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# What about Passive Innovation Resistance? Exploring User's Resistance to Technology in the Healthcare Sector<sup>1</sup>

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## **ABSTRACT**

Where little is known about how users passively resist innovation prior to evaluation, this paper explores both past and current trends through a systematic review of 45 studies (1989 – 2017) related to the consumer decision journey. The literature on adoption largely assumes that consumers are open to change, presuming that all consumers will experience a new offering prior to reaching an adoption decision. However, the review confirms the existence of passive innovation resistance; the selected papers also identified two main drivers (resistance to change and status quo satisfaction). However, some recent studies have challenged these drivers for not evolving along with the consumer decision journey. Our contribution highlights

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the multidimensional nature of experience in today's digital world through the re-examination of antecedents and correlates. In doing so, the study strengthens our understanding of the phenomenon, ensuring that managers become more aware of the differences when making strategic decisions on innovation.

**KEYWORDS:** Passive Innovation Resistance, Self-Service Technology, Disruptive Technology, Experience, Consumer Decision Journey, Healthcare

**JEL CODES:** I1, O14, P46, O33

The need to reduce the demand placed on certain social infrastructures has become a great concern to many nations across the globe (Bréchat *et al.*, 2014). With healthcare in particular, there has been a continuous rise in global spending from 6.5 trillion dollars in 2012 to 7.2 trillion dollars in 2013, and this rise in expenditure is expected to continue well into the future (Deloitte, 2015), largely because it is influenced by the health needs of the elderly population, which has nearly doubled in countries like the United States (Deloitte, 2015). The ageing US population increased from 9% in 1960 to about 17% in 2014 (Mather *et al.*, 2015). Chronic disease associated with this population group is also on the rise and, lastly, so is the concern on adherence to medication, where figures suggest that about 50% of chronic patients are non-adherent (Alaiad *et al.*, 2014; Deloitte, 2015; Mather *et al.*, 2015).

The innovation on medication follow-up using self-service technologies is one example of the digital transformation in medical science today, with reports suggesting that intervention improves total healthcare spending by about 7-11% (Joss, 2011; Deloitte 2015). Self-service technologies (SSTs) are defined as “*technological interfaces that enable customers to produce a service independent of direct service employee involvement*” (Meuter *et al.*, 2000, p.50). This is a term that is often interchangeably used with assistive technologies (ATs) like drones, robotic companions, and mobile apps (Alaiad *et al.*, 2014; Rijdsdijk, Hultink, 2009).

According to some researchers, self-service technology is more than a technical development but is rather the epitome of a paradigm shift, with the potential of dramatically changing the future of service consumption (Hoffman, Novak, 2015; Ostrom *et al.*, 2015). One element that makes this approach remarkable is the self-service aspect. This demonstrates the unique nature of value co-creation with a cost saving strategy through users' participation (World Health Organisation, 2016; Ostrom *et al.*, 2015).

The successful diffusion of this innovation is, however, hindered by concerns over user's comfort (i.e. the risk to privacy, moral values, lack of human

control and health risk etc.), which contribute to the 40-50% failure rate (Castellion, Markham, 2013; Nguyen, De Cremer, 2016). The case of AiCure or Paro robot are typical examples in healthcare, the latter is designed as a companion for the elderly or disabled, with the aim of creating a calming effect for those suffering from Alzheimer's or another kind of cognitive impairment (Hengstler *et al.*, 2016; Bogue, 2014). Instead, a third of assistive technologies are rejected or abandoned within a year due to the psychological costs associated with such a behavior change (Gourville, 2006; Bogue, 2014). This has prompted some scholars to advocate the need to re-evaluate people's perceptions towards emerging trends such as the cost of acquiring new skills, the loss of benefits on the incumbent product/service, and the distance it creates between physicians and patients, which seem to be of more concern to many than the potential benefits (Marikyan *et al.*, 2019; Gourville, 2006).

