**Title Page**

Investigating the Employee-Customer Relationship in a Utilitarian Context

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**Abstract**

This research, drawing on dyadic data, is one of the first to assess the significance of employee satisfaction in driving customer satisfaction and service quality within a utilitarian context. Multi-level structural equation modelling is employed to analyse 974 customers directly matched to 95 employees across 15 retail grocery stores. Our key empirical finding is that within a utilitarian context, and using a multi-level approach, employee satisfaction does not have a significant direct effect on either customer satisfaction or customer service quality perceptions. Perceptions of price competitiveness assume a more significant role in both customer satisfaction and service quality perceptions than employee satisfaction. Utilitarian store managers should focus their efforts on appropriate service strategies where employee satisfaction still plays a key role.

**Statement of Contribution**

It is almost a truism that employee satisfaction drives customer outcomes. However, the contribution of this paper is that in utilitarian environments, which are understudied in this literature stream, employee satisfaction may not be a driver of customer outcomes and that the oft-cited direct relationship needs to be readdressed. We suggest that perceptions of price competitiveness assume a more significant role in both customer satisfaction and service quality perceptions than employee satisfaction.

**Keywords:** Customer Satisfaction, Employee Satisfaction, Service Quality, Retailing

**Introduction**

The interaction between employees and customers is considered a core element of the service offering (Jayawardhena & Farrell, 2011; Lim, Lee, & Foo, 2016) with significant interest from managers in the attitudes and behaviours of frontline employees that deliver their organization's service offering (Gruber, 2011; Hong, Liao, Hu & Jiang, 2013). These resultant customer outcomes (typically service quality perceptions and customer satisfaction) are accepted antecedents of organizational performance (Kamran-Disfani, Mantrala,Izquierdo-Yusta & Martínez-Ruiz, 2017). The connection between employee outcomes and customer outcomes is typically posited based on the oft cited ‘satisfaction mirror' (Heskett,Sasser, & Schlesinger, 1997), which is a key component of the Service Profit Chain (SPC) (Brown & Lam, 2008; Hogreve, Iseke, Derfuss, & Eller, 2017). However, there is a lack of consensus within the literature on the impact and significance of the connection between employee satisfaction (ES) and customer satisfaction (CS). Some researchers have found positive relationships between the constructs (Homburg & Stock, 2004, Netemeyer, Maxham III & Lichtensten,2010) while others reported non-significant effects (Silvestro & Cross, 2000; Homburg, Wieseke, & Hoyer, 2009). A negative relationship has been acknowledged by Chun and Davies (2009), who further suggest that employee satisfaction is not enough to satisfy customers. A key limitation in much of the extant literature is the type of data being used. Many studies do not employ dyadic data designs and so are not considering direct interaction between the customers and employees.

Hogreve et al. (2017) highlighted that, despite research to date, there is a lack of consensus within the literature on the links within the SPC. Whilst they extended the SPC literature by focusing on differences between B2B and B2C, an additional issue is the dearth of research investigating ES-CS link within utilitarian environments. This is a key concern as differential effects occur between customer responses in utilitarian rather than in hedonic shopping environments, as utilitarian environments facilitate more routine and goal-oriented shopping behaviour (Olsen & Skallerud, 2011). Furthermore, in their meta analyses Hogreve et al. (2017) noted the need to develop a specific SPC for different customer segments. Given the differences in utilitarian versus hedonic motives and customer behaviours, this paper addresses this gap, using dyadic data.

Within the literature, dyadic data has been analysed to illuminate and test the relationships between employees and customers (Brown & Lam, 2008). However, many of these studies employ significant levels of aggregation in their analysis (Gazzoli, Hancer, & Kim, 2013), while others do not represent direct one-to-one customer-employee matching in their design and operationalization (Brown & Lam, 2008). In addressing this paucity of research, this paper aims to assess these methodological implications for understanding ES-CS. For practitioners, this lack of consensus on ES-CS link, the lack of research on utilitarian environments, and the focus on aggregation at the store level as opposed to the individual level, is of concern. For example, knowing that ES might not lead directly to CS in a utilitarian environment would allow managers to focus resources on other areas of the store, e.g. price competitiveness, to influence customer satisfaction. Employing a SPC lens, this paper reveals that there is no significant direct relationship between employee satisfaction and either customer satisfaction or customer service quality. This research found that price competitiveness is an important issue for retailers as the level of competition and price sensitive customers increase in tandem. Retailers, therefore, need to manage perceptions of price competitiveness as these perceptions have significant effects on customer satisfaction and service quality.

The paper is organized as follows: firstly, we update the work of Brown and Lam (2008) using papers that take a dyadic approach to the ES-CS link. Secondly, we investigate the effect of the service environment and briefly review the major theoretical underpinnings of the ES-CS relationship. Thirdly, we concentrate on the variety of methodological approaches using dyadic data. The methodology is then outlined and the Multi-level Structural Equation Modelling (MLSEM) results are presented. Finally, the theoretical and managerial implications of the analysis are discussed.

