Customer-salesperson interaction technologies: Are robo-advisors replacing personal selling?

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Abstract

With the development of digital sales tools, e.g. robo-advisors, and its adoption by consumers, sales management is changing rapidly. This development may lead into disintermediation of salespeople as technologies emancipate consumers to inform themselves about offerings. Consequently, consumers may not view the buying process necessarily driven by humans. Whereas research has already surveyed the perspective of salesperson technology adoption, little is known about the consumer perspective when it comes to customer-salesperson interaction technologies. Thus, our main contribution is to compare different levels of customer-salesperson interaction technologies and its impact on behavioral constructs. Using experiments, we contribute to the literature by investigating how different forms of customer-salesperson interaction technologies impact customer perception. Second, we contribute to the growing robo-advisory literature by demonstrating how robo-advisory is perceived by customers.

Keywords: *Salesperson, Technology, Robo-Advisor*
Track: *Sales Management and Personal Selling*

1. Introduction

Traditionally, the salesperson has been the leading player in a buyer-seller dyad (Zboja, Clark, and Haytko, 2016). However, driven by the development of digital technologies and tools, consumers have changed their buying behavior according to the adoption of interactive new media (Crittenden, Peterson, & Albaum, 2010). As interactive new media increases the availability of information to a maximum, it is not surprising that on the one hand rising customer expectations and on the other hand consumer avoidance of buyer-seller negations impact personal selling and sales management (Anderson, 1996). Today, consumers are more sophisticated than ever before and are buying without the aid of sales personnel (Verma, Sharma, and Sheth, 2016). Ahearne and Rapp (2010) conclude that the more upcoming technologies enable the consumer to make an educated buying decision on its own, the higher the probability is that disintermediation of salespeople will occur. On a salesperson–customer interface technology continuum they propose on the one end salesperson-specific technologies, i.e. technologies used solely by the sales representatives. They point out that in most circumstances customers do not see or are not even aware of technology use. On the other end they consider customer-specific technologies as technologies used solely by the customer. They propose that these technologies may eliminate the role of the salesperson. Thus, this end reflects a potential for disintermediation of salespeople. It can be proposed that consumers may no longer be exclusively driven by human contact or they even may not require human contact for buying decision making anymore (Moncrief, 2017; Ahearne & Rapp, 2010; Moore, Raymond, and Hopkins, 2015; Marshall, Moncrief, Rudd, and Lee, 2012).

With respect to technology, the research on sales from the salesperson perspective has been extensive so far (Sharma & Sheth, 2010). With respect to consumer self-service technologies studies have revealed that technology acceptance is driven by ability and ease of usage (Meuter, Bitner, Ostrom, and Brown, 2005; Brown, Venkatesh, Kuruzovich, and Massey, 2008). However, we see a distinct gap in the analysis of different levels of customer-salesperson interaction technologies. So far, it remains unknown, if customer-specific interaction technologies (CSIT) impact disintermediation of salespeople. With the growth of robo-advisors a perfect proxy for these technologies can be used for the analysis of effects on central consumer constructs. Consequently, we follow the argumentation of Anderson (1996) and Ahearne and Rapp (2010) and test the effect of either robo-advisors as a form of selling without human contact or human-driven personal selling in an investment advise setting. As a third option, we consider a hybrid form of personal selling with technology support, hence

depicting different positions on the proposed salesperson–customer interface technology continuum.

2. Theoretical background and research propositions

As suggested by the relationship marketing paradigm as well as social exchange theory, trust (Pavlou, 2003), perceived risk (Sheth & Parviatar, 1999; Pavlou, 2003), psychological reactance (Brehm, 1966) and perceived use (Thibaut & Kelley, 1959) are important concepts of buyer-seller-interactions - especially in the online (e-commerce) context. In accordance with the conceptualization of Ahearne and Rapp (2010), we consider personal selling as close relational exchanges with a maximum of social interaction, thus describing the maximum of salesperson-oriented interaction technologies on the proposed salesperson–customer interface technology continuum. On the other hand of the continuum, we consider robo-advisors as discrete exchanges characterized by no social interaction. Robo-advisors are solely used by the customers and thus, eliminate the role of the salesperson. Robo-advise can be defined as digital investment advice tools that match consumers on the basis of their personal preference to financial products (Ringe & Ruoff, 2018). It should be noted, that a key characteristic of robo-advisors is the absence of any human contact between the advisor and the customer (Fisch, Laboure, and Turner, 2017). Thus, employing these concepts in the uncertain context of robo-advisors as a new form of online selling is also reasonable. Therefore, perceptions of trust, risk, psychological reactance and use are likely to be important factors in consumer acceptance of robo-advisors

