 3	Compustat	Vizcaíno & Chousa (2016), Zhao & Murrell (2016)
Market leverage	Book value of total liability divided by the sum of the book value of total liabilities and the market value of shareholders' equity	1 and 3	Compustat	Horváthová (2012), Malshe & Agarwal (2015)
Airline quality rating (AQR score)	Calculated based on several aspects of airline customer service quality (see airlinequalityrating.com for details)	4	airlinequalityrating.com	Gursoy, Chen, & Kim (2005), Seo, Moon, & Lee (2015)
Customer commitment	Total receivables divided by total sales revenue	2 and 4	Compustat	Nath et al. (2010), Rahman, Rodríguez-Serrano, & Lambkin (2018)
Cash flow margin	Income before extraordinary items plus depreciation and amortisation divided by sales	1 and 3	Compustat	Brush, Bromiley, & Hendrickx (2000), Morgan & Rego (2009)
Net worth	Total asset minus total liabilities	2	Compustat	Capobianco & Fernandes (2004), Murray (1989)
Turnover ratio (efficiency)	Sales divided by total invested capital	1, 2 and 3	Compustat	Baik, Chae, Choi, & Farber (2013), Galbreath & Galvin (2004)

Table 4. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.
Tobin's Q	654	2.78	14.407
MVA	671	-991.928	6006.37
Brand equity	671	30.65	316.722
NCE	671	155.541	201.065
Firm size	659	7.16	1.273
Market leverage	654	.868	.189
Cash flow margin	671	.074	.121
Capital intensity	671	3.585	1.969
Profitability	671	.041	1.058
Turnover ratio	654	.511	2.054
Selling intensity	671	.03	.078
Net worth	671	1413.151	3396.645
Customer commitment	659	.143	.071

Marketing capability	659	.983	.049
AQR score	492	-4.194	9.322

Table 5. Variance Inflation Factor

	VIF	1/VIF
Firm size	2.503	.4
NCE	2.276	.439
Market leverage	1.878	.533
Net worth	1.794	.558
Customer commitment	1.579	.633
Selling intensity	1.38	.725
Brand equity	1.38	.725
Capital intensity	1.353	.739
Cash flow margin	1.353	.739
Marketing capability	1.119	.894
AQR score	1.101	.908
Turnover ratio	1.027	.974
Profitability	1.004	.996
Mean VIF	1.519	

Table 6: Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Tobin's Q	1.000													
(2) Brand equity	-0.026	1.000												
(3) NCE	-0.079	0.376*	1.000											
(4) Firm size	-0.262*	0.441*	0.630*	1.000										
(5) Market leverage	0.061	0.117*	0.123*	0.225*	1.000									
(6) Cash flow margin	-0.056	-0.075	0.005	-0.086	-0.400*	1.000								
(7) Capital intensity	-0.209*	0.021	-0.078	0.317*	0.007	0.033	1.000							
(8) Profitability	-0.003	-0.006	0.005	0.005	-0.012	-0.002	0.020	1.000						
(9) Turnover ratio	-0.026	-0.001	0.082	0.026	0.052	0.038	-0.082	-0.004	1.000					
(10) Selling intensity	0.648*	-0.039	-0.065	-0.135*	0.091	-0.062	-0.197*	0.004	-0.003	1.000				
(11) Net worth	-0.048	0.112*	0.079	0.260*	-0.370*	0.380*	0.164*	0.011	-0.031	-0.042	1.000			
(12) Customer commitment	-0.317*	0.163*	0.268*	0.379*	0.434*	-0.264*	0.078	-0.002	0.070	-0.070	-0.084	1.000		
(13) Marketing capability	0.071	0.116*	0.062	0.036	-0.006	0.040	-0.016	-0.010	-0.033	-0.152*	0.050	-0.012	1.000	
(14) AQR score	0.021	-0.230*	-0.139*	-0.094	-0.124*	0.059	0.095	-0.014	-0.030	0.045	0.091	-0.185*	0.026	1.000