Past studies have confirmed that a significant behavior change is a given in the face of resistant innovation (Heidenreich *et al.*, 2016; Garcia *et al.*, 2007; Ellen *et al.*, 1991). Hence, radical innovation that significantly alters the existing belief structure, attitudes, tradition or routine will no doubt exacerbate the risk concern of some consumers (Van Heerden *et al.*, 2012), as it did in the era of telephone innovation, automobile innovation, and the PC revolution (Gourville, 2006). In today's society, for consumers to adopt and integrate these technologies into their personal space, the role of public authorities in selecting between needs also has to be re-evaluated because most of these innovations deal with the social change process (Van Heerden *et al.*, 2012; Bréchat *et al.*, 2014; Batel, Devine-Wright, 2015). Especially that of healthcare, where complex and sensitive issues oblige patients to seek an integrated health service that offers a continuum of medical care tailored to their needs (Berry, 2014; World Health Organisation, 2016). Hence, strategic decisions that draw their legitimacy only from reduced public budgets will not be conducive in satisfying the new needs associated with technology adoption in healthcare (Bréchat *et al.*, 2014).

Adoption in this study refers to the purchase of an innovation with at least one use and resistance as the non-purchase or non-use (Talke, Heidenreich, 2014). The economic consequences of adoption are evident in the literature, for example, it was estimated that 750,000 Americans went abroad for treatment requiring cutting-edge technology in 2007 compared with approximately 150,000 in 2006 (Keckley, 2008). Cost may be the influencing factor in this example but resistance to innovation often appears in diverse form. Renewable energy and associate technologies (RET) are a case in point, where the technological innovation (i.e. electric cars and wind turbines) face

opposition that at times leads to delays in adoption or an outright rejection by the local community (Batel, Devine-Wright, 2015).

Humanoids, robots and drones confront similar opposition from patients and other type of users within healthcare (*e.g.* doctors, nurses and other caregivers) who perceive them as deskilling or disruptive to the social structure of the existing communities (Marikyan *et al.*, 2019).

Our contribution attempts to address what Gourville (2006) referred to as a psychological bias, *i.e.* the limited literature on the psychological costs associated with innovation resistance. The research into this phenomenon is limited because most studies examine resistance from a conscious or active action (Patsiotis *et al.*, 2013; Talke, Heidenreich 2014; Heidenreich *et al.*, 2016). Active innovation resistance refers to the conscious form of resistance that comes from functional and psychological barriers following an evaluation of the innovation (Kleijnen *et al.*, 2009; Patsiotis *et al.*, 2013; Heidenreich *et al.*, 2016). While passive innovation resistance deals with the unconscious form of resistance that manifests prior to the evaluation of a new offering, usually driven by previous experience, an individual's resistance to change disposition and satisfaction with the status quo (Heidenreich, Kraemer, 2015; Lemon, Verhoef, 2016).

The paper also goes a step further, examining the socio-psychological factors of such behavior given that some consumers now fundamentally shop with a confirmation bias (Elzinga, Seitz, 2017). This confirmation bias in the consumer decision journey may have been triggered by the addition of the social dimension (Lemon, Verhoef, 2016). By so doing, the study reflects on the influence of the social dimension attributed to the unconscious, in addition to the functional and psychological barriers considered in prior studies (*e.g.* Elzinga, Seitz, 2017, Lemon, Verhoef 2016).

### **Research Questions**

- How is passive innovation resistance different from active innovation resistance?
- What are the drivers of passive innovation resistance and how does this differ in a sensitive industry like healthcare?
- Which factors moderate the effect of these drivers on passive innovation resistance?

### **Methodology**

In order to limit bias, the study conducts a systematic review of the literature on consumers' resistance to innovation; with this method we were able

to provide a scientific summary of evidence (Petticrew, 2006) and as such avoid duplication. The method also facilitates the examination of extant literature, i.e. understanding the objectives of the articles in relation to consumer innovation resistance and the potential changes in the consumer decision journey. An approach guided by the following criteria: (A) Definition of innovation resistance with a focus on passive resistance. (B) The search for the drivers of innovation resistance from articles between 1989 and 2017; this is because the literature on technology adoption marks a fundamental disagreement with the drivers of innovation resistance at this period with the publication of Ram and Sheth (1989).