2.1 Trust

According to social exchange theory (Thibaut & Kelley, 1959), people form exchange relationships on the basis of trust and perceived risk. Trust is defined as "confidence in the exchange partner's reliability and integrity" (Morgan & Hunt, 1994). It is viewed as an important component for successful relationship building (Stewart, Pavlou, and Ward, 2002). However, exchange relationships that are likely to cost more than the potential reward will be avoided. On the Internet, customers typically perceive higher risk compared to a conventional shopping environment (Tan, 1999) due to distance, virtual identity, and lack of regulation. Therefore, trust is the preliminary condition to consumers' e-commerce participation. In the context of robo-advisors it becomes clear that there is a risk of monetary loss since consumers have to rely on online information solely and thus, may become more vulnerable to inaccurate, incomplete or wrong information provided by robo-advisors. In addition, there is a risk of privacy loss by providing personal information to robo-advisors. Consequently, the

importance of trust is elevated in e-commerce because of a possible high degree of uncertainty and risk present in most online transactions (Jarvenpaa, Tractinsky, and Vitale, 1999). Thus, we pose *Hypothesis 1: A higher level of CSIT will lead to a lower level of trust.*

2.2 Perceived Risk

Perceived risk is defined as the consumer's subjective belief of suffering a loss in pursuit of a desired outcome (Bauer, 1960; Sheth & Parvyatar, 1995). Within the context of e-commerce, perceived risk is regarded as an important driver of consumer intentions to buy. In the online context, the distant and impersonal nature of the online environment has been associated with environmental uncertainty (e.g. technology) or behavioural uncertainty (e.g. relational) (Bensaou & Venkataman, 1996). Environmental uncertainty may result due to the missing control of the consumer regarding its information. Although the seller has an important influence on the security of the transaction medium (e.g., encryption, authentication, firewalls), there is still the possibility of third parties compromising the transaction process. Behavioural uncertainty may arise due to opportunistic behavior of the seller including false information, misleading product presentations or misleading advertising. Perceived risk has been shown to negatively influence consumer online buying intentions (Jarvenpaa et al., 1999; Pavlou, 2003). The perceived risk associated with robo-advisors may reduce perceptions of behavioral and environmental control, and this lack of control may negatively influence buying intentions. Within the context of robo-advisors, we assume that customer-specific technologies will result in a higher level of customer perceived risk due to technology-driven environmental uncertainty. Thus, we derive *Hypothesis 2: A higher level of CSIT will lead to a higher level of perceived risk.*

2.3 Psychological Reactance

The socio-psychological theory of psychological reactance indicates that when a perceived freedom is eliminated or threatened with elimination, the individual will be motivated to re-establish that freedom (Brehm, 1966). Relationship marketing is widely based on commitment (Morgan & Hunt, 1994). This commitment can be either formalized by a contractual setting or not. However, formalization may be interpreted by the customer as a thread to its freedom of choice as for promotional influence or manipulative advertisement (Clee & Wicklund, 1980). Consequently, customers will show psychological reactance. Transferred to the context of CSIT, consumers are confronted with many unwanted marketing communications through various channels. In addition, they may recognize persuasive tactics of salespersons and their attempt to push the purchase of a specific product. These forced intrusions are perceived as threats to their freedom of choice (Martin & Murphy, 2017).

Consequently, consumers may show psychological reactance which in turn motivate consumers to regain their lost freedom (Edwards, Li, and Lee, 2002). Thus, we assume that a higher level of CSIT will lead to a lower level of psychological reactance. Hence, we state *Hypothesis 3: A higher level of CSIT will lead to a lower level of physiological reactance.*

2.3 Perceived Use

According to social exchange theory "perceived use" is a key construct to explain why consumers continue or complete a social interaction. Thibaut und Kelly (1959) postulate that a consumer judges the use of an interaction on a basis of a comparison level describing an individual cost-benefit ratio. Applied to technology, the term "perceived usefulness" is defined as the individual's perception that using the new technology will enhance or improve his or her performance (Davis, 1989). In the context of robo-advisors, usefulness refers to the degree to which consumers believe using robo-advisors will improve their performance or productivity, thus enhancing the outcome of investment advise. However, in comparison to investment advise by salespeople, the relationship between robo-advisors and perceived usefulness is not clear. With decreasing financial literacy in society (Hastings, Madrian, and Skimmyhorn, 2013), we propose an opposite trend towards salespeople interaction in investment advise. Hence, we propose *Hypothesis 4: A higher level of CSIT will lead to a lower level of perceived use.*

3. Experimental design and data collection

To test the derived framework, a single factorial between-subjects experiment was conducted with the experimental factors personal salesperson advise, robo-advise and hybrid advise (robo-advise + salesperson advise). For the experiment, three treatment groups were formed, each of them was exposed to a different stimulus. For the purpose of this research, it was decided to use real robo-advisors and a real investment advise setting at a savings bank, including real salespeople and robo-advisors in order to have a high degree of realism (Geuens & de Pelsmacker, 2017). Any other influences, such as the local conditions, were reduced or at least homogenized for all groups. The manipulated stimuli as well as the entire study design were pre-tested among participants. In total, a convenience sample of 75 participants was collected and randomly assigned to the four three treatment groups, resulting in three independent samples with 25 participant each using a parallel design. The participants' age was between 18 and 35 years. Further, the sample was equally distributed between women and men. To measure the surveyed constructs, multi-items were used that were already established by prior research and are accepted in literature; most items were then

measured on 7-point Likert scale. The measurement of trust was done by applying the scale of Lee and Moray (1992). Perceived risk was measured by adapting the scale of Sheth and Parvyatar (1995). Psychological reactance was measured by adapting the scale of Hong and Page (1989). Perceived use was measured by adapting the scale of Zaichkowskiy (1994).