**Literature Review**

***The ES-CS link***

There has been general acceptance of a positive ES-CS link (Brown & Lam, 2008; Evanschitzky, Groening, Mittal, & Wunderlich, 2011; Frey, Bayón & Totzek, 2013). For example, Chi and Gursoy (2009) suggested that, within hotels, employee satisfaction leads to positive customer satisfaction, whilst Evanschitzky, Sharma and Prykop (2012) argued the same for banks. However, there are different approaches to research on this issue. Brown and Lam (2008) report on 22 dyadic studies and find a variety of approaches taken to gather and analyse dyadic data. Table 1 identifies the papers that examine the ES-CS link since this seminal article focussing on journals in the Chartered Association of Business Schools (CABS) listing. In an extension to Brown and Lam (2008), the table highlights the type of service environment, the theoretical frameworks, and the methodological approaches used. The framework proposed by Arnold and Reynolds (2003) is used to classify the papers as either relationship, hedonic or utilitarian. These types of service environments are determined based on (1) the original authors classification of the research service context where available, for example Yee et al (2011) classify beauty and fashion as hedonic service contexts, (2) consideration of the theoretical frameworks underpinning the research, for example Evanschitzky, Sharma & Prykop’s (2012) use of a Relationship Marketing framework reflects their identification of financial services as a relational service context, and (3) the agreement of all authors of this paper drawing on their understanding and interpretation of the context of the paper. Thirteen of the studies find a positive link between ES and CS although there are a variety of data collection methods and matching methods used. For example, whilst papers indicate they are measuring the effect of ES on CS, often these papers are looking at store level ES on CS (e.g. items relate to ‘all in all I am satisfied with the retailer’ or ‘I am completely satisfied with X’, Chi and Gursoy, 2009; Grandey et al., 2011; Zablah et al., 2016) and not the direct matching relationship between employees and customers. This direct matching of dyadic data is significant to consider and this research matches CS directly with the till operator who served them (e.g. items relate to ‘till employees’ willingness to help’ or ‘showing sincere interest in the customer’).Past studies also take place in different service environments and this aspect is explored next.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Author (Year)*** | ***Type of Service Environment*****Hedonic=H, Utilitarian= U****Relationship= R** | ***Theoretical Framework(s)*** | ***Sample*** | ***Matching Dyadic data*** | ***Analysis***  | ***CS at store level*** | ***Number of Items for CS*** | ***ES-CS Link*** | **ES-SQ or SQ-CS link** |
| Chi and Gursoy (2009) | H: Hotels | Service Profit Chain (SPC) | 3,346 customers2,023 employees50 units | No | SEM with aggregation to unit level | Yes  | (3) e.g. I am very satisfied with my stay at X | + | Not tested |
| Homburget al. (2009) | H: Travel Agencies | SPCSocial Identity | 597 customers258 employees109 units | Yes | HLM | Yes | (3) e.g All in all I am very satisfied with this travel agency. | Ns | Not tested |
| Evanschitzky et al. (2011) | H: DIY retailer | Generalized Exchange Theory | 20,742 customers933 employees(3 months difference between data collection) | No | SEM with aggregation to employee level | Yes  | (2) e.g. Overall, how satisfied are you with X? | + | Not tested |
| Grandey et al. (2011) | U: Warehouse retailer | Emotional ContagionPerformance MotivationSPC | 328 storesNo numbers specified  | No | HLM with aggregation to store level of both ES and CS | Yes | (12) Overall satisfaction from the Gallup Workplace Audit (GWA)  | + | Not tested |
| Kantabutra (2011) | H: Retail Apparel | Leadership | 126 storesNo numbers specified  | No | Multiple Regression with aggregation to store level | Yes  | (14) Based on Hacki et al. (2000) study | Ns | Not tested |
| Yee, Yeung & Cheng (2011) | H: e.g. Beauty/fashion/jewellery | SPC | 210 Stores630 participants (Customer and Employees) | No  | SEM | Yes | (4) Based on Oliver (1997) |  + | ES-SQ: NsSQ-CS: + |
| Chuang, Judge & Liaw (2012) | R: Sales/ Insurance/ financial Services/Hairdressers | Transformational LeadershipEmotion regulation | 52 Stores204 Managers204 Employees204 Customers | Yes (Triadic) | HLM | Yes | (3) e.g. Overall, I am satisfiedwith the decision to come to this store | + | Not tested |
| Evanschitzky, Sharma & Prykop (2012) | R: Financial Services | Relationship MarketingSPC | 18 Employees188 Customers | Yes | Multilevel regression and HLM | Yes  | (2) e.g. Overall how satisfied are you with X? | + | SQ-CS: +ES-SQ: not tested |
| Evanschitzky, Von Wangenheim & Wünderlich, (2012) | H: DIY/garden store | SPC | Customers: 144,965 (yr:2001), 100,351 (yr:2002), 161,922 (yr:2003)Employees: 7,668 (yr:2001), 6,040 (yr:2002), 2,755 (yr:2003) | No | 3SLS regression  | Yes | (2) e.g. Overall, how satisfied are you with X? | + | Not tested |
| Joen & Choi (2012) | R: Private education | Emotional Contagion | 227 Employees227 Customers | Yes  | SEM | Yes  | Does not specify how many items. Items were adopted from Bettencourt (1997). | +Tested CS-ES link – Ns | Not tested |
| Gazzoli, et al. (2013) \* | H: Restaurant Chain | Customers Orientation | 1,117 customers186 employees | No | SEM with aggregation to employee level | Yes  | (3) Adapted from Oliver (1997) | + and fully mediated by interaction quality | ES-SQ: + SQ-CS: + |
| Gounaris & Boukis (2013) | H: Retail Banking | Emotional ContagionSPCSocial Exchange | 604 customers183 employees15 units | No | HLM | Yes  | Does not specify number of items, items were adopted from Fornell (1992). | + | ES-SQ: +SQ-CS: not tested |
| Jung & Yoon (2013)  | H: Restaurant  | Employee SatisfactionCustomer Satisfaction  | 69 employees258 customers | Yes | SEM | Yes  | (4) e.g. Overall, I am satisfied with my experience at this restaurant | + | Not tested |
| Hur et al. (2015) \* | R: Care homes | Emotional ContagionSPC | 282 Employees282 Customers | Yes | SEM | Yes  | (4) e.g. I am satisfied with this social care service and its performance  | + | Not tested  |
| Zablah et al. *(2016)* | H: Retail Apparel | Social Exchange TheorySPC | 49,272 customers1,470 employees | No | Cross-lagged panel data analysis | Yes | (3) e.g. I am completely satisfied with X  | +(Finds reciprocal relationship with CS to ES link predominant) | Not tested |
| Wu (2017) | R: Financial Services | Emotional Labour | 322 Employees322 Customers | Yes | SEM | Yes | (5) e.g. This bank is a good firm to do business with | + | Not tested |

**Table 1:** Dyadic data examining the ES-CS relationship since Brown & Lam (2008). \* The authors refer to employee satisfaction as job satisfaction and service quality as interactive quality or internal quality.

***The Service Environment***

Within the ES-CS literature, hedonic based environments such as travel agencies (Homburget al., 2009) or high-end retail apparel (Zablah, Carlson, Donavan, Maxham III & Brown, 2016) and relationship based environments, such as financial services (Wu, 2017) or professional services (Freyet al., 2013), have received significant attention, whilst utilitarian environments have been largely ignored (see Table 1). It can be challenging to clearly classify services as either relationship, hedonic or utilitarian in nature as some services have attributes of all three types (Arnold & Reynolds, 2003; Jones, Reynolds & Arnold, 2006), however in categorising, we used the dominant aspect for that service relying on the literature for support.

