



Does information and communication technology improve job satisfaction? The moderating role of sales technology orientation



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ARTICLE INFO

Article history:

Received 20 October 2012

Received in revised form 13 May 2013

Accepted 9 January 2014

Available online 12 July 2014

Keywords:

Information and communication technology

Job satisfaction

Administrative performance

Outcome performance

Technology orientation

ABSTRACT

Empirical research concerning the role of information and communication technology (ICT) in shaping business-to-business salesforce job satisfaction remains relatively scarce. The authors propose and empirically test a causal model that theoretically represents structural relationships among factors comprising ICT and eventual salesperson job satisfaction. Study results indicate that ICT indirectly influences job satisfaction through salesforce administrative performance. While ICT infrastructure, training, and support positively relate to administrative performance, none of them influence outcome performance significantly. In addition, salesperson technology orientation moderates the effect of both ICT infrastructure and support on job satisfaction. Managerial insights and implications from the research are discussed.

Published by Elsevier Inc.

1. Introduction

Firms continue to invest substantial resources in information and communication technology (ICT) infrastructure, training, and support with the hope of enhancing the capabilities of their salesforce. Modern technology augments business-to-business (B2B) salesforce activities with better ICTs than ever before. Information technology is fundamental to a firm's growth and represents a primary tool for enhancing B2B salesforce performance. Research shows that communication technologies enhance salesforce activities including employing market intelligence, managing their customer contacts, submitting sales call reports, and developing sales forecasts (Gohmann, Guan, Barker, & Faulds, 2005). While the sales literature contains a fair amount of research on adoption and usage of information technology applications, the role that ICTs play in shaping salesperson job satisfaction remains understudied.

The current study presents unique contributions to sales technology literature in four distinct ways. First, an extensive literature provides evidence concerning sales technologies including salesforce automation (SFA) and customer relationship management (CRM). SFA involves the

use of computer hardware and software applications to convert manual sales activities to electronic processes (Erffmeyer & Johnson, 2001; Rivers & Dart, 1999). CRM uses technology to manage customer interactions and transactions (Zoltners, Sinha, & Zoltners, 2001). However, Hunter and Perreault (2006) and Marshall, Moncrief, Rudd, and Lee (2012) argue that today's salespeople use a wide range of technologies that may go beyond the classification as either CRM or SFA. Therefore, Hunter and Perreault (2006; 2007) coin the term *sales technology* (ST) as a broader concept including all information technologies salespeople use in performing the selling function. However, this definition does not explicitly describe just what all the various technologies might be. Similarly, others (Erffmeyer & Johnson, 2001; Honeycutt, 2005) argue that SFA refers to different things to different people or firms. For example, one organization may deem a tablet computer as an SFA tool, but another may not. These definitions focus on "information technologies" and do not address the more general case of "communication technologies."

In practice, communication technologies are critical in B2B selling environments. Today, the professional salesperson has at his or her disposal a range of communication devices and applications including tablet computer/smartphone apps, blogs, wikis, social media networking sites, data warehouses, and various near-field communication capabilities. Hence, the present generation of salespeople employs a variety of communication technologies including social media and mobile Internet technology that go beyond the traditional boundaries of CRM, SFA, and ST (Hunter & Perreault, 2006; Marshall et al., 2012). For example, pharmaceutical sales representatives are currently practicing e-detailing,

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which uses a rich variety of new and intricate ICTs, including electronic video conferencing, interactive voice response, online video presentations, and social media (Alkhateeb & Doucette, 2008).

Our study takes a holistic approach in understanding the role of ICT on salesforce performance and job satisfaction. ICT is a well-defined and widely used construct in the information system literature and encompasses computer and communication technologies, shareable technical platforms and databases, networking technologies, broadcast media, and audio and video processing and transmission (Chung & Hossain, 2010; Davenport, Hammer, & Metsisto, 1989; Ross, Beath, & Goodhue, 1996; Schaper & Pervan, 2007; Weill, Broadbent, & Butler, 1996). Because ICT plays an important role in any organization and the use of novel and sophisticated ICTs continue to emerge in B2B selling, it is undoubtedly an important topic that deserves sales researchers' attention. Researchers indeed call for more substantive research dealing with sales ICT practice and its effectiveness (Brady, Fellenz, & Brookes, 2008; Marshall et al., 2012).

Second, the study explores the effects of previously untapped constructs related to ICT such as a firm's ICT infrastructure and support. As a firm's investment in sales ICTs continues to grow especially in B2B industries, the use of ICTs has become an integral part of a salesperson's daily routine. A firm's investment in ICT can influence sales performance and job satisfaction. However, any such influence is likely moderated by salesperson technology orientation. Therefore, the study sheds light on the efficacy of salesforce ability and propensity to use ICTs as a driving force of job satisfaction. Given that salesforce turnover can be very costly and poses a serious challenge to B2B firms, understanding the influence of ICT and firms' job enrichment efforts such as technology infrastructure and support on salesforce job satisfaction and retention has become crucial to firms' ability to sustain sales performance.