(C) Language: the study considered articles published in English, this is not only due to linguistic limitation but also because the majority of search engines publish journals in English with an easily accessible impact factor. (D) Quality: articles published in academic journals with an impact factor were considered using the *ABS Academic Journal Guide 2018* (Kiss *et al.*, 2012). This is not to suggest that other publications are less relevant for academic consideration but often articles published in journals with an impact factor are rubber stamped as validated knowledge in the field, and as such we feel that this criterion could provide an accurate picture of relevant scholarly research (Keupp *et al.*, 2012) on consumer innovation resistance. (E) The inclusion of empirical and conceptual articles in the study emphasizes the rapid change in method. (F) The inclusion of a multidisciplinary approach to step (1) adds rigor to the research goal and scope, through the review of consumer innovation resistance from a variety of branches within the social sciences.

We began step (2) with an electronic search of the keyword “innovation resistance” in Scopus, EBSCO and the Web of Science databases, and similar keywords searched for in titles, abstracts, or the full text of the article under consideration. The term “innovation resistance”, “consumer” and other specific terms (*e.g.* robotic companion) combined in this search process, to ensure that the literature review focuses on consumer innovation resistance. At the start, the databases contain a large number of articles on innovation resistance. The structural decline in this large number of articles did not occur until the term “consumer” was added to “innovation resistance” using an “and” condition. The decline after the “and” condition represented the cut-off point for a detailed analysis of the 453 articles. Some articles were initially included at this stage, but once attention shifted to the unit of analysis, abstracts and introductions were re-read to ensure that our selection is based on consumer innovation resistance, this approach reduced the articles to 209.

The next stage saw articles published outside of the following disciplines; innovation, general management, information management, marketing and operations management were excluded, articles without an impact factor were also excluded in stage 4 (Keupp, Palmié, Gassmann, 2012; Aguinis *et al.*, 2018). In the fifth stage, a backward citation search was utilized (e.g. Thomé *et al.*, 2016), this process of screening and exploring cited references beyond selected keywords or integrated, more specific, terms (e.g. robotic companion) provided nine new articles. The process ended with duplicates and electronically unavailable articles excluded (Aliaga-Isla, Rialp, 2013). Hence, the 45 remaining articles were selected for the systematic review.

### Scope of the Review

The subject of innovation resistance has been widely studied in many disciplines using a series of research designs (Talke, Heidenreich, 2014). Reinforcing the idea expressed in our contribution on passive innovation becomes a challenge, as many of these past studies do not account for the unconscious form of resistance (Heidenreich, Kraemer, 2015). Furthermore, little is known about how this impacts the evolving nature of the human decision journey, which in recent times has been exacerbated by rapid technological change (Elzinga, Seitz, 2017). Another major challenge surfaced when addressing the multidisciplinary nature of the subject as we had to analyse and scrutinize different perspectives.

Most of the studies (about 70%) contextualized their approach towards a specific technological domain, assistive technology application in banks or similar consumer electronic sectors. Though some past studies have listed theories in their review, the classification of articles into the theoretical framework was a major effort in this process (e.g. Aliaga-Isla, Rialp, 2013), hence we decided to only include research disciplines and impact factors as both enhanced the significance of our review process.

Table 1 (see Appendix) reflects the list of journals included in the literature review, with the most articles published in the *Journal of Business Research* – JBR (5), followed by *Journal of Product Innovation Management* – JPIM (4), *International Journal of Bank Marketing* – IJBM and *Computers in Human Behavior*, with (3) articles each, the *Journal of the Academy of Marketing Science* – JAMS (2), *Technological Forecasting and Social Change* (2), *International Journal of Information Management* – IJIM (2), *Journal of Economic Psychology* – JEP (2). The others have one each, *Journal of Consumer Marketing* – JCM (1), *Technovation* – TECH (1), *Advances in Consumer Research* – ACR (1), *Harvard Business Review* – HBR (1), MIT

*Sloan Management Review* – MSMR (1), *Journal of Service Research* – JSR (1), *International Journal of Mobile Communications* – IJMC (1), *E-Business and Telecommunications* – E-BT (1), *European Journal of Innovation Management* – EJIM (1), *Communications of the ACM* – CACM (1), *Food Quality and Preference* – FQP (1), *Journal of Services Marketing* – JSM (1), *International Journal of Innovation Management* – IJIM (1), *Qualitative Research in Financial Markets* – QRFM (1), *International Journal of Business Information Systems* – IJBIS (1), *Industrial Marketing Management and Asia Pacific* – IMMAPP (1), *Journal of Marketing Management* – APJM (1), *European Journal of Marketing* – EJM (1), *The Journal of High Technology Management Research* – JHTMR (1) and *Journal of Consumer Behaviour* – JCB (1).