Utilitarian and hedonic services are not necessarily at opposite ends of the same continuum, rather services can be high or low in both hedonic and utilitarian attributes (Voss, Spangenberg & Grohmann, 2003; Okada, 2005). A utilitarian service environment is considered more task oriented or goal focused (Teller, Gittenberger & Schnedlitz, 2013) and relates to achieving an outcome that can help satisfy a need, whilst the motive is about *getting something done* (Jones et al., 2006). This is in contrast to hedonic services, which are considered more of a want, and are seen as *fun, enjoyable, fantasy led*, which result in engagement with the activity because *you love it* (Holbrook & Hirschman, 1982). Both hedonic and utilitarian services offer benefits to the consumer, however, the hedonic benefit is primarily in the form of experiential enjoyment and the utilitarian benefit is usually practical functionality.

In examining utilitarian and hedonic service environments, two key concepts require consideration. The first is that of the situational motivators (Babin, Darden, & Griffin, 1994) which consist of ‘purchase uncertainty' (utilitarian motivator) and ‘disposition towards the salesperson' (hedonic motivator). The second set of concepts are the individual motivators, which are typically discussed in terms of ‘efficiency' (utilitarian motivator) and ‘shopping enjoyment' (hedonic motivator) (Babin et al., 1994; Haas & Kenning, 2014). When customers have hedonic motivations, (the consumer chooses to engage with salespeople due to their liking of the salesperson), they then view interactions differently to those with utilitarian motives (Haas & Kenning, 2014). Whereas in a utilitarian service encounter, such as a grocery retail stores, engagement with a frontline employee at the checkout tends to have an efficiency motive due to the need to pay for their items and leave the store. Examining the ES-CS link in this context is of interest as the rationale for customer engagement is task or goal oriented rather than pursuing an emotional goal as is the case in more hedonic or relational environments. Research has also found that customers may choose to patronize a retailer for which satisfaction is not their sole driver (Hunneman, Verhoef & Sloot, 2015).

In specifying their research approach to hedonic environments, Arnold and Reynolds (2003) requested respondents not to discuss grocery retail stores as they were not considered hedonic. Rychalski and Hudson (2017), in a more recent paper, also classify grocery retail stores as principally utilitarian. This has clear implications for our understanding of the ES-CS link as the types of environments are significantly different. Table 1 shows a relative paucity of utilitarian environments in the recent literature, and this is mirrored in Brown and Lam (2008). Olsen and Skallerud (2011) focus their research on store attributes and shopping value and highlight the need to examine utilitarian environments as understanding these environments can provide better insights to retailers to improve their performance. For example, the employee-customer interaction that occurs in hedonic and relationship-based environments is more intense than that in a utilitarian environment. Whilst customers in grocery retail stores may only have a transactional interaction with the till employee. This is notwithstanding that the interaction could take more time than your average hedonic encounter, as consumers may have many items when grocery shopping, or may only be seeking to speak with a till employee due to purchase uncertainty or efficiency, e.g. item not scanning, or asking for a change of item because they noticed a defect. Furthermore, Wolter et al. (2019, p. 819) highlighted that even limited or infrequent contact between customers and employees can facilitate affective reactions: ‘if customers have some contact with employees in a service that necessitates face-to-face interactions and the observation of service production, employees’ happiness can be contagious and facilitate better service that customers notice’. Therefore, understanding this transactional but engaged contact between customers and employees within a utilitarian environment can provide insight to theory and practice.

Table 1 also shows the range of theoretical frameworks underpinning research on the CS-ES link, and this aspect is discussed next.

***Theoretical Frameworks***

In understanding employee effects on customer outcomes, it is possible to engage in research at either the organizational (store) or the individual (customer) level of analysis. The SPC can be conceptualized at the organizational level (Loveman, 1998; Honget al., 2013) and results have demonstrated that employees play a critical role in shaping customers' perceptions of the service interaction (van Dolen, Lemmink, de Ruyter & de Jong, 2002; Gruber, 2011) and these perceptions help to drive organizational performance (Loveman, 1998). Frontline employees are enablers of customer satisfaction during the customer engagement or service encounter stage (Gazzoliet al., 2013). The customer engagement stage of the customer experience, where employee and customers interact, has received considerable attention in the literature, with the SPC appearing to be the most frequently referred to theoretical perspective in examining the link (Brown & Lam, 2008; Evanschitzky, Von Wangenheim, & Wünderlich, 2012; Hur, Moon, & Jung, 2015).

At the individual level of analysis, theories of emotional contagion in tandem with the SPC underpin extant research approaches. Emotional contagion explains how individuals align their behaviours with others in social situations, through mimicry, to emotionally converge with them (Hatfieldet al. 1994; Von Wangenheim¸ Evanschitzky & Wunderlich*,* 2007). Emotional contagion suggests that the affective state of an individual can be transmitted to other individuals through social interaction (Otterbring, 2017). As outlined in Table 1, emotional contagion is a popular explanation for the relationship between employee satisfaction and customer responses in the extant literature.

Recent work using the SPC has generally shown a positively-valenced direct ES-CS relationship (e.g.; Evanschitzky, Von Wangenheim, & Wünderlich, 2012; Huret al., 2015). For example, a meta-analysis of 58 SPC studies (Honget al., 2013) found general support for the overall SPC and found a weakly positive, but significant, ES-CS relationship. However, these findings are at odds with the meta-analysis conducted by Brown and Lam (2008) who found that the ES-CS relationship was fully mediated by customer perceptions of service quality (SQ). In addition, many of these studies took place in hedonic store environments and the data had been aggregated to the store level (e.g. Chi & Gursoy 2009; Evanschitzky et al. 2011). Thus, there is limited empirical evidence or support for the link in utilitarian environments or when dyadic data is analysed at the employee level. For example, when Homburg et al. (2009) matched the customer to the direct employee that served them, they found no significant relationship between ES and CS. Furthermore, other research implementing the SPC has highlighted non-significant ES-CS relationships. Loveman (1998) found no significant relationship between ES-CS in a personal banking context and Silvestro and Cross (2000) found no significant ES-CS relationship within a grocery retail store, whilst they found a negative relationship between some of the SPC links (e.g. quality and productivity).