Third, previous research relies primarily on sales volume (in units or dollars) as a principal indicator of salesperson performance (e.g., Ahearne, Hughes, & Schillewaert, 2007; Ahearne, Jones, Rapp, & Mathieu, 2008; Morris, Davis, Allen, Avila, & Chapman, 1991). Lately, research suggests two key dimensions of salesperson performance: administrative performance (nonselling performance or sales-related administrative performance such as call planning and reporting) and outcome performance (selling performance such as generating sales volume and sales revenue) (e.g., Baldauf, Cravens, & Piercy, 2005; Sundaram, Schwarz, Jones, & Chin, 2007). To date, little is known about the differential antecedents and outcomes of the two performance dimensions. Sundaram et al. (2007) underline the importance of salesperson administrative performance and emphasize a need for further research into the effects of sales technology on the different dimensions of sales performance. Thus, the current study addresses this issue.

Finally, despite decades of research, the relationship between job performance and job satisfaction remains a topic of ongoing controversy. Extant literature offers two opposite points of view concerning this relationship (i.e., job satisfaction leads to job performance or job performance leads to job satisfaction). Over the last few decades, researchers gravitated toward the view that job performance exhibits a weak but positive relationship with job satisfaction (e.g., Brown & Peterson, 1993, 1994). In light of such conflicting findings regarding the performance–satisfaction relationship, the secondary goal of our study is to examine whether different dimensions of job performance (e.g., administrative and outcome) have different impacts on job satisfaction.

2. Literature review

Prior research on salesforce technology in B2B personal selling can be grouped into three streams. As shown in Table 1, extant research focuses on SFA (e.g., Erffmeyer & Johnson, 2001; Rivers & Dart, 1999). These studies report a strong impact of SFA on sales performance (e.g., Jelinek et al., 2006; Ko & Dennis, 2004) and sales

productivity through better account prospecting, development, and buyer profiling (Pullig, Maxham, & Hair, 2002). The second cluster of studies investigates the efficacy of sales-based CRM (e.g., Ahearne et al., 2007; Zoltners et al., 2001) and its impact on salesperson performance (e.g., Ahearne et al., 2004; Ahearne et al., 2008) and call productivity (Ahearne et al., 2007). The third line of research introduces the term *sales technology*, which includes a range of information technologies meant to facilitate or enable performance of sales tasks (Hunter & Perreault, 2006; 2007). The studies suggest a direct impact of sales technology on internal role performance and an indirect effect on performance with customers.

Most sales research studies rely on a narrow concept of sales technology with a focus on a specific sales technology package and its impact on sales effectiveness. However, not all B2B salespersons access and use such information technology resources (e.g., SFA and CRM). Rather, in most cases, firms install and maintain a common set of ICTs that are used by employees, including the salesforce. Considering the crucial role of ICTs in B2B selling, it is critical to have a general understanding of the holistic contribution of ICT to salesforce performance and job satisfaction.

3. Proposed model and hypotheses

The proposed causal model (see Fig. 1) is grounded in several bodies of knowledge. These include the *social exchange theory*, which assumes that human behavior is an exchange of rewards between actors; the *job characteristics model* of work motivation, which illustrates the potential impact of job characteristics on job outcomes; and the *balance theory*, which is a psychological theory that highlights the desire for consistency. Fig. 1 posits relationships between three ICT-related exogenous constructs (i.e., infrastructure, training, and support) and three endogenous constructs (i.e., administrative performance, outcome performance, and job satisfaction). ICT factors exert direct and indirect effects on job satisfaction through administrative performance and outcome performance. Furthermore, technology orientation moderates the relationship between ICT factors and job satisfaction.

In this study, ICT *infrastructure* is defined as a salesperson's perceptions of a firm's investment in sales-related ICT resources including hardware, software, staffing, and sophisticated Internet applications. ICT *training* refers to the extent to which salespeople believe that they receive sufficient sales-related ICT training to use ICT tools. ICT *support* involves a salesperson's perceptions regarding the firm's provision of inputs that are needed to engage in the efficient use of ICT resources. Support may include the availability of specialized personnel manning a help desk, an information center to answer users' questions regarding ICT usage, troubleshooting capabilities, and hands-on support to users before and during usage (Bhattacharjee & Hikmet, 2008). In line with Sundaram et al. (2007), we define *administrative performance* as the extent to which ICTs affect the quality of salesperson planning, time management, and reporting. "Submitting required reports on time" is an example of salesperson administrative performance (Hunter & Perreault, 2007). *Outcome performance* refers to "the extent to which the technology affects the quality of the salesperson's ability to produce key sales results" (Sundaram et al., 2007, p. 111) and represents quantitative results of the salesperson's efforts (Baldauf et al., 2005). In this study, *technology orientation* is defined as a salesperson's propensity and analytical skills needed to use firm-specific ICTs in performing sales tasks (Hunter & Perreault, 2006).

3.1. Impact of ICT factors on salesperson performance and Job satisfaction

Job satisfaction represents an individual's psychological well-being on the job (Singh, Goolsby, & Rhoads, 1994). Various models propose, test, and try to explain the impact of job design on employee job satisfaction. For example, Hackman and Oldham's (1976) job characteristics model (JCM) suggests that various job characteristics (e.g., skill variety

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