## Mapping the Objectives of the Articles

The initial exploration conducted prior to selection of the paper followed the example of Aguinis, Ramani and Alabduljadder (2018). Although the distribution of the articles indicates the rich character of the topic, this is not exclusive as it also shows that the majority of the papers generated are theoretical/conceptual. The Excel workbook introduced at this stage enhances the recording and comparing of data content. Through the codes in Excel, we were able to highlight those articles dedicated to consumer innovation resistance and how most of these studies contextualized their approach towards active innovation resistance. This makes the unconscious rationale more challenging to put into context; therefore, to broaden the domain, a semantic categorisation of keywords was applied. According to Goddard (2011), semantic analysis is the task of ensuring that the declarations and statements of a program are semantically correct. Applying a semantic analysis here enables identification of the nature of the text and it also facilitates the visual presentation of the concepts discussed in the corpus (Marikyan *et al.*, 2019).

## Results

### Definition of Innovation Resistance

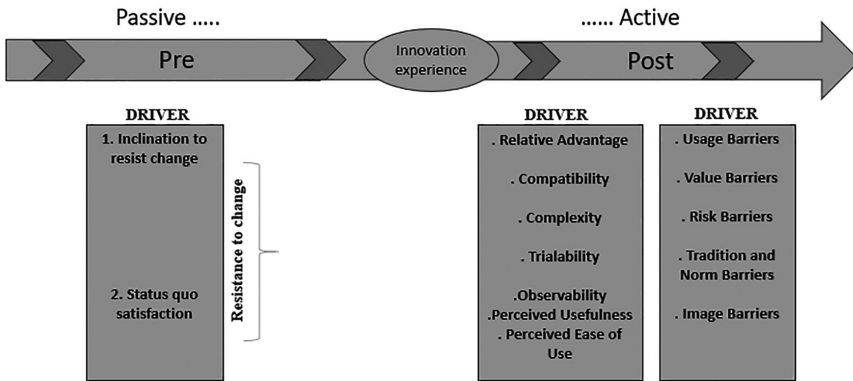
Szmigin and Foxall (1998) define innovation resistance as consumers' response derived from a conscious choice, while Ram and Sheth (1989), define innovation resistance as “*the resistance offered by consumers to an innovation, either because it poses potential changes from a satisfactory status quo or because it conflicts with a consumer's belief structure*”. Ellen *et al.* (1991) refer to

it as resistance to change following “*an evaluative response to maintain the status quo*”. Therefore, the commonality with these seminal definitions is that resistance is linked to changes imposed by innovation, either before or after the evaluation of a new offering (Kleijnen *et al.*, 2009; Heidenreich, Spieth, 2013) and as such highlights innovation resistance as a key inhibitor to the process of adoption.

This revelation gave rise to a series of criticisms on innovation adoption, for instance, despite the popularity of the adoption model by Rogers (2003), the theory was still criticized for its focus on the innovation decision process after the formation of attitudes (*e.g.* Kleijnen *et al.*, 2009). Other scholars like Patsiotis *et al.* (2013) have also questioned the omission of unconscious antecedents linked to why people resist or continue usage. This ambiguity led to several responses, including the view that “*resistance may have been contrasted with readiness*” (Hultman, 2014). Generally, resistance is attributed to a state of mind reflecting unwillingness or unreceptiveness to change in the ways we think and behave (Hultman, 2014). Readiness is not the opposite of resistance, even though it is defined as a state of mind reflecting willingness or receptiveness to change (Hultman, 2014). Hence, customer readiness designed to address individual characteristics and personal orientations like innovativeness and the tendency to be a technology pioneer (Parasuraman, 2000) have not been able to provide details on the drivers of both adoption and resistance (Patsiotis *et al.*, 2013).

Adoption literature also marks a fundamental disagreement about the drivers of innovation resistance. Some researchers consider innovation resistance to be a personality-related inclination to resist changes or satisfaction with the actual status quo (Bagozzi, Lee, 1999; Heidenreich, Spieth, 2013; Talke, Heidenreich, 2014). In other words, this group connects to the notion of passive resistance, or better still, the unconscious response. The other group argues that it is an active action in which resistance becomes a negative attitude that consumers develop from evaluation of a new offering (Laukkanen *et al.*, 2008; Kleijnen *et al.*, 2009; Talke, Heidenreich, 2014). Figure 1 below illustrates how the drivers of active innovation resistance differ from those of passive innovation resistance. However, with limited research on passive innovation resistance (Bagozzi, Lee, 1999; Talke, Heidenreich, 2014), the study attempts to contribute to this phenomenon.