Similarly, in looking at prior research using an emotional contagion lens, research generally indicated a positive ES-CS relationship (Payne & Webber, 2006; Joen & Choi, 2012). However, these studies are predominantly, and appropriately, in hedonic or relationship-based environments (Joen & Choi, 2012; Hur et al.*,* 2015), leaving a gap in our understanding of how ES influences CS in utilitarian based environments. Thus, this research addresses concerns about the general acceptance of the ES-CS relationship and investigates the types of data and analysis of the ES-CS link.

***Methodological Implications (Dyadic Data and Analysis)***

Within the literature, dyadic data, which allows employee and customer outcomes to be systematically related to each other, has enabled in-depth analyses of the ES-CS relationship. In many service situations, each employee serves multiple customers and prior research has focused on different approaches to examine these relationships. These differing approaches and the variations that occur when researchers analyse dyadic data are outlined in Table 1. Differences in approach lead to mixed evidence on the relationship between employee and customer outcomes.

As frontline service encounters are dyadic and interactive processes, both the employee and customer experiences are influential (Ma & Dubé, 2011). This dyadic relationship implies that customer data be collected proximate to their interaction with the specific employee being surveyed. Previously some studies did not have the opportunity to directly match customers and employees but instead collected both independently and then aggregated data from the customer to employee level (Evanschitzkyet al., 2011; Gazzoliet al., 2013). Others aggregated both customer and employee data to unit level (Von Wangenheimet al., 2007; Grandey, Goldberg, & Pugh, 2011) using single level structural equation models (Gazzoliet al., 2013). Those who have explicitly matched customers and employees, and used a multi-level design, have typically calculated factor scores and then used these in a multi-level analytical approach such as Hierarchical Linear Modelling (Evanschitzky, Sharma, & Prykop, 2012). Others have employed panel data modelling (Zablahet al., 2016).

Overall, although extant studies provide evidence of the ES-CS relationship at an aggregate level, the majority do not explicitly match employee and customer data, omitting the core component of the dyadic relationship, i.e. the direct contact between the frontline employee and the customer. Where an explicit matching approach was taken for the dyadic data, the results are mixed and researchers have sampled quite different service environments (e.g. Homburg et al. (2009) found a non-significant ES-CS relationship for travel agents whilst Hur et al. (2015) found a significant positive ES-CS relationship in a care home).

In addition to looking at the type of dyadic data, it is imperative to examine how customer satisfaction is being measured. For example, some studies are not asking customers about their satisfaction with the frontline employee who served them, rather it is store level satisfaction that is examined (see Table 1). In addition, a two item (e.g. Evanschitzky et al.*,* 2011) or three item (e.g. Homburg et al.*,* 2009) scale is commonly used for assessing CS. However, these scales focus on the CS at the store level, e.g. ‘all in all I am very satisfied with this travel agency' or ‘all in all I am satisfied with the retailer'. Netemeyer et al. (2010) indicate that they examine the ES-CS relationship within a utilitarian environment and found a positive link, however, they actually examine customer satisfaction with the store and not the level of satisfaction with the interaction with the frontline employee who served them (Netemeyer et al.*,* 2010). Thus, it is difficult to say that employee satisfaction had a direct influence on the customer when it is not the customer's satisfaction with the employee that is being measured. Despite these methodological issues, the preponderance of empirical evidence (see Table 1 and Brown and Lam, 2008), and the underpinning theories (both emotional contagion and SPC), suggest a positive relationship between ES and CS. Therefore, we hypothesize the same outcome for utilitarian environments:

H1: For the customer-employee interaction, employee satisfaction will positively influence customer satisfaction within a utilitarian environment

***Service Quality in Utilitarian Environments***

In defining service quality, Liljander and Strandvik (1997, p.148) highlight that it can ‘be described as a cognitive process, where customers consider the goodness/badness of different components of the service ... by comparing the service performance with some predetermined standard'. There is general agreement within the literature that service quality relates to the employee's attention to the customer, the store's service offering and how well employees provide that offering (Reimer & Kuehn, 2005; Kim & Moon, 2009; Evanschitzky, Sharma & Prykop, 2012). The service quality construct has also formed a key part of the SPC (Heskett et al., 1997), with service quality influencing customer satisfaction (Tam, 2004; Jayawardhena & Farrell, 2011; Hooper, Coughlan & Mullen, 2013). It is only in recent years that both the ES-CS and the SQ-CS link have been tested together with the use of dyadic data, and in line with the majority of the ES-CS research, the nature of the store environments has been hedonic to date, with no utilitarian environments being studied ~~(e.g. Gazzoli et al.~~*~~,~~* ~~2013)~~. This limits managerial understanding of the importance that service quality has on customer satisfaction, as within a utilitarian environment the consumer may put more emphasis on the service quality dimension over employee satisfaction, given that a consumers situational and individual motive is about *getting something done* and not necessarily about the satisfaction they accomplish.

Originally, it was proposed that customer satisfaction preceded service quality (Bitner et al., 1990). However, empirical and conceptual work now widely accepts that service quality precedes customer satisfaction (Heskett et al., 1997; Tam 2004). Lazarus (1982) suggested in his appraisal-emotional response framework that cognitive appraisal occurs prior to affective appraisal. In line with the idea that the more cognitive construct (service quality) should precede the more affective (customer satisfaction) construct (Brady & Robertson, 2001; Tam, 2004) and from the SPC line of thought (Heskett et al., 1997), the following hypothesis was developed.

H2: Service quality will positively affect customer satisfaction within a utilitarian environment

Within the marketing literature, service quality is considered to be driven by employee satisfaction (Evanschitzky, Sharma & Prykop, 2012). This Employee Satisfaction–Service Quality (ES-SQ) link forms part of the key foundation within the SPC (Heskettet al., 1997) and parallels the premise of Internal Marketing (Brown & Bond, 1995), which attempts to facilitate a service market orientation to provide employee-customer engagement and customer satisfaction. The ES-SQ link is considered an important element for managers as it is through enabling the employee via training and giving them the ability to make decisions in serving the customers, that managers expect a positive effect of service quality on customer satisfaction (Slåtten, 2009). Employees that are enabled in their job can provide a better service offering to the customer and tend to be satisfied in the job. Satisfied employees tend to be more engaging and tend to provide higher customer-oriented behaviours such as quality of services (Brown & Lam, 2008; Yee, Yeung & Cheng, 2010, 2011).