**** p<0.01, ** p<0.05, * p<0.1*

Table 7: Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) MVA	1.000													
(2) Brand equity	-0.042	1.000												
(3) NCE	-0.188*	0.376*	1.000											
(4) Firm size	-0.099	0.441*	0.630*	1.000										
(5) Market leverage	-0.295*	0.117*	0.123*	0.225*	1.000									
(6) Cash flow margin	0.198*	-0.075	0.005	-0.086	-0.400*	1.000								
(7) Capital intensity	-0.093	0.021	-0.078	0.317*	0.007	0.033	1.000							
(8) Profitability	0.021	-0.006	0.005	0.005	-0.012	-0.002	0.020	1.000						
(9) Turnover ratio	-0.004	-0.001	0.082	0.026	0.052	0.038	-0.082	-0.004	1.000					
(10) Selling intensity	0.032	-0.039	-0.065	-0.135*	0.091	-0.062	-0.197*	0.004	-0.003	1.000				
(11) Net worth	0.195*	0.112*	0.079	0.260*	-0.370*	0.380*	0.164*	0.011	-0.031	-0.042	1.000			
(12) Customer commitment	-0.114*	0.163*	0.268*	0.379*	0.434*	-0.264*	0.078	-0.002	0.070	-0.070	-0.084	1.000		
(13) Marketing capability	-0.018	0.116*	0.062	0.036	-0.006	0.040	-0.016	-0.010	-0.033	-0.152*	0.050	-0.012	1.000	
(14) AQR score	0.013	-0.230*	-0.139*	-0.094	-0.124*	0.059	0.095	-0.014	-0.030	0.045	0.091	-0.185*	0.026	1.000

**** p<0.01, ** p<0.05, * p<0.1*

Table 8: Results of three stage least square regression (3sls). Performance variable: **Tobin's Q**.

	(Equation :1) Tobin's Q	***(Equation :2)*** Brand Equity	***(Equation :3)*** Tobin's Q	***(Equation :4)*** NCE
Tobin's Q (Lag1)	0.817***		0.818***	
	(0.0127)		(0.0127)	
Brand equity	0.000137***			
	(2.91e-05)			
NCE	-0.000190***	-0.916***	-0.000161***	
	(3.08e-05)	(4.02e-05)	(3.02e-05)	
Firm size	-0.0127	384.7***	-0.000103	62.65***
	(0.0125)	(0.0134)	(0.0123)	(0.0127)
Market leverage	0.735***		0.621***	
	(0.0867)		(0.0833)	
Cash flow margin	-0.0705***		-0.0985***	
	(0.0227)		(0.0219)	
Capital intensity	0.00288	-5.232***	-0.00598*	
	(0.00367)	(0.00314)	(0.00315)	
Profitability	0.000886	-11.01***	0.00127	
	(0.00193)	(0.00198)	(0.00193)	
Turnover ratio	-0.000253	-23.29***	-0.000611	
	(0.000970)	(0.00111)	(0.000967)	
Brand equity (Lag1)		0.0490***		
		(7.51e-06)		
Selling intensity		8,773***		881.0***
		(0.290)		(0.281)
Net worth		0.00636***		
		(8.35e-07)		
Customer commitment		10,775***		750.1***
		(0.322)		(0.349)
NCE (Lag 1)				0.590***
				(2.67e-05)
Marketing capability				-46.81***
				(0.0719)
AQR score				-0.705***
				(0.000361)
Constant	-0.252**	-3,674***	-0.197	-434.2***
	(0.121)	(0.108)	(0.120)	(0.128)
Number of observations	484	484	484	484

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 9: Results of three stage least square regression (3sls). Performance variable: **Market value added (MVA)**

	(Equation :1) MVA	***(Equation :2)*** Brand equity	***(Equation :3)*** MVA	***(Equation :4)*** NCE
MVA (Lag1)	0.939***		0.918***	
	(5.07e-07)		(4.90e-07)	
Brand equity	4.860***			
	(2.97e-05)			
NCE	-5.255***	-0.136***	-4.682***	
	(3.11e-05)	(3.10e-05)	(3.09e-05)	
Firm size	219.0***	199.1***	564.1***	43.55***
	(0.0128)	(0.0120)	(0.0126)	(0.0115)
Market leverage	12,556***		9,188***	
	(0.0732)		(0.0703)	
Cash flow margin	-2,730***		-3,599***	
	(0.0223)		(0.0217)	
Capital intensity	185.4***	-24.16***	-185.0***	
	(0.00414)	(0.00307)	(0.00347)	
Profitability	126.6***	-0.347***	146.9***	
	(0.00194)	(0.00195)	(0.00193)	
Turnover ratio	-22.36***	-9.225***	-34.04***	
	(0.000967)	(0.00101)	(0.000965)	
Brand equity (Lag 1)		0.0303***		
		(7.49e-06)		
Selling intensity		3,408***		295.7***
		(0.232)		(0.224)
Net worth		0.00661***		
		(8.35e-07)		
Customer commitment		2,647***		-252.7***
		(0.183)		(0.195)
NCE (Lag 1)				0.649***
				(2.05e-05)
Marketing capability				-57.96***
				(0.0718)
AQR score				-1.471***
				(0.000285)
Constant	-13,637***	-1,548***	-11,650***	-193.1***
	(0.122)	(0.0828)	(0.121)	(0.108)
Number of observations	484	484	484	484