Figure 1 - Drivers of innovation resistance (Extracted from papers under study)

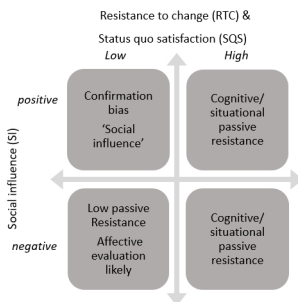


### Passive Innovation Resistance: Typology and Drivers

The systematic literature review confirms that passive innovation resistance received less attention from researchers because of a pro-change bias that assumes that all consumers willingly experience innovation through the evaluation of a new offering (Kleijnen *et al.*, 2009; Talke, Heidenreich, 2014; Heidenreich *et al.*, 2016). Studies from social psychology and healthcare have, however, repositioned the case for passive innovation resistance with the perspective that resistance to change is more than just overt behavior in a specific situation (Bréchat *et al.*, 2014; Talke, Hendenreich, 2013) and that such predisposition to change is normal, given that people strive for psychological balance (Heidenreich *et al.*, 2016). Therefore, passive innovation resistance is likely to have emerged from the perception that the new idea or practice will disturb the individual’s psychological balance (Szmigin, Foxall, 1998; Talke, Heidenreich, 2014; Heidenreich *et al.*, 2016).

Consistent with some of the earlier studies on innovation resistance, which suggest that all innovation represents uncertainty, as some individuals reject, others may postpone or oppose the new offering (e.g. Ram, Sheth, 1989; Szmigin, Foxall, 1998, Kleijnen *et al.*, 2009). This behavior is often interpreted differently depending on the surrounding circumstances; some individuals effectively evaluate while others are unconscious at this stage(s) (i.e. passive state). Past studies have called for the need to bridge the knowledge gap preventing researchers and implementers from being able to separately assess the effect of passive innovation resistance on an individual’s ability to adopt (e.g. Heidenreich *et al.*, 2016).

**Figure 2 – Passive innovation resistance (Matrix)**



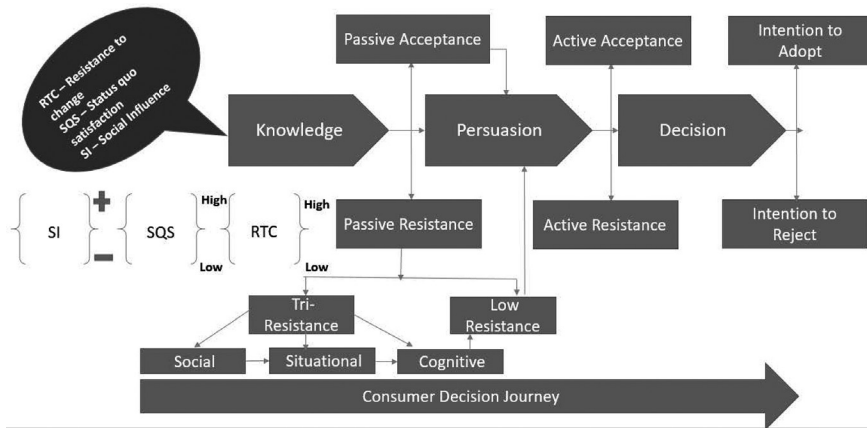
According to Talke and Heidenreich (2014), there are two factors directly responsible for passive innovation resistance as illustrated in Figures 2 and 3: (1) adopter-specific inclination to resist changes and (2) situation-specific status quo satisfaction. Adopter-specific factors represent the individual's cognitive style while situation-specific factors relate to the individual's status quo satisfaction (Talke, Heidenreich, 2014). These two variables form the bases upon which passive innovation resistance is classified. Dual passive resistance is a state in which an individual experiences high cognitive and high situational passive resistance. In other words, the individual has a high self-concept built on previous experiences such that affective evaluation becomes impossible even at the persuasion stage. The individual is likely to reject innovation due to perceived satisfaction in the existing product or service (Talke, Heidenreich, 2014). Low passive resistance occurs because of a low inclination to resist changes and low status quo satisfaction (Talke, Heidenreich, 2014) that consumers with these traits are likely to adopt (i.e. may make significant progress in the evaluation stage).