Surprisingly many papers, when examining the ES-CS link, do not include the ES-SQ link in their study (see Table 1). For example, Evanschitzky, Sharma and Prykop (2012) looked at service quality and how it influenced customer satisfaction but did not examine how employee satisfaction influenced service quality perceptions in the retail environment. To date, Gounaris and Boukis (2013) is the only published paper that has collected dyadic data to examine both ES-CS and ES-SQ links of the SPC. However, in a similar study, Gazzoli et al. (2013) found that the ES-CS relationship was fully mediated by interaction quality (which they derive from service quality), and also indicated that interaction quality was influenced by job satisfaction (which they derive from employee satisfaction). Given this interesting empirical omission in the literature and the key theoretical relevance that employee satisfaction has on both customer outcomes, i.e. customer satisfaction and service quality, we propose the following hypothesis,

H3: For the customer-employee interaction, Employee satisfaction will positively affect service quality within a utilitarian environment

***Price Competitiveness***

Price perceptions are often used by consumers as a cue for performance expectations of a product or service. These perceptions also act as cues in determining their attitude towards a provider (Han & Ryu, 2009). Whereas customers may not tend to remember the actual price of a product or service, they do however encode prices in a way that gives them meaning (Zeithaml, 2000). When encoding price information, Hamilton and Chernev (2013) suggest that pricing perceptions are defined by customers’ evaluation of the specific price of an item as compared to that of a reference price. When developing their pricing perceptions customers also form an expectation of the general pricing position of a store. This expectation is based on several aspects such as environmental cues and the service level provided and is formed before customers go on to examine the actual price tag of an item in the store (Baker, Parasuraman, Grewal & Voss, 2002; Hamilton & Chernev, 2013). Retail store format may also influence price perceptions (Benoit et al., 2020). Combined these aspects coalesce to determine the consumer's perception of the competitiveness of prices offered by an organization (Ruekert & Churchill Jr, 1984). Positive perceptions of price competitiveness have been shown to lead to higher levels of customer outcomes such as satisfaction (Hunt & Morgan, 1995; Grewalet al., 1999; Wakefield & Inman, 2003). We suggest that positive perceptions of price competitiveness are a crucial part of the value proposition of the grocery retail franchisees included in this study. Thus, in line with the literature, we develop the following hypotheses:

H4a Within a utilitarian environment perception of price competitiveness positively affects customer satisfaction

H4b Within a utilitarian environment perception of price competitiveness positively affects service quality

**Materials and Methods**

***Collection of Dyadic Data***

Grocery retail stores were chosen as an appropriate utilitarian research setting to test our hypotheses. Grocery retail, although not without some hedonic elements, is predominantly functional in nature, and so is a good example of a utilitarian context (Voss et al., 2003). Many consumption experiences like shopping can include both hedonic and utilitarian aspects. However, services such as grocery are principally utilitarian in that the majority of customers use them for functional purposes, with this service fulfilling utilitarian values more strongly and more often than hedonic values (Rychalski & Hudson, 2017). The stores did not include the sale of clothes or accessories and were grid-format in nature. This grid format is a utilitarian layout that allows for task-oriented shopping (Levy & Weitz, 2007). Grid layout ‘is widely favoured by the grocery sector because the majority of customers visiting grocery stores have planned their purchases' (Vrechopoulos, O’Keefe, Doukidis & Siomkos, 2004, p.14). In interviews with ten store managers, as part of the wider study, they used words to describe their stores that emphasized its utilitarian nature (e.g. grid format, planned purchasing).

Customers tend to spend a considerable period in grocery retail environments and therefore their satisfaction is likely to be affected by employee and store level variables. The current research was conducted with franchisees of a major retail group, similar to Evanschitzky et al. (2011), in Ireland. Franchised stores, in this network, have a common approach to staff training and development supported strongly by the franchiser organization. Permission was gained from the franchiser to approach franchise operators about the research. Data collection proceeded in two phases. With the aid of the franchiser organization, contact was established with 15 retail stores in the Dublin region. These 15 were chosen to provide a balanced sample of the stores to control for possible external effects that could bias results in a systematic manner.

The first step involved a qualitative study with frontline employees, customers and managers of these retail stores, with the core aim of gaining a fuller understanding of the customer experience at the store. Initially, several in-depth discussions took place with the head of store development for the franchise. With their support for the research, 15 franchises were contacted and informal phone discussions (c. 20-30 mins) took place with 10 managers of the franchises (one manager looked after four stores). Following from these, four in-depth interviews were carried out with the franchise store managers (c. 60 mins) and four in-depth interviews with customers (c.45 mins). Before having the interviews with the managers, they were sent a pilot copy of the customer questionnaire, the employee questionnaire and manager questionnaire to have a look at and discuss at the interview. One of the managers that was interviewed worked at the stores that belonged to the group that had four franchises.

With the support of the managers, the researcher had informal conversations with several employees in store regarding the employee questionnaire. Customers were sent the customer questionnaire only. These in-depth and informal interviews were used to pre-test the questionnaire and to clarify and improve the scales. During these formal and informal interviews, it was highlighted how the stores were task oriented, contained a grid layout and that the stores were viewed as utilitarian in nature. Following Newman (2007), we adapted questions based on suggestions from respondents that some of the terminology was outdated.

As all scales were measured on a self-reported basis, several steps were taken to reduce social desirability bias. Firstly, with the retail franchise owners, the independence of the university was stressed, and it was made clear that no individual store results would be sent back to the franchiser. Secondly, when administering the questionnaire to the employees and customers, the importance of genuine answers was highlighted and that all responses were confidential. Thirdly, the employee questionnaire was administered in a quiet area of the store when their managers were not in attendance and they were assured that their participation was voluntary. Fourthly, all participants were provided with a written declaration, approved by the university, that all data was anonymous, and that no individual would be identified in the research outputs. Fifthly, all the research was conducted during a short three-week time period, so that the effect of extraneous macro-environmental issues in the grocery industry was minimized. Finally, we used code numbers to match customer and employee questionnaires.

To achieve a high level of response, members of the research team personally administered all questionnaires and ensured the matching was correct. Employee questionnaires were collected at the start of the session in store and customers were asked to participate as they left the store similar to van Dolen et al.(2002). Podsakoff, MacKenzie, Jeong-Yeon and Podsakoff (2003) highlighted that by obtaining measures of the predictor and the criterion variable from separate sources; common method bias can be partially controlled. Homburg and Stock (2004) noted that in their approach to collect dyadic data, they might have brought about a systematic bias by asking employees to choose their customers. To achieve the best possible response and to ensure the correct matching of the dyadic data, a similar procedure to Homburg et al.(2009) took place where the researcher selected the customers and matched them to the employee.