4. Results

4.1 Data preparation and manipulation checks

Almost all constructs had alpha scores well above 0.7 (trust = .911; perceived risk = .785; psychological reactance = .686; perceive use = .889), displaying a good level of reliability (Nunnally & Bernstein, 1994). Pearson's Chi-square test and Kruskal-Wallis H-test were applied to check for structural equality based on gender and age. The results indicate no significant differences between the three experimental groups. Correspondingly, the groups can be compared and used to reliably and validly investigate the proposed differences in consumer behavioral constructs under different conditions.

Statistical measures show that the manipulation of salesperson advise, robo-advise as well as hybrid advise was successful. To check the manipulations, pairwise Kruskal-Wallis-tests were applied, resulting in Chi-square values ranging from 8.967 (psychological reactance) to 30.276 (trust) on a <.01 significance level.

4.2 Hypotheses test

To test our propositions, we conducted planned comparisons. Kruskal-Wallis H tests for each treatment group and constructs showed that there are statistically significant differences in the dependent variables between the different advise treatments. Table 1 shows the respective results. For all surveyed constructs we can partially confirm our hypotheses. The comparison between groups indeed revealed for robo-advise that these forms of customer-specific interaction technology achieve the highest ranks for perceived risk and psychological reactance and the lowest ranks for trust and perceived use compared to the other groups. However, comparing salesperson advise and hybrid adivse, interestingly, hybrid advise showed higher ranks than salesperson advise for trust and perceived use. For risk and psychological reactance, the groups indicted lower ranks compared to salesperson advise. By this, we can conclude that our findings are somewhat contradictory to the conceptualization of Ahearne and Rapp (2010). We cannot confirm a linear increase of the measured constructs with respect to salesperson-customer interaction technologies. Interestingly, the hybrid advise seems to outperform the other two interaction forms emphasizing that human touch in selling still seems to matter.

Table 1

Results of Kruskal-Wallis H tests.

Construct	Hyp.	N	Alpha*	Mean	SD.	χ2	p	Rank
Trust	H1	75	0.911	5.71	1.11	30.288		
Robo-Advisse		25					0.00	18.66
Hybrid Advise		25					0.00	49.98
Salesperson Advise		25					0.00	45.36
Perceived Risk	H2	75	0.785	5.62	0.91	22.398		
Robo-Advisse		25					0.00	54,78
Hybrid Advise		25					0.00	29.52
Salesperson Advise		25					0.00	29.70
Psychological	H3		0.686	2.07	0.84	8.967		
Robo-Advisse		25					0.01	48.24
Hybrid Advise		25					0.01	30.54
Salesperson Advise		25					0.01	35.22
Perveived Use	H4		0.889	5.41	1.21	22.340		
Robo-Advisse		25					0.00	21.30
Hybrid Advise		25					0.00	47.84
Salesperson Advise		25					0.00	44.86

* Cronbach's alpha scores.

5. Managerial implications and limitations

Our findings have important implications for the implementation of customer-salesperson interaction technologies. As the momentarily trend of shifting resources from salesperson-centric technologies to customer-centric technologies is still growing strong, more and more companies evaluate the implementation of e.g. robo-advisors as a form of CSIT without any human touch. However, our findings suggest that companies should not underestimate the value of personal selling from a consumer perspective. Hence, based on our experimental setting, we can only partially agree to the conceptualization of Ahearne and Rapp (2010) who suggest disintermediation of salespeople. Our results rather indicate that banking customers still favor a hybrid of personal selling and robo-advisory. This result is maybe linked to the fact that assessment advisory has high degree of complexity for the consumer and effort its integration in the buying process in a context of individualized advisory. Based on this fact we assume that a disintermediation of the salesperson does not occur in a strong way as long the financial product has high degree of complexity, specialization and individualization. Contrary to that financial products with a lower degree of complexity has a higher risk of the disintermediation of the sales person, which can already be

seen in the area of banking accounts (for e.g. Paypal). However, this must not necessarily be the case in the future. The further development of artificial intelligence and thus, the improvement of robo-advisors may increase the risk for traditional banking services like personal investment advisors to be disintermediated by robo-advisors. Regarding possible limitations of the study, it needs to be said that the external validity of the study may be limited as the data collection was made using an experimental design. Hence, the relation between CSIT and the surveyed constructs needs to be examined in real-life settings.

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