Cognitive passive resistance is driven by an individual's inclination to resist change due to a perception in the cognitive gap that makes it difficult for the individual to break away from routine adoption (Heidenreich, Handrich, 2015). This particular resistance demonstrates the influence of previous experiences with the suggestion that less attention is given to the innovation if the individual has a higher tendency to resist change, as he or she becomes emotionally stressed in the face of change (Nov, Ye, 2008; Heidenreich, Spieth, 2013; Heidenreich *et al.*, 2016). According to Oreg (2003) and Heidenreich and Kraemer (2015) cognitive passive resistance truly reflects the unconscious, as it highlights the vulnerability of the individual and any changes at this stage are expected to reduce the individual's openness to innovation and likelihood of adoption. Situational passive resistance is another type of resistance that inhibits innovation adoption, as consumers who are happy with the existing product or service prefer to maintain the

status quo rather than to pursue change (Oreg, 2003; Heidenreich, Kraemer, 2015). In this case, a higher desire for the status quo decreases the need for change and increases the resistance to alternatives, as most innovations will require consumers to learn new skills and change accustomed behaviors (Ellen *et al.*, 1991; Heidenreich *et al.*, 2016).

### Consumer Decision Journey Analysis

Figure 3 – Consumer Decision Journey (Extracted from papers under study)



### Theoretical Implications

Recent studies continue to argue that customers are changing their behaviors in multiple ways to reflect the increasingly complex customer touch points emerging from rapid technological innovations (e.g. Elzinga, Seitz, 2017; Lemon, Verhoef, 2016). The findings from our systematic review of literature from 1989 to 2017 indicate that passive innovation resistance is an important issue that is driven by resistance to change (RTC) and status quo satisfaction (SQS). This view, however, does not account for the recent constant switching by consumers (e.g. Lemon, Verhoef, 2016; Elzinga, Seitz, 2017). According to a recent McKinsey study involving over 125,000 consumers across 350 brands in about 30 categories, today’s consumers fundamentally adopt new offerings with a confirmation bias initiated at the knowledge stage, as opposed to the persuasion stage suggested in some extant literature (Elzinga, Seitz, 2017).

This would signal a change in the consumer decision journey as other factor(s) besides RTC and SQS are potentially disrupting the traditional process of decision making. A few of the studies in our corpus hinted at the possibility of a social dimension, but this was either considered as a moderator or a risk factor (*e.g.* Kuisma *et al.*, 2007; Kleijnen *et al.*, 2009; Bartel, Reinders, 2011; Reinders *et al.*, 2015). The confirmation bias suggested in Elzinga and Seitz (2017) is a clear illustration of how the consumer decision journey is evolving, as active evaluation involving previous experience shifts from being an important touchpoint at the persuasion stage into the knowledge stage. This recent shift in consumers' response to rapid technological change in today's society was also echoed in Lemon and Verhoef (2016), where the study argued that experience is now likened to engagement *i.e.* the moment in which the customer reaches out, to create a variety of touchpoints along the decision journey.

According to Harmeling *et al.* (2016) customer engagement initiatives might both influence existing cognitive bonds and build new cognitive bonds, by affecting the strength, content, and organization of knowledge structures. This reaffirms the shift in the consumer decision journey and, even more, how the unconscious is no longer influenced by resistance to change (RTC) and status quo satisfaction alone but in combination with other dimensions of experience. After all, customer experience is a multi-dimensional construct involving cognitive, emotional, behavioral, sensorial and social responses (Lemon, Verhoef, 2016). As such, the cognitive and emotional/affective dimensional used in some past studies to account for the unconscious resistance to technological innovation in the social context (*e.g.* Heidenreich, Kraemer, 2015; Heidenreich *et al.*, 2016) may not be adequate in today's societies without the inclusion of social influence (Batel, Devine-Wright, 2015).