Sample size determination is challenging for multi-level models and estimating an appropriate sample size to ensure that sufficient power is available to estimate the relationships is complex (Mathieu, Aguinis, Culpepper & Chen, 2012; Aguinis, Gottfredson & Culpepper, 2013). In line with Mathieu et al. (2012), this research chooses employees across organizations as this reduces the possibility of constraining variance across levels. We choose to concentrate on gathering data from more level 2 (till employees) rather than gathering more customer data (level 1) per employee to improve the power of our results (Snijders & Bosker, 1999). Bearing in mind the advice of Mathieu et al. (2012), we aimed to have an average number of customers per employee of around 10. Mass and Hox (2005) found little effect of different sized level one samples beyond the mean sample size. Our approach also includes covariates at both levels, which has been shown to improve the power of statistical results in multilevel models (Raudenbush, 1997). Usable data was obtained for 974 customers and 95 till employees. Every till employee that was working on the tills for more than one hour was used in the research. Every third customer was approached to answer the customer questionnaire. Similarly, to Evanschitzky et al. (2011) the response rate for customers is impossible to calculate due to the number of customers per store being unknown.

***Measurement***

The measurement scales came from the literature with minor adaptations for context based on the initial qualitative data collected. All ratings were on a 7-point Likert scale. In previous dyadic research examining these constructs, authors have used various measurement items for the customer satisfaction factor (Von Wangenheimet al., 2007; Yeeet al., 2011). In keeping with past research (Oliver, 1997), the customer satisfaction factor was based on items that have been used frequently to examine specific service attributes. However, this research specifically examined the satisfaction of customers with their till employee and not store level satisfaction, which parallels the Dietz, Pugh and Wiley (2004) study on till employees in banks. Similarly, previously tried and tested measures were used for the employee satisfaction factor. Babin and Boles' (1998) research on job satisfaction has provided a global measure of employee satisfaction (Homburg & Stock, 2004; Homburg et al.*,* 2009). Previous research has broken service quality into dimensions such as employee service quality (Bakeret al., 1994; Yeeet al., 2011) or overall quality (Reimer & Kuehn, 2005). We took items developed by Brady and Cronin (2001) and Baker et al.(1994) that did not overlap to develop a more comprehensive scale.

Price competitiveness was a one-item 7-point Likert scale question, i.e. ‘in comparison to other stores within a 5 km radius, this stores pricing is competitive'. This item was developed through discussions with the managers of the grocery stores and stemming from previous measures of price competitiveness (e.g. Grewal et al., 1999). In particular, Grewal et al. (1999) highlight that price competitiveness relates to the likelihood of a firm providing relatively lower prices in comparison to other firms, thus a single item of the direct comparison with other stores was deemed appropriate to measuring price competitiveness. Furthermore, as Bergkvist and Rossiter (2007, p. 175) conclude, for many marketing constructs that consist of a singular concrete attribute, ‘single item measures should be used'.

***Covariates***

A number of both customer and employee-related covariates were included in the research design to test the robustness of the hypothesized relationships. At the customer level we controlled for gender, age and level of spend in store. Level of spend was chosen as a covariate as extant research (Homburg & Stock, 2005; Fornell, Rust & Dekimpe, 2010) demonstrates a strong positive relationship between customer satisfaction and spending patterns. We controlled for gender and age at the employee level.

***Modelling Approach***

The customer data was collected in relation to specific employees; therefore, we would expect an employee level effect. This was tested by calculating Intra-Class Correlation Coefficients (ICCs) for the measured items. ICCs were calculated as per Muthén and Muthén (1998-2017) where the ICC is between-level variance over the total variance (between-level plus within-level). The ICCs for the employee satisfaction items were between 0.120 and 0.236. The ICCs for customer satisfaction items were low (0.015 to 0.022). The low level of variation in customer responses was expected given that the stores are relatively homogeneous in terms of their service strategy. However, ICCs, even as small as 0.01, can bias results if the multilevel nature of the data is not considered (Tabachnik & Fidell, 2013). A multi-level mediation approach is employed to investigate the relationship between constructs at different levels (Preacher, Zhang & Zyphur, 2011). This has an advantage over standard mediation methods in that it explicitly takes the multi-level nature of the data into account (Lachowicz, Sterba & Preacher, 2015).We tested our hypotheses in a multi-level structural equation (MLSEM) model using MPlus controlling for store level effects through correcting the standard errors for stratification effects.

**Results**

The profile of the customer respondents was 67% female and the majority (64%) were aged between 26 and 55. The employee respondents were predominantly (72%) female, and 80% were aged between 18 and 35. This demographic profile was considered to be reasonable for grocery retail stores when reviewed with store management. The model without structural paths and covariates was run to test for measurement issues following Anderson and Gerbing (1988). Based on a further review of prior research and ensuring robust validity of the constructs, items with low reliabilities and low loadings on constructs were removed. The final level of fit was good with χ2(94) = 229.016; RMSEA = 0.037; CFI = 0.978; TLI = 0.972 SRMR(customer) = 0.046, SRMR(employee) = 0.172 (Bagozzi & Yi, 2012). The high level of SRMR at the employee level is a cause for concern. Inspection of the loadings on the three constructs at this level showed high values (all above 0.9) so therefore we proceeded with the analysis in light of the other good fit results. Table 2 displays the psychometric properties of the focal scales.