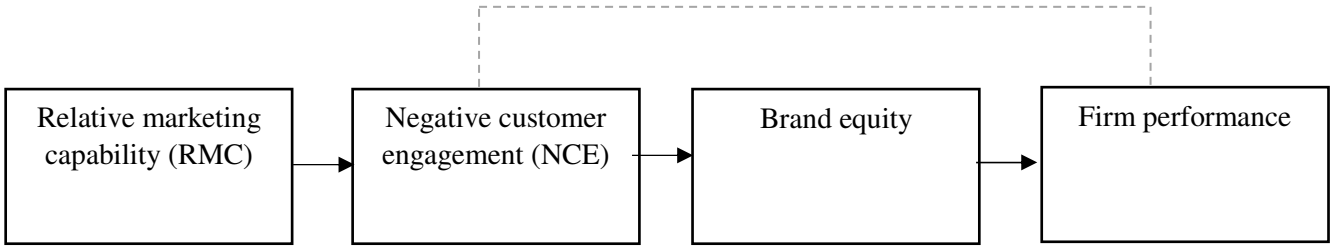
Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 10: Results of three stage least square regression (3sls). Performance variable: **Market value**

	(Equation :1) Market value	***(Equation :2)*** Brand equity	***(Equation :3)*** Market value	***(Equation :4)*** NCE
Market value (Lag1)	0.928***		0.928***	
	(6.79e-07)		(6.79e-07)	
Brand equity	5.538***			
	(2.38e-05)			
NCE	-3.334***	-0.0374***	-3.334***	
	(4.17e-05)	(4.16e-05)	(4.17e-05)	
Firm size	-2,037***	446.9***	-815.5***	57.48***
	(0.0425)	(0.0338)	(0.0422)	(0.0245)
Market leverage	-731.7***		-2,881***	
	(0.0714)		(0.0708)	
Cash flow margin	3,844***		1,981***	
	(0.0305)		(0.0294)	
Capital intensity	-590.7***	45.93***	-770.5***	
	(0.00935)	(0.00892)	(0.00932)	
Profitability	93.41***	-1.546***	118.9***	
	(0.00232)	(0.00235)	(0.00232)	
Turnover ratio	24.49***	-12.48***	5.679***	
	(0.00115)	(0.00124)	(0.00115)	
Brand equity (Lag 1)		0.0102***		
		(9.83e-06)		
Selling intensity		12,932***		1,843***
		(1.258)		(0.990)
Net worth		-0.00159***		
		(1.27e-06)		
Customer commitment		8,171***		754.8***
		(0.488)		(0.422)
NCE (Lag 1)				0.624***
				(2.61e-05)
Marketing capability				-203.5***
				(0.113)
AQR score				0.00779***
				(0.000416)
Constant	15,176***	-4,057***	9,675***	-270.0***
	(0.331)	(0.254)	(0.330)	(0.189)
Observations	350	350	350	350

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Figure 1. Conceptual Model of the Study



Appendix A:

According to DOT definitions (See www.transportation.gov for details), NCE pertaining to *flight problems* encompasses customers' complaints about flight cancellations, flight delays or any other deviations from schedule, whether planned or unplanned. NCE regarding *oversale* encompasses complaints due to all bumping problems, whether or not the airline complied with DOT oversale regulations. NCE regarding *fares* encompasses reported complaints due to incorrect or incomplete information about fares, discount fare conditions and availability, overcharges, fare increases and the level of fares in general. NCE regarding *refunds* encompasses complaints due to problems in obtaining refunds for unused or lost tickets, fare adjustments or bankruptcies. NCE regarding *disability* encompasses complaints concerning civil rights by air travellers with disabilities. NCE regarding *animals* encompasses reported complaints due to the loss, injury or death of an animal during air transport provided by an air carrier. NCE concerning *baggage* encompasses complaints lodged by customers due to lost, damaged or delayed baggage; charges for excess baggage; or carry-on baggage problems. NCE regarding *reservations, ticketing or boarding* encompasses complaints pertaining to airline or travel agent mistakes made in reservations and ticketing; problems in making reservations and obtaining tickets due to busy telephone lines or waiting in line or delays in mailing tickets; or problems regarding boarding the aircraft (except oversale). NCE regarding *customer service* encompasses reported complaints due to rude or unhelpful employees, inadequate meals or cabin service or mistreatment of delayed passengers. NCE related to the *other category* encompasses complaints pertaining to frequent flyers, smoking, tour credit, cargo problems, security, airport facilities, claims for bodily injury and others issues not classified above. DOT publishes reports on customer complaints on a monthly basis. Monthly data were converted to quarterly data for this study. Data pertaining to NCE were collected from the first quarter of 2003 until the last quarter of 2017.