## **Passive Innovation Resistance in the Healthcare Context: Key Drivers**

According to the literature, passive innovation resistance occurs when the new reality or the degree of change is no longer compatible with familiar responses (*e.g.* Oreg 2003; Heidenreich, Kraemer, 2016). This would imply that, the moment the level of change exceeds the adopter-specific threshold, unconscious mechanisms manifest. Therefore, adequate measures to overcome passive innovation resistance should either focus on ways to reduce satisfaction with the status quo, the perceived changes imposed by the

innovation, or both in combination (Heidenreich, Kraemer, 2016). There are several empirical examinations in relation to this approach within consumer electronics but none of the countermeasures proposed in these studies are generalizable to other contexts like healthcare, where the vulnerability of the individual consumer often leads to additional touchpoints involving the social change process (Baxendale *et al.*, 2015; Risselada *et al.*, 2014; Berry, 2014).

For example, past studies suggest that mental simulation and benefit comparison moderate the effect of passive innovation resistance on users, this is not the case in healthcare where the elderly and their value networks of formal and informal caregivers continue to passively resist healthcare robots (Broadbent *et al.*, 2009; Heidenreich, Kraemer, 2016). Mental simulation in this study refers to an imitative representation of a usage situation that enhances the affective evaluation of an innovation by consumers (Heidenreich, Kraemer, 2016), while benefit comparison is supposed to lower the status quo satisfaction of the individual through a process that compares the benefits of new and old products/services simultaneously. Neither measure has factored in the influence of the social change process on innovation. Therefore, healthcare offers an ideal setting in which to investigate this phenomenon, given its exposure to multiple actors, technology, and ambiguous institutional rules and norms (McColl-Kennedy *et al.*, 2012).

Consider online discussion groups, often described as an information exchange location; this is partly the case, but it goes far beyond that as it can also serve as a major social and emotional support function (Hallem, Barth, 2015). These platforms dedicated to healthcare are not just a discussion forum but also a campaign forum as they facilitate contact between medical practitioners or other types of experts wishing to disseminate their experiences/views under the pretext of offering moral support to those vulnerable members (Hallem, Barth, 2015).

Furthermore, a service industry like healthcare remains empirically limited in relation to the influencing factors of passive innovation resistance (Heidenreich, Kraemer, 2016), despite the attention drawn to the substantial behavioral change often required in the sector (Hess, 2009). This review provides an integrative perspective of SSTs as both a social (Castro, 2012) and a technological (Bauer, 1995) new object(s) in contemporary societies.

## **Innovation Experience in Healthcare**

Often, those in need of healthcare describe their experiences as a journey, a journey in which the customer engages in the co-creation of value with

firm and other non-firm actors (Danaher, Gallan, 2016). Several past studies have emphasized how experience in healthcare extends beyond the firm-customer dyad to involve the patient's cognitive and emotional resources, as well as resources from friends, family, and other customers and from other firms and the community (e.g. McColl-Kennedy *et al.*, 2012; Danaher, Gallan, 2016). Other past studies neglect this connectedness between engagement and experience during the decision journey despite several calls for research (e.g. Malthouse, Calder, 2011). The above view certainly strengthens the case for a social dimension and the need for previous experience to be considered beyond the usual limit of cognitive and the emotional/affective dimension. The consumer decision journey is not a new concept in marketing, it is often referred to as the customer experience map, because it depicts the service journey from beginning to end, reflecting all the interactions, triggers, touchpoints, motivations and frustrations leading on to the customer's decision (McColl-Kennedy *et al.*, 2015).

Many modern decision journeys have factored in the impact of digitalization (Elzinga, Seitz, 2017). Some consider it at the pre-purchase stage, an aspect that uncovers the customer's interaction with the brand, category, and environment prior to the adoption of a new offering. Researchers in marketing view pre-purchase as behaviors associated with need recognition, search and consideration, studies from other social sciences refer to it as the "knowledge stage" and this could include the customer's entire experience (i.e. cognitive, emotional, affective and social), before purchase (Talke, Heidenreich, 2014; Lemon, Verhoef, 2016). The persuasion stage follows, it is here that the consumer evaluates the product or service before engaging in either active innovation acceptance or active innovation resistance (Talke, Heidenreich, 2014). Others consider the impact of digitalization at the decision stage, because it is here that the consumer decides to adopt or reject an innovation based on attitude and the additional information acquired (Talke, Heidenreich, 2014; Lemon, Verhoef, 2016).