**Table 2:** Items, Loadings & Reliabilities

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Construct** | **Item wording** | **Loading** | **Std Error** | **CR(ω)** | **AVE**  | **Alpha** |
| **Customer Level** | How satisfied were you with the service you received from the employee at the checkout in terms of... |  |  |  |  |  |
| Customer Satisfaction | Providing an accurate service for me | 0.910 | 0.012 | 0.942† | 0.825 | 0.958† |
|  | Willingness to help me | 0.932 | 0.011 |  |  |  |
|  | Making me feel secure about my transactions | 0.952 | 0.009 |  |  |  |
|  | Showing sincere interest in me | 0.798 | 0.019 |  |  |  |
|  |  |  |  |  |  |  |
| Service Quality | Employees give me personal attention | 0.768 | 0.019 | 0.877† | 0.666 | 0.914† |
|  | The store offers high-quality service | 0.910 | 0.016 |  |  |  |
|  | Employees are not too busy to respond to me | 0.687 | 0.034 |  |  |  |
|  | I believe the store offers excellent service | 0.880 | 0.022 |  |  |  |
|  |  |  |  |  |  |  |
| **Employee Level** |  |  |  |  |  |  |
| Employee Satisfaction | Generally speaking, I am very satisfied with this job | 0.834 | 0.054 | 0.921 | 0.664 | 0.920 |
|  | I like my job | 0.888 | 0.039 |  |  |  |
|  | There are no fundamental things I dislike about my job | 0.795 | 0.043 |  |  |  |
|  | I like my job more than many employees of other companies | 0.664 | 0.081 |  |  |  |
|  | I consider this employer as first choice | 0.790 | 0.048 |  |  |  |
|  | I am generally satisfied with the kind of work I do in this job | 0.895 | 0.028 |  |  |  |

†: This is a level specific α and ω value as per Gedhof et al. (2014). Employee satisfaction is modelled at one level only.

In a similar manner to Irfan et al. (2019), Composite Reliability (CR) and Average Variance Extracted (AVE) values were calculated for each construct. An assessment of multi-level reliability was carried out for customer satisfaction and service quality factors as they are estimated on both levels of the model (Geldhof, Preacher & Zyphur, 2014). The within- and between-level composite reliabilities (ω) for customer satisfaction were 0.942 and 0.958 respectively. The within- and between-level composite reliabilities (ω) for service quality were 0.877 and 0.985 respectively. Geldhof et al.(2014) suggest that level specific α is a better estimator of reliability in the case of dyadic data and as a result this has been included in Table 2. All AVE estimates were greater than 0.660 and all CRs were greater than 0.870 (Bagozzi & Yi, 2012) providing very good evidence of convergent validity. Further evidence of convergent validity was that all factor loadings were greater than 0.650, the t-values were significantly greater than 2, and each loading was greater than twice its standard error (Anderson & Gerbing, 1988). To assess discriminant validity, the square roots of the AVEs were assessed against the inter-construct correlations (Fornell & Larcker, 1981) as per the diagonals within Table 3. All were higher than the inter-construct correlations thus demonstrating evidence of discriminant validity.

**Table 3:** Inter-construct Correlations

|  |  |  |  |
| --- | --- | --- | --- |
|  | CSc | SQc | ESe |
| CSc | 0.908 |  |  |
| SQc | 0.489 | 0.816 |  |
| ESe | -0.020 | 0.026 | 0.821 |

Notes: The diagonal holds the square root of the Average Variance Extracted (AVE). c denotes measurement at customer level and e denotes measurement at employee level. p values are as follows (CS – SQ, p= 0.000; CS-ES, p=0.932; SQ-ES, p=0.855).

The results of the MLSEM analysis are depicted in Figure 1, and Table 4. The fit statistics show an acceptable level of fit, χ2(139) = 360.777; RMSEA = 0.041; CFI = 0.964; TLI = 0.956; SRMR(customer) = 0.047, SRMR(employee) = 0.213 (Bagozzi & Yi, 2012). Figure 1 shows a lack of support for H1 and H3 and strong support for H2, H4a and H4b. The hypothesized relationships between employee satisfaction and service quality (H1: γ = 0.060, p = 0.898) and customer satisfaction (H3: γ = -0.063, p = 0.807) were not supported in our model. The hypothesized relationships between service quality and customer satisfaction (H2: γ = 0.433, p = 0.000), and between price competitiveness and service quality (H4a: γ = 0.406, p = 0.000) and customer satisfaction (H4b: γ = 0.160, p = 0.000) were supported.

**Figure 1:** Structural Model

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The age of the customer has a significant negative effect on service quality (γ = -0.101, p = 0.026) showing that older customers have lower perceptions of service quality. The level of spend in store moderately negatively (γ = -0.096, p = 0.068) affected service quality but positively (γ = 0.068, p = 0.028) affected customer satisfaction. At the employee level, employee age had a significant (γ = -0.334, p = 0.000) negative effect on employee satisfaction, whereas employee gender had no significant effect (γ = -0.014, p = 0.905).

**Table 4:** Structural Model Results

|  |  |  |  |
| --- | --- | --- | --- |
| ***Within Level*** |  |  |  |
| *Effect* | *Standardized Coefficient* | *Standard Error* | *p-value* |
| *Hypotheses* |  |  |  |
| H2: SQ – CS | 0.433 | 0.063 | 0.000 |
| H4a: Price competitiveness – SQ | 0.406 | 0.052 | 0.000 |
| H4b: Price competitiveness – CS | 0.160 | 0.060 | 0.007 |
| *Controls:*  |  |  |  |
| Customer Age – SQ | -0.101 | 0.045 | 0.026 |
| Spend – SQ | -0.096 | 0.052 | 0.068 |
| Spend – CS | 0.068 | 0.031 | 0.028 |
| ***Between Level*** |  |  |  |
| *Effect* | *Standardized Coefficient* | *Standard Error* | *p-value* |
| *Hypotheses* |  |  |  |
| H1: ES-CS | -0.063 | 0.257 | 0.807 |
| H3: ES-SQ | 0.060 | 0.466 | 0.898 |
| *Controls:*  |  |  |  |
| Employee Gender – ES | -0.014 | 0.116 | 0.905 |
| Employee Age - ES | -0.331 | 0.077 | 0.000 |

**Discussion**

***Theoretical Implications***

This research makes a number of theoretical contributions to literature in the domain. Firstly, these findings challenge the premise of the oft cited ES-CS link of the SPC, suggesting that the type of service environment (hedonic, relationship, utilitarian), plays a more significant role in understanding the complex ES-CS relationship than previously thought. While existing research on the ES-CS link provides important and significant insights, this research posits that its’ explanatory power may be limited to specific service environments. Whilst the ES-CS link reflects a positive association in hedonic and relationship environments, within utilitarian environments employee satisfaction may have little or no direct consequences for customers due to their situational and individual motivators.

Secondly, in using matching dyadic data and finding no significant relationship between employee satisfaction and customer satisfaction or service quality, this research provides thought-provoking challenges to existing theory. The comparatively small number of studies to date, as shown in Table 1, that take this explicit matching approach demonstrates that true dyadic matching is still quite rare in this field. Most prior research that matched customers and employees directly using dyadic data (Evanschitzky, Sharma & Prykop, 2012; Jeon & Choi, 2012; Huret al., 2015) have found a positive relationship between the ES-CS. The exception is Homburg et al. (2009). However, these studies were conducted in a relationship or hedonic service environment and further research on utilitarian environments using dyadic data is warranted.