According to Elzinga and Seitz (2017), the confirmation bias identified in their study is a clear indication that some consumers no longer refine their understanding of how the innovation can be incorporated into their personal space at the persuasion stage because such a decision is *unconsciously* taken at the knowledge stage. If this confirmation bias is driven by previous experience of the customer, as suggested in Lemon and Verhoef (2016), and rapid technological innovation remains a catalyst for the social change process, then ignoring the social dimension will therefore not reflect the argument from other studies (e.g. Baxendale *et al.*, 2015; Risselada *et al.*, 2014).

Even more, the social dimension explicates the importance of the relation during the evaluation of previous experience at any stage of the consumer decision journey (e.g. Lemon, Verhoef, 2016). No matter what the stage, the individual consumer seems to be surrounded by other customers, peer influences, independent information sources and environments (Baxendale *et al.*, 2015; Risselada *et al.*, 2014). Thus, the review highlights this missing antecedent (social influence) of previous experience at the knowledge stage by considering changes in the consumer decision journey beyond the traditional dimension of cognitive and emotional/affective.

### Social Influence

From a social network perspective, the challenges of value co-creation across boundaries are hugely researched in the literature, with findings suggesting that social influence has an impact on the process of innovation as the attitudes or behaviors of important personalities interfere with the group's decision-making (Venkatesh, Brown, 2001). Other studies like Cialdini and Goldstein (2004) explained social influence in the context of the importance of forming accurate perceptions of reality and reacting accordingly, and of developing social relationships and maintaining a favorable self-concept.

Moscovici's (1988) study on social representation theory once considered this phenomenon with the focus on everyday communication and thoughts in order to determine the relationship between human psychology and modern social and cultural trends. Since then, social representation theory has been extensively used to examine socio-psychological processes within several social change processes (e.g. Lauri, 2009). An understanding of the social information valence could prove vital in evaluating the impact of the offering and that of the social change process. According to Lemon and Verhoef (2016), mobile real-time experience has been used in other studies to show how the frequency and positivity of interactions contribute to brand preference changes. For a more practical example, consider the recent debate over the so-called "Fourth Industrial Revolution" where many see resistance as a place-protective action against the proliferation of robots, creating institutional procedures (e.g. Bogue, 2014), often moderated by medical professionals, policy-makers and other lead actors to either promote or prevent the advancement of such technological innovation (e.g. Bogue, 2014).

This is consistent with Batel and Devine-Wright (2015); their case study of renewable energy and associate technologies suggests that opposing schools of thought perceive the rise of autonomous machines as threats to place-related identities, hence they mount opposition against any technological

disruption perceived as a threat to job security, privacy, moral values, etc. Past studies continue to ignore this aspect, i.e. the role played by people's relations with their community and its representation (e.g. Huijts *et al.*, 2012; Heidenreich, Kreamer, 2016). Kuisma *et al.* (2007) also highlight this in their study with the suggestion that consumers express social identities when shopping, a view shared by others, including Bartels and Reinders (2011), as they iterate the significance of social identity in predicting innovative behaviors.

## Conclusion

Our review and analysis of 45 peer-reviewed articles allowed us to reflect on past findings on consumer innovation resistance. As part of our analysis, we focused on the definition of innovation resistance first and later came across an important gap in the literature about passive innovation resistance. Here, the study attempts to explore this concept further with a review of the drivers and an investigation into the socio-psychological factors associated with such a behavior change, although the systematic literature review confirms the drivers of passive innovation resistance as resistance to change (RTC) and status quo satisfaction (SQS). This was only for a certain period of time, as rapid technological innovation alters the decision journey, causing consumers to regularly switch in an attempt to adapt to a changing world (Lemon, Verhoef, 2016; Elzinga, Seitz). The insight from the case study of healthcare further reaffirms that, for technological innovation in today's society to deliver the best possible service experience that meets the needs of users, such innovation would have to contend with the social change process (Van Heerden *et al.*, 2012; Batel, Devine-Wright, 2015). This literature review study explicates the influencing factors of passive innovation resistance better with the inclusion of the social dimension and the realignment of the debate away from studies that view initial resistance from a laggard or deviant mentality (e.g. Goldenberg, Oreg, 2007).

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