Furthermore, though using matching dyadic data is now becoming more prevalent in research, existing research often fails to fully account for the dyadic nature of the data and inadvertently introduces bias, for example by not collecting the data at the same time from both sets of respondents on the day they interacted. Gathering data immediately from the customer, whilst they are still in the store, ensures that they remember clearly the interaction that they had. In addition, collecting data from the frontline employees proximate to when they served their customers helps to ensure the quality of the data. Gathering this type of data is time consuming and requires robust data collection procedures but gives a key insight into the dynamics of complex relationships. The use of matching dyadic data combined with MLSEM is a beneficial way to model these complex data sets. The method of collection has the advantage of removing a significant source of common method bias (Podsakoff et al.*,* 2003; Evanschitzkyet al., 2011). Furthermore, the MLSEM approach in this research facilitated modelling of the conventional situation where a single employee can serve multiple customers.

In addition to the matching dyadic data, this research examined customer's satisfaction with the employee that served them. Previous research, when measuring customer satisfaction, has looked at customer satisfaction with the store, and user satisfaction with the store, as a proxy measurement to link employee satisfaction with the customer. This research found no ES-CS link when customer satisfaction was measured on their satisfaction with the employee. This is of significant interest to researchers and practitioners as this research directly links customer satisfaction to the employee and found no significant relationship between them.

In relation to the effect of price competitiveness on customer satisfaction and service quality, we found that the perception of price competitiveness had a positive effect on both customer satisfaction and service quality with a higher coefficient reported for service quality. This may be indicative of a value for money perception by customers in a competitive retail grocery environment, which helps to drive custom to the store (Benoit et al., 2020). The evidence suggests that this value for money perception could influence higher customer satisfaction and service quality. Higher level of spend had a positive effect on customer satisfaction in line with the extant literature but no significant at the 5% level, effect on service quality. In the current grocery retail environment of diminishing margins, there are likely to be fewer employees in the store to service customer queries and provide the high-quality service that customers who spend more expect. This is particularly apparent from in-depth discussions with retailers who noted that they were operating their stores with fewer employees, thus providing a rationale for the unexpected negative effect of spend on service quality.

Thirdly, while the direct ES-CS relationship was not found by the Brown and Lam (2008) meta-analytic study, they did find a mediated relationship through service quality perceptions. Our findings do not support this indirect path and we suggest that the utilitarian environment and the types of service encounters within them (e.g. the interaction that occurs between till employees and customers, which may be the only interaction that occurs in a grocery store environment) could be a key influential consideration for ES-CS and ES-SQ relationships. For example, in their research on grocery retail stores, Hunneman et al. (2015) suggested that fast till checkouts have the largest impact on customers’ store satisfaction and that customer friendly personnel had a much lower effect. In looking at the customers' satisfaction responses, the results suggest that customers were strongly satisfied with till employee providing an accurate service, though fast checkouts were not examined in this research. However, there is strong evidence in the literature for the link between service quality and customer satisfaction (Brady & Robertson, 2001; Hooper et al., 2013), and this was reflected in our findings.

***Managerial Implications***

In this research, employee satisfaction did not lead to customer satisfaction or impact perceptions of service quality. However, this does not imply that employee satisfaction should be neglected as a construct. On the contrary, employee satisfaction has been shown to be a key driver of employee loyalty (Heskettet al., 1997; Loveman, 1998). Employee satisfaction is also associated with positive performance outcomes (Sharma, Kong & Kingshott*,* 2016), contributing in turn to the store’s brand image (Sirianni, Bitner, Brown & Mandel, 2013). While this research suggests that employee satisfaction does not directly influence customer satisfaction, it is not the only one to do so (Homburg et al., 200;, Kantabutra, 2011; Gazzoli et al.*,* 2013), though prior studies have not considered utilitarian contexts utilising a MLSEM approach.

This paper highlights that other variables should be included to better understand the ES-CS relationship in utilitarian environments and that there are many variables that managers should consider that directly influence customer satisfaction, e.g. price competitiveness and service quality. As this paper indicated, the price competitiveness perceptions of customers had significant direct effects on both perceptions of service quality and customer satisfaction. The price competitiveness of the store is a key component of the value proposition offered to customers. Providing value to customers is crucial to maintaining a competitive position within the marketplace for the retailers studied. For example, the focus for managers in retail stores should be to consider how products are displayed and organized in the store, as well as developing the competences of their employees (Bäckström & Johansson, 2017).

It is important to highlight that the lack of a link between employee satisfaction and customer satisfaction is not problematic if the customer does not value the interaction. Hunneman et al. (2015) suggested that consumers become more price (rather than quality) sensitive during economic downturns. Price competitiveness had a significant influence on customer's satisfaction and not on the interaction they received from an employee. An additional managerial implication is that the level of interaction customers expect from the frontline employee influences the possibility of an ES-CS connection existing at all. Within grocery retail stores, there is a growing trend towards less reliance on employee-customer engagement in frontline services. Some customers are more interested in speed and accuracy than contact with employees (Collier & Kimes, 2013). This is reflected in a trend towards self-service tills, which can be seen across most larger grocery retailers (Demirci Orel & Kara, 2014) and is coupled with a dramatic increase in their use (Leung & Matanda, 2013). Managers need to consider the level and nature of the interaction sought between customers and employees and manage resources accordingly.

**Conclusion**

This research has assessed the ES-CS link within a utilitarian context, drawing on dyadic data from customers and employees at the employee-level. Our outcomes challenge the premise of a positive relationship between employee satisfaction and customer satisfaction as reported in previous research while also implying that the explanatory power of existing research may be limited to specific hedonic or relationship-based environments. However, we do not claim that employee satisfaction is unimportant for managers to consider in a utilitarian setting, rather we highlight that there are other key elements that directly influence customer satisfaction that should be considered; specifically, price competitiveness and service quality. Our contradictory findings highlight the need for additional customer and employee interaction research within utilitarian contexts, for example utilitarian environments which have more employee-customer engagement. While the oft-cited satisfaction mirror is not shattered, it does seem to have some cracks at least in a utilitarian context.

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